

EIAR Volume 2

**Environmental Impact
Assessment Report**

Proposed Residential Development

**Lands at Cornamaddy,
Athlone,
County Westmeath**

On behalf of

Marina Quarter Limited

December 2022



Planning & Development Consultants

63 York Road,

Dun Laoghaire

Co. Dublin

www.brockmcclure.ie

Westmeath County Council Planning Authority - Inspection Purposes Only

Table of Contents

1. Introduction	2
2. Description of Development.....	12
3. Planning and Development Context	32
4. Alternatives	73
5. Population and Human Health	82
6. Land, Soils, Geology and Hydrogeology	106
7. Hydrology	135
8. Biodiversity	152
9. Air Quality and Climate	234
10. Noise and Vibration	259
11. Landscape Visual Impact Assessment	277
12. Architectural, Archaeological and Cultural Heritage	335
13. Traffic and Transportation	359
14. Waste Management	371
15. Material Assets	382
16. Cumulative Impacts	386
17. Interrelationships Between the Aspects	399

1 INTRODUCTION

1.1 Introduction

This Environmental Impact Assessment Report (EIAR) is submitted in conjunction with and in addition to a planning application, prepared by Brock McClure Consultants, 63 York Road, Dun Laoghaire, Co. Dublin for permission for the development of lands, primarily for residential development, in the town lands of Cornamaddy, Athlone, Co. Westmeath as described below.

We wish to highlight from the outset, that our client is committed to working with the Planning Authority to deliver on a residential proposal that is appropriate to the site and the surrounding context at Cornamaddy. The residential scheme is designed in line with the pattern of the surrounding residential development and the current market demand for the wider Athlone area. The site masterplan is shown on figure 1.1 below:

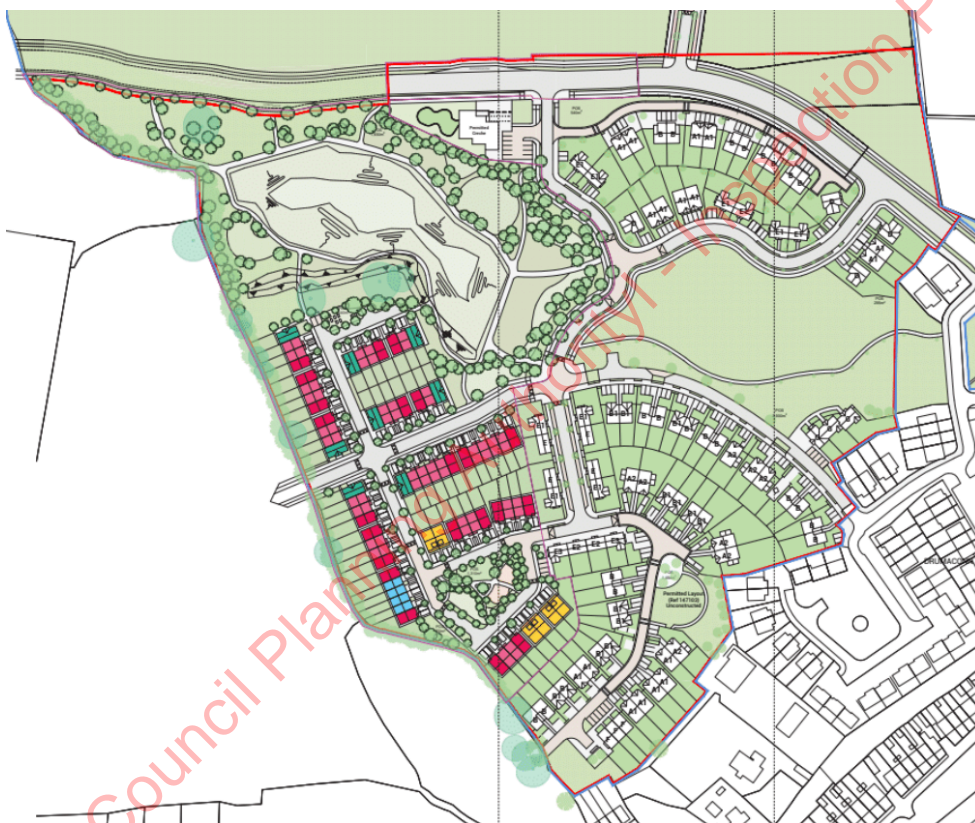


Figure 1.1: Site Masterplan Layout

The development will consist of a residential development and public park comprising the following:

Marina Quarter limited intend to apply for a 5-year permission for development at this site of total 10.87ha on lands located at Cornamaddy, Athlone, Co. Westmeath. The site is generally bounded to the west by greenfield lands and Cornamagh Cemetery, to the north by greenfield lands, to the south by greenfield lands and the Ballymahon Road (N55) and to the east by the existing Drumaconn housing estate. The development will comprise of a residential development and public open space comprising the following:

- Amendments to permitted application WMCC reg Ref. 14/7103/ ABP Ref. PL25.244826 for the removal of 38 no. permitted units (not constructed) to be replaced by: Construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (c.78 sq.m each), 60 no. 3 bed semidetached (c. 96-116 sq.m each) and 6 no. 4 bed semidetached houses (c. 147 sq.m each) with associated private gardens.

- The creche facility, public open spaces, landscaping, roads layouts, car parking, boundary treatment works, public lighting and all associated site works associated with the 87 no. remaining units retained as permitted under WMCC Reg Ref. 14/7103 ABP Ref. PL25.244826 will remain unchanged.
- All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a sections of the distributor road permitted under WMCC Reg. Refs 14/7103/ ABP Ref. PL25.244826 and 22/253 to the east of the site.
- All associated site development works, services provision, drainage works, public open space (c.1.03ha), landscaping, boundary treatment works, public lighting, associated esb substation cabinets, bin stores, car and bicycle parking provision.
- This development will form part of a larger/future phase of the development.
- This planning application is accompanied by an Environmental Impact Assessment Report and Natura Impact Statement.

The northern portion of the applicant's landholding also has the benefit of a permission granted under WMCC Ref. 22/253 for 75 no. units in the northeastern portion of the applicants lands. It is envisaged that a further phase of development will be lodged in the future for c.170 units which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units' total.

It is noted that the assessment area for this Environmental Impact Assessment Report takes into account the entire area within the applicant's landholding.

1.2 Scoping of the EIAR

The purpose of scoping is to identify the information to be contained within the EIAR and the methodology to be used in gathering and assessing the information.

Given the nature and scale of the proposed development as a standalone application and in combination with other separate applications on the lands in the immediate vicinity of the subject site, it has been decided by the EIAR specialist team to prepare a complete Environmental Impact Assessment Document. For the sake of consistency and completeness, all chapters have been scoped into this Environmental Impact Assessment Report.

The application and Environmental Impact Assessment report has been informed by informal discussions with Westmeath County Council regarding the subject development, and previous pre planning meetings that have taken place with regards existing lodged applications on the lands and the overall development strategy for the lands at Cornamaddy. It has been further informed by advice received from the specialist team engaged to prepare the EIAR.

1.3 Consultation

Prior to the lodgement of this application, the full complete Environmental Impact Assessment Report has been uploaded to the Department of Housing, Planning and Local Governments EIA Portal. The EIA portal is easily accessible by members of the public and provides a link and map of all planning applications that have been lodged with an accompanying EIAR.

1.4 Requirement for Environmental Impact Assessment

The requirement for an EIA for certain types and scales of development is listed in Annex I and Annex II of the of the EU Directive 2014/52/EU amended directive 2011/92/EU and is transposed into Section 5 (Part 1 and 2) of the *Planning and Development Regulations 2001* as amended.

The EU Directive on EIA lists projects for which an EIA is mandatory (Annex I) and projects for which an EIA may be required (Annex II) EU member states can select to apply thresholds for Annex II projects or examine projects on a case-by-case basis to assess when an EIA is required. In Ireland a combination of both has been applied. Annex I and II of the EU Directive on EIA have been transposed to schedule 5 of the *Planning and Development Regulations 2001* as amended.

The subject development does not fall within any of the classes of development as listed within Part 1 of Schedule 5.

The proposed development does fall within the development classes as set out in Part 2 of schedule 5 as follows:

10. Infrastructure Projects (b)(iv):

‘Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of built-up areas and 20 hectares elsewhere’.

Accordingly, the subject site has an overall site area of 10.87ha. This in combination with applications lodged and assessed as part of this EIAR on the immediately adjacent subject lands presents an overall EIA Assessment Area of c. 20.5 ha of the applicants overall landholding (10.87ha subject site) and therefore this EIAR has been prepared in accordance with Part 10 provisions of the Act.

This EIAR describes the findings of the EIA process to the Planning Authority to help determine a decision on the proposed development. It also informs the relevant statutory consultees, interested parties and the public about the likely effects that the proposed development will have on the environment.

1.5 Content of the Environmental Impact Assessment Report

This EIA report has been prepared in accordance with the most relevant guidance including but not limited to:

- EIA Directive (2011/92/EU) as amended by EIA Directive (2014/52/EU)
- Planning and Development Act 2000 (as amended)
- Planning and Development Regulations 2001 (as amended)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018).
- Guidance on preparation of the Environmental Impact Assessment Report (European Union, 2017)
- Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022).

Pursuant to EIA Directive, (Article (5) 1 of Directive 2014/52/EU), this EIAR specifically contains:

- A description of the project comprising information on the site, design, size and other relevant features of the project;
- A description of the likely significant effects of the project on the environment;
- A description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and if possible, offset likely significant adverse effects on the environment;
- A description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment.

- A description of the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be effected or the use of natural resources;
- A non-technical summary of the information referred to in points (a) to (d); and
- Any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project.

Impacts arising from the existence of the proposed development, the use of natural resources, the emission of pollutants, the creation of nuisances and the elimination of waste are described as direct, indirect, secondary, cumulative, short and long term, permanent and temporary, positive and negative, as appropriate.

1.6 Competency

An Environmental Impact Assessment Report must be prepared by competent experts. The applicant, Marina Quarter Limited, approached Brock McClure Planning and Development Consultants to direct and co-ordinate the preparation of the EIAR. A team of qualified experts has prepared each individual chapter of the report, as listed in table 1.1 below.

1.7 Format and Structure of the EIAR

This EIAR has been prepared in the ‘Grouped Format’ structure, which examines each aspects of the environment as a separate chapter referring to the existing environment, the proposed development, likely impacts and mitigation measures.

The EIAR is presented in 3 no. volumes as follows:

- Volume 1 – Non-Technical Summary
- Volume 2 – Environmental Impact Assessment Report
- Volume 3 – Appendices to Environmental Impact Assessment Report

Preparation of the EIAR has been co-ordinated by Brock McClure, Planning and Development Consultants with inputs from specialist consultants. Table 1.1 below provides a summary and overview of how this EIAR is structured together with an acknowledgment of specialist consultant’s input in the preparation of same.

Pursuant to Schedule 6, Part 1 and Part 2 of the 2001 Regulations, the following environmental elements have been grouped and assessed within this EIAR:

CHAPTER	ASPECT	CONSULTANT	LEAD CONSULTANT
0	<i>Non-Technical Summary</i>	<i>Contribution from all EIAR project team members</i>	<i>Not Applicable</i>
1	<i>Introduction</i>	<i>Brock McClure</i>	<i>Majella Quinn</i>
2	<i>Description of the Proposed Development</i>	<i>Brock McClure</i>	<i>Majella Quinn</i>
3	<i>Planning and Development Context</i>	<i>Brock McClure</i>	<i>Majella Quinn</i>
4	<i>Alternatives</i>	<i>Brock McClure</i>	<i>Majella Quinn</i>

5	<i>Population and Human Health</i>	<i>Brock McClure</i>	<i>Majella Quinn</i>
6	<i>Land, Solis, Geology and Hydrogeology</i>	<i>Enviroguide</i>	<i>Roz O’Hora</i>
7	<i>Hydrology</i>	<i>JBA Consulting</i>	<i>David Casey</i>
8	<i>Biodiversity</i>	<i>Enviroguide</i>	<i>Roz O’Hora</i>
9	<i>Air Quality and Climate</i>	<i>Enviroguide</i>	<i>Roz O’Hora</i>
10	<i>Noise and Vibration</i>	<i>Enfonic</i>	<i>Patricia Redondo</i>
11	<i>Landscape and Visual Impact</i>	<i>Cunnane Stratton Reynolds</i>	<i>Alastair Ferrer</i>
12	<i>Archaeological, Architectural and Cultural Heritage</i>	<i>John Cronin & Associates</i>	<i>Tony Cummins</i>
13	<i>Traffic and Transportation</i>	<i>Paul McGrail</i>	<i>Paul McGrail</i>
14	<i>Waste Management</i>	<i>Enviroguide</i>	<i>Roz O’Hora</i>
15	<i>Material Assets</i>	<i>Brock McClure</i>	<i>Majella Quinn</i>
16	<i>Cumulative Impacts</i>	<i>Brock McClure</i>	<i>Majella Quinn</i>
17	<i>Interactions Interrelationship between the aspects</i>	<i>Brock McClure</i>	<i>Majella Quinn</i>

Table 1.1: Structure of Volume 1

1.8 EIAR Project Team



Doran Cray Architecture are an Architectural Firm based in Maynooth, Co. Kildare. Doran Cray have worked on numerous high quality residential and mixed-use schemes in Westmeath and around Ireland and provide a high-quality standard of architectural design.



Paul McGrail Consulting Engineers are a group of civil and structural engineers based in Maynooth, Co. Kildare. Paul McGrail Consulting Engineers have directed a multitude of significant development projects in several territories, ranging from commercial and retail to residential and mixed-use developments.

Paul McGrail Consulting Engineers have been involved in a variety of residential projects for large scale residential schemes such as the proposed development and have worked on all previous phases of the overall development proposal on the Cornamaddy lands.



Brock McClure Consultants is a town planning consultancy established in 2012 and partnered by Laura Brock and Suzanne McClure. Laura Brock and Suzanne McClure have 20 years of experience in all aspects of planning consultancy in both the public and private sector and a proven track record in the industry with a wide range of projects spanning across both statutory and strategic planning fields.

A high-calibre team of urban planners has extensive experience in a broad range of project types including residential, mixed use, industrial and commercial developments. Brock McClure Planning Consultants provides specific advice on development proposals, exempted development provisions and aspects of planning law but has also experience in all other aspects of planning (retail assessment, site characterisation assessment, monitoring, planning appraisals, environmental assessment and among many more).

CUNNANE STRATTON REYNOLDS
LAND PLANNING & DESIGN

Cunnane Stratton Reynolds is a Landscape Design and Planning consultancy, which was established in Ireland in 1995 and is registered with the Irish Landscape Institute and the Irish Planning Institute. It has offices in Dublin, Cork, and Galway. The practice is also represented in the UK by Cunnane Town Planning.

CSR also has a long history of undertaking and managing projects to which public participation is central, from large scale strategic studies to smaller scale urban and village renewal, environmental improvement and park projects in inner city and socially disadvantaged areas.

JOHN CRONIN & ASSOCIATES
ARCHAEOLOGY | CONSERVATION | HERITAGE | PLANNING

John Cronin is a qualified archaeologist, planner and building conservation specialist.

Since establishing John Cronin & Associates in 2000, John has built a dynamic and innovative company specializing in urban and building conservation, cultural heritage, and archaeology throughout Ireland. Drawing on his professional training and experience in both the public and private sectors, with a growing team of professional heritage management practitioners, he has developed a wide ranging and bespoke service operating from offices located in Counties Cork and Donegal.

With 30 years of professional experience, he has acted as an expert witness in the area of archaeological mitigation, cultural heritage and archaeological heritage for a multitude of private and public sector clients.



Enviroguide Consulting has an established reputation for delivering high quality consultancy services including environmental compliance, environmental liability, risk management and waste management consultancy. We provide expert guidance and advice with a proven track record of successfully delivering innovative and practical solutions.

Enviroguide assists their clients to understand the environmental implications of their operations and to add value to their business with solutions that incorporate financial and environmental risk mitigation.

Their extensive project experience ranges from conceptual development and project execution through to ongoing operational support. Enviroguide consistently offer clients a reliable, hands-on, expert service with a proven track record of successfully delivering on projects.

Enviroguides team of experienced consultants and project managers includes environmental scientists, engineers, surveyors, chartered waste managers, hydrogeologists, contaminated land experts, acousticians and ecologists.

Many of Enviroguides senior consultants are leading experts and are chartered members of relevant professional organisations.

Enfonic

Enfonic Limited are expert producers of Environmental, Architectural, Occupational and Product Noise Assessment and have worked on a number of successful commercial and residential development schemes across Ireland and the UK. Enfonic have been employed by the applicant to prepare accurate assessments of construction and operational noise levels that may arise throughout the development process.



JBA Consulting is a leading water, environmental, urban design, engineering and risk management consultancy, committed to exceptional client service. JBA delivers international expertise in their specialised sectors through a network of local offices across Ireland, the UK and Europe. JBA Consulting was established in Ireland in 2007 on the foot of writing the Developing Planning Guidelines for Flood Risk Management for DoEHLG and OPW.

They are a leading flood management, environmental, water and engineering consultancy. JBA Consulting operates nationwide from their Limerick and Dublin offices, as well as in Northern Ireland, the rest of the UK and internationally. We have a growing presence in Eastern Europe, served from their office in Bucharest, Romania.

JBA Consulting is part of the larger JBA Group. JBA (UK) first began trading in 1995.

1.9 Description of Effects

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

The identified quality, significance, and duration of the effects for each aspect is based on terminology set out in the EPA’s Guidance on the Information to be contained in Environmental Impact Assessment Reports 2022 table 3.4, presented on table 1.2 below:

Quality of Effects	Positive – A change which improves the quality of the environment
	Neutral - No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error
	Negative – A change which reduces the quality of the environment
	Imperceptible – An effect capable of measurement but without significant consequences.
	Not Significant – An effect which causes notable changes in the character of the

Describing the Significance of Effects	environment but without significant consequences
	Slight Effects – An effect which causes notable changes in the character of the environment but without significant consequences
	Moderate Effects – An effect that alters the character of the environment without affecting its sensitivities
	Significant Effects – An effect which, by character, magnitude, duration, or intensity, significantly alters most of a sensitive aspect of the environment
	Profound Effects – An effect which obliterates sensitive characteristics
Describing the Extent and 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?)
Describing the Probability of Effects	Likely Effects – The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented
	Unlikely Effects – The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented
Describing the Duration and Frequency of Effects	Momentary Effects – Effects lasting from seconds to minutes
	Brief Effects – Effects lasting less than a day
	Temporary Effects – Effects lasting less than a year
	Short Term Effects – Effects lasting one to seven years
	Medium Term Effects – Effects lasting from 7 to 15 years

	<p>Long Term Effects – Effects lasting from 15 to 60 years</p>
	<p>Reversible Effects – Effects that can be undone, for example through remediation or restoration</p>
	<p>Frequency of Effects – Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly, - or hourly, daily, weekly, monthly, annually).</p>
<p>Describing the Types of Effects</p>	<p>Indirect Effects (a.k.a Secondary or Off-Site Effects) – Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway</p>
	<p>Cumulative Effects – The addition of many minor or insignificant effects on other projects, to create larger, more significant effects</p>
	<p>‘Do Nothing Effects’ – The environment as it would be in the future should the subject project not be carried out</p>
	<p>‘Worst Case’ Effects – The effects arising from a project in the case where mitigation measures substantially fail</p>
	<p>Indeterminable Effects – When the full consequences of a change in the environment cannot be described</p>
	<p>Irreversible Effects – When the character, distinctiveness, diversity, or reproductive capacity of an environment is permanently lost</p>
	<p>Residual Effects – The degree of environmental change that will occur after the proposed mitigation measures have taken effect</p>
	<p>Synergistic Effects – Where the resultant effect is greater significance than the sum of its constituents (e.g combination of SOx and NOx to produce smog).</p>

Table 1.2 – Description of Effects

1.10 Site Selection and Consideration of Alternatives

The subject site was chosen for development based on its current zoning objectives and plan led strategic context. The overall Cornamaddy lands on which the subject site and overall assessment area are located are appropriately zoned for residential development within the Athlone Town Development Plan 2014-2020.

The subject site is also within the area included within the Cornamaddy Area Action Plan 2005. Although this document was published in 2005, it still offers relevant context for the site as little development has taken place on the lands since the publication of this plan.

Given the site zoning for residential development, scale and proximity to Athlone Town, the subject site was chosen by the applicant to carry out this multi-phase residential development. No other sites were considered by the applicant due to the appropriateness of the subject lands for development of this typology.

The design and layout of the proposed scheme has undergone several iterations to ensure that the proposal is fully site responsive, and all environmental factors, including archaeology, architecture, and cultural heritage, have been considered.

Several initial development site layouts and configurations were considered and assessed with regard to environmental effects prior to the finalisation of the site layout plan and design of the proposed development by the design team. Chapter 4 of this report examines earlier iterations of the overall development on the Cornamaddy lands and provides analysis of the design evolution as it relates to each individual EIAR topic.

A 'do-nothing' scenario was considered an inappropriate and unsustainable approach that would result in the inefficient use of a strategically located and serviced land bank of zoned residential and open space lands. A 'do nothing' scenario would also frustrate the delivery of the strategic planning objectives for the area and the region.

1.11 Forecasting Methods and Difficulties in Compiling the Specified Information

Forecasting methods and evidence used to identify and assess the significant effects of the environment for each environmental aspect are set out in each chapter.

There were no significant difficulties encountered in compiling the specified information in this EIAR. Any issues that were encountered during the assessment of individual factors are noted within the relevant chapters.

2 DESCRIPTION OF THE SITE AND PROPOSED DEVELOPMENT

2.1 Introduction

This chapter provides a description of the subject site, receiving environment and a description of the proposed development.

A systematic approach in accordance with the Guidelines on the Information to be contained in EIARs (2022), Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018) and other EIA Guidance documents were used to ensure that all relevant aspects of the development are accurately and fully described. The objective is to provide a description of the proposed development in sufficient detail, which when taken together with the description of the receiving environment provided, will allow an independent reader without acquired technical environmental knowledge, to understand the significant impacts likely to arise from the proposed development.

The description of the proposed development is described in this chapter in terms of these environmental topics that will form the basis of the impact assessment process and the characteristics of the proposed development which could potentially affect human beings, soil, water, climate, air, flora, fauna, landscape, archaeology, and cultural heritage. Chapter 14 specifically addresses interactions between all environmental factors in this regard.

The EIA directive also requires that the description of the site, design, size or scale of the development considers all relevant phases of the existence of the project from its construction through its existence and operation (and where applicable its restoration or decommissioning).

This EIAR document fully reflects the key environmental factors of the proposed development which were recognised from the scoping carried out by the design team. The level of detail required will vary considerably according to the sensitivity of the existing environment and the potential of the project for significant effects.

Subject Site Characteristics

The subject site is identified in Figure 1 below.

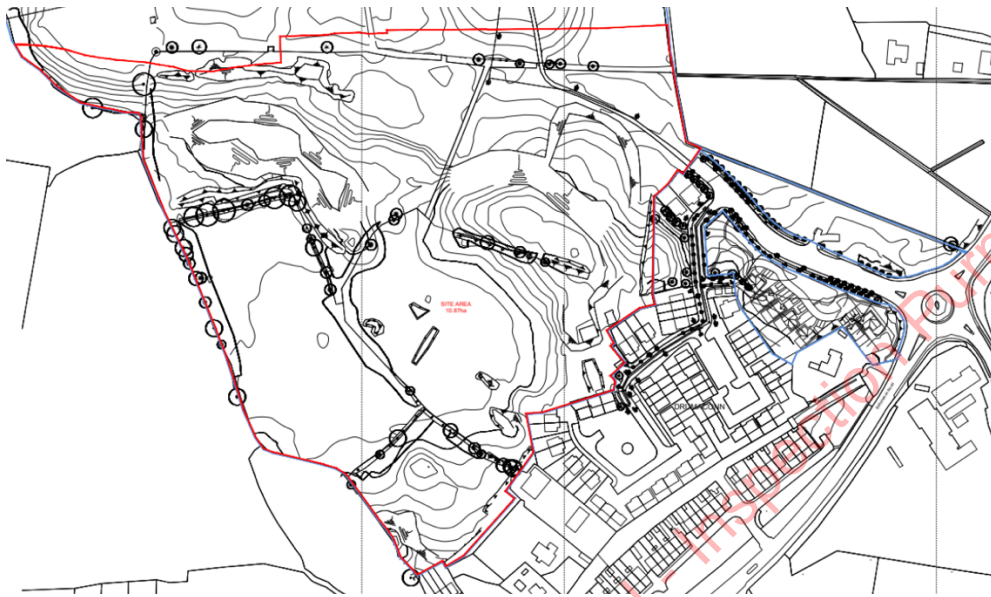


Figure 2.1 – Application Site Area

The land subject to this planning application is located at Cornamaddy, Athlone, Co. Westmeath, approximately 2km to the northeast of Athlone Town Centre. The site is generally bounded by surrounding greenfield lands to the immediate north, east and west, with an existing residential housing development 'Drumaconn' bounding the site to the southeast.

The access and egress road for this development is partially in existence, currently providing access and egress to the constructed 'Drumaconn' residential development off the Ballymahon Road - N55. This road will be extended as part of the permission granted under WMCC reg ref. 14/7103, and further extended into the development site as part of the application granted under WMCC reg. ref. 22/253. The subject development will offer a further extension to the Distributor Road through the Cornamaddy lands, extending the road westwards from the section of road included in the planning application lodged to WMCC reg ref. 22/253.

It is envisioned that the section of the distributor road provided as part of the subject application will contribute towards the deliverance of the entirety of the distributor road, envisioned to traverse the central portion of the Cornamaddy lands as they are developed.

The proposal is located on greenfield lands that have been subject to surrounding previous grants of permission for residential development by Westmeath County Council and An Bord Pleanala and has been earmarked for new residential development since the early 2000's. It is noted that the applicant is due to imminently begin construction of the Cornamaddy lands to the immediate south of the development site, permitted under WMCC reg ref. 14/7103.

The subject site is on the north eastern periphery of Athlone Town, with the town main street located approximately 2km to the south west of the development site, which is ideally located for residential development, outside the town centre but close to facilities and services. There are schools, supermarkets, a library and restaurants all within walking distance of the proposal site.

Aside from availing of the many amenities that Athlone to the south west of the subject site has to offer, the development site is proximate to several retail and retail warehousing services including SuperValu and Spar on the Ballymahon Road and Blyry Industrial Estate, which is highly accessible and a short walk from the subject site.

2.2 Description of the Characteristics of the Proposed Development

Marina Quarter Limited intend to apply to Westmeath County Council for permission for a residential development proposal at Lands at Cornamaddy, Athlone, Co. Westmeath, approximately 2km to the northeast of Athlone Town.

We wish to highlight from the outset, that our client is committed to working with the Planning Authority to deliver on a residential proposal that is appropriate to the site and the surrounding context at Cornamaddy. The residential scheme is designed in line with the pattern of the surrounding residential development and the current market demand for the wider Athlone area. The site masterplan is shown on figure 2.2 below:

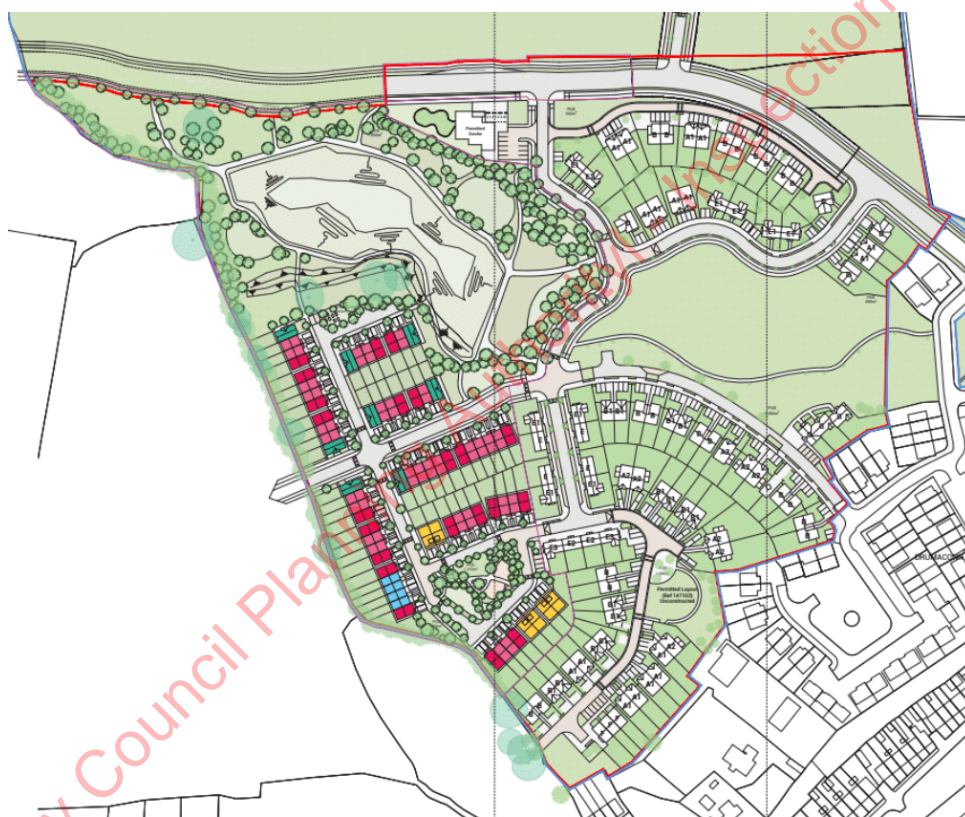


Figure 2.2 – Site Masterplan Layout

The development will consist of a residential development and public park comprising the following:

Marina Quarter limited intend to apply for a 5-year permission for development at this site of total 10.87ha on lands located at Cornamaddy, Athlone, Co. Westmeath. The site is generally bounded to the west by greenfield lands and Cornamagh Cemetery, to the north by greenfield lands, to the south by greenfield lands and the Ballymahon Road (N55) and to the east by the existing Drumaconn housing estate. The development will comprise of a residential development and public open space comprising the following:

- Amendments to permitted application WMCC reg Ref. 14/7103/ ABP Ref. PL25.244826 for the removal of 38 no. permitted units (not constructed) to be replaced by: Construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (c.78 sq.m each), 60 no. 3 bed semidetached (c. 96-116 sq.m each) and 6 no. 4 bed semidetached houses (c. 147 sq.m each) with associated private gardens.

- The creche facility, public open spaces, landscaping, roads layouts, car parking, boundary treatment works, public lighting and all associated site works associated with the 87 no. remaining units retained as permitted under WMCC Reg Ref. 14/7103 ABP Ref. PL25.244826 will remain unchanged.
- All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a sections of the distributor road permitted under WMCC Reg. Refs 14/7103/ ABP Ref. PL25.244826 and 22/253 to the east of the site.
- All associated site development works, services provision, drainage works, public open space (c.1.03ha), landscaping, boundary treatment works, public lighting, associated esb substation cabinets, bin stores, car and bicycle parking provision.
- This development will form part of a larger/future phase of the development.
- This planning application is accompanied by an Environmental Impact Assessment Report and Natura Impact Statement.

The northern portion of the applicant's landholding also has the benefit of a permission granted under WMCC Ref. 22/253 for 75 no. units in the northeastern portion of the applicants lands. It is envisaged that a further phase of development will be lodged in the future for c.170 units which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units' total.

The overall applicant's landholding at Cornamaddy is shown on figure 2.3 below as 'EIA Assessment Area' with the boundaries of previously lodged granted and live permissions shown within the assessment area boundary:



Figure 2.3: EIA Assessment Area

Detailed Description

The now proposed phase of the overall development offers a range of unit types across the site with the residential scheme comprising 70 no. new houses. The unit mix proposed will cater for a wide demographic, with housing options ranging from 2 bed to 4 bed units. The proposed unit mix is detailed below:

Houses:

- 4 no. House type B1 (4 bed) Semi Detached (147 sq.m)
- 2 no. House type B2 (4 bed) Semi Detached (147 sq.m)
- 20 no. House type D1 (3 bed) Semi Detached (96 sq.m)
- 30 no. House type D2 (3 bed) Terraced (96 sq.m)
- 2 no. House type D3 (3 bed) Semi Detached (96 sq.m)
- 4 no. House type E5 (2 bed) Terraced (78 sq.m)
- 8 no. House type (3 bed) Semi Detached (116 sq.m)

A detailed breakdown of the units provided is outlined on the Site Statistics sheet prepared by Doran Cray Architects submitted as part of this planning application pack. The proposed development includes for the amendment of the existing granted permission on the subject lands (WMCC reg. ref 14/7103) to remove and replace 38 no. units that were permitted as part of this application that fall inside the subject developments redline boundary. The units to be replaced are as follows:

- 6 no. Unit Type A1 4 Bedroom House (130 sq.m)
- 8 no. Unit Type A2 – 4 Bedroom House (142 sq.m)

- 7 no. Unit Type A3 – 4 Bedroom House (142 sq.m)
- 4 no. Unit Type B – 3 Bedroom House (113 sq.m)
- 2 no. Unit Type B1 3 Bedroom House (113 sq.m)
- 7 no. Unit Type D – 4 Bedroom House (162 sq.m)

It is noted that the proposed development amends the previously granted permission, removing 38 no. units total consisting of 28 no. 4 bed houses, 6 no. 3 bed houses and 4 no. 2 bed houses.

The proposed development provides 70 no. houses. Of the 70 no. houses to be provided the following unit mix is noted: 60 no. 4 bed houses, 6 no. 3 houses and 4 no. 2 bed houses.

It is submitted that the proposed development will appropriately replace a portion of the extant permission on site, providing units of a similar typology to replace the units that will be removed from the existing permission. The proposed mix of units is suitably balanced and provides a mix in line with the permitted units within the development redline that will be replaced.

Building Form

There are 7 no. differing house types proposed with each considered in terms of form, material composition, texture, colour and adjacent treatments to create distinct character areas within the overall neighbourhood.

A familiar architectural language ties all types together to create a consistent aesthetic throughout the proposal. These types consist of a mix of terrace, duplex and semi-detached houses. End terrace and semi-detached units bookend the residential access roads and have been designed to create active corners and enhanced passive surveillance. The layout and orientation of these dual and triple aspect units creates bright and attractive homes.

A familiar architectural language ties all types together to create a consistent aesthetic throughout the proposal. These types consist of a mix of terrace, semi-detached and detached houses creating a variety of articulation along each street edge with corner units developed as dual aspect where possible to provide active corners, passive surveillance and brighter homes.

The units proposed are similar in appearance to those already permitted under WMCC Reg Ref 22/253 to the north of the development site, which propose red brick and render. This approach will help unify the overall appearance of the development while creating a distinct character for the site whilst remaining consistent with the general architectural style of the Drumaconn estate to the south-east of the site. The site layout allows for natural surveillance of public open space areas, play areas and pedestrian and cycle routes. Units fronting onto open space are dual aspect so as to provide passive surveillance. The application of local materials and regional detailing are essential to rooting the development within the local vernacular.

All units provided feature a traditional pitched roof, which is suitable given the context of surrounding existing developments and creates a sense of familiarity, allowing the proposal to seamlessly integrate into the surrounding context and provide a suitable domestic scale.

Doran Cray, the project architects, have designed all residential units provided across the scheme to allow as much light penetration as possible, creating brightly lit welcoming environments. Windows provided have, where possible, been provided adjacent to front doors to enhance light provided within the units. Ground floor windowsills have been provided at a low height to create brighter lit spaces to the front of the residential units.

Special architectural attention has been given to corner sites and end of row houses to prevent prominent locations across the site appearing to have a no descript finish.

Residential Density

The proposal offers 70 no. new units on a total site area of 10.87ha. It is noted that a large portion of the total area included within the site redline is zoned for open space and features an esker running through the northern portion of the site, meaning that this area is not suitable for development. The existing permitted creche area and proposed link roads have all been discounted from the net developable site area, totalling 3.47ha of the site. This leaves a net developable site area of 6.40ha.

There are 87 no. units granted within the overall net developable site area. The proposed development for 70 no. units means that there will be 157 no. units total provided on the net site area of 6.40ha, giving a density of 25 units per hectare. There is 1.03 ha of open space provided within the net development area of 6.40ha.

Dual Aspect

All 70 no. new houses provided will enjoy the benefit of being dual aspect. The provision of dual aspect units allows for a high level of amenity and passive surveillance to be provided across the development site.

Part V Provision

7 no. units across the development site will be provided as Part V units. 71% of the units provided will be 3 bed units and 29% of the units will be 2 bed. The breakdown of Part V unit typology is as follows:

- 5 no. House type D2 (3 bed) Terraced (96 sq.m)
- 2 no. House type E5 (2 bed) Terraced (78 sq.m)

A detailed description of the part V units provided is included in the Architectural Drawing Pack and housing quality assessment document prepared by Doran Cray Architects submitted as part of this application pack.

We confirm that the applicant has engaged with the WMCC Housing Department regarding the provision of Part V units. The proposed offering was deemed acceptable by WMCC.

A Part V Validation letter (email) provided by Westmeath County Council and unit costings are submitted as part of the application documentation.

Car and Bicycle Parking

An adequate level of parking is delivered across the site with 101 no. car parking spaces being provided in the curtilage of the 70 no. houses and 6 no. visitor spaces provided. All houses will be provided with either 1 or 2 no. in curtilage spaces.

It is considered that bicycle storage for houses will be in the rear gardens of any semi-detached houses. All mid terraced houses have been provided with a secure bicycle lock up located to the front of the property.

Access

The site will be accessed via the partially completed distributor road through the Cornamaddy lands, which is currently constructed up to the access point to the Drumaconn estate to the southeast of the development site. This distributor Road is due to be extended up to the site boundary as part of the permissions granted under WMCC reg Refs. 147103 and 22253 which will provide for the construction of portions of the

distributor road across the central portion of the Cornamaddy lands up to the subject site boundary.

A section of the envisioned distributor road will also be constructed as part of the subject proposal, extending west through the Cornamaddy lands as an extension to the section of road permitted under WMCC reg. refs. 147103 and 22253 and will give access to the residential units proposed.

Open Space

A total of 3.08ha of the overall site area of 10.87 ha is zoned for the provision of Open Space. This area of open space, permitted creche, and link roads serving the surrounding wider area have been excluded from the developable net site area, totalling 6.40ha.

A total of 1.03 ha of Public Open Space has been provided with the developable residential zoned portion of the site, totalling 16% of the total net site area.

The 3.08 ha of the site zoned for the provision of Open space is located north of the 70 no. proposed units, and within the extant permission area. It is noted that no works are proposed to the zoned open space area within the extant permission area within the eastern portion of the site redline. The project Landscape Architect, Cunnane Stratton Reynolds has endeavoured to provide an appropriate high quality landscape response to this ecological feature on the site and has incorporated a pathway area looping around the esker at its base. This will allow for the esker to be utilised as a natural feature of this section of the site whilst remaining untouched. A number of landscaped public open space areas, a natural play area and kickabout zone will be provided along the looped pathway at the base of the esker, which will allow the public to interact with this space.

Public open space areas totalling 1.03 ha within the net site area of 6.40 ha are provided throughout the residential zoned areas of the overall site. These open space areas will be provided as small parkland areas and will be distributed throughout the development site, a short walk from each dwelling. These will be used for informal recreation and will be presented as open and inviting areas with defined edges and low-level planting and will include a community garden and play area, maintained to a high standard, giving these areas a less formal intimate feeling than the large area of public open space provided in the northern portion of the site.

We refer to the Landscape Design Statement prepared by Cunnane Stratton Reynolds submitted as part of this application pack for a detailed overview of the landscaping proposal for the site, including planting details and a maintenance plan.

The Landscape Masterplan for the site is depicted in figure 2.4 below:



Figure 2.4: Landscape Masterplan

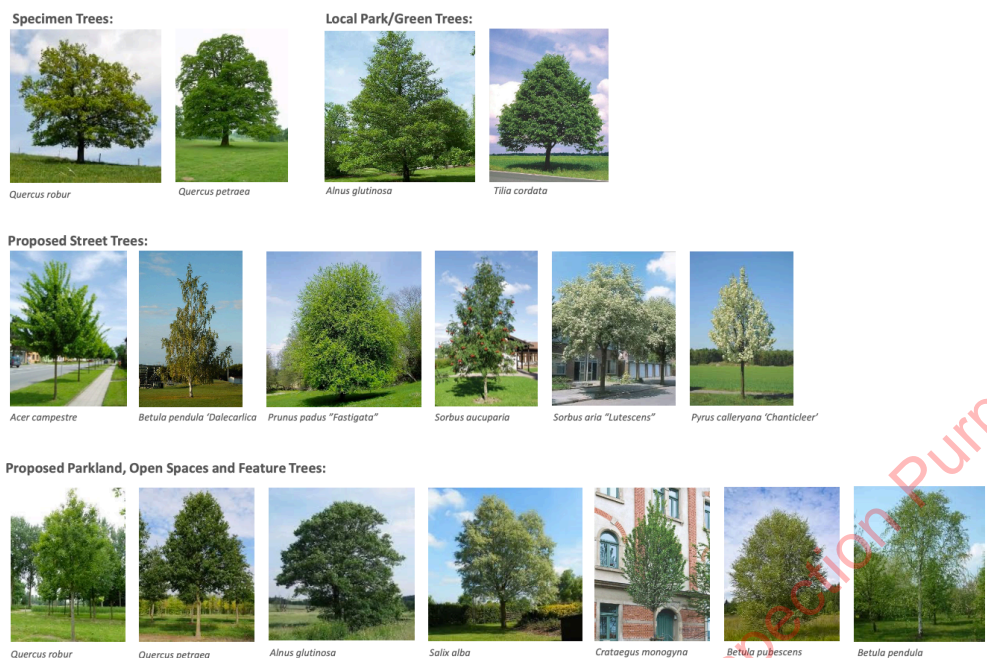


Figure 2.5: Typical Proposed Tree Species

Tree Cover

A Tree Survey and Constraints Plan and Arborists Report has been prepared and is submitted as Part of the application pack by Charles McCorkell Arborist. It is noted that the proposed development has been carefully designed to minimise any impact on existing trees and hedgerows within the site red line boundary. The Arborists report notes that the small number of trees and shrubs required to be removed as part of the proposal will have a negligible impact on the surrounding landscape character due to their limited public amenity value and low quality.

The subject proposal incorporates new planting, providing significant new high-quality tree and hedge planting and incorporating existing trees and hedgerows into the proposal. It is considered that the proposed planting will have a long-term positive impact on the subject lands, increasing the local canopy cover and enhancing the visual appearance of the new development and surrounding open space lands.

The Arborists Report recommends that site supervision should be carried out during construction by an arboricultural consultant to ensure that any retained trees can be properly and adequately protected and maintained. We refer to the arborists report for a detailed overview of the tree protection methods recommended for the subject site.

The report concludes that provided the recommendations and methods of work as outlined in the Arborists report are followed, the proposed development can be successfully carried out without having a negative impact on the character or appearance of the surrounding landscape.

Public Lighting

All fittings throughout the proposal site will be fitted with strategically located LED lighting to prevent light spill that could impact on previously existing ecological networks. Lighting fixtures proposed will be provided by C U Phosco, specifically models P852, which is designed as residential road lighting, and P852K, specifically designed to appropriately light minor roads and residential areas.

Public lighting will be provided covering all pedestrian footpaths and roads. No public lighting is proposed covering the proposed walkways around the Esker Open Space area in the northern portion of the development site. . This area of the provided open space

on the site is intended for daytime use only. The adjacent roads and houses fronting onto this area of open space fronting east and north will provide passive surveillance of this area and increase the level of safety.

It is considered that the public lighting plan has been appropriately designed so that there is no impact on existing and future flora and fauna communities.

Details of the proposed public lighting layouts and specifications can be found in the public lighting report and site lighting layout submitted as part of this application pack, prepared by Morley Walsh.

Energy/ Sustainability

Each dwelling will achieve a minimum energy performance standard as outlined by the SEAI, including NZEB standards for all dwellings.

Please refer to the Energy Statement prepared by Morley Walsh submitted for further details regarding the proposed energy strategy for the scheme.

Adaptability

Units have been designed with future adaptability in mind. Homeowners have the option for future internal reconfiguring or future expansion to the rear. These alterations and adaptations can be carried out without affecting the character of the houses or the neighbourhood subject to proper planning.

Universal Design

All house types where possible follow and exceed where possible the Technical Guidance Document M – Access and Use (2010) in compliance with building regulations.

The principles of Universal Design have been adopted to meet the changing needs of people over time. Access and use is possible regardless of age, size or ability. The four key principles state that units should: integrate with the neighbourhood, be easy to approach, enter and move about in, easy to understand, use and manage and be flexible, safe, cost effective and adaptable over time.

Archaeology

A desktop Archaeological Impact Assessment has been carried out the development by John Cronin & Associates.

The report concludes that there is no predicted impact from the development on recorded archaeological features. It is noted that the potential for the presence of sub-surface archaeological features cannot be discounted and a programme of archaeological test trench investigations is recommended prior to the construction of the development. There are no recorded archaeological sites or designated architectural heritage structures located within the proposed development site or within its close environs. There is only one recorded archaeological site located within 1km of the proposed development and this comprises an extant mound barrow (WM029-041----) located 715m to the north-west. There are no designated architectural heritage structures or conservation areas located within the 1km study area and no undesignated examples exist within the proposed development site. In addition, a review of the locations of other modern residential developments within the surrounding area revealed that their construction did not result in the removal of any recorded archaeological sites or designated architectural heritage structures.

Roads

There will be 3 no. road types provided as part of the subject development. A section of the envisaged distributor road through the central portion of the Cornamaddy lands will be provided. This will connect to the section of the distributor road granted under WMCC Reg Ref. 22/253.

A local road will be provided traversing the central portion of the residential units and a cul de sac road will be provided spurring from this into the northern area of the residential offering, to the immediate south of the esker within the development site redline boundary.

It is noted that appropriate dished kerbs and tactile paving as per the NRA Pedestrian Crossing Specification and Guidance document 2011 will be provided throughout the site. Any pedestrian crossing area which does not feature tactile paving will feature dropped kerbs.

Typical Stop Signs will be provided throughout the development site at appropriate locations, as well as 30KM/H slow zone signage at appropriate locations along the sections of local roads provided throughout the development.

Details of the proposed roads can be found on the Road Sections and Details drawings and DMURS Statement of Consistency submitted as part of this application pack, prepared by Paul McGrail Consulting Engineers.

DMURS

A Statement of Consistency with the Design Manual for Urban Roads and Streets and the National Cycle Manual has been prepared by Paul McGrail Consulting Engineers and is submitted with this application documentation. The submitted DMURS Statement of Consistency concludes that the development is in compliance with the four core principles of the DMURS document, listed below:

- **Design Principle 1** - To support the creation of integrated street networks which promote higher levels of permeability and legibility for all users, and in particular more sustainable forms of transport.
- **Design Principle 2** - The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment.
- **Design Principle 3** - The quality of the street is measured by the quality of the pedestrian environment.
- **Design Principle 4** - Greater communication and co-operation between design professionals through the promotion of a plan-led, multidisciplinary approach to design.

We refer the Planning Authority to the DMURS Statement of Consistency submitted as part of this application pack for a full detailed analysis of the proposed developments compliance with DMURS design elements.

SuDS

A number of SuDS features are proposed as part of the development to provide an effective system to mitigate the adverse effects of urban stormwater runoff on the environment by reducing run off rate, volume and frequency, reducing pollutant concentrations in stormwater. The proposed SuDS measures proposed are detailed in the Engineering Report submitted as part of the application pack, summarised as follows:

- Modular Permeable Paving
- Swales
- Detention Basins
- Petrol Interceptor
- Hydrobrake Flow Control

Flood Risk

It is considered that the site is not subject to any risk of pluvial or coastal flooding at present given its location in the midlands area of Ireland and status as greenfield lands. Pluvial flood risk has been addressed by designing the development to accommodate

surface water runoff from a 100 year period storm plus climate change. The site is outside the 1:1000 year coastal flood zone.

The site has been assessed for potential fluvial flooding. It is considered that the subject site is within flood zone C.

A Flood Risk Assessment document has been prepared by Paul McGrail Consulting Engineers and is submitted as part of this application pack. It is concluded that the development is considered to be adequately protected in the context of potential future flood events in the area.

The site has been assessed to ensure that no flooding will occur in the event of a 1:30 year return period, and accounting for 20% of Climate Change. The site has been protected against potential river flooding via the attenuation that is provided within the SUDS features, i.e. modular permeable paving and on-line attenuation structures/ features.

Traffic

A Traffic Impact Assessment has been prepared and is submitted as part of the subject application pack. The report assesses the potential traffic implications of the development in relation to the existing traffic in the area and quantifies the extent of additional trips generated by the proposal, and the impact of trips generated on the operational performance of the surrounding local road and network junctions.

The submitted report concludes that the existing N55/ R916/ L8048 roundabout to the east of the development site will continue to operate within its capacity, with small queues and delays predicted during heaving traffic AM and PM peak hours, with this operational capacity predicted to remain consistent up to 2039, 15 years after the opening of the development.

The report also concludes that there is adequate carparking provided across the development site to facilitate any demand that will arise from residents of the new residential development.

Road Safety

A road safety audit for the proposed development has been carried out by RoadPlan. The audit raised several issues with the initial proposed road layout provided by Paul McGrail Consulting Engineers. Workshop meetings were held between RoadPlan and Paul McGrail to rectify all issues identified with the proposed Roads Layout.

We confirm that the Roads drawings submitted as part of this planning application pack have been amended to improve the safety of the scheme for all road users as per the recommendations of the Road Safety Audit. We refer to the submitted Road Safety Audit and Roads Drawing Pack prepared by RoadPlan and PMCG respectively for a full detailed analysis.

Appropriate Assessment

An Appropriate Assessment Screening Report has been prepared for the development site by Enviroguide and is submitted as part of this application pack. The report considers the nature, size and location of the proposed development and the possible impacts that may arise from construction, the qualifying interests and conservation objectives of surrounding European sites and the potential for in combination effects arising from other surrounding plans and projects.

The report concludes that the proposed development may give rise to significant effects on the Lough Ree SAC (000400) and the Lough Ree SPA (004064), and therefore recommends that a Natura Impact Statement is prepared in respect of the proposed development. A Natura Impact Statement has been prepared as part of the application material and its conclusions are summarised below.

Natura Impact Statement

Following the conclusions of the AA Screening Report submitted as part of the application material, it was recommended that a Natura Impact Statement be prepared in respect of the proposed development given the potential for significant negative impacts on the Lough Ree SAC (000400) and the Lough Ree SPA (004064).

The Natura Impact Statement outlines several mitigation measures that can be implemented during the construction and operational stages of the development to avoid any significant impact on the Lough Ree SPA and SAC.

It is noted that upon examination of listed plans and projects within the vicinity of the subject site, there are no possible residual impacts that should arise from the proposed development once suitable mitigation methods are adopted, concluding that there is no possibility for any significant in combination effects to European sites involving the proposed development.

We refer to the submitted NIS for an outline of the Watercourse Protection Measures, Construction Best Practice Methods and Operational Surface Water Treatment Measures that will be utilised during the developments construction phase to mitigate any potential negative impacts.

The submitted NIS concludes that, beyond reasonable scientific doubt, that once the mitigation measures recommended within the NIS document are implemented correctly and in full, the proposed development will not result in any significant adverse impacts on the Lough Ree SAC or Lough Ree SPA.

2.3 Development Inputs

Water Supply

The proposed watermain network will connect to the under-construction water network which will be connected to the existing 150mm watermain pipe network located at Drumaconn Road. The proposed network has been designed to comply with Irish Water specification. 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 Irish Water and to facilitate possible future domestic meter installation.

A Pre-Connection Enquiry was made to Irish Water (Ref. CDS20006740). Irish Water concluded that based on the details provided with the pre connection enquiry and their own desk top analysis of the current available capacity in the Irish Water Network as assessed by Irish Water, it was advised that the proposed connection to the Irish Water Network can be facilitated. Correspondence between the project engineer PMCG and Irish Water has been included as part of this application pack.

Power Supply

ESB Networks have been contacted and existing ESB network map for the site and surrounding area was obtained by the project design team. A system of on-site substations will be installed to provide power to the development.

2.4 Development Outputs

Surface Water

Surface water runoff from the development will be attenuated to greenfield runoff (Qbar), in accordance with the recommendations of the GDSDS. Surface water run-off from each surface water catchment, will be attenuated using a Hydrobrake on the surface water outlet.

The proposed drainage design network has been modelled and tested against different critical storms using the standard catchment rainfall profiles from the Flood Studies Report (FSR) within Causeway Software. A critical storm period is considered as a level of rainfall intensity and the greater the year of the return period, the higher the intensity of the storm.

For each return period tested, storm durations from 15 minutes to 36 hours were stimulated to assess the length that a storm would release rainfall into the drainage network.

The proposed catchment area has been designed to cater for the proposed development under this application plus the extant planning permission granted under ref. no. 147103. The proposed design is complying with the granted planning application. The proposed detention basin will provide the required storage volume.

Foul Water

The foul water from the development will discharge via soil vent pipes within the buildings by gravity flow before connecting into the existing separate foul sewer network within the development. The foul sewerage for each house will have a separate connection to the proposed 225mm and 150mm diameter foul sewer along the road.

A 150mm diameter sewer at a min gradient of 1:60 has been designed to cater up to 9 dwellings, and a 150mm diameter sewer at a min gradient 1:150 slope to cater 10 to 20 dwellings with no chance of any more house connecting. Pipes that cater more than 20 dwellings has been designed as 225mm diameter sewer at a min gradient of approximately 1:200.

Waste Management

Construction Waste Management - A detailed Construction Waste Management Plan has been prepared by Paul McGrail Consulting Engineers and is submitted as part of the application documentation. The Plan outlines the responsibilities of relevant persons on the site regarding waste management, with a nominated Construction Waste Manager to be appointed by the Project manager to oversee all aspects of waste management throughout the project, including waste characterisation, implementation of the Construction Waste Management Plan and effective communication of the plan objectives with all site operatives.

Construction Environmental Management - A Construction Environmental Management Plan has been prepared by Paul McGrail Consulting Engineers and is submitted with this application documentation to outline the objectives of managed procedures required to ensure that construction related activities on the site are executed in a safe and controlled manner to prevent any adverse impacts on the surrounding existing environment.

The submitted plan considers all aspects of the project in its environmental assessment, including construction programme and phasing, enabling works, infrastructure works, a description of works, site logistics, indicative construction methods and safety, health and environmental provision.

All appropriate mitigation and preventative measures that will be taken to mitigate any impact on the surrounding environment are outlined in the CEMP submitted.

Operational Waste Management - An Operational Waste Management Plan has been prepared by Paul McGrail Consulting Engineers and is submitted with this application

documentation to outline procedures that will be undertaken to ensure correct management and disposal of generated waste to maximise the level of waste recycling/reuse and minimise the levels of waste being disposed of via landfill.

The submitted plan outlines relevant National, Regional and Local Waste Policies. The proposed development has been designed to comply with all relevant National, Regional and Local waste policies.

The OWMP also provides a detailed outline of the proposed waste management facilities that will be delivered as part of the subject proposal. All residential units provided will feature a 3 bin waste system to encourage segregation of waste as source, and an associated secure bin storage unit.

Waste types which are generated infrequently such as waste electrical and electronic equipment, chemicals, lighting, furniture and textiles should be disposed of accordingly as generated.

2.5 Design/ Development Rationale

The subject lands are appropriately zoned and have been earmarked for residential development for c. 20 years. The lands were included within the Cornamaddy Action Area Plan 2005, which provided a detailed strategy showing how the lands could be appropriately developed as a new residential neighbourhood to the north of Athlone Town Centre. Despite the publication of this detailed Action Area Plan in 2005, no development on the subject lands has come to fruition to date.

The site has remained appropriately zoned for residential development within the Athlone Town Development Plan 2014-2020, which offers the most recent relevant planning context for the lands.

The applicant now endeavours to fulfil this long-standing objective to develop the Cornamaddy Lands as a new residential neighbourhood.

The now proposed development of 70 no. new houses presents phase 3 of an overall Masterplan, which will comprehensively consolidate development on the lands as envisaged in the relevant statutory planning documents.

To date, the applicant has lodged 2 no. applications on their overall landholding at Cornamaddy, which represent phase 1 and 2 of the overall development of the site as follows:

Phase 1: WMCC Ref. 22/253 – Permission granted for the construction of 75 no. residential units comprising: 51 no. 2 storey semi-detached and terraced houses (consisting 4 no. 2 bed houses and 47 no. 3 bed houses, ranging in size from c.78 sq.m – 120 sq.m each), and 24 no. 3 storey apartment/duplex units (consisting 12 no. 2 bed apartments and 12 no. 3 bed duplexes, ranging in size from 84sq.m to 121 sq.m each).

Phase 2: WMCC Ref. 22/340 - Application lodged to Westmeath County Council for the construction of a two Storey childcare facility, including classrooms, reception, kitchen, associated staff areas and office, toilets, storage, plant rooms, circulation areas and photovoltaic panels at roof level (c.668sqm total gross floor area). This application is currently live, at Further Information Stage.

The phase 3 application will consolidate the development of the southern portion of the subject lands by amending the permission granted by Westmeath County Council under Ref. 147103. The subject application for 70 no. units and retained element of the permission granted under WMCC Reg. 147103 will provide 157 no. units total on the southern portion of the Cornamaddy lands. The subject application also proposes a

section of the envisaged distributor road through the central portion of the Cornamaddy lands.

It is noted by the applicant that the subject Phase 3 application will be followed by a Phase 4 application to provide development on the remaining portion of the lands, located in the north-eastern area of the applicant's landholding. This will be lodged as an LRD application to Westmeath County Council. The applicant has engaged in initial pre planning discussions with Westmeath County Council regarding the delivery of this future phase of development.

No alternative locations were considered by the applicant for the development given Westmeath County Councils longstanding objectives to develop the subject site as a residential offering and the sites appropriate zoning for residential development. However, a number of alternative designs and layouts were considered throughout the project design stages, which have been addressed as appropriate in Chapter 4: Alternatives of this Environmental Impact Assessment Report.

2.7 Characteristics of the Construction and Operation Phases

Site Preparation Works and Establishment of construction Services

Preparation of the site requires limited works with minimal site clearance, establishing entranceways and haul roads for vehicles, surveying and setting out, setting up the construction site with fencing, site compounds etc. It is noted that much of the haul roads and entranceways to the site have been established to cater for the existing surrounding developments which are currently under construction.

The site will provide office, portable sanitary facilities, equipment storage, parking etc for contractors for the duration of the works. The construction compound will be fenced off for health and safety reasons so that access is restricted to authorized personnel only. All areas under construction will be fenced for security and safety purposes and temporary lighting supplied as necessary.

Pursuant to Section 2(a)(i) of S.I No 600 of 2001, a description of the physical characteristics of the proposed development and land use requirements during the construction and operation phases is provided below.

Construction Phase

It is envisioned that the construction stage of the proposed development will occur in 5 no. phases. The characteristics of each construction work phase is outlined below:

- **Phase 1 A Site Set Up**

20 no. construction staff will be employed over a c. 3-month period to complete site clearance works, which are not considered to be of significance given the lack of existing vegetation on the site. Site offices and a contractor's compound will be set up during this phase, as well as a secure site boundary and erection of relevant signage.

- **Phase 1 B – Setting out of sites and provision of services**

40 no. construction staff will be employed over a c. 4–5-month period to complete the setting out of sites and provision of services. This includes the laying of sewers, construction of detention basins, provision of footpaths, public lighting, and roadways. As there are catchment areas, the site services associated with the phasing will be constructed as and when required to ensure that all surface water is attenuated prior to discharge to the existing surface water network.

- **Phase 1-5 – Construction of Units**

It is anticipated that the construction period for the 70-no. proposed residential units will reflect the strong demand for new houses in Athlone and therefore will involve the employment of up to 150 no. construction staff dependent on the number of units being constructed at any one time. It is predicted that the proposed development will take c. 4 years to complete to operational dependent on a full grant of planning permission.

Construction Hours

Construction hours will be subject to planning permission and associated conditions. However it is noted that it may be necessary for construction to take place outside of normal construction hours in the case of services diversions and connections, concrete finishing and fit out works.

Deliveries to site will generally be between the hours of 07:00 to 19:00 Monday to Friday and 08:00 to 14:00 on Saturdays. There may be occasions where it is necessary to make deliveries outside of these times, for example when large loads are limited to road usage outside of peak times.

Any deliveries or construction works that need to take place outside of the agreed working hours will be completed with the advance agreement of Westmeath County Council.

Vehicular Access to Site during Construction

The subject site will be accessed via the existing entrance to the adjacent Drumaconn estate off the N55 to the east of the subject development. It is noted that a section of the distributor road granted under WMCC Reg Ref. 22/253 will be constructed into the Cornamaddy lands providing site access.

A pedestrian only access point to the site will be installed to separate vehicular and pedestrian movements when accessing and egressing the site.

Security personnel will be present at the site entrance to ensure all traffic is entering/exiting the site in a safe manner.

A wheel wash will be installed at the site entrance to prevent dirt from the site being carried out onto the public road.

Site Parking during Construction

Provision of on-site parking will be provided during the construction phase to any trades that require parking for vehicles due to transportation of specialist equipment/ plant requirements.

Operational Phase

Once operational, the geology on site will be protected from the elements. Subsoil will either have a surface road dressing, building footprint or topsoil covering. Topsoil will be grassed to prevent erosion or surfaced with paving. Planting and landscape of open space areas will protect against erosion of soil.

The proposed development will increase the area of hard standing on the existing site, through the inclusion of new houses and paved areas. Unmitigated, this will lead to an increase in the volume of rainfall runoff generated on the site and a reduction in percolation to the groundwater table.

The impacts of the operational phase of the proposed development are further addressed as appropriate in the relevant chapters of this EIAR.

2.8 Monitoring

Construction Noise

All construction activities will be carried out in compliance with the recommendations of BS 5228 Noise Control on Construction and Open sites.

Potential Sources of Noise include construction activities on site which may involve the use of heavy machinery. It is submitted that contractors will ensure the careful selection of quiet plant and machinery to undertake work where available.

Any ancillary plant such as generators, pumps or compressors will be located in areas on the site away from noise sensitive locations to minimise disturbance on the surrounding areas. Mechanical plant and equipment used for the purpose of works will be fitted with exhaust silencers and maintained in good working order.

A complaints procedure will be operated by the contractor throughout the construction phase and efforts will be made to address any noise issues at the nearest surrounding noise sensitive receptors, should they arise.

Air Quality and Dust Monitoring

Best practices will be employed throughout the construction period to ensure that emission to air of pollutants is appropriately minimised. Air monitoring will be carried out throughout the construction period as deemed necessary.

Construction materials will be appropriately handled and stored to ensure that any arising adverse effect from the generation of dust will be reduced or eliminated. Waste skips will be covered, scaffold netting will be used, and water will be used to suppress dust. Trucks and vehicles accessing and egressing the site will do so via a hardstanding area.

Construction material handling areas will be located as far away as is practical from any surrounding residential or public areas and prolonged storage of materials will be avoided where possible.

The burning of any waste materials will be strictly prohibited.

Vibration

The contractor will be required to carry out works such that the effect of vibration on adjacent buildings and the surrounding area is minimised and that no damage to these occurs because of construction activity on the site.

Potential sources of vibrations include construction activities on site which may involve the use of heavy machinery. The contractor will be required to comply with the requirements of the planning permission for any vibration limits on the for the works.

2.9 Sustainability

The proposed development will meet the requirements for Conservation of Fuel and Energy in Dwellings (Part L Building Regulations 2011), and as such will meet the requirements for compliance with Nearly Zero Energy Building Standards.

2.9 Cumulative Impacts

There are potential short term nuisances arising from the construction phase of the subject development.

In advance of works starting on site the works contractor will prepare a detailed Construction Environmental Management Plan (CEMP). The CEMP will set out the overarching vision of how the construction of the proposed development will be managed in a safe and organised manner by the contractor.

It is considered that these short-term impacts have the potential to combine with impacts arising from the construction of other permitted and planned projects on the applicant's overall landholding, should the construction period for each of these developments overlap.

The applicant's overall landholding has the benefit of permissions granted under WMCC Reg Refs. 147103 and 22253. It is considered that should the construction periods of the subject application and these extant permissions overlap that short term slight negative effects would arise.

It is considered that the subject development in combination with surrounding planned and permitted projects would have an overall long term slight positive impact on the site. This is outlined in detail within the prepared Cumulative Impacts Chapter of this submitted Environmental Impact Assessment Report.

All extant permissions on the site have been independently assessed on their own merits and should adhere to any relevant conditions attached to their grants of permission during the construction period to minimise the potential for negative effects to arise.

2.10 Decommissioning

Given the nature of the proposed development, residential use, road development and active open space, it is not envisaged that the proposed development will require closure or decommissioning in the future.

3 PLANNING AND DEVELOPMENT CONTEXT

The development lands are subject to national, regional, sub regional and county/ local planning policy.

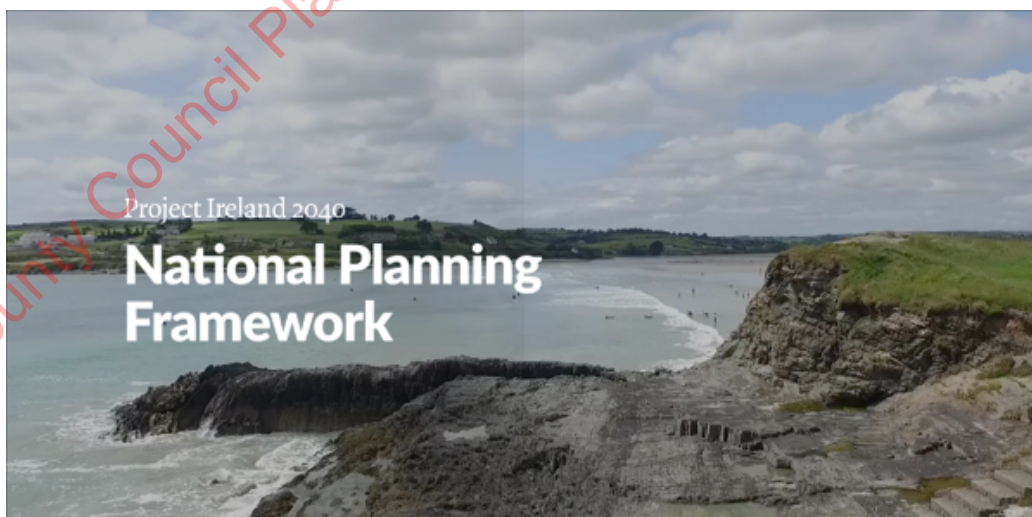
This chapter considers the strategic and local level statutory planning context governing development on the application site, inclusive of a review of the relevant national and regional policy context and local statutory planning context for Westmeath County and the application site, with an aim to promote the proper planning and sustainable development of the subject site.

3.1 Strategic Planning Policy Documents

It is our considered opinion that the key policy documents for consideration as part of this section are identified as follows:

- National Planning Framework – Project Ireland 2040
- Rebuilding Ireland: Action Plan for Housing and Homelessness
- Regional Spatial & Economic Strategy for the Eastern and Midland Region 2019-2031
- Design Manual for Urban Roads and Streets 2019
- Smarter Travel – A New Transport Policy for Ireland 2009-2020
- Sustainable Residential Development in Urban Areas (2009)
 - a. Urban Design Manual - Best Practice Guidelines
- Delivering Homes, Sustaining Communities (2008)
 - a. Best Practice Guidelines - Quality Housing for Sustainable Communities
- Guidelines for Planning Authorities on Childcare Facilities (2001)
- The Planning System and Flood Risk Management (2009)
- Urban Development and Building Height Guidelines (2018)
- Housing for All – A New Housing Plan for Ireland (2021)

3.1.1 National Planning Framework – Project Ireland 2040



The National Planning Framework (NPF) is the Government's high-level strategic plan for shaping the future growth and development of our country out to the year 2040. It caters for:

- The extra one million people that will be living in Ireland by 2040;
- The additional two thirds of a million people working in Ireland by 2040; and

- The half a million extra homes needed in Ireland by 2040.

The Framework focuses on:

- Growing our regions, their cities, towns and villages and rural fabric.
- Building more accessible urban centres of scale.
- Better outcomes for communities and the environment, through more effective and coordinated planning, investment, and delivery.

As a strategic development framework, this Plan sets out the long-term context for the Country's physical development and associated progress in economic, social, and environmental terms and in an island, European and global context. Ireland 2040 will be followed and underpinned by supporting policies and actions at sectoral, regional, and local levels.

The key high - level objectives of the Plan are:

- To continue a path of economic, environmental, and social progress that will improve our prosperity, sustainability and well - being.
- To ensure that Irelands many unique assets can be built upon, with an emphasis on improving economic output and stability as well as quality of life, environmental performances and the livability of Dublin, our cities, towns, and rural areas.
- To set out likely future change in Ireland and the spatial pattern required for effective and coordinated investment in a range of sectors to best accommodates and support that change.
- To put in place a strategy for the sustainable development of places in Ireland and how that can be achieved through planning, investment, and implementation.

The NPF sets out that the Eastern and Midlands region will, by 2040, be a Region of around 2.85 million people, at least half a million more than today. It is identified that progressing the sustainable development of new greenfield sites for housing and particularly those close to public transport corridors is key to enabling growth.

It is worth highlighting that the projected level of population and jobs growth in the Eastern and Midland Regional Assembly area respectively represents 475,000 - 500,000 additional people and 330,000 additional jobs by 2040.

It is noted in the NPF that the 5 key cities, whilst geographically distributed, do not offer influence that extends to all parts of Ireland, particularly towards the Northwest and Midlands region. Sligo fulfils this role in the northwest and Athlone in the midlands, acting as an accessible centre of employment and services and a key point for investment in the midland's region, allowing Athlone to have the widest possible regional reach.

The NPF notes that due to its strategic location and scale of population, employment and services, Athlone has an influence that extends to all three Regional Assembly Areas (Southern, Eastern & Midlands and Northern & Western). Given the importance of the regional interdependencies, it is noted that it will be necessary to prepare a co-ordinated strategy for Athlone at both regional and town level to ensure that the town and environs have the capacity to grow sustainably and to secure investment as the key regional centre in the Midlands.

The NPF recommends the following in relation to compact urban development: *“At a metropolitan scale, this will require focus on a number of large regeneration and redevelopment projects, particularly with regard to underutilised land within the canals and the M50 ring and a more compact urban form, facilitated through well designed higher density development.”*

It is also apparent from the NPF that low-density housing development, and underused sites, have been a feature of Ireland’s housing landscape in cities, towns, and the open countryside. To avoid urban sprawl and the pressure that it puts on both the environment and infrastructure demands, increased residential densities are required in the urban areas.

The following National Policy Objectives have direct relevance to the proposed development:

- **National Policy Objective 2b** - The regional roles of Athlone in the Midlands, Sligo and Letterkenny in the North-West and the Letterkenny-Derry and Drogheda Dundalk-Newry cross-border networks will be identified and supported in the relevant Regional Spatial and Economic Strategy
- **National Policy Objective 4** - Ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.
- **National Policy Objective 5** - Develop cities and towns of sufficient scale and quality to compete internationally and to be drivers of national and regional growth, investment and prosperity
- **National Policy Objective 6** - Regenerate and rejuvenate cities, towns and villages of all types and scale as environmental assets, that can accommodate changing roles and functions, increased residential population and employment activity and enhanced levels of amenity and design quality, in order to sustainably influence and support their surrounding area.
- **National Policy objective 7** – Apply a tailored approach to urban development, that will be linked to the Rural and Urban Regeneration and Development Fund, with particular focus on:
 - Strengthening Ireland’s overall urban structure, particularly in the Northern and Western and Midland Regions, to include the regional centres of Sligo and Letterkenny in the North-West, Athlone in the Midlands and cross-border networks focused on the Letterkenny-Derry North-West Gateway Initiative and Drogheda-Dundalk-Newry on the Dublin-Belfast corridor.

The national planning framework promotes the creation of mixed tenure communities by stating “More affordable homes must be provided in our urban areas as part of the creation of mixed-tenure communities.”

The sites zoning allows for residential development and is considered appropriately serviced with appropriate infrastructure to deliver on a sustainable form of development.

It is submitted that the current proposal for 70 new residential units will deliver on the above objectives of the NPF. We note specifically that the addition of a wide range of unit typologies is appropriate at this highly accessible site, catering to a wide demographic of potential future residents.

We submit that the proposal for a medium-density residential development at this highly accessible location is consistent with the National Planning Framework for 2040.

3.1.2 Rebuilding Ireland: Action Plan for Housing and Homelessness



The action plan for housing and homelessness recognises that a significant increase in new homes is required. The action plan outlines a 5 pillar approach as follows:

- Pillar 1 - Address Homelessness
- Pillar 2 - Accelerate Social Housing
- Pillar 3 - Build More Homes
- Pillar 4 - Improve the Rental Sector
- Pillar 5 - Utilise Existing Housing

The plan outlines that *“Accelerating delivery of housing for the private, social and rented sectors is a key priority for the Government. Ensuring sufficient stable and sustained provision of housing that is affordable, in the right locations, meets peoples different needs and is of lasting quality is one of the greatest challenges facing the country at present.”*

The plan repeatedly states the need for housing to be in appropriate locations, *“In addition to the scale of housing provision, the delivery of housing in the right place is also central to enabling a good standard of living and improving quality of life. Locating housing in the right place provides the opportunity for wider family and social networks to thrive, maximises access to employment opportunities and to services such as education, public transport, health and amenities, while also delivering on sustainability objectives related to efficiency in service delivery and investment provision.”*

The proposed development supports Pillar 3 of the plan specifically by way of the delivery of 70 new residential units at a key location adjacent to services, amenities and employment in Athlone Town Centre. The site is considered a significant opportunity site for the delivery of residential units close to Athlone Town and will contribute to the overall development of the Cornamaddy lands.

We submit that the proposal is consistent with the Action Plan for Housing and Homelessness.

3.1.3 Housing for All – a New Housing Plan for Ireland

Housing for All

A new Housing Plan for Ireland



The Housing for All (HFA) plan has been introduced by the Government in order to achieve a more sustainable housing system with a planning system that is fit for purpose and that will create long-term vibrant communities with the necessary supporting infrastructure. It caters for:

- Preventing homelessness
- Protecting tenants
- Supporting social inclusion

The plan focuses on:

- Introducing incentives and measures to bring vacant and derelict properties back into residential use.
- Supporting homeownership and increasing affordability.
- Preventing homelessness, protecting tenants and supporting social inclusion and increasing social housing delivery.
- Increase the levels of new housing stock with the goal of ending homelessness by 2030.
- Achieve a more sustainable housing system with a planning system that is fit for purpose and that will create long-term vibrant communities with the necessary supporting infrastructure.
- Increasing the capacity and efficiency of delivery in both public and private sectors.
- Over 300,000 new homes to be built by 2020, including a projected 54,000 affordable homes for purchase or rent and over 90,000 social homes.
- Setting out a pathway to economic, societal and environmental sustainability in the delivery of housing.

The HFA is to be the largest State led building programme in our history and is financed by the biggest State funding commitment ever. The HFA also has the largest ever housing budget in the history of the State to transform our housing system, with an excess of €20 bn in funding through the Exchequer, the Land Development Agency (LDA) and the Housing Finance Agency over the next five years.

Housing policy objective 11, no. 11.2 supports high-density housing: “Develop section 28 Guidelines for Planning Authorities on Sustainable and Compact Settlement Guidance (SCSG), including guidance on housing typologies to facilitate innovative approaches to medium and higher densities.”

Additionally, housing policy objective 12, no 12.2 is to deliver a new approach to active land management: “Develop proposals for new Urban Development Zones, to DHLGH deliver a coordinated and transparent approach to the delivery of residential and urban development, particularly on brownfield sites, meeting the compact growth objectives of the National Planning Framework.”

Furthermore, the HFA plan will drive economic sustainability and reduce constructions costs. Objective 23, 23.11 states that the HFA plan will “Reduce C&D waste and associated costs by working with the construction industry on demonstration projects to show how best practice (specifically in relation to urban high-rise apartment developments) waste segregation and other waste management measures, can reduce overall C&D disposal costs.”

The subject proposal provides 70 new residential units which will contribute towards the government’s target deliverance of 33,000 new residential units per year between 2021 and 2030.

We submit that the proposal is consistent with Housing for All – A New Housing plan for Ireland

3.1.4 Regional Spatial & Economic Strategy for the Eastern and Midland Region 2019-2031



The *Regional Spatial and Economic Strategy for Eastern and Midland Regional Assembly* (RSES) has recently been published and adopted.

The RSES provides a:

- **Spatial Strategy** – to manage future growth and ensure the creation of healthy and attractive places to live, work, study, visit and invest in.
- **Economic Strategy** – that builds on our strengths to sustain a strong economy and support the creation of quality jobs that ensure a good living standard for all.

- **Metropolitan Plan** – to ensure a supply of strategic development areas for the sustainable growth and continued success and competitiveness of the Dublin metropolitan area.
- **Investment Framework** – to prioritise the delivery of key enabling infrastructure and services by government and state agencies.
- **Climate Action Strategy** – to accelerate climate action, ensure a clean and healthy environment and to promote sustainable transport and strategic green infrastructure.

Athlone is included in the Gateway Region as listed in the RSES which includes the Midlands and north west border areas, outside the Core Region, which are strategically located as inter regional portals to the Northern, Western and Southern Regions, where over 400,000 people reside. The gateway region also includes Regional Growth Centres such as Dundalk, a number of large county towns as well as smaller towns and villages which support the wider rural and agricultural area where population is more dispersed. Athlone is described as a Regional Growth Centre.

The RSES notes that Athlone is located in the centre of Ireland at a key node between Dublin and Galway on the River Shannon and has direct connectivity between towns such as Longford, Mullingar, Tullamore, Maynooth, Portlaoise, Ballinasloe and Roscommon. Due to its scale of population, employment and services, Athlone acts as a key regional centre for the extensive catchment that extends into the Northern and Western Region. Athlone's employment and housing potential, historic centre and cultural assets, along with its attractive natural environment along the banks of the River Shannon, provide for significant tourism opportunities and an enhanced quality of life for both residents and visitors to the town.

The RSES targets significant growth in the Regional Growth Centres of Athlone, Drogheda and Dundalk to enable them as regional drivers, focusing on improving local economies and quality of life to secure investment to fulfil roles as key Regional Growth Centres, with Athlone being an economic driver in the centre of Ireland.

The RSES notes that Cornamaddy has the potential to deliver the population targets outlined in the RSES, stating that:

'The development of lands at Curragh Lissywollen, Lisseywollen South, Cornamagh, Cornamaddy and Monksland / Bellanamullia, have the potential to deliver the population targets identified in the RSES'.

The proposal addresses the high demand for housing in this area located within a Regional Growth Centre and offers a high quality residential providing 70 new residential units on lands at Cornamaddy which have been identified in the RSES as having potential to deliver on population targets.

We submit that the proposal is consistent with the Regional Spatial and Economic Strategy for the Eastern & Midland Region.

3.1.5 Smarter Travel – A New Transport Policy for Ireland – 2009 – 2020



The Government has committed in 'Smarter Travel - A Sustainable Transport Future: A New Transport Policy for Ireland 2009 - 2020' to reducing the total share of car commuting from 65% to 45%, a rise in non-car trips by 55% and that the total vehicle miles travelled by the car fleet will not increase.

The key goals of the Guidelines are as follows:

- Future population employment growths will predominantly take place in sustainable compact forms which reduces the need to travel for employment and services.
- 500,000 more people will take alternative means to commute to work to the extent that the total share of car commuting will drop from 65% to 45%.
- Alternatives such as walking, cycling and public transport will be supported and provided to the extent that these will rise to 55% of total commuter journeys to work.
- The total kilometres travelled by the car fleet in 2020 will not increase significantly from current levels.
- A reduction will be achieved on the 2005 figure for Greenhouse gas emissions from the transport sector.

Achieving sustainable transport will require a suite of actions that will have complementary impacts in terms of travel demand and emissions. These are as follows:

- Actions to reduce the distance travelled by private car and encourage smarter travel.
- Actions aimed at ensuring that alternatives to the car are more widely available.
- Actions aimed at improving the fuel efficiency of motorised transport.
- Actions aimed at strengthening institutional arrangements to deliver the targets.

Smarter Travel acknowledges that good progress is being made in meeting the above targets and actions by providing better guidance on planning and development through the delivery of Planning Guidelines.

A Traffic Impact Assessment has been prepared by RoadPlan and is submitted as part of this planning pack. The Traffic Impact Assessment concludes that the proposed development will not have an impact on the functional capacity of the surrounding roads junctions or roundabouts, with all predicted to continue to functionally operate 15 years after the opening of the proposed development, to 2039.

A Road Safety Audit has also been completed for the proposal by RoadPlan and recommendations arising from the Audit have been implemented to ensure that the

proposal will feature a road layout that is safe and suitable for users on foot, on bike or in cars.

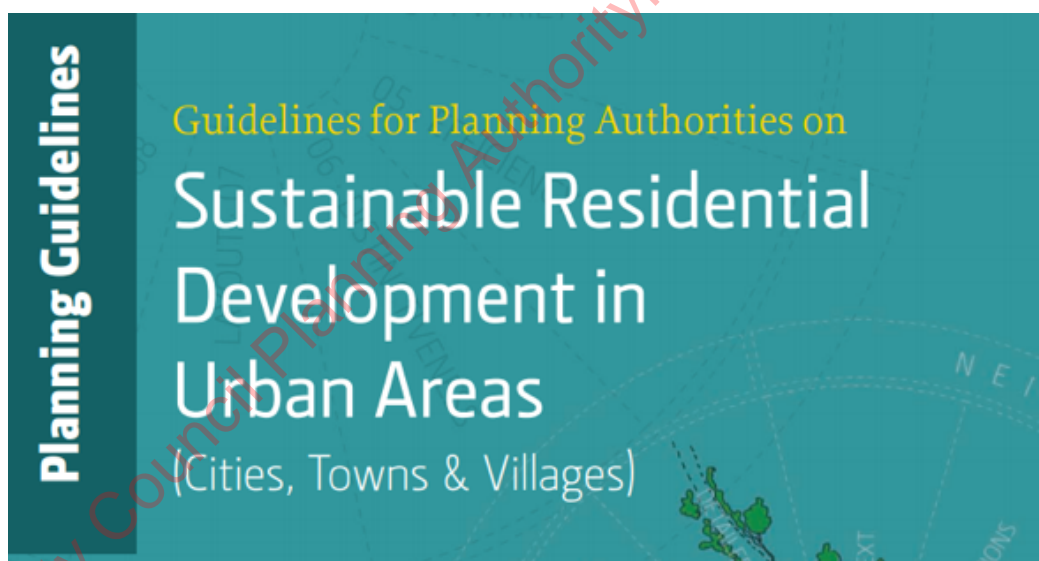
These recommendations outlined in the submitted Road Safety Audit will be implemented to ensure that, in so far as possible, the impacts of traffic are reduced and minimised where practical, while providing several environmental and economic advantages.

We submit that the proposal for a new residential development at this highly accessible location is supportive of the objectives of Smarter Travel - A New Transport Policy for Ireland (2009-2020).

3.2 Ministerial Guidelines

Each of the relevant strategic policy documents are now considered below and their relevance to the subject site and the developments compliance with same, is assessed in detail.

3.2.1 Sustainable Residential Development in Urban Areas (2009)/ Urban Design Manual (2009) Guidelines



The role of these guidelines is to ensure the sustainable delivery of new development throughout the country. The Guidelines provide guidance on the core principles of urban design when creating places of high quality and distinct identity. High quality design is recommended in the development management process. The Guidelines are accompanied by an Urban Design Manual, which demonstrates how key principles can be applied in the design and layout of new residential development.

The development site can be best described as Outer Suburban/ 'Greenfield' outlined in section 5.11 (f) of this document:

"These may be defined as open lands on the periphery of cities or larger towns whose development will require the provision of new infrastructure, roads, sewers and ancillary social and commercial facilities, schools, shops, employment and community facilities".

The document goes on to state that:

‘Studies have indicated that whilst the land take of the ancillary facilities remains relatively constant, the greatest efficiency in land usage on such lands will be achieved by providing net residential densities in the general range of 35-50 dwellings per hectare and such densities (involving a variety of housing types where possible) should be encouraged generally. Development at net densities less than 30 dwellings per hectare should generally be discouraged in the interests of land efficiency, particularly on sites in excess of 0.5 hectares’.

The density of the proposed development on residential lands within the application site boundary is as follows:

70 no. units on a net site area zoned on a net site area of 6.40 ha offering an overall residential density of 25 uph on the development site when combined with the extant permission WMCC Reg Ref. 147103 within the development redline.

This level of density is considered to be appropriate having regard to the National Planning Framework, Regional Planning Guidelines and Sustainable Urban Housing: Design Standards for New Apartments: Guidelines for Planning Authorities (2018) which promotes an increase in residential density.

The development provides a variety of unit types and sizes which are capable of catering for a wide range of demographics in the Athlone area, and will appropriately deal with demand for varying unit typologies as population in the area increases.

The building height on the site of 2 storey with an optional attic conversion to 3 storeys with a pitched roof is considered appropriate to deliver a sustainable residential density suitable to the nature of the site and its surroundings, and maximise the development potential of the site whilst providing high quality units with access to large areas of open space. The proposal is appropriately located close to Athlone Town Centre. There are no existing residential dwellings immediately adjacent to the site and so unduly overlooking or overshadowing does not present itself as an issue in this case.

The development is located on the northeastern periphery of Athlone Town (population over 5000) which puts the development in the category of ‘Larger Towns’ as outlined in the guidelines. We examine the contents of the Guidelines below as they relate to Larger Towns.

Design

The key elements of design in the context of larger towns are as follows:

- Acceptable Building Heights
- Avoidance of Overlooking/Overshadowing
- Provision of adequate public and private open space
- Internal Space in Apartments
- Suitable parking provision
- Provision of ancillary facilities

The current proposal has been designed in the context of the above and we note the following in this regard:

- Appropriate building heights are proposed in accordance with performance criteria under the Building Height Guidelines.
- Overshadowing is not considered an issue in this case; the proposed development is maximum 3 storeys (including optional attic conversion) and does not immediately border any residential sites of differing character.

- An adequate level of parking is delivered across the site with 1 to 2 no. in curtilage parking spaces being delivered for residents and 6 no. visitor parking spaces provided.
- Multiple safe open spaces are provided throughout the development site overlooked by dwellings and equipped with children’s play spaces and landscaped areas for residents.
- A coherent and permeable network of open spaces is proposed.
- Pedestrian access and permeability are key across the site and specific attention has been given to accessibility and the connectivity of the site with surrounding street interfaces, with wide footpaths and safe cycle lanes provided along this site access route.

Density

The proposed development aims to deliver an appropriate density and form of residential development to accommodate the growing population of Athlone on the subject site located on the north-eastern periphery of Athlone Town.

70 no. units on a net site area zoned on a net site area of 6.40 ha offering an overall residential density of 25 uph on the development site when combined with the extant permission WMCC Reg Ref. 147103 within the development redline. It is noted that the calculated density of the development does not include the permitted creche within the development site redline boundary or link roads serving the wider area or lands zoned for Open Space provision, in accordance with Appendix A of the Guidelines.

The proposed density of 25 units per hectare on the residential zoned lands within the site red line boundary is considered an appropriate approach to development having regard for the site location in proximity close to Athlone Town centre, the importance of the site for the deliverance of new residential development within Athlone, and the site access surrounding transport, services, amenities, and infrastructure.

The proposal has been carefully considered to offer a sustainable form of development, taking precedence from the typology of surrounding developments, whilst still providing a high level of residential density and amenity.

As the site is considered a greenfield site, section 2.7 of the guidelines state that:

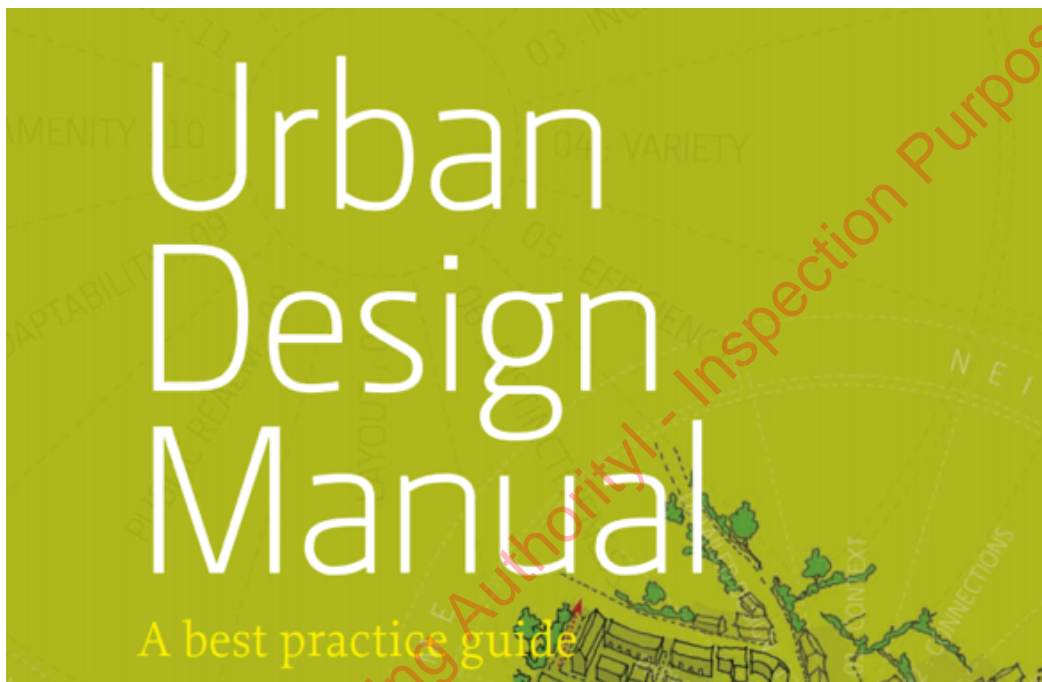
‘where substantial areas of brownfield or greenfield sites are going to be (re)developed, it is strongly recommended that a local area plan (LAP) be prepared to facilitate the sustainable development of the area and to avoid it being developed in a piecemeal and incoherent fashion over a long period of time’.

The Athlone Town Plan 2014-2020 provides the relevant context for the development area and sets forward an appropriate density for new development on residential zoned lands. Section 3.4 of the plan outlines the general density parameters for new residential development as follows:

Location for News Residential Development	General Density Parameters
Town Centre and Brownfield Sites	Site Specific/ 35 per ha
At Strategic locations including public transport nodes	35 units per ha
Inner Suburban/ Infill	Site Specific
Outer Suburban/ Greenfield	30-35 per ha
Outer edge of Urban/ Rural Transition	20-35 per ha

It is noted that the Athlone Town Plan generally advocates new developments on greenfield sites at a density of 35 units per hectare. The proposed density of 25 units per hectare on the residential zoned lands within the site redline when the proposed development is combined with the retained elements of the permission granted under WMCC 147103 is considered appropriate, as the subject proposal increases the density on the southern portion of the Cornmaddy lands from 20 units per hectare as per the extant permission, to 25 units per hectare as per the proposed permission.

Urban Design Manual



Aside from the above, we draw attention to the compliance of the scheme with the ‘sister’ document for these guidelines, the ‘Urban Design Manual’. This planning application is accompanied by a Design Statement, prepared by Doran Cray Architects, which demonstrates how the proposed development has regard to and has been developed in accordance with best practice in respect to urban design.

The Design Statement should be read in conjunction with this Planning Report and with the plans and particulars accompanying this planning application.

For the purposes of this report, compliance with the key requirements of the Urban Design Manual are noted below:

CRITERIA	RESPONSE
<p>CONTEXT</p> <p>How does the development respond to its surroundings?</p>	<p>The proposal seeks to provide a development that is self-sufficient in terms of privacy, access to open space, and parking. Appropriate access points are provided to the development – both pedestrian and vehicular.</p> <p>The development location and design has been chosen to protect the amenity of the surrounding area. The development is maximum 3 no. storeys (when optional attic conversions are included for) which respects the existing landscape of the area and caters to the needs of the growing population in Athlone appropriately. The scale, layout and design of the development poses no impact in terms of</p>

	<p>overlooking or overshadowing to the existing residential estate 'Drumaconn' located to the east of the application lands.</p> <p>The development will cater for improved connections to surrounding future developments through the provision of a new link road through the central portion of the site, which will be partially constructed as part of this application.</p>
<p>CONNECTIONS How well is the new neighbourhood/site connected?</p>	<p>The proposal delivers on the following in terms of connections:</p> <ul style="list-style-type: none"> o Appropriate access points are provided to the development. o The site's proximity to Athlone town and public transport links ensures a safe and easy access from the site to amenities and facilities in the area. There is adequate parking for the development to allow all future residents to own a private car.
<p>INCLUSIVITY How easily can people use and access the development?</p>	<p>We note the following in terms of usability and access to and within the scheme:</p> <ul style="list-style-type: none"> o Pedestrian access and linkages to the site are in existence and within walkable distances to nearby public transport. o Pedestrian access is further enhanced within the development with 'pedestrian priority' given in the northern portion of the site on the open space zoned land, with a landscaped walkway provided looping around the base of the existing esker at this location, and no vehicular access proposed to this portion of the site. o The proposed development will provide a range of accommodation types which have been designed to allow for full part M accessibility where possible.
<p>VARIETY How does the development promote a good mix of activities?</p>	<ul style="list-style-type: none"> o Variety in the development is provided through a range of design proposals in both the built environment and in the landscaping layout. o In the built environment, there are a variety of different unit typologies proposed, which allows for accommodation for a variety of end users. o The landscaped elements are divided between several areas throughout the site which gives residents a variety of areas to avail of. o Passive security is designed to provide total surveillance. o Communal landscaped outdoor areas are provided within the scheme which can allow for a range of activities to be provided to future residents.
<p>EFFICIENCY How does the development make appropriate use of resources including land?</p>	<p>The scheme proposes a development at an appropriate density for the site on currently underutilised lands in in a highly accessible location adjacent to the N55 Cavan-Athlone Road to the northeast of Athlone Town.</p> <p>The massing of the buildings on the site was carefully considered by the project team throughout the design process. It was decided that 2 storey housing units (with options for a third storey attic conversion), were the most appropriate form of development for the site given its size, location, demand for unit typology in this area, and surrounding permitted development to allow for a high level of residential amenity to be provided.</p>
<p>DISTINCTIVENESS How do the proposals create a sense of place?</p>	<p>The scheme promotes the principles of DMURS - Design Manual for Urban Roads and Streets. This balance of road planning, public space</p>

	<p>and site layout will provide an inviting and enticing setting for a new community.</p> <p>The proposal features landscaping unique to the subject site which will create an immersive open space area for residents synonymous with the proposed development. The proposal features appropriate boundary treatments to provide a level of privacy for residents of the proposed development. Landscaping plans for the site are outlined within the Landscape Drawing Pack submitted as part of this application pack prepared by CSR.</p>
<p>LAYOUT How does the proposal create people-friendly streets and spaces?</p>	<p>As can be seen from the site layout plan, pedestrian priority is maintained within the scheme, with the entire northern portion of the open space zoned lands on the site sterile from development due to their zoning objective and the location of the esker on the lands. Appropriate landscaping measures have been implemented to provide a walkway around the base of the esker for pedestrians, with numerous pockets of landscaped areas provided along the walkway including an informal play area and kickabout zone.</p> <p>Pockets of landscaped space are also provided within the residential portion of the site, with numerous pocket areas providing a community garden and play area provided within the residential zoned lands.</p> <p>All streets have been designed to DMURS standards with a specific emphasis on promoting low speed travel for vehicles throughout the development site.</p> <p>Appropriate pedestrian and cycle infrastructure is proposed as part of the scheme.</p>
<p>PUBLIC REALM How safe, secure and enjoyable are the public areas?</p>	<p>All communal spaces within the scheme are easily accessible from all units. The layout of communal open space areas has been arranged to ensure that these spaces are safe secure and well maintained.</p>
<p>ADAPTABILITY How will the buildings cope with change?</p>	<p>The development offers a range of unit types and sizes. Homeowners have the option for future internal reconfiguring or future expansion to the rear and attic. These alterations and adaptations can be carried out without affecting the character of the houses or the neighbourhood.</p>
<p>PRIVACY AND AMENITY How do the buildings provide a high quality amenity?</p>	<ul style="list-style-type: none"> ○ Appropriate set back distances are maintained. ○ Private open space is in line with all required development standards. ○ All units feature own door access. ○ All units have access to high quality landscaped communal amenity areas.
<p>PARKING How will parking be secure and attractive?</p>	<p>Parking areas are private for the units provided as part of the development and all parking areas within the development site benefit from passive surveillance from several units.</p>
<p>DETAILED DESIGN How well thought through is the building and landscape design?</p>	<p>CSR have worked closely with Doran Cray to devise a scheme that complements and respects the original design concept, existing permissions, and existing development in the vicinity of the site. The landscaping proposal enhances the development and ensures that the individual amenity of the units and wider residential amenity of the scheme is of high quality.</p>

Table 5 - Compliance with Urban Design Manual

The above table clearly outlines how the development proposal is envisaged to deliver on the key provisions of the Urban Design Manual. We submit that the current proposal is supportive of the objectives of the Sustainable Residential Development in Urban Areas (2009) / Urban Design Manual.

3.2.3 Delivering Homes Sustaining Communities (2007)



The Department's policy on housing provides the overarching policy framework for an integrated approach to housing and planning and notes that demographic factors will continue to underpin strong demand for housing. This in turn presents challenges for the physical planning of new housing and associated services. The quality of the housing environment is central to creating a sustainable community.

The *Delivering Homes Sustaining Communities* policy statement is accompanied by Best Practice Guidelines entitled 'Quality Housing for Sustainable Communities' and these are the focal point in terms of the consistency of the current proposal.

Quality Homes for Sustainable Communities (2007)

The purpose of these Guidelines is to promote high standards in design and construction and in the provision of residential development and services in new housing schemes. It is our considered view that the proposal for the site has delivered on the key principles of this document by delivering the following:

- The proposed development will provide a quality living environment in 2- and 3-bedroom duplex apartments and 2 to 3-bedroom houses designed to meet or exceed standards and ample amenities and open space are provided.
- Pedestrian Access is prioritized within the scheme. The proposed layout facilitates connection to the adjoining sites which are earmarked for future development. The entirety of the northern portion of the site is zoned as open space and is appropriately landscaped, with no residential development or vehicular access proposed to this area of the subject lands.
- All open spaces are safe and benefit from passive surveillance from the proposed dwelling buildings on site.
- The chosen materials have been selected for their aesthetic and durable qualities over the life cycle of the scheme.

A Housing Quality Assessment has been prepared by Doran Cray Architects and submitted with this planning application. We direct the Planning Authority to this assessment for full details on the extent of proposals. We submit to the Board that the current proposal is supportive of the objectives of the Delivering Homes Sustaining Communities (2007) and the associated Best Practice Guide 'Quality Housing for Sustainable Communities'.

3.2.4 Guidelines for Planning Authorities on Childcare Facilities (2001)

Childcare Facilities

Guidelines for Planning Authorities

The Childcare Guidelines provide a framework to guide local authorities in preparing development plans and assessing applications for planning permission, and developers and childcare providers in formulating development proposals. The Guidelines are intended to ensure a consistent approach throughout the country to the treatment of applications for planning permission for childcare facilities.

The Guidelines state: *“Access to quality childcare services contribute to the social, emotional, and educational development of children. There are clear economic benefits from the provision of childcare. The lack of accessible, affordable, and appropriate childcare facilities makes it difficult for many parents/guardians to access employment and employment related opportunities.”*

The Guidelines identify several appropriate locations for childcare facilities, which include the following:

- New Communities/Large Housing Developments
- The vicinity and concentrations of workplaces, such as industrial estates, business parks and any other locations where there are significant numbers working
- In the vicinity of schools
- Neighbourhood, District and Town Centres
- Adjacent to public transport corridors, park and ride facilities, pedestrian routes, and dedicated cycle ways

Notwithstanding the locations identified above, the Guidelines state that proposals should have regard to the following:

- Child Care (Pre-School Services) Regulations, 1996.
- Suitability of the site for the type and size of facility proposed.
- Availability of outdoor play area and details of management of same.
- Convenient to public transport nodes.
- Safe access and convenient parking for customers and staff.
- Local traffic conditions.
- Number of such facilities in the area; and
- Intended hours of operation.

The recommendation for new housing developments is the provision of 1 facility for 75 dwellings.

The subject application proposes 70 no. new residential units. It is noted that no childcare facility is proposed as part of the subject application. The applicant currently has a live application with Westmeath County Council for a childcare facility currently at Further Information stage under Reg Ref. 22/340 that will cater for the childcare need that will arise from development on the entirety of the lands in the future.

3.2.5 The Planning System and Flood Risk Management (2009)



The Planning System and Flood Risk Management Guidelines were published by the Minister for the Environment, Heritage & Local Government in November 2009 under Section 28 of the Planning & Development Act 2000 (as amended).

The purpose of the Guidelines is that Planning Authorities must implement the Guidelines in ensuring that where relevant, flood risk is a key consideration in the assessment of planning applications.

We refer to the enclosed Engineering Report prepared by Paul McGrail Consulting Engineers Consulting for full details on the assessment carried out in line with the above guidelines. The key conclusions of this document are as follows:

The site is considered to be within Flood Zone C.

It is considered that the site is not subject to any risk of pluvial or coastal flooding at present given its location. Pluvial flood risk has been addressed by designing the development to accommodate surface water runoff from a 100 year period storm plus Climate Change. The site is outside the 1:1000 year coastal flood zone.

The site has been assessed for potential fluvial flooding.

It is concluded that the development is considered to be adequately protected in the context of potential future flood events in the area.

The site has been assessed to ensure that no flooding will occur in the event of a 1:30 year return period, and accounting for 20% of Climate Change. The site has been protected against potential river flooding via the attenuation that is provided within the SUDS features, i.e. modular permeable paving and on-line attenuation structures/ features.

3.2.6 Guidance on Appropriate Assessment for Planning Authorities

Under Article 6(3) of the EU Habitat Directive and Regulation 30 of SI no. 94/1997 “European Communities (Natural Habitats) Regulations (1997)” any plan or project which has the potential to significantly impact on the integrity of a Natura 200 site (i.e., SAC or SPA) must be subject to an Appropriate Assessment. This requirement is also detailed under in the Planning and Development Acts (2000 - 2010).

An Appropriate Assessment Screening Report has been prepared by Enviroguide and is submitted as part of this application pack.

The AA Screening Report concludes that the proposed development may give rise to significant effects on the Lough Ree SAC (000400) and the Lough Ree SPA (004064), and therefore recommends that a Natura Impact Statement is prepared in respect of the proposed development.

The submitted NIS concludes that, beyond reasonable scientific doubt, that once the mitigation measures recommended within the NIS document are implemented correctly and in full, the proposed development will not result in any significant adverse impacts on the Lough Ree SAC or Lough Ree SPA.

3.2.7 Design Manual for Urban Roads and Streets 2019



The Design Manual for Urban Roads and Streets (DMURS), 2019, sets out design guidance and standards for constructing new and reconfiguring existing urban roads and streets in Ireland. It also outlines practical design measures to encourage more sustainable travel patterns in urban areas. DMURS places a focus on pedestrians, cyclists and public transport users and sets out guidance and standards for constructing new and reconfiguring existing urban roads and streets in Ireland.

Consideration of DMURS and its contents has been a key objective for this project. The four key design principles have been incorporated as follows:

- **Connected networks:** To support the creation of integrated street networks which promote higher levels of permeability and legibility for all users, and more sustainable forms of transport.

The proposed development provides an additional section of the envisioned distributor road through the central portion of the Cornamaddy lands, connecting to the east with the section of the distributor road permitted under Westmeath County Council Reg Refs

147103 and 22253. The completion of the entirety of the distributor road through the central portion of the lands will be subject to a future planning application and will consolidate the development of Cornamaddy as a new neighbourhood on the north-eastern periphery of Athlone Town.

A future connection point to lands to the southwest of the site is also proposed as part of the subject proposal.

A large portion of the northern section of the site does not feature vehicular access or residential development due to an esker being present at this location and the designated zoning of this portion of the site as open space. Pedestrian priority is given to this area with a landscaped looped walkway provided at the base of the esker, featuring a number of landscaped areas that residents and the public can interact with, including an informal kickabout zone and natural play area.

Roads without long straight sections are proposed throughout the development site to encourage lower speeds and lower traffic flow throughout the site, creating a safer environment for pedestrians.

- Multi-functions streets: The promotion of multi-functional, place-based streets that balance the needs of all users within a self-regulating environment.

There is limited scope for encouraging multi-functional streets within the development site given the singular nature of the proposal as a residential development. However, the proposal promotes multi-functional use for pedestrians and cyclists who can access the site safely via proposed new pedestrian and cycle infrastructure to access the housing units or to access the large landscaped communal open space areas provided.

- Pedestrian focus: The quality of the street is measured by the quality of the pedestrian environment.

Pedestrians are considered throughout the development with improved connectivity throughout the site and along the site perimeter. Additionally, internal roads have been omitted from much of the northern portion of the development site, encouraging increased pedestrian activity and ensuring pedestrians have priority over vehicles across this portion of the site.

The restriction of vehicular access across the northern portion of the site allows a large area of pedestrian focused space to be provided which is safe and removed from traffic traversing the site.

- Multidisciplinary approach: Greater communication and co-operation between design professionals through the promotion of a plan-led, multidisciplinary approach to design.

The multi-disciplinary approach is reflected in the chosen design which arose from a series of meetings with the design team. This has ensured a holistic and considered approach to designing the development has been maintained.

All internal roads within the development site have been designed for a vehicular speed of between 10km/h and 30km/h, which allows the movement of vulnerable road users to be prioritised.

We submit that the proposal for a high density, mixed tenure development at this highly accessible location is supportive of the objectives of Design Manual for Urban Roads and Streets (2013).

3.2.8 Urban Development and Building Height Guidelines (2018)

Urban Development and Building Heights

Guidelines for Planning Authorities

December 2018



The publication of the '**Urban Development and Building Heights, Guidelines for Planning Authorities (2018)**' is intended to set out national planning policy guidelines on building heights in relation to urban areas. These guidelines are the most recent form of guidance from the Minister on the matter of building height and were formally adopted in December of 2018. We note that section 1.14 of the document sets out the following:

*"Accordingly, where SPPRs are stated in this document, **they take precedence over any conflicting, policies and objectives of development plans, local area plans and strategic development zone planning schemes.** Where such conflicts arise, such plans/ schemes need to be amended by the relevant planning authority to reflect the content and requirements of these guidelines and properly inform the public of the relevant SPPR requirements.*

The Urban Development and Building Height Guidelines are the predominant context for assessment of height in this case.

The development is considered to be located in a 'suburban/edge location (City and Town)'. Section 3.4 of the guideline's states that:

'Newer housing developments outside city and town centres and inner suburbs, i.e. the suburban edges of towns and cities, typically now include town-houses (2-3 storeys), duplexes (3-4 storeys) and apartments (4 storeys upwards). Such developments deliver medium densities, in the range of 35-50 dwellings per hectare net. Such developments also address the need for more 1 and 2 bedroom units in line with wider demographic and household formation trends, while at the same time providing for the larger 3, 4 or more bedroom homes across a variety of building typology and tenure options, enabling households to meet changing accommodation

requirements over longer periods of time without necessitating relocation. These forms of developments set out above also benefit from using traditional construction methods, which can enhance viability as compared to larger apartment-only type projects’.

Section 3.6 of the guidelines regarding building heights in suburban/ edge locations states that:

‘Development should include an effective mix of 2,3 and 4 – storey development which integrates well into existing and historical neighbourhoods and 4 storeys or more can be accommodated alongside existing larger buildings, trees and parkland, river/sea frontage or along wider streets’.

The proposed development provides 70 no. new 2 storey houses (with some optional 3rd floor attic conversions) on a net site of 6.40 ha. Then combined with the retained element of the extant permission WMCC Reg Ref. 147103 for 87 no. units this presents an overall density of 25 units per hectare across 147 no. units provided on the site.

It is considered that 2-3 storey residential units represent the most appropriate form of development for the site given its size, location, surrounding development context and demand for the proposed unit types in the areas surrounding Athlone.

SPPR 4 of the Urban Development and Building height guidelines relates directly to the subject development and states that:

‘It is a specific planning policy requirement that in planning the future development of greenfield or edge of city/town locations for housing purposes, planning authorities must secure:

- 1. the minimum densities for such locations set out in the Guidelines issued by the Minister under Section 28 of the Planning and Development Act 2000 (as amended), titled “Sustainable Residential Development in Urban Areas (2007)” or any amending or replacement Guidelines;*
- 2. a greater mix of building heights and typologies in planning for the future development of suburban locations; and*
- 3. avoid mono-type building typologies (e.g. two storey or own-door houses only), particularly, but not exclusively so in any one development of 100 units or more’.*

The proposed development provides 23 and 4 bedroom 2 storey houses (with some optional 3rd floors) , on residential zoned land, on a site located to the northeast of Athlone Town. It is considered that this form of development offers unit typology that matches demand and delivers an appropriate density on the site while maintaining a high level of residential amenity.

Specific Planning Policy Requirements

The following Specific Planning Policy Requirements are considered particularly relevant to the current site context and the compliance of the scheme with these SPPRs is set out below.

SPPR 3 (A)

‘It is a specific planning policy requirement that where:

(A) 1. an applicant for planning permission sets out how a development proposal complies with the criteria above; and 2. the assessment of the planning authority concurs, taking account of the wider strategic and national policy parameters set out in the National Planning Framework and these guidelines; then the planning

authority may approve such development, even where specific objectives of the relevant development plan or local area plan may indicate otherwise.”

Applicant Response to SPPR 3A

The performance of the proposal vis a vis the building height criteria is further assessed below in sub-section ‘Development Management Criteria’.

Development Management Criteria

The Guidelines clearly set out that in the event of making a planning application, the applicant shall demonstrate to the satisfaction of the Planning Authority that the proposed development satisfies several criteria. The relevant criteria, followed by an applicant response is set out below to clearly set out for the benefit of the Planning Authority:

Table Error! No text of specified style in document.-1 Development Management Criteria

At the scale of the relevant city / town	
Assessment Criteria	Response
<p><i>“The site is well served by public transport with high capacity, frequent service and good links to other modes of public transport.</i></p>	<p>While the site is located within a comfortable walking distance of Athlone Town, it also benefits from nearby services on Ballymahon Road and Blyry Industrial Estate as well as transport links. The site is well served by a number of reasonably frequent bus services departing from Athlone bus station approximately 2km to the south west of the site offering services connecting to Limerick, Green Bridge, Rail Walk, Roscommon, Longford, Waterford, Mullingar and Kilnacloy.</p> <p>The closest bus stop to the site is located approximately 900 metres to the south west of the site along the N55 and is served by the A2 Bus Eireann route which offers connections to Bealnamulla in Roscommon. It is noted that the applicant has provided indicative locations for future bus stop locations along the proposed distributor road through the application site as part of the subject application and previous applications lodged to Westmeath County Council under Reg Refs. 147103 and 22253.</p> <p>Athlone Rail Station is also located approximately 2km to the south west of the site which is located on the Galway to Dublin rail route, ensuring that Athlone is well connected to both the west and east coasts.</p>

<p>Development proposals incorporating increased building height, including proposals within architecturally sensitive areas, should successfully integrate into/enhance the character and public realm of the area, having regard to topography, its cultural context, setting of key landmarks, protection of key views. Such development proposals shall undertake a landscape and visual assessment, by a suitably qualified practitioner such as a chartered landscape architect.</p>	<p>The proposal is not located within an architecturally sensitive area. However, careful consideration has been given to the successful integration of the scheme into the existing character and topography of the site and area. The Architectural Design Statement and Landscape Design Statement prepared by Doran Cray and CSR respectively, outline the rationale for the development and respectively confirms the proposal, while substantial, would result in a positive contribution to the character and urban fabric of this area in terms of landscape character and quality due to both the low sensitivity, quality and nature of the existing site and the proposed revitalisation and new architectural character.</p>
<p>On larger urban redevelopment sites, proposed developments should make a positive contribution to place-making, incorporating new streets and public spaces, using massing and height to achieve the required densities but with sufficient variety in scale and form to respond to the scale of adjoining developments and create visual interest in the streetscape.”</p>	<p>The proposed development would not reduce the visual amenity of the surrounding area.</p> <p>Careful consideration has been given to the existing residential estate ‘Drumaconn’ to the southeast of the development site to maintain a high level of residential amenity for these properties. Appropriate set back distances have been maintained and the proposed architectural style and unit typology is respecting of the surrounding existing development and extant permissions on the surrounding lands.</p> <p>A variety of unit types are provided across the development site offering a variety in scale and form while also providing an appropriate density for the site given its location and scale.</p>
<p>At the scale of district/ neighbourhood/ street</p>	
<p>The proposal responds to its overall natural and built environment and makes a positive contribution to the urban neighbourhood and streetscape.</p>	<p>The proposal responds to the natural and built environment in an appropriate manner. Careful consideration has been given to the proposal regarding how it addresses the surrounding area with particular attention given to the streetscape and similar surrounding development. The high-quality design submitted provides an appropriate development which will provide a precedent for development on nearby similar sites. The development aims to deliver a new high quality residential</p>

	<p>estate, offering unit types that cater to demand for new units as outlined in national policy documents on a currently underutilised site, earmarked for development.</p>
<p>The proposal is not monolithic and avoids long, uninterrupted walls of building in the form of slab blocks with materials / building fabric well considered.</p>	<p>Careful consideration has been given to ensure that a monolithic appearance is avoided. Different materials and fenestration as well as changes in massing between terraced rows and duplex units across the site will break up the uniform appearance of the site and create visual interest.</p> <p>The changes in unit size/ type on the site creates a unique townscape, avoiding the feel of a monolithic one-dimensional estate.</p> <p>We refer to the Architectural Design Statement prepared by Doran Cray Architects enclosed herewith for further details regarding the architectural design of the development.</p>
<p>The proposal enhances the urban design context for public spaces and key thoroughfares and inland waterway/ marine frontage, thereby enabling additional height in development form to be favourably considered in terms of enhancing a sense of scale and enclosure while being in line with the requirements of “The Planning System and Flood Risk Management – Guidelines for Planning Authorities” (2009).</p>	<p>There is no inland waterway or marine frontage within the current proposal. We can confirm that initial investigations have concluded that there will be no inappropriate flood risk because of the proposal.</p>
<p>The proposal makes a positive contribution to the improvement of legibility through the site or wider urban area within which the development is situated and integrates in a cohesive manner.</p>	<p>The high-quality design proposed will ensure that the development will be legible and attractive when viewed from the wider area. Internally, the site provides pedestrian and cycle linkages which integrates the development and have been designed to link to future development on the surrounding Cornamaddy lands.</p>
<p>The proposal positively contributes to the mix of uses and/ or building/ dwelling typologies available in the neighbourhood.”</p>	<p>The appropriate mix of unit types and sizes will be incorporated into the proposed development to contribute to a currently limited market for this type of housing close to Athlone. The mix of 2,3- and 4-bedroom houses provides variety and options within a single development for future residents.</p>

At the scale of the site/building	
<p>The form, massing and height of proposed developments should be carefully modulated so as to maximise access to natural daylight, ventilation and views and minimise overshadowing and loss of light.</p>	<p>The design of the subject scheme, particularly the orientation of the housing units was carefully considered to minimise the potential for overlooking and overshadowing.</p>
<p>Appropriate and reasonable regard should be taken of quantitative performance approaches to daylight provision outlined in guides like the Building Research Establishment’s ‘Site Layout Planning for Daylight and Sunlight’ (2nd edition) or BS 8206-2: 2008 – ‘Lighting for Buildings - Part 2: Code of Practice for Daylighting’.</p> <p>Where a proposal may not be able to fully meet all the requirements of the daylight provisions above, this must be clearly identified and a rationale for any alternative, compensatory design solutions must be set out, in respect of which the planning authority or An Bord Pleanála should apply their discretion, having regard to local factors including specific site constraints and the balancing of that assessment against the desirability of achieving wider planning objectives. Such objectives might include securing comprehensive urban regeneration and or an effective urban design and streetscape solution</p>	<p>It is considered that there will be no risk of negative impacts arising from overlooking/ overshadowing following the construction of the development given that there are no existing developments directly adjacent to the subject site. Any permitted developments due to commence construction in the surrounding area are appropriately located and scaled to avoid overbearing and overlooking of any future developments on the Cornamaddy lands.</p>
Site Specific Assessment	
<p>Specific impact assessment of the micro-climatic effects such as down-draft. Such assessments shall include measures to avoid/ mitigate such micro-climatic effects and, where appropriate, shall include an assessment of the cumulative micro-climatic effects where taller buildings are clustered.</p>	<p>Given the development height and the layout of the buildings across the development site it is considered that measures to avoid/ mitigate microclimatic effects are not necessary for the proposed development.</p>
<p>In development locations in proximity to sensitive bird and / or bat areas, proposed developments need to consider the potential interaction of the building location, building materials and artificial lighting to impact flight lines and / or collision.</p>	<p>From a completed Appropriate Assessment Screening exercise, it was concluded that the proposed development may give rise to significant effects on the Lough Ree SAC (00400) and the Lough Ree SPA (004064), and therefore recommends that a Natura Impact Statement is prepared in respect of the proposed development. A Natura</p>

	Impact Statement was subsequently prepared. The mitigation measures included within the completed NIS are considered acceptable and will mitigate against significant adverse effects on European sites.
An assessment that the proposal allows for the retention of important telecommunication channels, such as microwave links	As the subject buildings are not considered to be of significant height, this assessment is not required in this instance.
An assessment that the proposal maintains safe air navigation.	Given the development is removed from any airports or air strips this report is not required in this case.
An urban design statement including, as appropriate, impact on the historic built environment	An Architectural Design Statement has been prepared by Doran Cray and is enclosed as part of the submitted application documentation. There are no Protected Structures onsite, and the site is not located within an Architectural Conservation Area. The development proposes no potential impact on any nearby protected structures.
Relevant environmental assessment requirements, including SEA, EIA, AA and Ecological Impact Assessment, as appropriate.	An Appropriate Assessment Screening Report and Natura Impact Statement have been prepared by Enviroguide and are submitted as part of the application material.

In consideration of above, the current proposal for 70 no. new houses can be positively considered on this site by the Planning Authority. Specifically, the proposal has addressed the specific development criteria requirements of the guidelines and is in compliance with the key relevant SPPRS. Most notably the site's location is considered to address the spirit and intent of the Guidelines, that being one proximate to transport links and a variety of services.

We submit to the Board that the proposal is consistent with the Urban Development and Building Height Guidelines for planning authorities (2018)

3.3 Westmeath County Development Plan 2021-2027

The Westmeath County Development Plan 2021 – 2027 is the relevant statutory planning document in place for county Westmeath. The Development Plan policies in relation to housing strategy polices relevant to the subject development are outlined below.

3.3.1 Housing Strategy

A housing strategy for Westmeath that covers the life of the County Development Plan from 2021 to 2027 has been prepared to ensure the proper planning and sustainable development of Westmeath and address the overall supply of housing within the administrative boundary of the Local Authority.

The key objectives outlined within the housing strategy are as follows:

- To identify the existing need and likely future demand for housing in the area of the County Westmeath Development plan.
- To ensure Westmeath County Council provides for the development of sufficient housing to meet projected future demand over the lifetime of the County Development Plan.
- To ensure that sufficient zoned lands are provided to meet the needs of different households of all types and tenure.

The Housing Strategy plays a key role in the transition of housing policy from national level through to local level.

Table 8 of Section 3 of the Housing Strategy outlines the Annual Population Projections for Westmeath. It is predicted that there will be a total Population Increase of 10,483 across the county between the years 2021 and 2027.

This population growth will translate to a need for 4,983 new residential units to be built across Westmeath between 2021 and 2027.

Athlone is a Key Growth Centre within the county. The housing strategy states in section 2.1 shows that urban areas in Westmeath (Athlone, Mullingar, Kinnegad and Moate) experienced a collective population growth of 14.2% between 2011 and 2016.

The population of Athlone at the time of Census 2016 was 21,349. This is predicted to grow to 27,693 by 2017, a growth rate of 30%.

The proposed development seeks to aid towards the fulfilment of housing targets for Westmeath by providing 70 no. new units in Cornamaddy, Athlone, on the North-eastern periphery of Athlone Town, which has been subject to rapid population growth. The proposal provides a variety of unit typologies and sizes offering houses ranging from 2 to 4 bedroom, which will cater for the demand for units caused by the recent population growth in Athlone and predicted population growth towards 2027.

3.3.2 Residential Density

The Westmeath County Development Plan section 3.7 states the following in relation to residential densities:

'Higher densities will be applied to the higher order settlements of Athlone and Mullingar to align with their roles as Regional Growth Centre and Key Town, subject to good design and development management standards being met.'

The proposed development offers a residential density of 25 units per hectare for the total quantum of development on the residential zoned lands within the site redline, totalling 6.40 ha. This is inclusive of the subject proposal of 70 no. units and the retained element of the extant permission on the site for 87 no. units, granted under WMCC Reg Ref. 147103.

The proposed density is considered appropriate given the site size, location, and context of the surrounding built residential environment. The proposed density allows for the sustainable development of the site whilst providing much needed unit types close to Athlone Town.

3.3.3 Layout and Design

Section 3.8 of the Westmeath County Development Plan states the following in relation to layout and design of new development:

'A good development creates a 'sense of place' and community belonging to the residents. This is created by providing a mixture of house types and tenure, an individual design, the use of a variety of materials for the context of the site and area and connectivity of the site to other places. In considering proposals for development, the Council will have regard to the DEHLG Guidelines on 'Quality Housing for Sustainable Communities – Best Practice Guidelines for Delivering Homes Sustaining Communities' (2007), 'Delivering Homes Sustaining Communities – Statement on Housing Policy' (2007), 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities' (2018) and 'Sustainable Residential Development in Urban Areas' and the accompanying 'Urban Design Manual: A Best Practice Guide' (2009).'

We refer the Planning Authority to the Architectural Design Statement prepared by Doran Cray which outlines the design rationale for the development and details the materials proposed.

The project Architect, Doran Cray, has given extensive consideration to the DEHLG Guidelines on 'Quality Housing for Sustainable Communities – Best Practice Guidelines for Delivering Homes Sustaining Communities' (2007), 'Delivering Homes Sustaining Communities – Statement on Housing Policy' (2007), 'Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities' (2018) and 'Sustainable Residential Development in Urban Areas' and the accompanying 'Urban Design Manual: A Best Practice Guide' (2009)' when designing the proposal.

CPO 16.21 outlines the council strategy for Public Open Space Provision and Recreational Amenities and states that:

'In general, 15% of gross site area should be provided for multifunctional open spaces at suitable locations within new residential schemes. These open spaces should be easily accessible to all residents and provide for both passive and active uses for persons of all abilities regardless of age or mobility and including design measures and features incorporating sensory design aids, and landscaping, where feasible'.

The proposal offers 0.31ha of public open space within the residential zoned portion of the development site, making up 15% of the developable site area. This is in addition to the 2.40ha of Open Space zoned lands located in the northern portion of the development site, that will be appropriately addressed with a high quality landscape proposal as part of the subject scheme.

It should be noted that there are additional areas of open space included within the development site that have not been included in the total calculation for public open space that will be landscaped as part of the proposed development.

3.3.4 Housing Policies

The proposed development is in line with the following relevant housing policies outlined in section 3.9 of the Westmeath County Development Plan:

CPO 3.1 - Reserve sufficient lands to facilitate and implement the Housing Strategy and its policies, as informed by the HNDA undertaken as part of this Development Plan.

CPO 3.2 - Ensure that settlements grow in a manner that is self-sustaining with sufficient social and economic infrastructure, and to a scale which aligns with the Settlement Hierarchy prescribed in the Core Strategy.

CPO 3.4 - Ensure in accordance with Part V of the Planning & Development Act 2000 (as amended) that arrangements for the provision of Social and Affordable Housing are made in accordance with the current Housing Strategy.

CPO 3.5 - Ensure that a suitable variety and mix of dwelling types and sizes is provided in developments to meet different needs, having regard to demographic and social changes.

CPO 3.6 - Support independent living for people with disabilities and the elderly and where possible, to ensure that housing is integrated within proposed or existing residential developments and located close to existing community facilities.

CPO 3.7 - Apply higher densities to the higher order settlements of Athlone and Mullingar to align with their roles as Regional Growth Centre and Key Town, subject to good design and development management standards being met.

CPO 3.14 - In developments of 20 units or above, the development should achieve, where possible, a minimum of 5% of units designed and built to facilitate occupation by persons with a disability without structural changes, in accordance with 'Universal Design Guidelines for Homes 2015'.

CPO 3.15 - To support the development of quality residential schemes with a range of housing options having regard to the standards, principles and any specific planning policy requirements (SPPRs) set out in the 'Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities' (2009); 'Urban Development and Building Heights Guidelines for Planning Authorities' (2018) and the 'Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities' (2018).

The design team has carefully considered the Housing Policies outlined in the Westmeath County Development Plan when designing the proposal.

The proposal contributes towards the objectives outlined in the county Housing Strategy by providing 70 units of the predicted requirement of 4,983 new residential units by 2027.

The proposal offers a variety of unit types which will cater for a broad spectrum of end user's needs and demand in the Athlone area, offering a variety of 2, 3 and 4 bed homes.

3.3.5 Zoning

The Westmeath County Development Plan 2021 -2027 outlines the Land Use Objectives for Westmeath. The following Land Use Zoning Categories are listed within the Development Plan:

- Established Residential
- Proposed Residential
- Self-Sustaining Rural Consolidation
- Mixed Use
- Consolidation Site
- Expanded Settlement Centre
- Enterprise & Employment

- Commercial
- Sporting Recreational
- Open Space
- Community, Educational & Institutional

It is noted that these 11 categories present the land use zoning objectives for the county from 2021 to 2027. Athlone is subject to a new Local Area Plan and currently is not assigned specific zoning objectives as per this list presented in the County Development Plan. The current land use zoning objectives for Athlone are presented in the Athlone Town Development Plan 2014-2020 which presents the most recent specific zoning context for the Athlone area. The specific zoning objectives for the site as outlined in the Athlone Town Development plan 2014 – 2020 are outlined in section 10.1 below.

3.3.6 Childcare and Youth Facilities

Section 4.12.3 of the Westmeath County Development Plan 2021 -2027 outlines the importance of the provision of appropriate Childcare Facilities across the county to enable parents to participate in the workforce and obtain an income that provides an acceptable standard of living for both them and their children. The Development Plan states that:

‘Westmeath County Childcare Committee supports 91 early childcare services, throughout the County catering for full day care, after school and preschool care, which employs 428 staff. The 0-4-year preschool population within the County in 2016 represents 7.3% of the population of Westmeath. Whilst the Council is not directly involved in the provision of childcare services, the Plan will seek to ensure sufficient facilities are provided in the areas required’.

It is noted that no childcare facility is proposed as part of the subject application. The applicant currently has a live application with Westmeath County Council for a childcare facility currently at Further Information stage under Reg Ref. 22/340 that will cater for the childcare need that will arise from development on the entirety of the lands in the future.

3.3.7 Development Standards

Chapter 16 of the Westmeath County Development Plan 2021 – 2027 presents Development Management Standards. We submit that all relevant Development Management Standards have been considered and complied with. We refer to Section 10 below which details compliance with the development standards outlined in the Athlone Town Plan 2014-2020.

3.4 Athlone Town Development Plan 2014-2020

The Athlone Town Development Plan 2014-2020 is the relevant statutory planning policy document for the subject lands. This plan is due to be replaced by a new Urban Area Plan for Athlone however no draft of a replacement plan has been prepared as of April 2022.

The plan is generally supportive of high-quality residential development providing that it adheres to the sustainable development and proper planning of the area and the objectives and policies supporting this.

The key provisions of the Plan and the compliance of the proposed development with same are now detailed herein.

The Plan sets out the zoning objectives for all lands within Athlone. The zoning objectives for the application lands are presented in figure 3.1 below:

3.4.1 Zoning

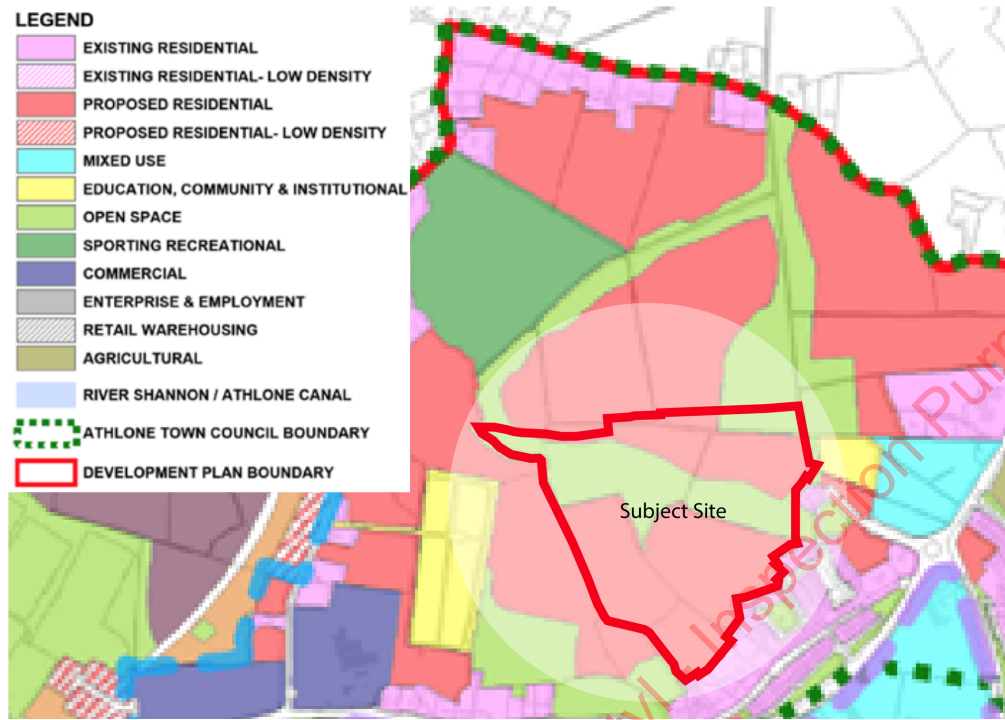


Fig 3.1 – Site Zoning as per the Athlone Town Development Plan 2014-2020

The site extends across residential and open space zoned areas as follows:

- **Residential o-LZ1** – ‘To provide for residential development, associated services and to protect and improve residential amenity’.
- **Open Space o-LZ8** – ‘To provide for, protect and improve the provision, attractiveness, accessibility and amenity value of public open space and amenity areas’.

Section 13.2.1 of the Athlone Town Development Plan 2014-2020 outlines the following vision for areas zoned for residential development:

‘The priority of the Councils is to improve the quality of existing residential areas and to protect their amenities and to strengthen the provision of local community services and amenity. In both new and established residential areas, a range of uses will be permitted in principle, in addition to housing, which has the potential to strengthen communities and encourage the enjoyment of residential amenity. Such uses may include local shops, crèches, schools, nursing homes, open space and recreation facilities. These may be permitted provided they are appropriate in scale and do not unduly interfere with the predominant residential land use.’

We submit that the proposed development improves the quality of the existing surrounding residential development at the Drumaconn estate to the east/ south east by extending development outwards into the Cornamaddy residential zoned lands and consolidating the development of the area as a new residential settlement to the north east of Athlone Town centre. The proposal introduces a mix of unit types and sizes into the area which can cater for the demands of a variety of end users, creating a vibrant estate with a mix of family sizes and ages living side by side.

Section 13.2.7 of the Athlone Town Development Plan 2014 – 2020 outlines the following vision for areas zoned for the provision of open space:

‘To provide for, protect and improve the provision, attractiveness and accessibility of public open space and amenity areas intended for use for recreational or amenity

purposes. Only development that is incidental to, or contributes to the enjoyment of open space, amenity or recreational facilities will be permitted within this zone’.

We submit that this objective for lands zoned Open Space has been considered and respected in the layout of the proposed scheme. The development has been designed to protect the existing esker in the northern portion of the site to protect the vision for lands zoned Open Space. This area in the northern portion of the development site will be appropriately landscaped with high quality finishes to ensure that it is a space that future residents of the development and the public can interact with within the development site.

3.4.2 Cornamaddy Area Action Plan 2005

We note that an Area Action Plan for Cornamaddy was published in 2005 which outlines a detailed plan for the development of the Cornamaddy Lands where the proposal is located. Although the AAP is now outdated it still offers the most recent specific context for the goal of the future development of the Cornamaddy lands, which has remained a consistent objective that has not yet been fulfilled since the publication of the AAP.

Map 9 included in the Area Action Plan details the zoning objectives for the Cornamaddy lands, which have remained largely unchanged from the publication of the AAP in 2005 to the publication of the Athlone Town Development Plan in 2014 which presents the most recent zoning context for the site. The zoning map as per the AAP is shown on figure 3.2 below and demonstrates that the site has been earmarked for residential development via the zoning objectives in place since 2005.

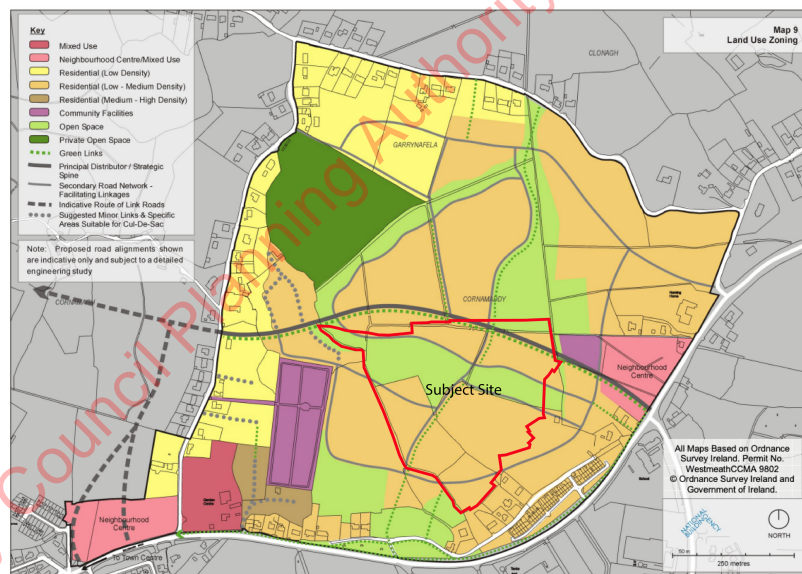


Figure 3.2 - Cornamaddy Zoning Objectives as per AAP 2005

The Area Action Plan sets out an indicative route through the central portion of the Cornamaddy lands for a new link road which will join up to a second envisioned link road to the west of the lands as outlined in the Cornamagh Local Area Plan 2009. The objective of providing a continuous distributor road through the Cornamaddy AAP and Cornamagh LAP lands will allow for access to future residential development on the Cornamaddy and Cornamagh Lands and regulate the flow of traffic through Athlone.

The proposed development provides a section of the envisioned link road through the Cornamaddy lands and will facilitate the further provision of this road towards the Cornamagh lands to the west of the site subject to a separate planning application. The section of the distributor road associated with the proposed development will connect to sections of the distributor road granted to the east of the development site under WMCC Reg Refs 147103 and 22253.

The indicative route for the distributor road through the Cornamaddy lands is shown on Map 1 of the AAP. Figure 3.3 below overlays the proposed development red line boundary onto Map 1 to show the portion of the envisioned distributor road that will be provided as part of the subject proposal.

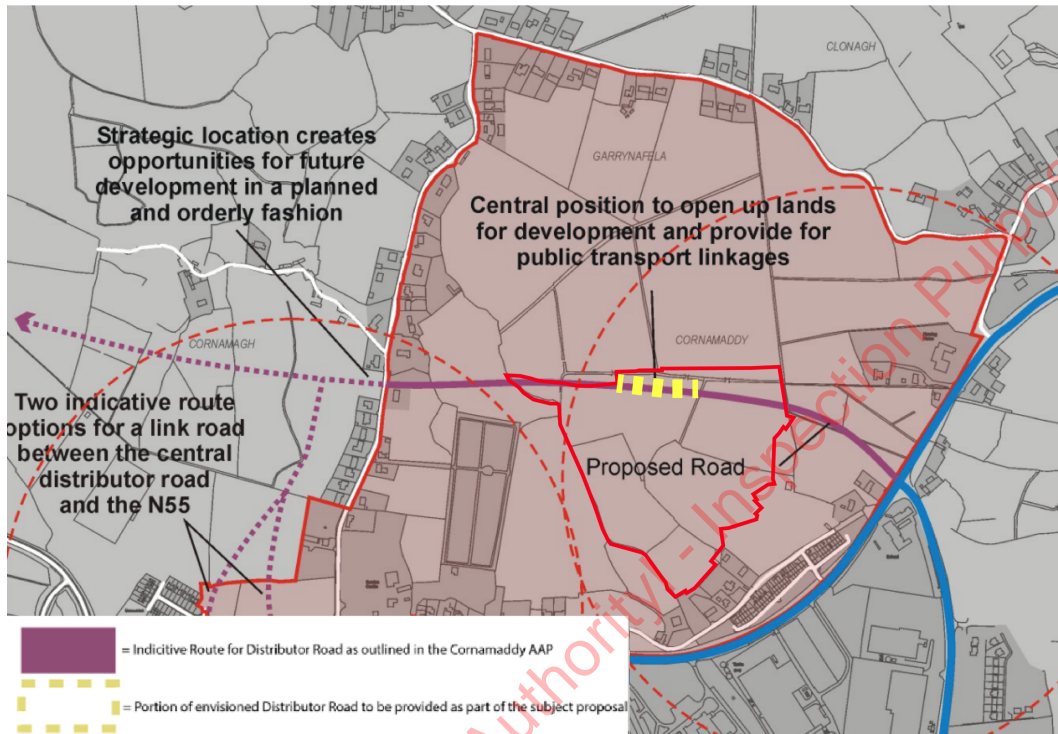


Figure 3.3- Portion of Distributor Road to be provided as part of the subject application

It is evident from figure 14 above that the proposed portion of the distributor road to be provided as part of the subject application is wholly consistent with the envisioned route for the road through the Cornamaddy lands.

The AAP considers several key principles as guiding factors for development on the Cornamaddy Lands, listed in section 3.1:

- Consideration for the existing land use patterns in the area and development of appropriate linkages between the study area and the surrounding environment, including zoned land identified in the adjacent LAP areas.
- The protection and integration of key environmental and landscape features. These features include the local water course that flows to Lough Ree, mature tree groupings, significant hedgerows, significant views, and open space networks,
- Ensure the provision of a network of open spaces, to include playing fields, amenity areas and linear parks.
- Identify an appropriate level of land use intensification that will facilitate the provision of a viable public transport service and support the provision of/ accessibility to services, while also creating a desirable balance between the natural and built environment.
- Through design, develop high quality walking and cycling routes and convenient access to public transport (facilitated by an appropriate road network) as a viable alternative to private car use both within the study area and linked to the wider area, particularly to services, facilities and amenities.

We submit that the subject development is consistent with the proposed development framework as per the Cornamaddy Area Action Plan.

The development has given consideration of surrounding land uses and the zoning objectives for the site, as well as the objectives for the lands and provides 70 new residential units and associated open space on appropriately zoned lands. The surrounding development has been carefully considered and the proposal offers a similar unit type and style to that both permitted and built in the vicinity of the site, consolidating the development of the area. A section of the distributor road linking the N55 to the Cornamagh lands through the central area of the Cornamaddy lands is proposed as part of the subject application.

The protection of key environmental and landscape features has been carefully considered on the subject site. An Appropriate Assessment Screening report and Natura Impact Statement have been prepared by Enviroguide in respect of the subject site. An Environmental Impact Assessment Report has also been prepared and is lodged as part of this application.

Open space areas are provided across the site and make use of the Open Space zoned lands around the northern and eastern site boundaries, incorporating these areas into the landscaped open space areas proposed as part of the scheme.

The proposal offers a variety of unit typologies and sizes appropriate for the demand for new houses in Athlone and is considered an appropriate intensification of use on the development site, which is currently underutilised and greenfield.

The proposed portion of the envisioned Distributor Road on the lands will facilitate the development of the entirety of the road as the overall Cornamaddy lands are developed. This will allow for future public transport and cyclist/ pedestrian links through the Cornamagh and Cornamaddy lands.

3.4.3 Core Strategy

Chapter 2 of the Athlone Town Development Plan 2014-2020 sets out Core Strategy Objectives for Athlone. The vision for the town is described in section 2.2 as follows:

“To provide for the development of Athlone as a driver of sustainable economic growth, commensurate with the Linked Gateway status of the town, whilst balancing the need to safeguard the town’s inherent environmental assets with the creation of appropriate development opportunities. To develop Athlone as a vibrant and dynamic town in which to live, work, do business and visit, offering high quality employment, educational, sporting and tourism facilities, together with sustainable communities.”

Section 2.8 deals with the strategy for Housing Requirement in Athlone from 2014 – 2020. Although this is now outdated, it is considered the most relevant recent policy context for the town as a replacement Town Development Plan has not yet been prepared. It was predicted that

3,310 housing units will be required up to 2020 to meet projected population targets set in the Midland Regional Planning Guidelines 2010- 2022 for the Gateway Towns.

This large requirement for new housing stock in Athlone still stands, with the Westmeath County Development Plan 2021 – 2027 forecasting that the population of Athlone will grow from 21,349 in 2016 to 27,693 in 2027, an increase in population of 30%, which means that the requirement for an increase in housing stock as per the Athlone Town Development Plan 2014-2020 is still relevant in 2022.

The following relevant Core Strategy Policies as listed in the Athlone Town Development Plan 2014-2020 are as follows:

- **Policy -SC1** - To ensure that the future spatial development of Athlone is in accordance with higher level Plans including National and Regional Spatial Policy, together with national policy guidance issued under Section 28 of the Planning and Development Acts 2000 as amended, the River Basin Management Plans, Surface Water Regulations and the Habitats Directive.
- **Policy P-CS4**- To seek the delivery of physical and community infrastructure in conjunction with high quality residential developments to create quality living environments.
- **Policy P-CS5** - To guide the future development of Athlone in accordance with the spatial framework established in Local Area Plans in the town.
- **Policy P-CS7** - To ensure a sequential approach to development and promote residential development, prioritisation of infill sites / developments and the occupation of residential units in the town core, in order to promote the achievement of critical mass and protect and enhance town centre function.
- **Policy P-CS8** - To promote the integration of land use and transportation policy and to prioritise provision for cycling and walking travel modes and the strengthening of public transport.
- **Policy P-CS11** – To promote the appropriate use and re-use of town centre back land and under-utilised sites and to promote the regeneration of areas in need of renewal.
- **Policy P -CS12** – To facilitate the sustainable development of Athlone as part of the Midland Linked Gateway to meet economic, social and demographic growth requirements in accordance with the provisions of the National Spatial Strategy and the Midland Regional Planning Guidelines 2010-2022.

We submit that the proposed development has been prepared in accordance with the Core Strategy outlined in the Westmeath County Development Plan 2021 – 2027 and provides a new quality residential development, creating a quality living environment on zoned lands at Cornamaddy, facilitating the sustainable growth of Athlone as a key town in the Midlands region.

3.4.4 Residential Development

Within the Athlone Town Development Plan Housing is dealt with in Chapter 3. The following housing policies listed in the Town Plan are of relevance to the subject site and future development should consider same:

- **Policy P-H2** - To secure the provision of social and affordable housing, to meet the needs of all households and disadvantaged sectors in Athlone, including the elderly, first time buyers, single person households on modest incomes, people with disabilities and special needs etc.

We refer the Planning Authority to the Part V drawing pack submitted as part of the Application Drawing Pack prepared by Doran Cray Architects for details on the Part V unit allocation proposed.

- **Policy P-H5** - To ensure the provision of a suitable range of house types and sizes to facilitate the demographic profile of the town.
- **Policy P-H7** - To require diversity in the form, size and type of dwelling within residential schemes.
- **Policy P-FH-1** - To ensure a mix and range of housing types and in particular two bedroom accommodation, to meet the diverse needs of residents of the town.

- **Policy P-FH-3** - To ensure that a suitable variety and mix of dwelling types and sizes is provided in developments to meet different needs, having regard to demographic and social profile of the town’s population.

We submit that the development provides a wide variety of unit types and sizes and caters for a broad demographic from young couples or older people looking to downsize to large families.

The following Council policies relating to the Sustainable Residential Development of Athlone are outlined in Section 3.7 of the Athlone Town Development Plan 2014-2020.

- **Policy P-SR1** - To support the principle of sequential development in assessing all new residential development proposals, whereby areas closer to the centre of the town, including underutilised and brownfield sites, will be chosen for development in the first instance to promote a sustainable pattern of development.
- **Policy P-SR6** - To ensure that new Greenfield residential estate development should be in accordance with the spatial framework established in the relevant Local Area Plan for the subject area.
- **Policy P-SR8** - To promote social inclusion by encouraging the provision of community facilities and in particular child care facilities in new and established residential areas.

We submit that the proposed development is on lands that have been earmarked for new residential development since the early 2000’s as per the Cornamaddy Area Plan, the Athlone Town Development Plan and the Westmeath County Development Plan. The proposed development offers new residential development on appropriately zoned lands.

Section 3.8 of the Athlone Town Development plan states that the following densities shall apply for all new residential development outside the Local Area Plans in the town:

Location for New Residential Development	General Density parameters
Town Centre and Brownfield Sites	Site Specific 35 per ha
At strategic locations including public transport nodes	35 units per ha
Inner suburban/ Infill	Site Specific
Outer Suburban/ Greenfield	30-35 per ha
Outer edge of Urban/ Rural Transition	20-35 per ha

There are 87 no. units granted within the overall net developable site area. The proposed development for 70 no. units means that there will be 157 no. units total provided on the net site area of 6.40ha, giving a density of 25 units per hectare. There is 1.03 ha of open space provided within the net development area of 6.40ha.

The unit typology of 2-4 bed houses gives rise to an increase in density, which is considered appropriate given the demand for different unit typologies and sizes within Athlone.

Given the density standards outlined in the Athlone Town Development Plan and the DEHLG'S Sustainable Residential Development in Urban Areas (2009) document, this level of density is considered appropriate at this Outer Suburban/ Greenfield site.

The following council policies relating to Residential Density are outlined in section 3.9 of the

Athlone Town Plan and are considered relevant to the subject proposal.

- **Policy P-RD1** - To require that new residential schemes in the town centre are to a high-quality design and include provision for environmental, economic, social and community functions, combined with improvements in the public realm, required in tandem to increase the attractiveness of the town centre as a residential location.
- **Policy P-RD3** - To apply the residential standards set out in the DEHLG's guidelines Sustainable Residential Development in Urban Areas (2009) as appropriate.

We submit that the proposed scheme is in general compliance with the residential standards set out in the DEHLG's guidelines for Sustainable Residential Development in Urban Areas (2009).

3.4.5 Residential Layout and Design

Section 3.11 of the Athlone Town Development Plan outlines the Residential Layout and Design Policy and Objectives for Athlone. The following policies outlined in the Town Development Plan are considered relevant to the subject development:

- **Policy P-RLD1** - To achieve attractive and sustainable development and create high standards of design, layout, and landscaping, for new housing development.
- **Policy RLD2** - To determine the layout of new development before or at the same time as the road layout with connections to social infrastructure identified.
- **Policy RLD3** - To require that appropriate provision is made for amenity and public open space as an integral part of new residential or extensions to existing developments.
- **Policy RLD4** - All new housing schemes shall be designed to reduce energy demand and shall comply with the Building Regulations energy performance standards.
- **Policy RLD5** - To ensure that all residential properties are designed with flexible and adaptable layouts to suit the home owner with regard to Lifetime Homes.

We submit that the council policies for residential layout and design have been carefully considered when designing the subject proposal. We refer the Planning Authority to the Design Statement prepared by Doran Cray Architects for the rationale behind the scheme design.

The proposal has been designed with consideration for the indicative route of future distributor road through the central portion of the lands as outlined in the Cornamaddy Area Action Plan 2005. The site layout has been designed to facilitate the future development of this road, and it is proposed that a section of this distributor road will be constructed as part of the subject proposal.

We submit that appropriate residential open space areas have been provided on appropriately zoned Open Space lands within the development redline boundary. The quantity of open space is detailed in the Landscape Drawing Pack prepared by Cunnane Stratton Reynolds submitted as part of the application pack, which we refer the Planning Authority to for more information.

All house types proposed have been designed to comply with the Building Regulations Energy Performance standards and have been designed with the potential for future adaptability if the homeowner so wishes.

We refer to the Architectural Design Statement and Sustainability Report prepared by Doran Cray Architects and Morley Walsh respectively, submitted herewith for details.

3.4.6 Plot Ratio

The Athlone Town Development Plan outlines the following Indicative plot ratio standards in Chapter 12:

Area Location	Indicative Plot Ratio
Town Centre/ Brownfield	1.0 – 2.0
Inner Suburban	0.5 -1.0
Outer Suburban Close Proximity to Public Transport	0.35 – 0.5
Outer Suburban Remote from Public Transport	0.25 – 0.35

The subject site can be described as ‘Outer Suburban Close Proximity to Public Transport. We note that the Town Development Plan provides that the Indicative Plot Ratio for development on lands considered as Outer Suburban Close Proximity to Public Transport is listed as .035-0.5.

The overall development within the redline boundary of 70 no. units as proposed and 87 no. units as permitted under WMCC Ref. 147103 on a net site area of 6.4 ha provides a plot ratio of 0.29.

This is considered appropriate in this case given its general compliance to the suggested indicative plot ratios, residential zoning objective for the site and the specific objectives for new residential development to be located on the Cornamaddy lands as outlined in the Cornamaddy Area Action Plan 2005 and the Athlone Town Development plan 2014 – 2020.

3.4.7 Dwelling Mix and Sizes

Chapter 3 of the Athlone Town Plan 2014-2020 outlines the aim for the provision of housing in Athlone as follows:

‘To facilitate the provision of high-quality residential development in sustainable communities and provide an appropriate mix of house sizes, types and tenures in order to meet the different needs of the people of Athlone’.

We submit that the proposed development offers a high quality of architectural design and provides a wide range of house types and sizes to cater for the different needs of people in Athlone. The overall breakdown of unit mix provided is as follows:

Houses:

- 4 no. House type B1 (4 bed) Semi Detached (147 sq.m)
- 2 no. House type B2 (4 bed) Semi Detached (147 sq.m)
- 20 no. House type D1 (3 bed) Semi Detached (96 sq.m)
- 30 no. House type D2 (3 bed) Terraced (96 sq.m)
- 2 no. House type D3 (3 bed) Semi Detached (96 sq.m)
- 4 no. House type E5 (2 bed) Terraced (78 sq.m)
- 8 no. House type (3 bed) Semi Detached (116 sq.m)

It is evident from the above that the residential mix proposed is appropriate for the site and provides for an extensive mix of unit types.

3.4.8 Privacy

Section 12.9.8 of the Athlone Town Plan 2014 – 2020 outlines the Standards for Privacy and Enclosure that are required for new developments.

The plan states that:

'In order to achieve adequate privacy and open areas between houses in new residential development the normal minimum rear garden space shall be not less than 11m in depth. This should be measured to the rearmost wall of the house and should not extend less than the full width of the house. As it is appreciated that this standard may not be readily complied with in all occasions, discretion may be employed where a side garden of equal or greater dimensions can be substituted for rear garden space and where the building design provides for the achievement of privacy. Consideration may be given to further reduction if the site is infill, is less than 10m deep and design is of a high standard.'

'Where a front boundary wall or fencing is provided, the design and materials shall be such as to provide a pleasing design feature to the overall housing layout.'

'Rear boundary walls or fences shall be constructed to a height of not more than 2m. Permanent screening of a similar height should also be provided between the gardens of adjoining houses for a minimum distance of 2.5m behind the rear of the house.'

We refer the Planning Authority to boundary treatment drawings prepared and by Cunnane Stratton Reynolds and the Architectural Drawings and Design Statement prepared by Doran Cray Architects submitted as part of this application pack, which clearly details that all proposals for boundary treatment are in fully compliance with the above requirements.

3.4.9 Residential Open Space

The following policies relating to the provision of Public and Private Open Space are detailed in section 3.13 of the Athlone Town Development Plan are considered relevant to the subject application:

- **Policy P-POS1** - To ensure that the provision of public and private open space for new residential development is of a high standard, overlooked and integral to the overall development. Narrow tracts of land or 'left over areas' will not be included within open space provision.
- **Policy P-POS2** - To require a detailed landscaping plan with all new housing developments by a suitably qualified professional. The landscaping design shall include a survey of the existing natural features on the site and indicate those to be retained.

We submit that the proposal offers satisfactory levels of passive surveillance from the new residential units over all areas of open space provided. No 'left over areas' have been included within the open space areas provided, with the majority of the open space proposed being provided on lands zoned for Open Space provision on zoning maps included in the Athlone Town Development Plan 2014 – 2020 and the Cornamaddy Area Action Plan 2005.

Section 12.9.11 details the standard of private open space provision required for new residential houses as follows:

Accommodation Size	Min. Private Open Area
1-2 bedrooms	48 sq.m
3-4-5 bedrooms	60-75 sq.m

We submit that the proposed development complies with the standards outlined in the plan, providing a minimum of 48 sq.m for the 2 bed houses, minimum of 60 sq.m for the 3 bed houses and minimum of 77 sq.m for the 4 bed houses.

Section 12.9.12 of the Athlone Town Plan 2014-2020 outlines specific standards for the provision of public open space. It is stated that:

‘Open space in housing estate areas shall normally be based on a standard of 15% minimum of gross site area’

There are 87 no. units granted within the overall net developable site area. The proposed development for 70 no. units means that there will be 157 no. units total provided on the net site area of 6.40ha, giving a density of 25 units per hectare. There is 1.03 ha of open space provided within the net development area of 6.40ha. This totals 16% of the total developable site area.

3.4.10 Roads

Section 12.9.18 outlines the relevant standard for car parking in Athlone. The plan states that:

Car parking for detached and semi-detached housing should be within the house site. Car parking for apartments and terraced housing should be in informal groups overlooked by housing units. The visual impact of large areas of car parking should be reduced by the judicious use of screen planting, low walls and the use of textured or coloured paving for parking bays.

The proposed scheme has carefully considered the car parking standards outlined in the Athlone Town Plan 2014-2020 and offers 1-2 no. car parking spaces in curtilage of all houses proposed.

Standards for Roads Design and Layout in Residential Schemes are outlined in section 12.9.19 and state that:

‘Significant development proposals affecting National roads must be accompanied by traffic and transport assessments (TTA) and/or road safety audits and refer to the National Road Authority’s (NRA) Design Manual for Roads and Bridge and to the Traffic Management Guidelines prepared by the then Department of Transport and the Department of the Environment and Local Government together with the Dublin Transportation Authority’.

‘Development proposals which may necessitate changes to road and/or junction layout in order to address capacity and road safety concerns arising from significant additional trips/travel generated by the proposed development should be accompanied by a Traffic and Transport Assessment (TTA). Applicants of such developments are referred to the Traffic Management Guidelines and the Traffic and Transport Assessment (TTA) Guidelines (2007) published by the NRA’

We refer the planning Authority to the Traffic and Transport Assessment prepared by RoadPlan submitted as part of this application which concludes that the existing N55/ R916/ L8048 roundabout to the east of the development site will continue to operate

within its capacity, with small queues and delays predicted during heaving traffic AM and PM peak hours, with this operational capacity predicted to remain consistent up to 2039, 15 years after the opening of the development.

The report also concludes that there is adequate car parking provided across the development site to facilitate any demand that will arise from residents of the new residential development.

We note that the application proposes to construct a section of the distributor road envisioned to run through central portion of the Cornamaddy lands from the N55 to the east of the site through to the Cornamagh Lands west of the site. The importance of the provision of such distributor roads is noted in section 6.17 of the Athlone Town Development Plan which states that:

'The Councils shall seek to provide new distributor roads to permit new development to take place where the need for such roads is identified in Action Area Plans, to provide links serving the transport nodes and in the promotion of economic activity'.

3.4.10 Part V Requirements

A total of 7 no. units are designated for Part V use. We refer to the Part V Drawings, Schedule of Accommodation and the Architects Design Statement prepared by Doran Cray Architects submitted as part of this application pack which identifies the location and specifications of the Part V units on the site.

4 CONSIDERATION OF ALTERNATIVES

The requirement to consider alternatives within an EIAR is set out in Annex IV (2) of the EIA Directive (2014/52/EU) and in Schedule 6 of the Planning and Development Regulations, 2001, as amended, which state:

“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 Schedule 6(2)(b) of the Regulations implement this requirement by requiring the following information:

(b) “a description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) 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 selecting the chosen option, including a comparison of the environmental effects;”

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 to be presented in the EIAR.

The Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018) – states:

“The Directive requires that information provided by the developer in an EIAR shall include a description of the reasonable alternatives studied by the developer. These are reasonable alternatives which are relevant to the project and its specific characteristics. The developer must also indicate the main reasons for the option chosen taking into account the effects of the project on the environment.”

“Reasonable alternatives may relate to matters such as project design, technology, location, size and scale . The type of alternatives will depend on the nature of the project proposed and the characteristics of the receiving environment. For example, some projects may be site specific so the consideration of alternative sites may not be relevant. It is generally sufficient for the developer to provide a broad description of each main alternative studied and the key environmental issues associated with each. A ‘mini- EIA’ is not required for each alternative studied.”

As such, the consideration and presentation of the reasonable alternatives studied by the project design team is an important requirement of the EIA process.

This chapter 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.

This chapter assesses the evolution of development and the alternatives examined by the Applicant relating to the location, size and scale and project design and technology of the Proposed Development. This section provides a full justification for the proposed development and provides a comparison of the environmental effects of each alternative option.

The main alternatives examined throughout the design process are set out as follows:

4.1 Alternative Locations

As noted in Section 4.13 of the 2018 Guidelines “some projects may be site specific so the consideration of alternative sites may not be relevant”.

We refer to the guidelines on Information to be contained in Environmental Impact Assessment Reports (EPA 2022), which states that in some instances alternative locations may not be applicable or available for a specific project which is identified for a specific location.

No alternative locations for the proposed development were considered in this case. The subject lands are appropriately zoned for residential development and the provision of public open space.

The subject lands and wider lands in the applicant’s landholding have been previously included within the Cornamaddy Action Area Plan 2005, which included a detailed strategy outlining how the Cornamaddy lands could be appropriately developed as a new residential neighbourhood north of Athlone Town Centre. Despite the publication of this action area plan for the lands, no development on the subject lands has taken place.

Since the Cornamaddy Action Area Plan, the site has remained appropriately zoned within relevant statutory planning documents, most recently the Athlone Town Development Plan 2014-2020.

The applicant now endeavours to fulfil this longstanding objective to develop the Cornamaddy Lands as a new residential neighbourhood.

Phase 1: WMCC Ref. 22/253 – Permission granted for the construction of 75 no. residential units comprising: 51 no. 2 storey semi-detached and terraced houses (consisting 4 no. 2 bed houses and 47 no. 3 bed houses, ranging in size from c.78 sq.m – 120 sq.m each), and 24 no. 3 storey apartment/duplex units (consisting 12 no. 2 bed apartments and 12 no. 3 bed duplexes, ranging in size from 84sq.m to 121 sq.m each).

Phase 2: WMCC Ref. 22/340 - Application lodged to Westmeath County Council for the construction of a two Storey childcare facility, including classrooms, reception, kitchen, associated staff areas and office, toilets, storage, plant rooms, circulation areas and photovoltaic panels at roof level (c.668sqm total gross floor area). This application is currently live, at Further Information Stage.

The phase 3 application will consolidate the development of the southern portion of the subject lands by amending the permission granted by Westmeath County Council under Ref. 147103. The subject application for 70 no. units and retained element of the permission granted under WMCC Reg. 147103 will provide 157 no. units total on the southern portion of the Cornamaddy lands. The subject application also proposes a section of the envisaged distributor road through the central portion of the Cornamaddy lands.

It is noted by the applicant that the subject Phase 3 application will be followed by a Phase 4 application to provide development on the remaining portion of the lands, located in the north-eastern area of the applicant’s landholding. This will be lodged as an LRD application to Westmeath County Council. The applicant has engaged in initial pre planning discussions with Westmeath County Council regarding the delivery of this future phase of development.

Given the sites appropriate zoning for residential development and the applicants previous experience with developing successful residential schemes in the county, the subject site was considered an ideal location by the applicant for the development of a new residential scheme.

Having regard to the nature and design of the development, it is considered that the proposed development is an effective and appropriate use of the subject site.

It is noted that extensive preliminary studies were conducted on the site prior to the preparation of a full planning application pack to ensure the site suitability for residential development as part of the due diligence process. This included the following assessments:

- Topographical Surveys
- Preliminary Ecological Assessments
- Preliminary Flood Risk Assessments
- Archaeological and Geophysical Surveys
- Test fits of early design iterations of the scheme

The development of the Cornamaddy lands will provide much needed residential accommodation in Westmeath, and as such, no alternative locations for the proposed development were considered in this instance.

4.2 Alternative Designs

A number of Alternative Designs for the scheme were undertaken by the project Architects, Doran Cray, prior to the arrival at the final project design as now submitted to the Planning Authority.

The final design of the scheme has evolved as part of a multi-disciplinary process with input from all EIAR team members.

The design of the now proposed 70 no. units has also been guided by the need for the development to function as part of the wider overall development on the subject lands.

It is considered that the development represents 'Phase 3' of a multi-phase approach to development on the Cornamaddy lands.

The evolution of the scheme to its final frozen design is presented below:

Option 1

Option 1 represents the initial design concept worked up by the project Architect, Doran Cray, at the initial design phase of the proposal. At this concept stage, the initial design was presented to the wider design team by the Architect for comment and discussion.

This initial concept design consisted of the following:

- 93 no. units total
- 10 no. 2 bed duplex apartment units (83.7 sq.m), 10 no. 3 bed duplex units (120 sq.m each), 51 no. 3 bed houses (ranging in size from 93.5 sq.m – 115.4 sq.m) and 22 no. 4 bed houses (ranging in size from 147 sq.m to 183 sq.m).
- The initial concept design featured a mix of unit types of Townhouses, Duplexes, and semi-detached units which were included in the initial concept layout plan to establish the suitability of the units on the site.
- This original concept plan retained 71 no. of the 125 no. previously permitted units within the site redline boundary.
- It is noted that at this design stage there was no initial concept design dealing with the esker element in the northern portion of the lands.

The initial concept site plan is shown below on figure 4.1 for comparative purposes:

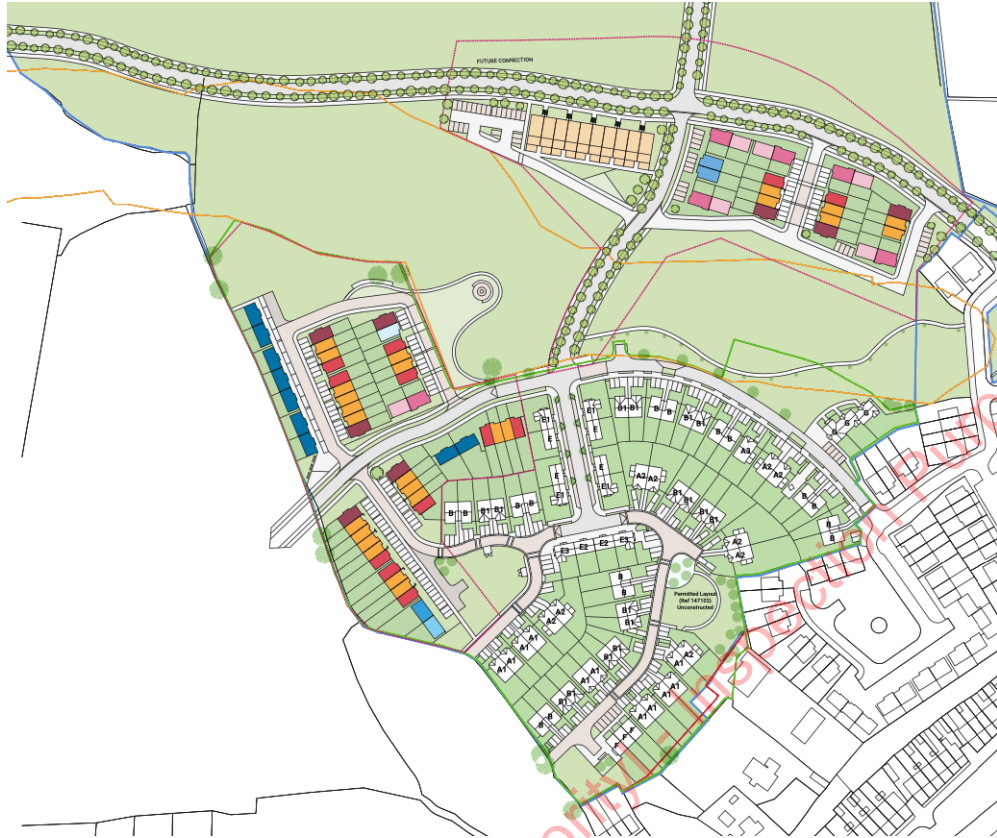


Figure 4.1 – Initial site concept design

Feedback from the wider design team and applicant on the initial concept scheme was received and incorporated into the next phase of the scheme design.

At this design stage it was put forward that the permitted childcare facility permitted under WMCC Ref 147103 would be removed and replaced with duplex units, subject to the creche submitted to WMCC under application reg ref. 22340 providing a sufficient quantum of childcare to cater for the applicant's overall development on the Cornamaddy lands.

Option 2

Option 2 represents a more advanced scheme design stage than the initial concept site plan prepared for phase 1. At this design stage a draft of the specific unit types that would be used for the proposed development were agreed.

At this design stage duplex units were still proposed to replace the creche permitted under WMCC Reg Ref. 147103.

A site redline boundary was drafted at this design stage to include the primary development area and the area where the permitted childcare facility is located in the northern portion of the site. At this stage the esker element was not included within the draft application redline and no landscaping works were proposed in this area.

The option 2 site layout is shown on figure 4.2 below:

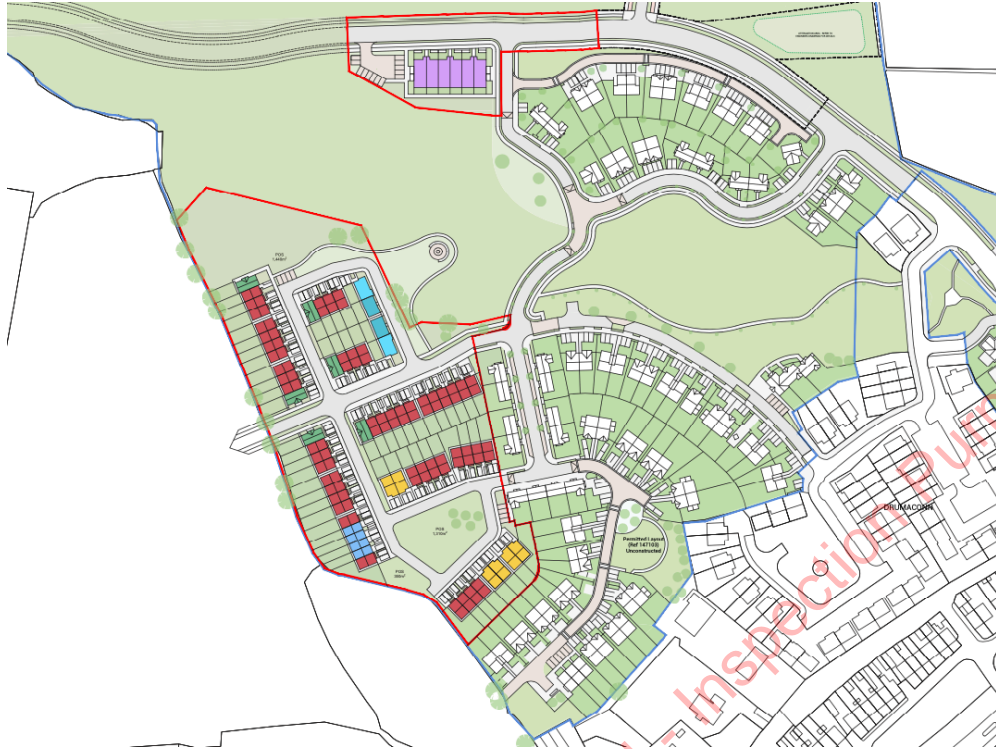


Figure 4.2 – Option 2 Site Layout

The option 2 stage of the development therefore consisted of the following:

- 80 no. units total
- 6 no. 2 bed duplex apartment units (78sq.m), 6 no. 3 bed duplex apartment units (134 sq.m), 4 no. 2 bed houses (78 sq.m), 58 no. 3 bed houses (ranging in size from 96 sq.m to 122 sq.m), 6 no. 4 bed houses (147 sq.m).
- The option 2 design featured a similar mix of unit types on the subject lands to design option 1, comprising a mix of unit types of Townhouses, Duplexes, and semi-detached units
- Proposed gross site area of 2.90ha
- Proposed net site area of 2.41ha
- Density of 33 units per hectare
- Provision of 0.31ha of public open space, making up 13% of the application site

This option 2 design whilst still concept, offered a more comprehensive picture of how this phase of the development on the overall Cornamaddy lands could be completed to time in with the applicant's multi-phase development program to consolidate development on their landholding at Cornamaddy as an entire new residential neighbourhood to the northeast of Athlone Town.

The proposal from this phase was subject to design input from all wider design team members and the applicant, and roads layouts, landscaping and further changes to the architect's layout were implemented, which culminated in the final frozen scheme design now as submitted, outlined in Option 3 – Chosen Option below.

Option 3 – Chosen Option

Option 3 represents the now submitted final design of the scheme. The now submitted final design has been subject to an extensive design process and is now considered the most viable design option for the lands on individual merit and in combination with all other lodged developments and future developments on the subject lands.

The redline boundary at this stage was extended and changed to include the entirety of the adjacent development permitted under WMCC Ref. 147103, 38 no. of these permitted units will be replaced as part of the subject development.

It was also considered by the design team and applicant that the previously permitted creche should be retained on the development site, and this has led to the applicant removing the duplex element that was prevalent at this location on the site throughout previous design options. It is noted that the applicant currently has a creche proposed under WMCC ref. 22340 which is a live application with Westmeath County Council at FI stage. The applicant plans to fulfil the any childcare requirement that may arise from the subject development with this creche facility.

The esker element on the site has also been included within the application redline boundary and appropriately treated as a passive recreation area by the project landscape architects, Cunnane Stratton Reynolds. The landscape design protects the existing esker and provides landscaped elements around its base such as a looped walkway and seating areas.

A section of the proposed distributor road through the central portion of the Cornamaddy lands has been included in the final design proposal, which will contribute towards the delivery of this long-standing road's objective in Westmeath.

The Chosen Option 3 can be described as follows:

Marina Quarter limited intend to apply for a 5-year permission for development at this site of total 10.87ha on lands located at Cornamaddy, Athlone, Co. Westmeath. The site is generally bounded to the west by greenfield lands and Cornamagh Cemetery, to the north by greenfield lands, to the south by greenfield lands and the Ballymahon Road (N55) and to the east by the existing Drumaconn housing estate. The development will comprise of a residential development and public open space comprising the following:

- Amendments to permitted application WMCC reg Ref. 14/7103/ ABP Ref. PL25.244826 for the removal of 38 no. permitted units (not constructed) to be replaced by: Construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (c.78 sq.m each), 60 no. 3 bed semidetached (c. 96-116 sq.m each) and 6 no. 4 bed semidetached houses (c. 147 sq.m each) with associated private gardens.
- The creche facility, public open spaces, landscaping, roads layouts, car parking, boundary treatment works, public lighting and all associated site works associated with the 87 no. remaining units retained as permitted under WMCC Reg Ref. 14/7103 ABP Ref. PL25.244826 will remain unchanged.
- All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a sections of the distributor road permitted under WMCC Reg. Refs 14/7103/ ABP Ref. PL25.244826 and 22/253 to the east of the site.
- All associated site development works, services provision, drainage works, public open space (c.1.03ha), landscaping, boundary treatment works, public lighting, associated esb substation cabinets, bin stores, car and bicycle parking provision.
- This development will form part of a larger/future phase of the development.
- This planning application is accompanied by an Environmental Impact Assessment Report and Natura Impact Statement.



Figure 4.3 – Chosen Site Layout

4.3 **Do Nothing Alternative**

The site is zoned for the provision of residential development and open space as per the Athlone Town Development Plan 2014-2020 which provides the most recent planning context for the subject site. The site was also previously included within the Cornamaddy Action Area Plan 2005 which set out a detailed strategy for how the lands could be appropriately developed as a residential offering. This shows that the site has been zoned for residential led development for c. 20 years despite no development taking place on the vast majority of the lands now within the applicant’s landholding at Cornamaddy.

The subject development represents phase 3 of an overall development on the subject site. The surrounding lands have the benefit of permissions for residential led development granted under WMCC Reg Refs. 147103 and 22253. The applicant plans to amend the permission granted under ref. 147103 with the subject application and build this application out, as well as the extant permission to the north granted under 22253.

The applicant also has a live permission with WMCC for a creche facility to provide childcare for the overall development on the lands (WMCC Ref. 22340).

A future phase 4 development in the northwest of the applicant’s landholding will consolidate the overall development of the lands as a new residential neighbourhood.

As there have been no alternative locations considered for the development as per the reasons outlined in section above, it is considered that the ‘Do Nothing’ Alternative of leaving the development site as greenfield lands would be contrary to Westmeath County Councils development objectives for the subject site and leave an undeveloped portion of the overall Cornamaddy lands, most of which have the benefit of extant permissions that will be constructed.

4.4 **Alternative Processes**

Alternative processes are not considered relevant to this Environmental Impact Assessment Report given the nature of the proposed development.

4.5 **Environmental Impacts of Design Evolution**

It is considered that the above evolution of the scheme from option 1 through to option 2 and the chosen option 3 were not driven by environmental factors but rather by design choices implemented by the design team. The existing esker area within the site redline is appropriately zoned for open space and has been appropriately treated throughout the design iterations.

The design team has endeavoured to ensure that the proposal presents the most sustainable design option for the site from the initial outset of the design of the scheme.

An appropriate assessment screening report was prepared for the subject site which concluded that there was the possibility that the development would give rise to significant effects on the Lough Ree SAC (000400) and the Lough Ree SPA (004064). Given this, a Natura Impact statement was prepared for the proposal which concludes that beyond any reasonable scientific doubt, once appropriate mitigation measures are implemented correctly and in full, the proposed development will not result in any significant adverse impacts on the Lough Ree SAC or Lough Ree SPA.

Soil & Geology:

The design layout has attempted to take account of the topography of the site. There will be no large piling requirements on the site excavation for basement construction will not be required, the road and housing construction will largely mirror the existing topography and will not materially change the local slopes and topography. The existing esker feature in the northern portion of the site will be protected as part of this proposal and appropriate landscaping has been provided around its base.

The final design ensures that the vast majority of excavated material from surface stripping, road grading and foundation excavation will consist of naturally occurring topsoil and subsoil and will be largely reusable. The final design will have minimal impact on local geology, where possible, excavated material will be reused on site.

Water & Hydrology:

The application location on the subject lands or general quantity of units proposed has not been subject to major variations throughout the design phases. The proposed drainage layout has remained generally consistent throughout the evolution of the proposed scheme, with advanced civils drawings only prepared when the architectural design of the Chosen Option 3 was confirmed. For this reason, it is considered that the impact of the proposed development on water and hydrology through the design phases has not varied.

Air & Climate:

Operational traffic emissions associated with the proposed development are predicted to have a negligible impact on air quality. The operational phase impact to air quality is long-term, localised, negative and imperceptible. Operational phase CO₂ emissions as a result of the traffic associated with the proposed development was carried out to determine the impact to climate. It was found that emissions of CO₂ are predicted to be imperceptible and will be significantly below the EU 2030 GHG target. The operational phase impact to climate is long-term, negative, and imperceptible.

Noise & Vibration:

The design evolution has at all times taken account of the potential impact on adjoining landowners and properties. While the internal layout has changed through the various designs, the separation distance has remained the same and therefore any potential impact has not changed through the design evolution.

Landscape & Visual Impact

As outlined above, the design evolution has taken key ecological factors into account in preparation of the proposed final scheme. It is acknowledged that due to the existing greenfield nature of the site, and the emerging urban form, initially the development may create some negative visual impacts. However, the extent of these impacts to human beings, and most importantly to the existing ecology, water and hydrology of the area have been minimised through the design and layout proposed herein.

Transport & Access:

The design evolution of the proposed development site provides a benefit to potential future vehicle users of the site. Designing the internal road network to form clusters rather than long expanses of road both internally and around the development, will create a safer environment for a residential area which will encourage slower vehicle speeds and heighten safety awareness for residents.

Material Assets:

It is considered that the overall quantum and location of development on the subject lands has not varied greatly throughout the project design stages. The development lands are greenfield and have not been in agricultural use in recent years. It is considered that as the quantum of development has remained at a similar scale throughout the various design iterations that the impacts on planting, natural resources, water services, transport, tourism, municipal waste and electricity supply would remain the same regardless of the chosen design option. An examination of the impact of the scheme on material assets is provided in Chapter 15.

Archaeology, Architecture & Cultural Heritage

It is noted that an Archaeological Impact Assessment for the entirety of the applicant's landholding was conducted. It was found that the proposed development would have no impact on Archaeological or cultural heritage sites surrounding the site. As the general location of the units for this phase remained consistent throughout the various design iterations of the scheme, it is considered that should any of the options designs been chosen, the resultant no impact on archaeological or cultural heritage features on or surrounding the site has remained consistent throughout the design phases.

5 POPULATION AND HUMAN HEALTH

5.1 Introduction

This chapter has been produced to assess the likely impacts associated with Human Health for the proposed development. In Accordance with the Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA 2022), Draft Advice Notes for Preparing Environmental Impact Statements (EPA 2015) and European Commission Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (EU 2017). This chapter considers the “existence, activities and health of people”, with respect to “topics which are manifested in the environment such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions”.

Human beings and their well-being are a central consideration in assessing the environment. Any likely change in environmental conditions, which will impact the quality of life for human beings, must therefore be comprehensively addressed.

Impacts upon humans may derive from any number of the environmental parameters discussed throughout this EIAR. Ultimately, all development impacts upon the environment to some extent and upon human beings and their quality of life. Direct effects relate to matters such as water and air quality, noise, and landscape change. Indirect effects relate to matters such as flora and fauna.

This section of the Environmental Impact Assessment Report focuses upon the human environment proximate to the proposed development in terms of population profile; employment; land use and social patterns; human health and traffic congestion.

Impact on humans arising from other issues such as natural hazards, soils, geology and hydrogeology, water, air quality, noise, vibration traffic and landscape are assessed in the following EIAR chapters:

- Chapter 6 – Land, Soils, Geology and Hydrogeology
- Chapter 7- Hydrology
- Chapter 10 – Noise and Vibration
- Chapter 11 – Landscape Visual Impact Assessment
- Chapter 13 – Traffic and Transport

5.2 Methodology

In accordance with the EPA Guidelines (EPA 2022) this chapter has considered that:

“In an EIAR, the assessment of impacts on population and human health should refer to the assessment of those factors under which human health effects might occur, as addressed elsewhere in the EIAR e.g under the environmental factors of air, water, soil, etc. The Advice Notes provide further discussion of how this can be addressed”.

As per Article 3 of the Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU:

1. The environmental impact shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:
 - i. Population and Human Health
 - ii. Biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC
 - iii. Land, soil, water, air and climate
 - iv. Material assets, cultural heritage, and the landscape
 - v. The interactions referred to in the factors referred to in points (i) to iv)

2. The effects referred to in paragraph 1 on the factors set out therein include the expected effects deriving from the vulnerability of the project to risks of major accidents and/ or disasters that are relevant to the project concerned.

The 2017 publication by the European Commission (EC), *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*, considered that:

Human Health is a very broad factor that would be highly Project dependant. The notion of human health should be considered in the context of other factors in Article 3(1) of the EIA directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the project, effects caused by changes in disease vectors caused by the project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise and pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a project in relation to workers on the Project and surrounding population’.

This chapter follows these EC guidelines and will examine the health effects relevant to the proposed development as they relate to a relevant, defined study area. The effects of the proposed development on the population and human health are analysed in compliance with the requirements of the EPA guidelines.

5.3 Assessment of Significance & Sensitivity

The assessment of significance is a professional appraisal based on the sensitivity of the receptor and the magnitude of impact of any potential effect. The sensitivity of individuals in an area will vary on a case-by-case basis and must be assessed accordingly. It would be unrepresentative to classify an entire population as ‘low sensitivity’ so for this assessment it is assumed that the receiving population is of a consistent high sensitivity to effectively properly assess the impact of the development on human health and population, using a precautionary principle.

5.3 Population

5.3.1 Receiving Environment

This section describes the receiving environment in terms of existing context, character, significance, and sensitivity which forms the baseline for further assessment.

Population Trends for the Local Area

The Central Statistics Office (CSO) provides data on population and socio-economic aspects of the population at a State, County and Electoral District level. The subject site falls with the ‘Moynard’ Electoral Division (ED) and within the administrative area of Westmeath County Council. The most recent census of population was undertaken by the CSO in 2016.

It was considered that a catchment area of 4km was appropriate to encapsulate the relevant population surrounding the site. This radius was decided due to the distance of the subject site to Lough Ree to the North, and the rural areas featuring small populations to the west, south and east outside the immediate environs on Athlone Town.

Demographic Trends for the defined catchment areas were reviewed based on the Census 2016 data for the Dublin County area and Small Area Population Statistics (SAPs) for the District Electoral Divisions (DEDs) of Moynard (Subject site location), Glassan, Athlone East Rural, Athlone East Urban and Athlone West Urban.

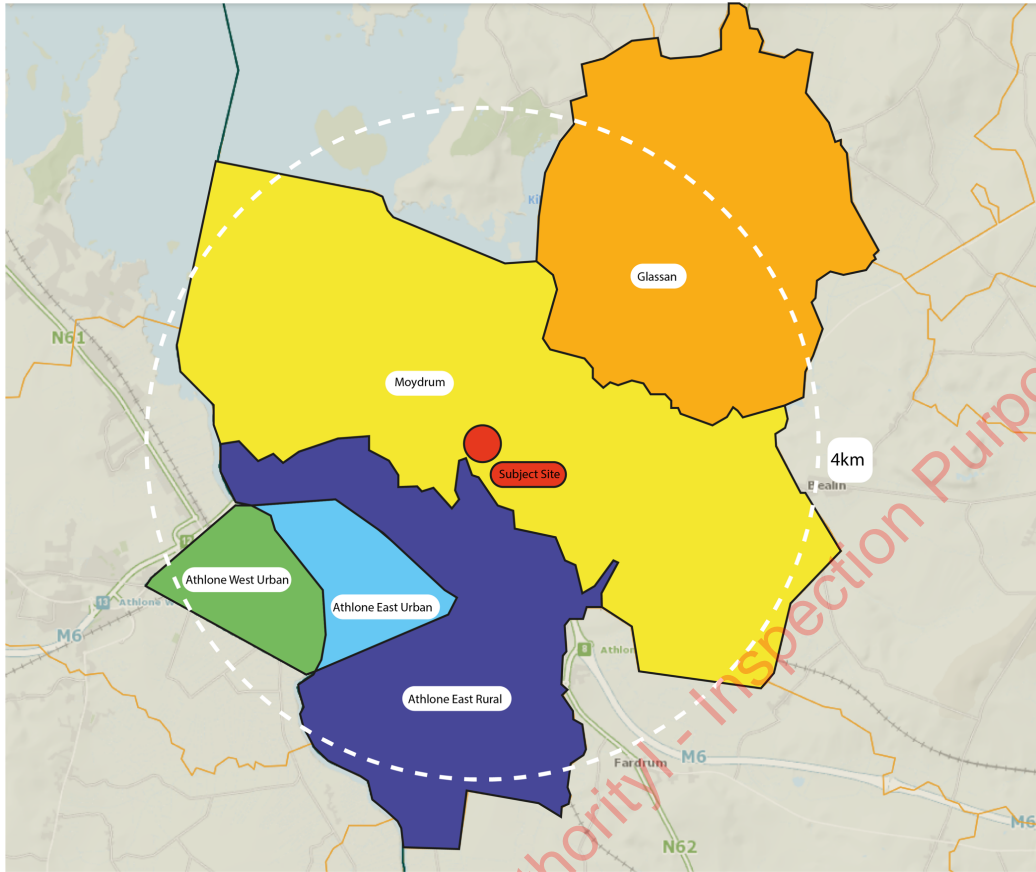


Figure 5.1 - Electoral Division map of subject area

CSO population statistics for the electoral division in which the subject site is located and other surrounding electoral divisions relevant to the subject site are summarised below. The population of the subject electoral division and surrounding electoral divisions in 2011 and 2016, the actual change in population and percentage change in population are highlighted in table 5.1 below.

DED	2011	2016	Actual Change	% Change
Moydrum	2794	2922	128	4.6%
Glassan	840	846	6	0.7%
Athlone East Rural	7161	7560	399	5.6%
Athlone East Urban	4131	4382	251	6.1%
Athlone West Urban	3165	3260	95	3%

Table 5.1 - Population evolution in both Electoral District Areas (Source: CSO 2016)

The official census data for 2016 indicates a 4.6% (128 persons) increase in the Electoral Division of Moydrum, in which the subject site is located, between the years of 2011 and 2016.

The overall change in population in the examined Electoral Divisions of Moydrum, Glassan, Athlone East Rural, Athlone East Urban and Athlone West Urban between the years of 2011 and 2016 was an increase of 879 persons or 20%.

With a consistently rising demand for housing in Westmeath County, population figures are envisaged to increase across most DEDs within the county in the next decade.

Appendix 1 of the Westmeath County Development Plan 2021-2027 outlines that an increase of population of 10,483 is predicted for County Westmeath between the years of 2021 and 2027.

Furthermore, although the 2016 Census of Population shows that the State population has only experienced a growth rate of 3.7 per cent from 2011 to 2016, these results are indicative of the past global financial crisis and the resulting trend towards migration.

As the economy recovers, a reversal in this trend is anticipated. There remains strong population growth and housing demand throughout the country. The examined Electoral Divisions within Athlone have consistently shown population growth and housing demand.

Age Profile

A review of the Moydrum, Glassan, Athlone East Urban, Athlone East Rural and Athlone West Urban age profiles confirmed that communities in the electoral division in which the subject site is located and surrounding electoral divisions have an age profile that is generally weighted towards a younger population group. This can be attributed to the growing trend of new residential development in the Athlone area which gives younger people an opportunity to purchase a home at lower prices than Ireland's larger cities, and the location of the Technological University of the Shannon within Athlone, which attracts younger people studying to the town. The young population located in Athlone has made it a key growth centre for continued residential development given its central location in Ireland and benefit of having a university.

The most prevalent age profiles for each of the electoral divisions examined as part of this population review is outlined as follows:

- Moydrum – 30 – 39
- Glassan – 50 – 74
- Athlone East Rural – 20-39
- Athlone East Urban – 20-39
- Athlone West Urban – 20-39

It is noted that the Glassan electoral division represents an outlier in terms of the general age profile prevalent in the electoral divisions surrounding the subject site. This can be attributed to its more rural location outside of Athlone, low total population figure, and prevalence of single dwellings. It is noted that it is likely that young people from the Glassan area would move into Athlone Town or other nearby larger settlements for convenience purposes (proximity to services, schools, colleges, career opportunities etc).

Population pyramids representing the percentage of population per age bracket as per the 2016 Census are presented below for the convenience of the Planning Authority:

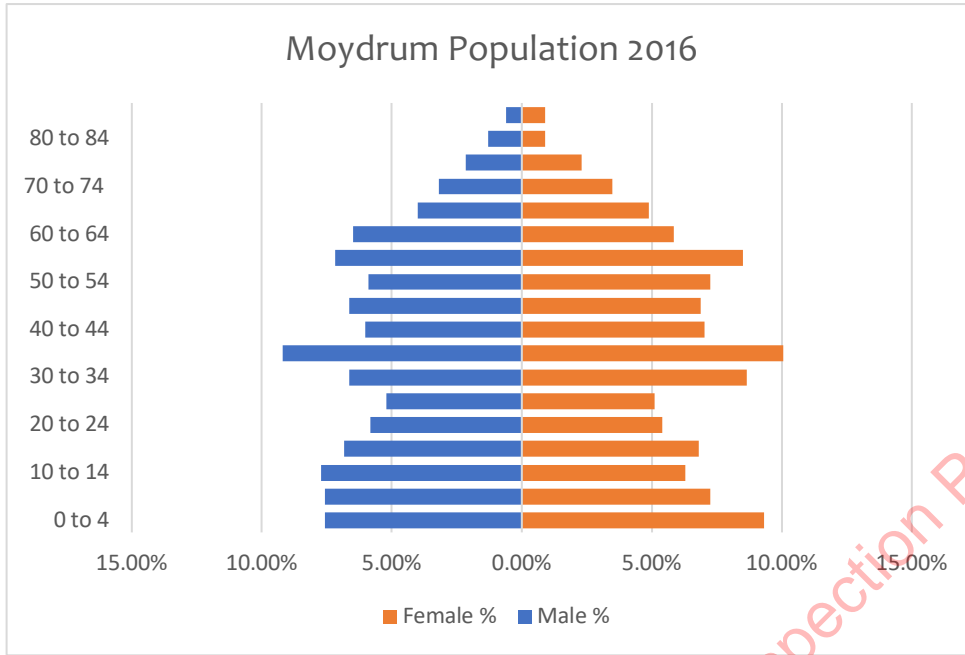


Figure 5.2 - Electoral Division 'Moydrum' population profile by sex and age group (Source: CSO 2016)

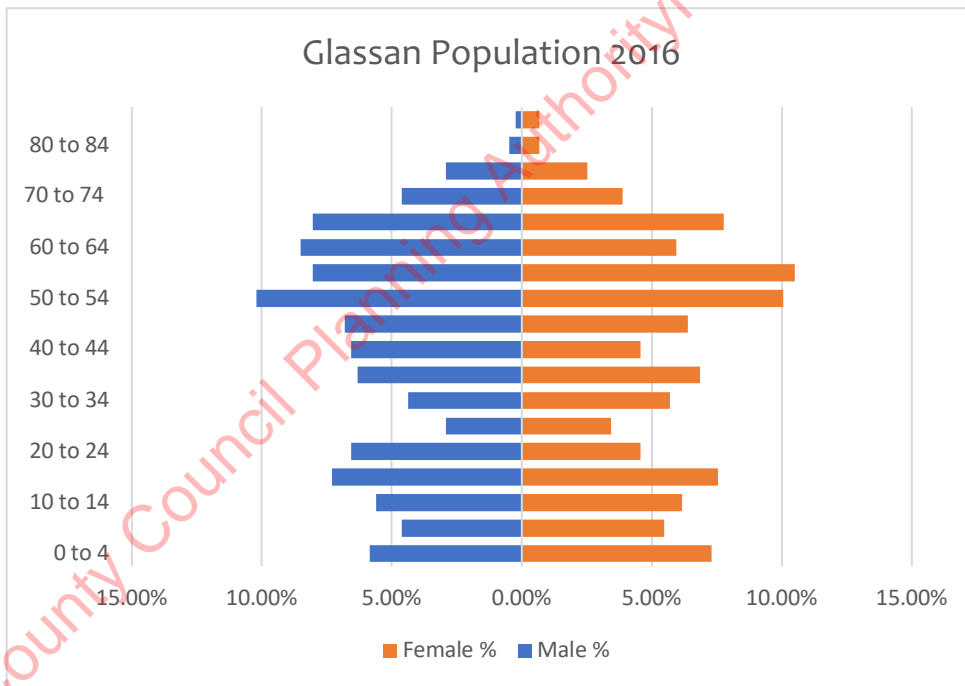


Figure 5.3 - Electoral Division 'Glassan' population profile by sex and age group (Source: CSO 2016)

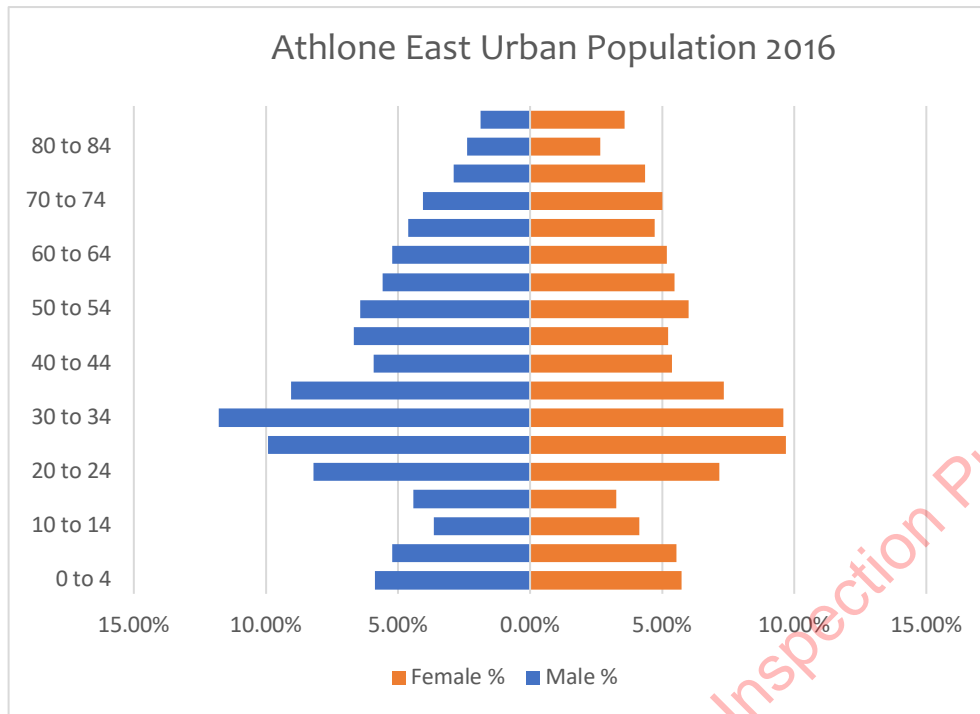


Figure 5.4 - Electoral Division 'Athlone East Urban' population profile by sex and age group (Source: CSO 2016)

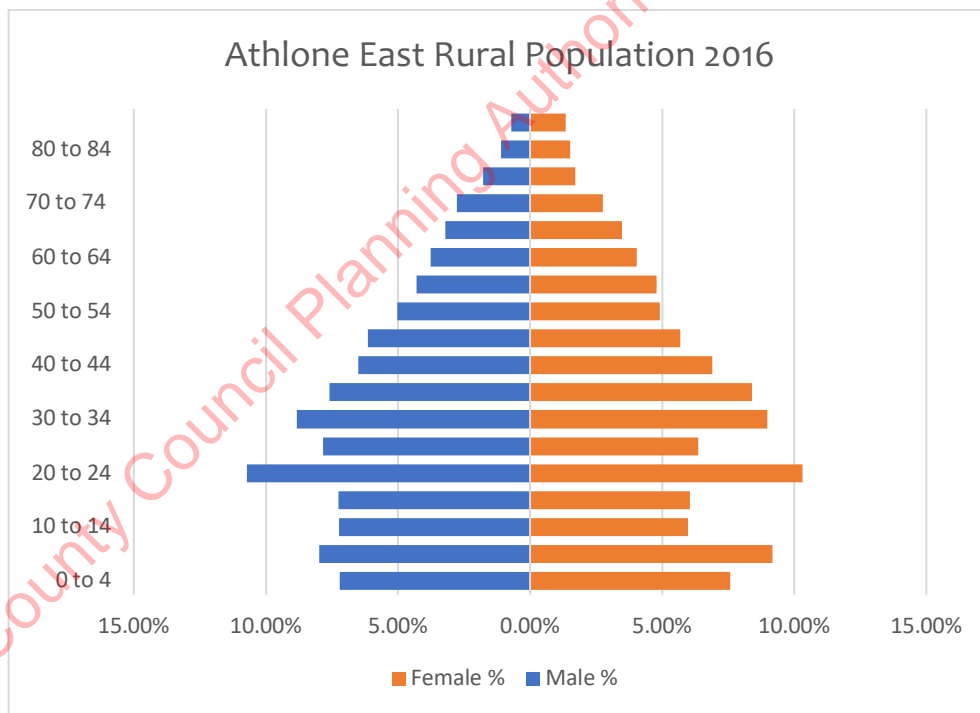


Figure 5.5- Electoral Division 'Athlone East Urban' population profile by sex and age group (Source: CSO 2016)

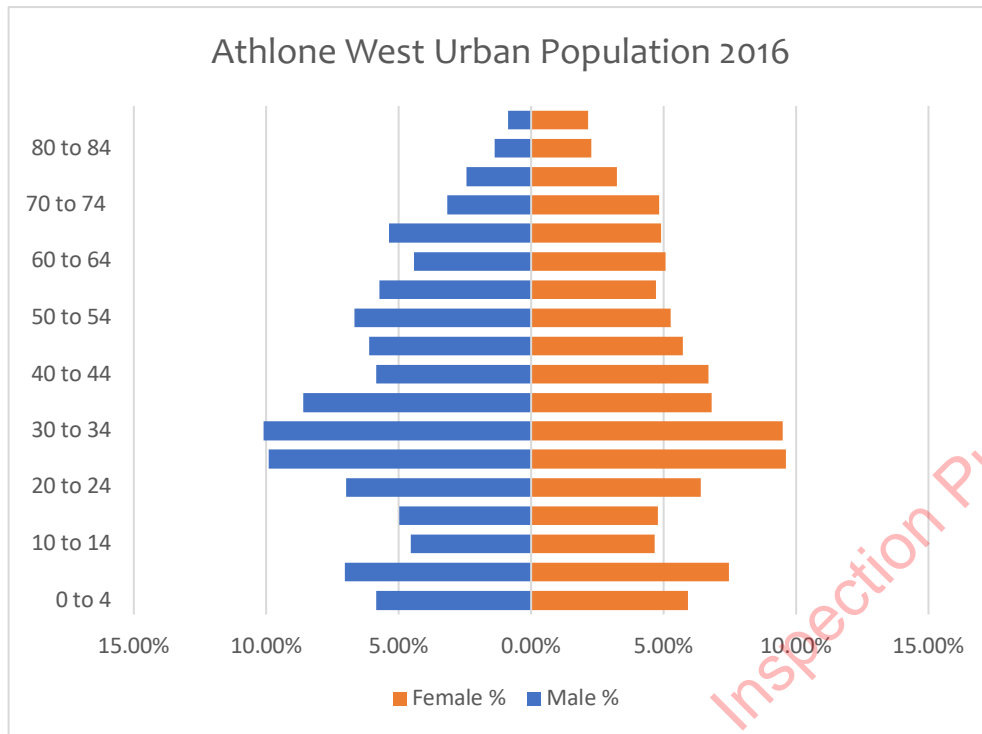


Figure 5.6 - Electoral Division 'Athlone East Urban' population profile by sex and age group (Source: CSO 2016)

Accommodation – Household Size

In accordance with official CSO 2016 figures, the average household size in Ireland is 2.75, which increased from 2.73 in 2011. From examining the 5-no. surrounding electoral divisions to the subject site, it is concluded that the average household size in the areas surrounding the subject lands is 2.68, falling slightly below the national average.

The predominant household size in the Moydrum area, where the subject site is located, was 2 persons, making up 28% of the total households in the electoral division.

The predominant household size in the Glassan and Athlone East Rural electoral divisions was also 2 persons, while the predominant household size in the Athlone East Urban and Athlone West Urban electoral divisions was found to be 3 person.

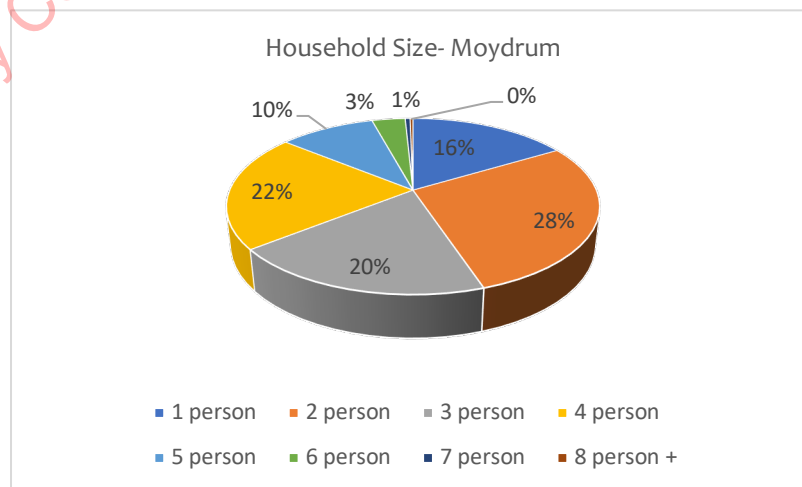


Figure 11 - Percentages of the different household sizes in the 'Moydrum' ED CSO 2016

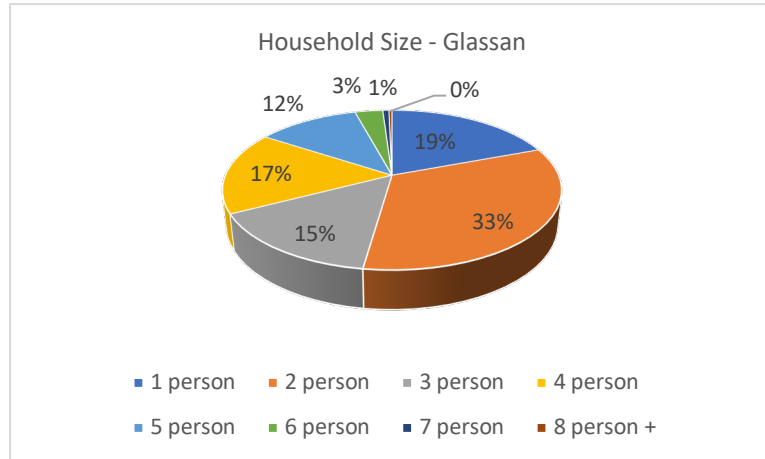


Figure 12 - Percentages of the different household sizes in the 'Glassan' ED CSO 2016

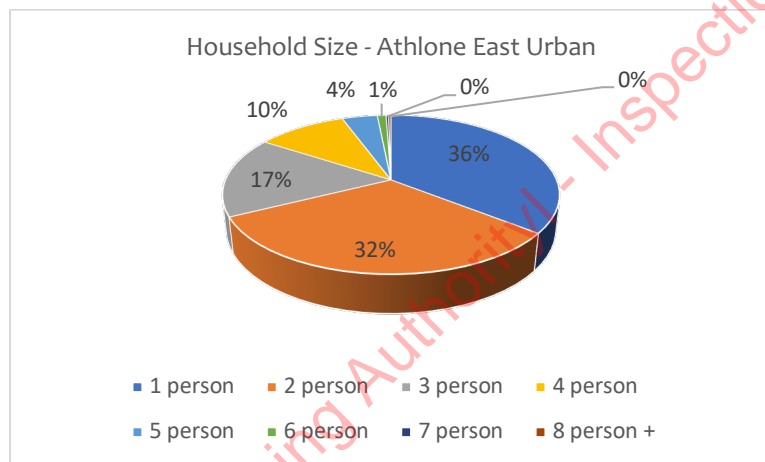


Figure 13 - Percentages of the different household sizes in the 'Athlone East Urban' ED CSO 2016

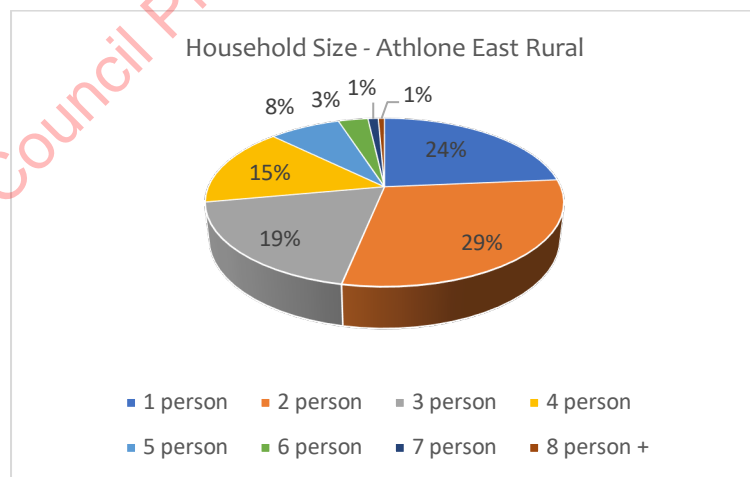


Figure 14 - Percentages of the different household sizes in the 'Athlone East Rural' ED CSO 2016

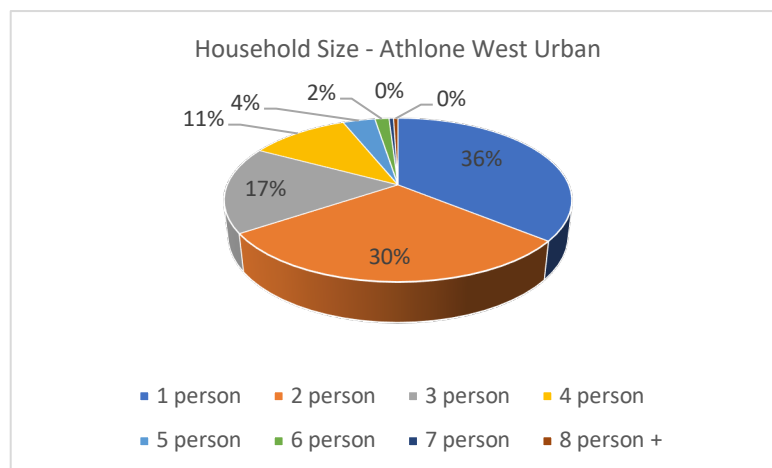


Figure 15 - Percentages of the different household sizes in the 'Athlone West Urban' ED CSO 2016

From the above analysis of Household Size across the Moydrum, Glassan, Athlone East Urban, Athlone East Rural and Athlone West Urban electoral divisions, it is noted that the largest cohort of people per household across the 5 examined electoral divisions is 2, making up 30.4% of the total households. It is noted that single person and three person households are also prevalent within the electoral divisions examined.

From the above data, the average number of people per household across each of the examined electoral divisions was calculated by dividing the total population of each electoral division by the total number of occupied households in each. That withstanding, the average number of people per household across the electoral divisions was calculated as follows:

- Moydrum: **2.86**
- Glassan: **2.98**
- Athlone East Urban: **2.42**
- Athlone East Rural: **2.83**
- Athlone East Urban: **2.33**

The above average household sizes per electoral divisions can be calculated in combination to present an average household size across the 5 no. examined electoral divisions of **2.68**.

Whilst we acknowledge the above figures, which clearly state that nearly one third of the households in the examined electoral divisions surrounding the subject site comprises of 2 person households, we will apply the average household size of 2.68 across the 5-no. examined electoral divisions within this report as an average household size projected for the subject proposal.

It can therefore be predicted that the proposed development of 70 no. units is expected to generate a population of **c. 188** no. persons based on these numbers.

It is noted that the subject development represents phase 3 of an overall development on the Cornamaddy lands within the applicant's landholding. The subject development will consist of an amendment to the previously granted permission within the site redline boundary granted under WMCC Reg Ref. 14/7103 for 125 no. units. 38 no. units are being replaced with 70 no. units as per the subject application, meaning that 157 no. units will be provided on the southern portion of the applicants landholding at Cornamaddy.

The northern portion of the applicant's landholding also has the benefit of a permission granted under WMCC Ref. 22/253 for 75 no. units in the northeastern portion of the

applicants lands. It is envisaged that a further phase of development will be lodged in the future for c.170 units which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units' total.

For an overall development of c. 400 units on the Cornamaddy lands it is envisioned that a population of c. 1072 will be generated subject to the construction of extant permissions and the lodgement of a future phase 4 application to consolidate the overall development on the Cornamaddy lands.

The key points to note are as follows:

- The total number of persons in the Moydrum, Glassan, Athlone East Urban, Athlone East Rural and Athlone West Urban is 18970 as per the CSO Census 2016.
- The average household size across the 5 examined electoral divisions is 2.68.
- Nearly a third of the local community comprises 2 - person households
- It is expected that the subject proposal of 70 no. units will generate a population of c. 188 no. persons.
- It is predicted that the subject proposal in combination with extant permissions on the applicant's landholding and future planned lodgments could present an overall unit total of c. 400 on the Cornamaddy lands. For a future overall development of c. 400 units the expected population generated would be c. 1072 persons.

We confirm that the above statistics area applied throughout this chapter to allow for conclusions be drawn.

5.3.2 Characteristics of the Proposal

The proposed development will consist of the construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (78 sq.m), 60 no. 3 bed semi-detached (96-116 sq.m) and 6 no. 4 bed semidetached houses (147 sq.m) with associated private gardens. The subject development will consist of an amendment to the previously granted permission within the site redline boundary granted under WMCC Reg Ref. 14/7103 for 125 no. units. 38 no. units are being replaced with 70 no. units as per the subject application, meaning that 157 no. units will be provided on the southern portion of the applicants landholding at Cornamaddy.

The northern portion of the applicant's landholding also has the benefit of a permission granted under WMCC Ref. 22/253 for 75 no. units in the northeastern portion of the applicants lands. It is envisaged that a further phase of development will be lodged in the future for c.170 units which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units' total.

5.3.3 Potential Impact of the Proposal

Construction Phase

The construction phase has no potential impact on the existing population of the area, given that it will be a finite process and it is expected that the workforce will travel from its existing place of residence rather than staying in temporary accommodation in the area. The impact on the local community is considered elsewhere in Section 5.5 of this Environmental Impact Assessment Report under 'Land Use and Social Patterns'.

Operational Phase

The now proposed development of c. 70 no. units is predicted to increase the existing population by c. 188 no. people. The overall development on the lands of c. 400 units is expected to increase the existing population by c. 1072 no. people.

It is expected that the development will have a permanent positive impact on the demography and economic future of the area, and its ability to support related infrastructure and services.

Do-Nothing Impact

It is anticipated that the ‘do-nothing’ approach would result in the stagnation of development in the area. The overall development lands at Cornamaddy have been earmarked for residential development for circa 20 years and are currently zoned for the provision of new residential development and open space provision as per the Athlone Town Development Plan 2014-2020, which offers the most recent statutory zoning context for the site.

It is considered that the that planned development of residential dwellings and open space at Cornamaddy is of paramount importance, thus, to adopt the ‘do-nothing’ approach would adversely affect these objectives.

5.3.4 Remedial and Reductive Measures

Construction Phase

The construction phase of the proposed development is unlikely to generate any significant adverse impact on the demography of the area and is more likely to have a positive economic impact as any construction workers on site will likely be in Athlone on a temporary basis, spend money within the local community and then leave Athlone when the construction phase has been completed. As such, no remedial or reductive measures are considered necessary. Any impacts on the community in the area are considered elsewhere in Section 5.5 of this Environmental Impact Assessment Report.

Operational Phase

No remedial or reductive measures are considered necessary during the operational phase. The proposed development will provide additional housing in a sustainable manner.

5.3.5 Predicted Impact of the Proposal

Construction Phase

It is not envisaged that any increase in population will occur during the construction phase. The proposed development is likely to generate additional income for existing shops and services.

Operational Phase

As outlined previously, the proposed development will result in an increase in population of c. 188 no. persons and should the entirety of the lands be developed it is considered that a population increase of c. 1072 no. persons will occur. This represents a beneficial impact for the area within the examined electoral districts and is entirely compatible with the residential policies and objectives of Westmeath County Council as outlined in the Athlone Town Development Plan 2014-2020.

Worst Case Impact

The failure of the proposed development to proceed will not lead to any adverse impacts on the existing population of the area. However, it would impede the planned growth in the area per the relevant statutory national and local planning documents.

5.4 Employment and Land Use

5.4.1 Receiving Environment

Employment

Based on the International Labour Organization (ILO) criteria, it is observed that there were 2,506,000 people aged 15-89 years in employment in Ireland in Q4 2021, giving an employment rate of 73.0% for those aged 15-64.

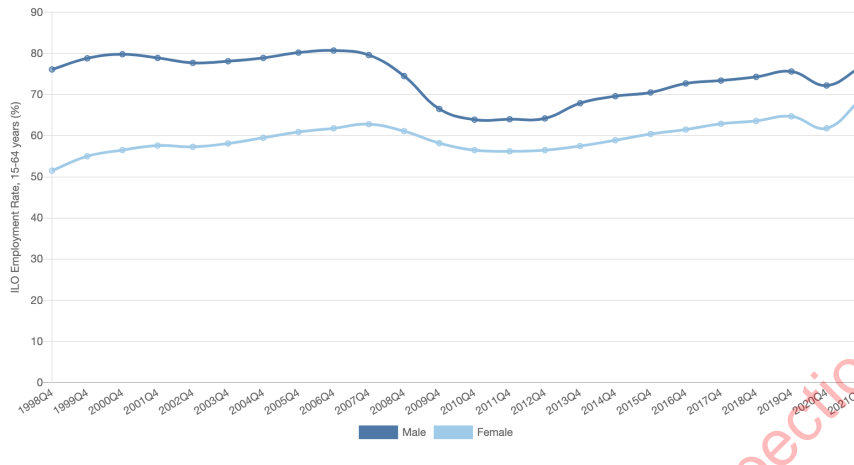


Figure 5.5: Employment rate for those aged 15-64 years by sex, Quarter 4 1998 to Quarter 4 2021

Employment Status

The number of employees increased by 216,500 (+11.2%) in the year ending Q4 2021 to 2,154,500, while the number of self-employed increased by 700 (+0.2%) to 326,500.

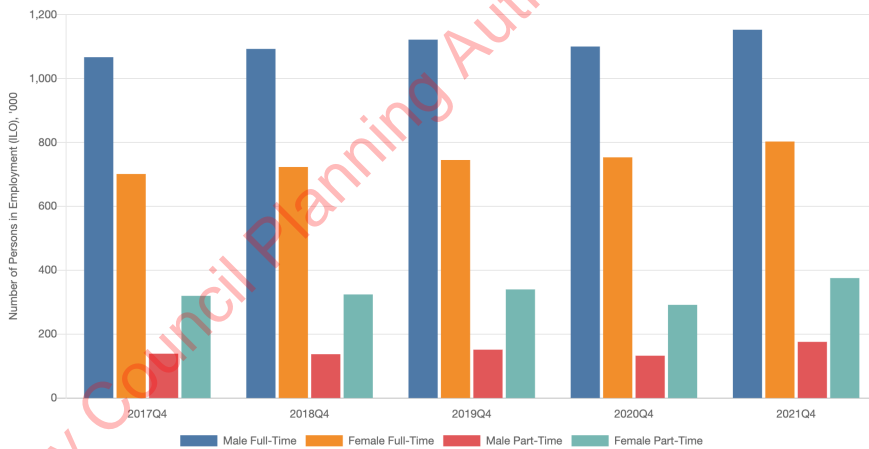


Figure 5.6: Persons aged 15 - 89 years in employment classified by sex and full-time/part-time status, Q4 2017 to Q4 2021

Overall, the employment increased by 229,100 in the year to Q4 2021, with 102,000 (+5.5%) more persons in full-time employment and 127,200 (+30.0%) more persons in part-time employment.

Unemployment

To establish a more balanced picture of the employment situation it is necessary to also examine trends in unemployment in Ireland over a comparable timeframe. The most pertinent figures in relation to unemployment are the Live Register figures, which are published on a national and local level. It should be noted however, that the live register lists those persons who are available for work but not currently employed. In addition, it includes part-time workers; casual workers and those in receipt of unemployment benefit

or assistance. As such, it is not a true indicator of unemployment, but a useful tool by which to measure fluctuations in the local and national employment circumstances.

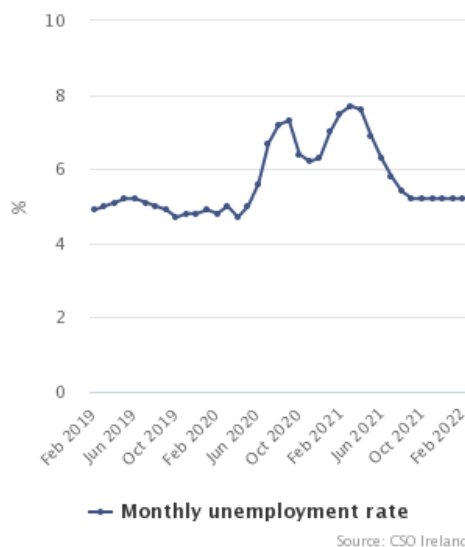


Figure 5.7: Monthly unemployment rate (ILO), (February 2019 – February 2022)

There were 127,400 unemployed persons aged 15-74 years in Q4 2021 based on ILO methodology. In Q4 2021, the unemployment rate was 4.9% for those aged 15-74 years with a rate of 10.2% for those aged 15-24 years; these rates are down from 5.9% and 14.2% respectively in Q4 2020

The COVID-19 Adjusted Measure of Monthly Unemployment published as part of the Monthly Unemployment release for January 2022, was 195,313 for December 2021 (end of Q4 2021); this estimate is an upper bound and adds all those on the Pandemic Unemployment Payment (PUP) to the standard Monthly Unemployment Estimate. The COVID-19 Adjusted Measure of Unemployment increased to 202,027 in January 2022

The associated COVID-19 Adjusted Unemployment Rate increased from 7.4% in December 2021 to 7.8% in January 2022

Employment - Conclusion

In accordance with Development Plan policy, there is an identified need to accommodate future generations within Athlone and the wider Westmeath area with the proper planning and development of new neighbourhoods. It envisages that a certain level of local employment will arise from the increase in population and the associated increase in employment opportunities. It is considered that the proposed development will have an increasingly positive effect on employment in the local community.

Land Use - Existing Retail Provision

A review of the surrounding area confirms that there is an existing convenience retail offering in the area surrounding the site. There are a number of supermarket offerings located within and on the periphery of Athlone Town to the south of the development site as follows:

- Tesco Superstore, Golden Island Shopping Centre
- Supervalu, Ballymahon Road
- Lidl, Dublin Road
- Dunnes Stores, Irishtown Athlone
- Aldi, Golden Island Shopping Centre

In addition to the above, there are a variety of local retail stores located within Athlone, notably a number specialising in Polish and Asian produce, as well as retail offerings such as Costcutter and Marks & Spencer.

Retail Provision – Conclusion

It is concluded that there are sufficient retail facilities in the area to cater for the proposed scheme. There is an array of supermarket and local shops in the vicinity of the proposed development that the future residents of the development will avail of.

5.4.2 Characteristics of the Proposal

The new resident population will provide an increased market for the local shops and services and may result in the creation of employment opportunities to cater for this increased demand for goods and services.

5.4.3 Potential Impact of the Proposal

Construction Phase

As previously noted, the site is zoned for residential and open space uses, thus the proposal is deemed to be an acceptable form of development. Direct and indirect employment will be generated as a result of the development during the construction phase.

Operational Phase

The increase in population that will result from the subject development and the overall development of the Cornamaddy lands has the potential to bring increased job security to existing jobs in the vicinity and will also help to stimulate the local economy by creating an increased demand for services which will lead to job creation.

Do-Nothing Impact

In this instance a ‘do-nothing’ impact would result in the loss of considerable direct and indirect economic and social benefits.

5.4.4 Remedial and Reductive Measures

The proposed development will be entirely beneficial in employment terms, and no remedial or reductive measures are considered necessary.

5.4.5 Predicted Impact of the Proposal

Construction Phase

The proposed development will provide important construction and related employment. In addition to the direct financial and employment benefits of the construction programme itself, it is anticipated that builders’ suppliers and other related services would benefit significantly during the construction period.

Overall, the construction programme of the proposed development will be of significant benefit to the local and wider economy, due to the income and increased expenditure that will result.

Operational Phase

When the residential dwellings of the subject development scheme are inhabited, there will be considerable scope for the contracting and purchasing of local goods, supplies and services in the area. This multiplier effect can be expected to generate and support additional employment and expenditure in the local economy to the benefit of local businesses.

Worst Case Impact

As the proposal would have no profound or irreversible adverse consequences in relation to employment, a ‘worst case’ impact is not applicable in this instance.

5.5 Land Use and Social Patterns

5.5.1 Receiving Environment - Land Use

An analysis of the existing community facilities within the area surrounding the overall development lands at Cornamaddy, Athlone is included within the supporting Community and Social Infrastructure Audit document, which should be read in conjunction with this EIAR.

Educational Facilities Summary

It is noted that there are a number of extant permissions on lands adjacent to the subject development. These permissions are as follows:

- **WMCC Reg Ref. 14/7103** – The construction of 98 no. new dwellings to include 11 no. 4/5 bedroom detached houses, 28 no. 4/5 bed semi-detached houses, 8 no. 3 bedroom detached houses, 34 no. 3 bedroom semi-detached houses, 8 no. 2/3 bedroom terraced houses, 3 no. 2 bedroom houses and 6 no. 2-bedroom bungalow houses. The development to include the provision of all associated site development works including road networks, services, landscaping and boundary treatments at Drumaconn, Cornamaddy, Athlone, Co. Westmeath.
- **WMCC Reg Ref. 17/7224** – The Development of 7 no new dwellings to include 3 no 5-bedroom detached houses and 2 no 4-bedroom detached houses with optional fifth bedroom/study and 2 no 4-bedroom semi-detached houses with optional fifth bedroom/study and all associated site development works including road networks, services, landscaping, and boundary treatments at Drumaconn, Cornamaddy, Athlone, Co. Westmeath.
- **WMCC Reg Ref. 22/253** – Construction of 75 no. residential units comprising: 51 no. 2 storey semi-detached and terraced houses (consisting 4 no. 2 bed houses and 47 no. 3 bed houses, ranging in size from c.78 sq.m – 120 sq.m each), and 24 no. 3 storey apartment/duplex units (consisting 12 no. 2 bed apartments and 12 no. 3 bed duplexes, ranging in size from 84sq.m to 121 sq.m each) at Cornamaddy , Athlone, Co. Westmeath.

It is noted that there will be a primary/secondary place demand arising from the above mentioned permissions and therefore this demand has been accounted for, and calculated as follows:

Number of Units X Average Household Size in Surrounding Electoral Divisions X 20% (percentage of population aged 4-19 in surrounding electoral divisions).

The total schools demand that will arise from these permissions is as follows:

- WMCC Reg Ref. 14/7103 = $98 \times 2.68 = 263$ total population $\times 20\% = 53$ no. children between 4-19.
- WMCC Reg Ref. 17/7224 = $7 \times 2.68 = 19$ total population $\times 20\% = 4$ no. children between 4-19.
- WMCC Reg Ref. 22/253 = $75 \times 2.68 = 201$ total population $\times 20\% = 40$ no. children between 4-19.

These 3 no. extant permissions are therefore predicted to generate a demand for 97 no. school places in primary and secondary schools.

The subject proposal for 70 no. units will generate the following demand for school places for children aged 4-19:

- $70 \times 2.68 = 188$ total population $\times 20\% = 38$ no. children between 4-19.

It is noted that the proposed development will amend the permitted development 14/7103, retaining 87 no. of the permitted units and providing 70 no. new additional units. Therefore the total schools places demand arising from the proposed and permitted developments on the overall lands is as follows:

- $239 \times 2.68 = 641$ total population $\times 20\% = 128$ no. children between 4-19.

It is noted that a future stage of development will be lodged on the applicants landholding at Cornamaddy, increasing the number of units on the Cornamaddy Lands to c. 400. If the overall development total on the lands is c. 400 units subject to future applications, the schools places demand for children aged 4-19 will be as follows:

- $400 \times 2.68 = 1072$ total population $\times 20\% = 214$ no. children between 4-19.

Given that the ages of children in the surrounding ED's are as follows:

- 41% of children are aged 4-12
- 59% of children are aged 13 -19

It is predicted that the demand for school places for primary and secondary schools arising from the proposed development in combination with the extant permissions WMCC refs 14/7103, 17/7224 and 22/253 are as follows:

- Primary School: 52 no. spaces
- Secondary School: 76 no. spaces

Should a future stage of development be lodged on the applicants landholding at Cornamaddy, increasing the number of units on the Cornamaddy Lands to c. 400. the schools places will be required as follows:

- Primary School: 88 no. spaces
- Secondary School: 126 no. spaces

It is considered that there is potential for educational/ community and institutional zoned lands to be expanded to facilitate the provision of future school facilities within a future Athlone Town Plan, as the current plan was originally intended to govern the development of Athlone and its environs from 2014-2020. A new plan should cater for the needs of all age groups in a growing population at Athlone and its environs.

Childcare Facilities

The proposed application includes for the retention of the childcare permitted on the application lands granted under WMCC Ref. 147103. It is noted that the applicant currently has an application lodged live to Westmeath County Council under Ref. 22340 for a childcare facility. It is intended that the childcare demand for the overall development site will be catered for by the creche application live at Further Information Stage with Westmeath County Council (Ref. 22/340).

It is noted that the following facilities are also located within the vicinity of the overall development lands:

- Busy Kids Creche
- Chatterboxes Childcare
- Chestnut Hill Montessori
- Clonbrusk Childcare Centre
- Clonros
- Glassons Pre School
- Grovelands Childcare Limited
- Jolly Mariner Childcare
- Little Acorns Montessori
- Little Scholars
- Na Fea Montessori Pre School and Homework Club
- Realta Gael Montessori School
- Regina Bushell T/A Grovelands Childcare
- Sarsfield Pre School
- Scallywags Childcare Centre
- Treasure Island Early Years Services

It is apparent from our review of childcare facilities, that there is an appropriate provision within the surrounding area to serve the proposed development. It is considered that the crèche within the applicant's landholding currently at Further Information Stage (Ref. 22/340) will cater for any demand for childcare that will arise from development on the subject lands.

Further Education

A review of the surrounding area has confirmed the following provision of facilities:

Further and adult education centres

- Technological University of the Shannon: Midlands Midwest Athlone Campus

Further Education Summary

There is one third level institute within 3km of the subject site. TUS: Midlands Midwest Athlone Campus is Irelands third Technological University, forming after a merge of the Limerick Institute of Technology and Athlone Institute of Technology and beginning operations in 2021.

The location of Athlone on the Galway to Dublin rail line means that 3rd level educational facilities in Dublin and Galway are easily accessible if commuting.

It is apparent from our review of further education facilities, that there is an appropriate provision within the surrounding area to serve the proposed development. It is our considered view that there is no requirement arising from the current proposal for the provision of additional facilities within the immediate context.

We trust that this will be satisfactory to the Planning Authority.

Retail Facilities

A review of the surrounding area has confirmed the following provision of retail:

- Arcadia Retail Park
- Athlone Town Centre
- Golden Island Shopping Centre

- Athlone Town Main Street

Retail Summary

There is a strong offering of retail outlets within 3Km subject site.

There are 3 no. shopping centres located within 3km of the proposed development (Arcadia Retail Park, Athlone Town Centre, and Golden Island Shopping Centre) that offer convenience stores, clothing and speciality stores as well as services such as hairdressers, barbers and beauty salons. This is coupled with the main street retail offering through the centre of Athlone Town Main Street which also provides a similar commercial offering to the centres listed above.

It is considered that from the above retail facilities listed there is an appropriate provision of retail facilities within the surrounding area to provide for the proposed development. It is our considered view that there is no requirement arising from the current proposal for the provision of additional facilities within the immediate context.

Community Facilities

A review of the surrounding area has confirmed the following provision of facilities:

Youth Clubs

- Gateway Youth Project
- Athlone Youth Resource Centre
- Youth Work Ireland Midlands
- St Marys Hall (Temporarily Closed)

Libraries

- Athlone Library
- AIT Library

Places of Worship

- Kingdom of Jehovahs Witnesses
- Corpus Christie Catholic Church
- River of Life Athlone Le Ceile Catholic Church
- Our Lady Queen of Peace Church
- Cherith Athlone Baptist Church
- Athlone Methodist Church
- Church of Saints Peter and Paul
- Redemption Baptist Church

Community Centres

- Brawney Community Centre
- St Kierans Community Centre
- Athlone Community Training Centre

Theatre

- Dean Crowe Theatre

- Athlone Little Theatre
- Tonnta Street Theatre

Community and Social Facilities Summary

It is apparent from our review of community and social facilities, that there is an appropriate provision within the surrounding area to serve the proposed development. It is our considered view that there is no requirement arising from the current proposal for the provision of additional facilities within the immediate context.

Sports Clubs

A review of the surrounding area has confirmed the following provision of facilities:

Gyms

- Athlone Regional Sports Centre
- JG Elite Gym
- AIT Sport
- Sheraton Fitness Athlone
- Smart Fitness Athlone
- Cross Fit Croi Athlone

Outdoor Clubs

- Southern Gaels GAA
- AC Celtic FC
- Willow Park FC
- St Mels Football Club
- Athlone Town FC
- Athlone RFC
- Buccaneers Rugby Football Club
- Custome Pitch and Putt
- Guinness Rugby Club

Indoor Clubs

- Hiver Muay Thai
- Na Fianna Martial Arts and Fitness Centre
- Athlone County Boxing Board

Sports Centres

- Athlone Regional Sports Centre
- Westmeath Golf Academy Ireland

Sports Club Summary

It is apparent from our review of the sports clubs, that there is an appropriate provision within the surrounding area to serve the proposed development. It is our considered view that there is no requirement arising from the current proposal for the provision of additional facilities within the immediate context.

Public Parks

A review of the surrounding area has confirmed the following provision of facilities:

Parks

- Garrycastle Park
- Burgess Pa
- Keane Park

Parks Summary

It is apparent from our review of parks, that there is an appropriate provision within the surrounding area to serve the proposed development. It is our considered view that there is no requirement arising from the current proposal for the provision of additional facilities within the immediate context. The Subject proposal also provides a large quantity of new landscaped parkland on appropriately zoned lands.

Health Care

A review of the surrounding area has confirmed the following provision of facilities:

Medical Centres

- Newtown Medical Centre
- Ceile Medical
- Renew Health
- Little Court Medical Centre
- Medel Healthcare
- Clonbrusk Primary Care Centre

Pharmacy

- Bretts Allcare Pharmacy
- Pure Pharmacy
- Cooneys Pharmacy
- McGorisks Pharmacy Clonbrusk
- Whytes Pharmacy
- Boots
- McSharrys Pharmacy
- Concannons Total Health Pharmacy
- Mulhollands

Health Care Summary

It is apparent from our review of health care facilities, that there is an appropriate provision within the surrounding area to serve the proposed development

It is our considered view that there is no requirement arising from the current proposal for the provision of additional facilities within the immediate context.

Nursing Homes

- Stella Maris Nursing Home

- Retreat Nursing Home
- Sonas Nursing Home Athlone

It is apparent from our review of Nursing homes within 3km of the Subject site that there is an appropriate provision within the surrounding area to serve the proposed development. It is our considered view that there is no requirement arising from the current proposal for the provision of additional facilities within the immediate context.

5.5.2 Characteristics of the Proposal

The subject development represents phase 3 of an overall development on the Cornamaddy lands within the applicant's landholding. The subject development will consist of an amendment to the previously granted permission within the site redline boundary granted under WMCC Reg Ref. 14/7103 for 125 no. units. 38 no. units are being replaced with 70 no. units as per the subject application, meaning that 157 no. units will be provided on the southern portion of the applicants landholding at Cornamaddy.

The northern portion of the applicant's landholding also has the benefit of a permission granted under WMCC Ref. 22/253 for 75 no. units in the northeastern portion of the applicants lands. It is envisaged that a further phase of development will be lodged in the future for c.170 units which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units' total.

5.5.3 Potential Impact of the Proposal

Construction Phase

The scale of the development will inevitably lead to noticeable impacts during the construction phase. These can largely be summarized as:

- Temporary increase in vehicular traffic
- Temporary increase in noise; dirt; and dust generation
- Temporary increase in employment opportunities

It is expected that short-term adverse impacts will be experienced mainly by the resident and working populations and to a lesser extent by the visiting/tourist community. The adverse impacts being considered here would generally be of a short-term nuisance nature and as such would not affect quality of life for existing residents in the long term.

Operational Phase

A proposal of this nature at the subject site would have the following potential impacts during its operational phase:

- Increase the population of the area
- Increase demand for local resources
- Increase support and demand for local businesses and services
- Increase level of local traffic
- Change the character and appearance of the subject site
- Increase critical mass capable of supporting increased public transport options

The existing and future community would experience these impacts in several ways. The growth in population of the neighbourhood may exert pressure on existing residential facilities ranging from public service facilities, community and commercial uses and schools. The existing local business community would be expected to receive increased patronage.

The community may experience a change in mobility consequent to increased congestion of the road network or actual physical development.

An alteration to the actual physical environment of the neighbourhood may affect the spatial perceptions of the community living in this area. However, it should also be noted that the increased population resultant from the proposed development will help underpin the viability of existing community, social and recreational facilities as the existing receiving community ages. The proposed development will provide new community, thus adding to the vitality of the existing community.

An increase in the residential and working population would ultimately increase the critical mass of the area and therefore provide a significant support base for the introduction of public transport systems over the longer term.

Do-Nothing Impact

A do-nothing scenario in this case would result in the perceptions of the community remaining unchanged.

5.5.4 Remedial and Reductive Measures

Construction Phase

Possible adverse impacts arising from the construction phase will be mitigated by various strategies. Dust and dirt will be minimised by wheel washing of heavy vehicles and dust will be managed by spraying stockpiles when conditions are dry. It is usual to restrict construction-working hours, including construction traffic, to minimise the impact on nearby noise sensitive locations. The community will be unavoidably aware of the construction phase while it is in progress, but it is expected that any inconvenience will be minimised by the standard building controls.

Operational Phase

The population increase arising from the subject proposal accords with the zoning of the site, the objectives of the Athlone Town Development Plan 2014-2020 and the relevant local and national statutory planning and guideline documents. Furthermore, it will add to the sustainability of local businesses and services. As such, no remedial measures are required.

5.5.5 Predicted Impact of the Proposal

Construction Phase

It is likely that any impacts during the construction phase of the subject development proposal will be temporary, mainly affecting the residential community and to a lesser extent, the working and visiting communities of the area. However, with due regard for the remedial and reductive measures proposed during the construction period, the impact of the proposed development on communities in the area will not be significant and any impact will only be short term.

Operational Phase

An increase in demand for local goods and services is likely to occur as a result of the development of residential dwellings. It is expected that the character of the local area would change, resulting in the creation a new vibrant neighbourhood, contributing to the Athlone Town living environment.

Worst Case Impact

The subject proposal will not produce any unacceptable, or irreversible changes in the local community. A worst-case scenario is thus not applicable in this instance.

5.6 Health and Safety

Construction Phase

Dust generated during the construction phase of the project will potentially impact the air quality within the immediate surrounds of the subject site. The most significant impacts are associated with excavation and construction traffic, both of which are dependent upon weather conditions.

A project-specific 'Construction and Environmental Management Plan' (CEMP) will be established and maintained by the contractor. The CEMP will also include a Waste Management Plan, prepared in accordance with the Department of Environment, Community and Local Government guidelines.

No lasting impacts are expected, and temporary impacts will be effectively managed through mitigation measures, in accordance with the CEMP, which will include a specific Dust Minimisation Plan.

Operational Phase

As the proposed development includes part construction of the envisaged Distributor Road through the lands, a significant human asset, upon completion there will be significant improvements to traffic and access conditions to the North of Athlone. The full completion of this road will be subject to a separate future planning application. In addition to the above, the proposal will provide additional material assets, including SuDS water infrastructure.

5.7 Traffic Congestion

Construction Phase

The residual impacts of the construction phase are a negative temporary impact upon the road network. It is envisaged that a construction management plan be put in place between the contractor and Westmeath County Council prior to work commencing.

This will assist with ensuring construction vehicles do not impact on the morning and evening peak periods on the local road network. The residual impacts of the operational phase on traffic will result in a negligible impact upon the surrounding road network. The development flows will not have a material impact upon the operation of the nearby junctions.

Operational Phase

New pedestrian and cycle infrastructure is proposed within the development to promote sustainable travel to and from the site.

5.8 Interactions

A comprehensive analysis of all identified inter-related potential likely and significant impacts are addressed in specific, subject-based chapters within this EIAR. Overall, the comprehensive environmental assessments undertaken show that the proposed development will not result in any significant adverse effects upon the environment. Mitigation measures are proposed to avoid, remedy, or reduce identified impacts where necessary.

5.9 Monitoring

Measures to avoid negative impacts on population and human health are largely integrated into the overall design of the proposed development. Compliance with the design and layout of the proposal applied for will be a condition of the development if granted. Monitoring will be managed via the Building Regulations certification process and by the specific conditions outlined in any grant of permission. Monitoring for

compliance with health and safety requirements will be undertaken by the project supervisor for the construction process.

Westmeath County Council Planning Authority - Inspection Purposes Only

6 LAND SOILS AND GEOLOGY

6.1 Introduction

This Chapter of the Environmental Impact Assessment Report (EIAR) provides a description of the land, soils and geology within and immediately surrounding the Proposed Development Site, an assessment of the potential impacts of the Proposed Development on land, soils and geology and sets out any required mitigation measures where appropriate.

The principal objectives of this chapter are to identify:

- Land, soils and geological characteristics of the receiving environment at the Proposed Development Site.
- Potential impacts that the Proposed Development may have on land, soils and geology including “worst case” scenario assessment.
- Potential constraints that the environmental attributes may place on the Proposed Development.
- Required mitigation measures which may be necessary to minimise any adverse impacts related to the Proposed Development; and

6.1.1 Quality Assurance and Competence

This chapter of the EIAR was written by Sam Marchant MSc., BSc, who is a Hydrogeologist with Enviroguide Consulting. The chapter was reviewed by Claire Clifford BSc., MSc., PGeo., EurGeol who is Technical Director of the Contaminated Land and Hydrogeology Division of Enviroguide Consulting and is a Professional Geologist with the Institute of Geologists of Ireland and has extensive experience in preparing environmental assessments for a range of project types and geological site settings.

6.2 Study Methodology

6.2.1 Regulations and Guidelines

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

- S.I. No. 92 of 2011- European Parliament and of the Council on the assessment of the effects of certain public and private projects on the environment including amendments S.I. No. 52 of 2014.
- S.I. No. 98 of 2008- European Parliament and of the Council on waste and repealing certain Directives.
- Environmental Protection Agency, May 2022. Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022)
- Environmental Protection Agency, 2002. Guidelines on Information to be contained in Environmental Impact Statements (EPA, 2002).
- Environmental Protection Agency, 2003. Advice Notes on Current Practice in the preparation of Environmental Impact Statements (EPA, 2003).
- Institute of Geologists of Ireland Guidelines, 2002. Geology in Environmental Impact Statements, A Guide (IGI, 2002).
- Institute of Geologists of Ireland Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements (IGI, 2013).

- National Roads Authority, 2009. Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (NRA, 2009).

6.2.2 Phased Approach

A phased approach was adopted for this EIAR in accordance with Environmental Protection Agency (EPA) and Institute of Geologists of Ireland (IGI) guidelines as set out above and is described in the following sections.

Element 1: An Assessment and Impact Determination stage was carried out by Enviroguide to establish the project location, type and scale of the development, the baseline conditions, and the type of land, soils and geological environment, to establish the activities associated with the Proposed Development and to undertake an assessment and impact determination.

This stage of the assessment included a desk top study that comprised a review of the following sources of information:

- Environmental Protection Agency (EPA) webmapping 2022.
- GSI Datasets Public Viewer and Groundwater webmapping, 2022.
- Google Earth Mapping and Imagery (Google Earth, 2022).
- Ordnance Survey Ireland (OSI) webmapping 2022.
- National Parks and Wildlife Services (NPWS) webmapping (NPWS, 2022).
- Teagasc webmapping (Teagasc, 2022).
- Information provided by the Applicant including;
 - Information pertaining to the design proposals for the Proposed Development
 - Ground Investigation Report including trial pit and borehole logs, soil laboratory test results and site map. Ground Investigations Ireland (GII) (GII, 2022a) (refer to Appendix 6.1)
 - Soil waste classification report, Ground Investigations Ireland (GII) (GII, 2022b) (refer to Appendix 6.2)

The study area, for the purposes of assessing the baseline conditions for the Land, Soils and Geology Chapter of the EIAR, extends beyond the Site boundaries and includes potential receptors with which there may be a pathway to from the Proposed Development and receptors that may be indirectly impacted by the Proposed Development. The extent of the wider study area was based on the IGI, 2013 Guidelines which recommend a minimum distance of 2.0km from the Site.

A site walkover survey to establish the environmental site setting and baseline conditions at the Proposed Development Site relevant to the land, soil and geology environment was undertaken by Enviroguide Consulting on the 28th of September 2022.

Element 2: Involves Direct and Indirect Site Investigation and Studies stage where necessary to refine the CSM and evaluate the potential impacts associated with the Proposed Development.

Element 3: Evaluation of Mitigation Measures, Residual Impacts and Final Impact Assessment were based on the outcome of the information gathered in Element 1 of the assessment. Mitigation measures to address all identified adverse impacts that were identified in Element 1 of the assessment were considered. These mitigation measures were then considered in the impact assessment to identify any residual impacts.

Element 4: Completion of the Land, Soil and Geology sections of the EIAR in this Chapter which includes all the associated figures and documents

6.2.3 Description and Assessment of Potential Impact

The Transport Infrastructure Ireland (TII) criteria for rating of the importance of geological features at the Site as documented in the National Roads Authority Guidelines (NRA, 2009), are summarised in Table 6-1.

Importance	Criteria	Typical Example
Very High	Attribute has a high quality, significance or value on a regional or national scale. Degree or extent of soil contamination is significant on a national or regional scale. Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale.	Geological feature rare on a regional or national scale (NHA). Large existing quarry or pit. Proven economically extractable mineral resource.
High	Attribute has a high quality, significance or value on a local scale. Degree or extent of soil contamination is significant on a local scale. Volume of peat and/or soft organic soil underlying route is significant on a local scale.	Contaminated soil on-site with previous heavy industrial usage. Large recent landfill site for mixed wastes. Geological feature of high value on a local scale (County Geological Site). Well drained and/or high fertility soils. Moderately sized existing quarry or pit. Marginally economic extractable mineral resource.
Medium	Attribute has a medium quality, significance or value on a local scale. Degree or extent of soil contamination is moderate on a local scale. Volume of peat and/or soft organic soil underlying route is moderate on a local scale.	Contaminated soil on-site with previous light industrial usage. Small recent landfill site for mixed wastes. Moderately drained and/or moderate fertility soils. Small existing quarry or pit. Sub-economic extractable mineral resource.
Low	Attribute has a low quality, significance or value on a local scale. Degree or extent of soil contamination is minor on a local scale. Volume of peat and/or soft organic soil underlying route is small on a local scale.	Large historical and/or recent site for construction and demolition wastes. Small historical and/or recent landfill site for construction and demolition wastes. Poorly drained and/or low fertility soils.

Importance	Criteria	Typical Example
		Uneconomically extractable mineral resource.

Table Error! No text of specified style in document.-2: Criteria for Rating Site Importance of Geological Features

6.2.4 Description and Assessment of Potential Impact

Impacts will vary in quality from negative, to neutral or positive. The effects of impacts will vary in significance on the receiving environment. Effects will also vary in duration. The terminology and methodology used for assessing the 'impact' significance and the corresponding 'effect' throughout this Chapter is described in Table 6-2.

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

Short-term	Effects lasting one to seven years
Medium-term	Effects lasting seven to fifteen years
Long-term	Effects lasting fifteen to sixty years
Permanent	Effects lasting over sixty years
Reversible	Effects that can be undone, for example through remediation or restoration

Table Error! No text of specified style in document.-3: Assessment of Potential Terminology and Methodology

6.2.5 Description of Soil/ Geological Site

The generic type of geological environment of the Proposed Development Site can be determined based on the IGI guidelines (IGI, 2013) which are provided Table 6-3.

Type	Description
Type A	Passive geological/hydrogeological environments (e.g. areas of thick low permeability subsoil, area underlain by poor aquifers, recharge areas, historically stable geological environments)
Type B	Naturally dynamic hydrogeological environments (e.g. groundwater discharges areas, areas underlain by regionally important aquifers, nearby springs rises, areas underlain by permeable subsoils)
Type C	Man-made dynamic hydrogeological environments (e.g.. nearby groundwater abstractions, nearby quarrying or mining activities below the water table, nearby wastewater discharges to ground, nearby geothermal systems)
Type D	Sensitive geological /hydrogeological environments (e.g. potentially unstable geological environments, groundwater source protections zones, karst)
Type E	Groundwater dependent eco systems (e.g. wetlands, nearby rivers with high groundwater component of baseflow),

Table Error! No text of specified style in document.-3: Geological Environment Type

6.3 The Existing and Receiving Environment (Baseline Situation)

6.3.1 Site Location and Description

The Proposed Development Site is located in Athlone, Co. Westmeath. The total Site area is 20.5 ha, the total site area for this phase of development is 10.87ha.

The Site is bound to the south by the existing Drumaconn residential estate, while the north, west and east Site boundary is greenfield. The Proposed Development Site is located North-East from Athlone town centre (refer to Figure 6-1).

The north-eastern portion of the Applicant’s landholding also has the benefit of a permission granted under WMCC Ref. 22/253 for 75 no. units. It is envisaged that a further phase of development will be lodged in the future for c.170 units in the north-western

portion of the Applicant’s lands, which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units’ total’.

6.3.2 Current and Historical Land Use

The Site of the Proposed Development is predominantly greenfield (except for a derelict house and yard present in the southeast of the Site, an access road to the station in the north of site and two concrete slabs in the south of the Site).

The Site is within the jurisdiction of Westmeath County Council. The Proposed Development Site forms part of the “Cornamaddy Action Area Plan – 2005”. The Westmeath Land Use Zoning Objective Maps indicates the Site falls within the Athlone townlands, which is listed as “subject to forthcoming Urban Area Plan”. Within the 2005 plan, the Site of the Proposed Development is located on lands which have been allocated Zoning Objectives of “Residential (Low – Medium Density)” and “Open Space”.

Historical mapping and aerial photography available from the Ordnance Survey of Ireland website (OSI, 2022) and Google Earth (Google Earth, 2022) were reviewed and key observations on-site and offsite are summarised in Table 6-4. The current Site use aerial photograph is shown in Figure 6-2.

There are no mapped EPA licensed facilities within a 2km radius of the Proposed Site Boundary (EPA, 2022).

Date	Information Source	Site Description
1837-1842	OSI map 6inch	<p>On-site: The Proposed Development is shown as open fields divided by field boundary. Drainage is shown along the north of the Site boundary. Drainage channels are present around the field boundaries.</p> <p>Off-site: The surrounding lands are predominantly greenfield with divided by field boundaries. Forestry present to the west of the Site.</p>
1888-1913	OSI map 25inch	<p>On-site: The Site remains undeveloped. The field boundaries have changed. The drainage has been altered and now extends to the western boundary before changing direct to the north.</p> <p>Off-site: The forestry to the west of the Site has been removed. Cemetery is present west, drainage channel from the Cemetery joins with the drainage on Site. Cornamaddy school is present immediately southeast of the Site. There are number of unidentified houses surrounding the lands. There is a gravel pit present south of the Cemetery, approximately 0.28km west of the Site Boundary.</p>
1830-1930	OSI Cassini map 6inch	<p>On-site: No significant changes.</p> <p>Off-site: The house to the south of the Site has expanded. The gravel pit south of the cemetery is no longer present.</p>
1995	OSI Aerial photography	<p>On-site: House has been built to the southeast of the Site.</p> <p>Off-site: Cluster of houses have been built south of the Site.</p>
2000	OSI Aerial photography	<p>On-site: No significant changes.</p> <p>Off-site: No significant changes.</p>

Date	Information Source	Site Description
2005	OSI Aerial photography	On-site: Haulage routes are present to the south and centre of Site, ground disturbance and soil stripping /regrading noted across Site. Storage yard present adjacent to the existing house on the south-east of the Site boundary. Off-site: Housing development to the south has been extended.
2013	OSI Aerial Photography	On-site: Construction of concrete slabs since 2005 Aerial photo. Grass growth over the previously removed topsoil. Construction of a station to the north of the Site including access road. Off-site: No significant changes.
2022	Google Maps Imagery	On-site: No significant changes. Off-site: No significant changes.
2022	Site Walk Over	On Site: Concrete slabs and ESB sub-station are present to the south of the Site. The house to the southeast of the Site is derelict and surrounding land is heavily vegetated and overgrown. Yard with stockpiled materials presence to north of the derelict building. Off-site: No significant changes noted, drainage works were taken place in the adjacent field to the east of the Site. Pump station present adjacent to the northern Site boundary.

Table Error! No text of specified style in document.-4: Historical Land Use

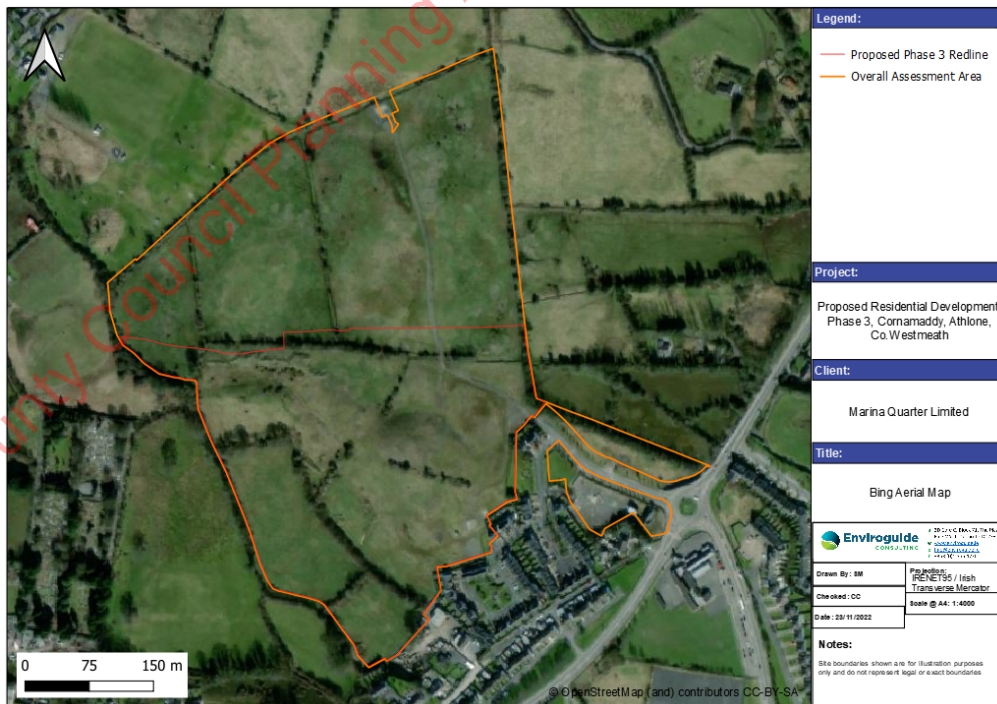


Figure Error! No text of specified style in document.-1: Current Site Use

6.3.3 Topography

The topographic survey of the Proposed Development Site indicates that the overall topography ranges from approximately 40meters above ordnance datum (mOD) at the lowest point to the northwest of the Site to approximately 50.7mOD in the southwest. In general, the Site is sloping from the south to the northeast.

- Drains are present across the Site; the lowest recorded point is in the drain to the northeast of the Site at 38.9mOD.
- Two topographic mounds are present to the north of the proposed development to a maximum height of 44.5mOD.
- There is an elevated area associated with the esker present in the center of the Site, running in a west to south-east-east direction.
- There is a steep slope present in the southwest of Site, the ground level ranges from 51mOD to 47mOD over a 15m distance.

The topographic survey map presented in the Phase 3 Planning drawing is presented in Figure 6-3 below.

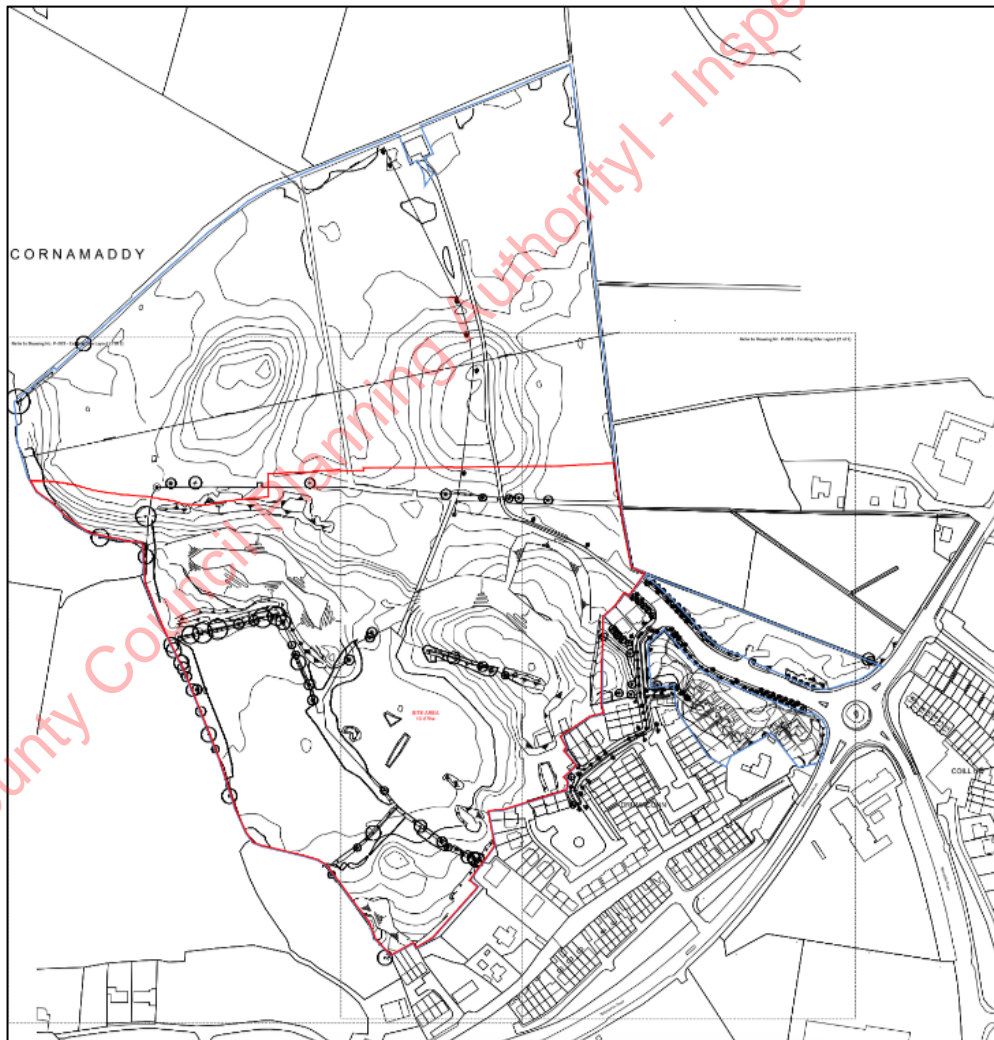


Figure Error! No text of specified style in document.-2: Topographic Map (Source: Phase 3 Planning Drawings)

6.3.4 Topography

The soils beneath the Proposed Development Site have been mapped by Teagasc (Teagasc, 2022) as the following:

- Fen peat (IFS Soil Code FenPt) is present predominately in the north of the Site
- Glaciofluvial sands and gravels (IFS soil Code BminSW) described as derived from mainly calcareous parent materials. BminSW soils are shallow well drained mineral soils (mainly basic).
- Esker sands and gravels (IFS Soil Code BminSW) with BasEsk parent material in the central of the site.
- Lake sediments (IFS Soil Code Lac) lacustrine type soils in the south of the Site.

The Teagasc (Teagasc, 2022) mapped soils at the Proposed Development Site are presented in Figure 6-4.

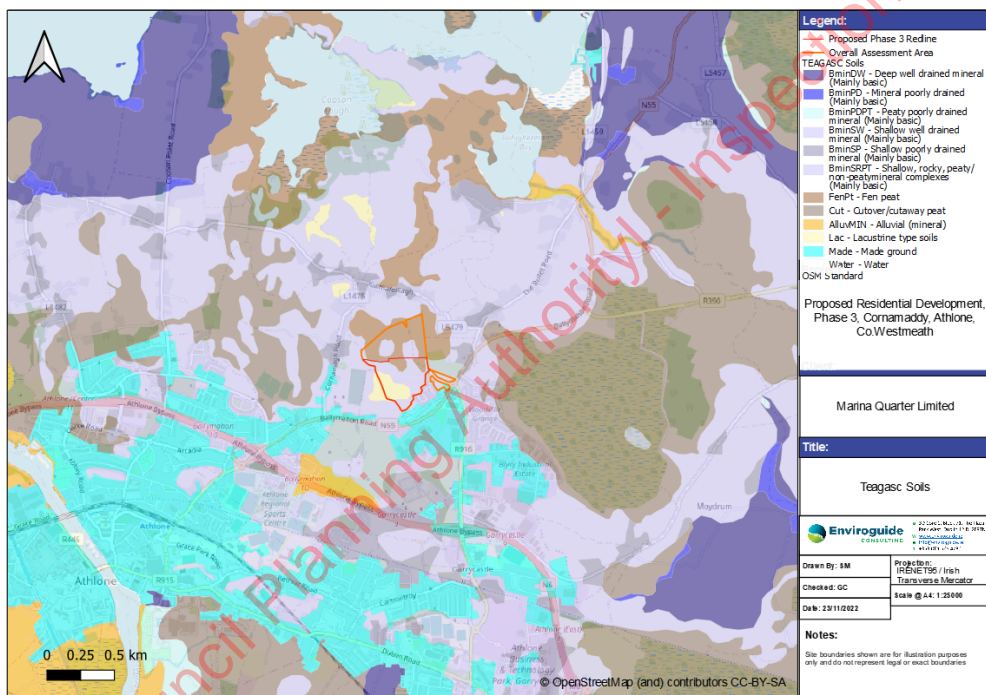


Figure Error! No text of specified style in document.-3: Teagasc Soils

6.3.5 Subsoil/ Quaternary Sediments

The subsoils or quaternary sediments beneath the Proposed Development Site are mapped by the GSI as follows:

- Fen Peat (FenPt) is present predominately in the north of the Site.
- Gravels derived from Limestone (GLs) predominately within the southeast of the Site.
- Esker comprised of gravels of basic reaction (BasEsk) is present in the center of the Site, running in a west to east direction.
- Lacustrine sediments (L) are present on the southwest of the Site.

The quaternary sediments are present in Figure 6-5.

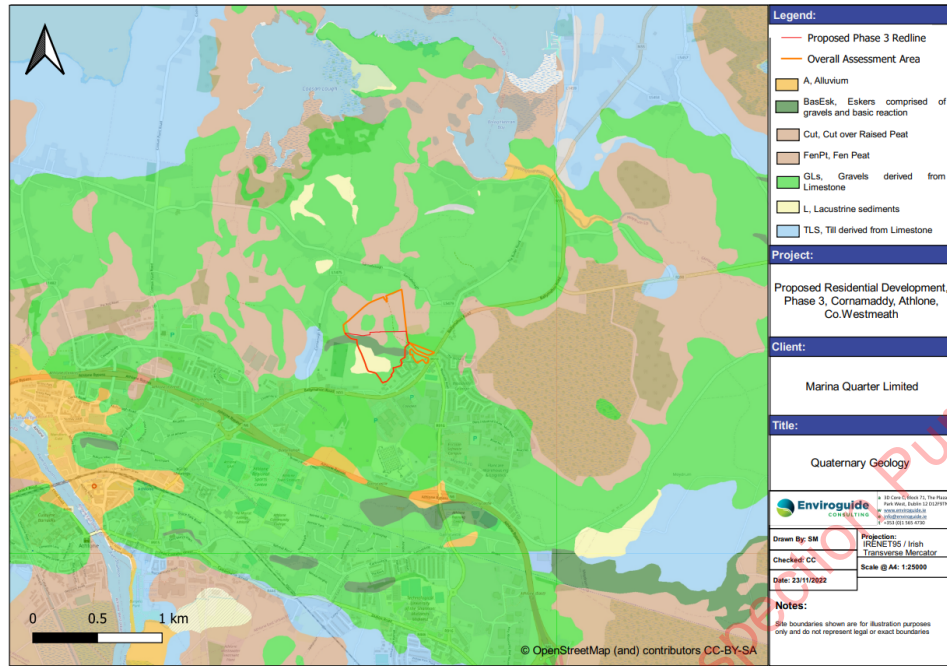


Figure Error! No text of specified style in document.-4: Quaternary Sediments

6.3.6 Geology

Based on the GSI (GSI, 2022), the bedrock beneath the Proposed Development is mapped as Waulsortian Limestone (Stratigraphic Code: WA, New Code: CDWAUL). Which is comprised of massive, un-bedded lime-mudstone. The Waulsortian limestones are over 1200m thick in the Shannon Estuary area but more typically 300-500m thick.

Lucan Formation comprising of dark limestone and shale (Stratigraphic code: LU, New Code: CDLUCN) is located 0.32km east and 0.97km north of the Proposed Development Site (refer to Figure 6-6).

There are no bedrock outcrops mapped within the Site Boundary or within a 2km radius of the Site boundary.

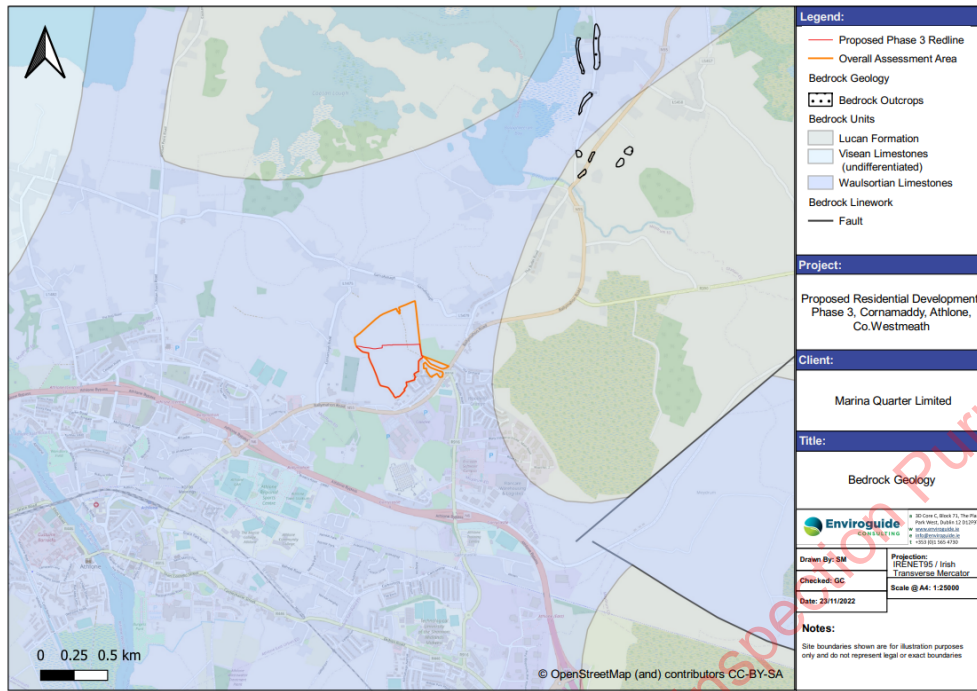


Figure Error! No text of specified style in document.-5: Bedrock Geology Map

6.3.7 Intrusive Site Investigation Results

Trial pitting, CBRs and boreholes drilling was undertaken as part of the ground investigation on Site in October 2022 by Ground Investigations Ireland (GII, 2022). The Site investigation report detailing the investigation locations and results is included in Appendix 6.1.

Soils and Bedrock

The soils encountered during the site investigation (GII,2022) are summarised below:

- MADE GROUND was present in TP01, TP02, TP04 and TP05 at the surface. Made ground was present in TP-10, TP10 and TP12 beneath a layer of topsoil (0.2m)
- or
- PEAT described as very soft brown slightly gravelly clayey studios fibrous PEAT with occasional boulders.
 - SILT, soft to very soft, grey, sandy gravelly clayey SILT with occasional to frequent organic fibres and cobbles and boulders
 - Clay, Firm to sift grey sandy gravelly silty CLAY with cobbles and boulders

The trial pits extended to a maximum depth of 3.4mbgl at TP-06 (36.75mOD). The CBR pits extended to a maximum depth of 1.8mbgl CBR4 (38.54mOD). Groundwater was encountered from 0.5mbgl to 1.5mbgl in fourteen of the nineteen trial pits. The GII, trial pit logs, provide a narrative on groundwater ingress, at the Site the ingress ranged from “medium” to “fast” ingress. Where groundwater was encountered, the trial pits became unstable with the side’s walls spalling or collapsing (refer to Chapter 7 for further information on groundwater).

Bedrock was not encountered in any of the 19 trial pit and two (2no) borehole locations.

Soil Analytical Data -

The soils encountered at the Site were generally native soil with the exception of localised areas of made ground (TP01, TP02, TP04, TP05 TP10 and TP12) in the north and southeast of the Site.

Soil analytical results for twelve (12no) soil samples are provided in Appendix 7 of the GII report (GII, 2022a) (refer to Appendix 6.1). The reported results for key parameters typically used for the general assessment and identification of contamination and analytical results are summarised as follows:

- Sum of BTEX (benzene, toluene, ethylbenzene, xylenes): <0.025mg/kg for all twelve samples;
- Sum of 7 PCBs (Polychlorinated Biphenyl): <0.035mg/kg for all twelve samples;
- Sum of 17 PAHs (Polycyclic Aromatic Hydrocarbons): <0.64mg/kg for all twelve samples;
- Petroleum Hydrocarbons (Total aliphatics and aromatics(C5-44)): <52mg/kg for all eleven of twelve samples with a reported concentration of 316mg/kg for sample TP07 (1.10-2.3m depth) located in the north of the Site; and,
- Asbestos: all twelve samples were reported as No Asbestos Detected (NAD).

The reported analytical results indicate that the soil is generally free from anthropogenic contamination and the trace TPH result reported for one sample is not indicative of heavily contaminated soil and would not be considered to pose an environmental risk. All TPH results are below published soil Generic Assessment Criteria (GAC) for human health risk assessment (LQM/CIEH, 2015; CL:AIRE, 2014, CL:AIRE 2010) and soil at the Site would therefore not pose any risk to human health for future occupants of the Site.

Soil Waste Classification Results

A soil waste classification assessment was prepared based on soil analytical data from the site investigation, the soil waste classification report (GII, 2022b) is provided in Appendix 6.2.

All twelve soil samples were classified as non-hazardous '17 05 04 soil and stones other than those mentioned in 17 05 03'. All samples were screened against the Landfill Waste Acceptance Criteria (WAC) specified in Council Decision 2003/33/EC and eight (8no) samples met the Inert Landfill WAC (refer to Table 2 of the GII report (GII, 2022b).

6.3.8 Radon

The Proposed Development Site is mapped by the EPA (EPA, 2022) as being in an area where "about 1 in 10 homes in this area is likely to have high radon levels"

The EPA cite the reference level for radon as 200 Bq/m³ and a High Radon Area where more than 10% of homes may have more than the reference level of radioactivity. As up to 10% of the houses in the area are mapped by the EPA as being over this reference level it indicates that the Site is not considered a High Radon Area however, it is noted that a high radon level can be found in any home, in any part of the country.

6.3.9 Geohazards

The GSI (GSI, 2022) records for karst features indicate there is a cave located approximately 2km northwest of the proposed development. The karst feature is mapped within the Lucan Formation.

The majority of the Proposed Development Site is located within an area of "Low" or "inferred Low" landscape susceptibility classification (GSI, 2022). There are two small areas to the south-west of the Site classified as "Moderately Low" associated with

localised steep topography on Site. There are no recorded landslides within a 2km radius of the Proposed Development Site.

In Ireland, seismic activity is recorded by the Irish National Seismic Network operated by Dublin Institute for Advanced Studies (DIAS) which has been recording seismic events in Ireland since 1978. There are six permanent broadband seismic recording stations in Ireland operated by DIAS. Records since 2010 show that the majority of recorded seismic events were associated with quarry blasts and no recent events have been recorded within 2km of the Proposed Development Site.

6.3.10 Geological Heritage Sites

A review of the GSI Geological Heritage Database (GSI, 2022) indicates two geological heritage Sites located within 2km radius of the Proposed Development which is summarized in Table 6-5 and shown in Figure 6-7.

Site Name	Site Code	Location	Distance from Site (km)	Geological Importance
Tullin Mushroom Rock	WH027	Northwest	1.3	An isolated, single, undercut limestone mushroom rock, situated in woodland
Loughandonnig Mushroom Rock	WH017	Southwest	2	An isolated, highly sculpted, limestone mushroom rock, situated within a pasture field.

Table 6-5: Geological Heritage Sites

An esker is mapped by the GSI in the centre of the Site orientated in an east-west direction (GSI, 2022). The esker is not mapped or listed in the GSI Geological Heritage Database and not included in the “Geological Heritage of County Westmeath” audit report in 2019 (GSI, 2019). The document provides a note on Esker Conservation in County Westmeath noting that “many of the best examples of eskers in County Westmeath have been extensively quarried, to such an extent that little of them actually remain anymore... it is imperative that a balance is found between geological heritage conservation and aggregate extraction in the future to ensure that the best examples of our eskers are protected”.

The esker on Site will not be excavated as part of the Proposed Development Site.

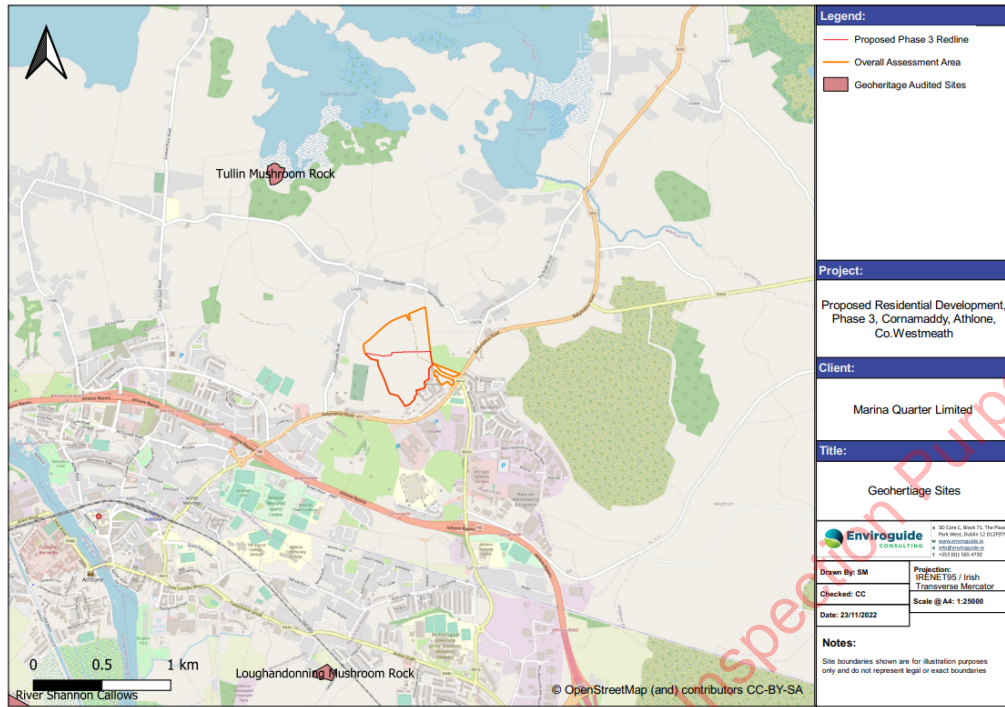


Figure Error! No text of specified style in document.-7: Geographical Heritage Sites

6.3.11 Economic Geology

The subsoils and quaternary deposits within the Site are mapped as having granular aggregate potential as follows:

- The gravels are considered as “Very High Potential”
- The esker is considered as “Moderate Potential”
- The lacustrine sand is considered as “Very Low Potential”

The granular aggregate potential map is presented in Figure 6-8. The bedrock beneath the Site has been identified by the GSI (GSI, 2022) as having “low potential” for crushed rock aggregate.

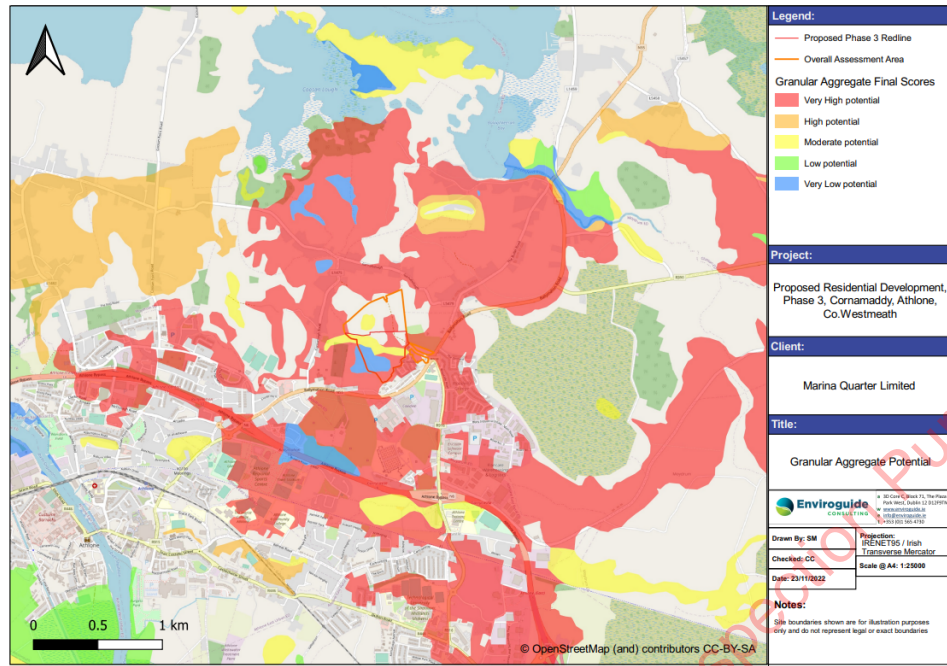


Figure Error! No text of specified style in document.-8: Granular Aggregate Potential

There are a number of historical pits and quarries mapped by the GSI (GSI, 2022) located within a 2km radius of the Proposed Development Site which are listed below in Table 6-6. There are none within the Site boundary and the closest is a historic quarry 0.28km to the west of the Site.

Name/Type	Status/ Age	Distance from Proposed Development(km)	Location from Site
Pit	Historic	1.05	East
Pit	Historic	1.12	East
Quarry	Historic	1.80	Northeast
Quarry	Historic	1.93	Northeast
Pit	1975-1995	0.93	Northeast
Pit	Historic	1.01	North-east
Pit	Historic	0.28	West
Quarry	Historic	1.38	West
Pit	Historic	1.60	Southwest
Pit	Historic	1.97	Southwest
Pit	Historic	1.51	Southwest
Pit	Historic	1.87	Southwest

Name/Type	Status/ Age	Distance from Proposed Development(km)	Location from Site
Pit	Historic	1.54	Southwest
Pit	Historic	1.79	Southwest
Pit	Historic	1.73	Southwest
Pit	Historic	1.73	South
Pit	Historic	1.34	South
Pit	Historic	1.63	South

Table Error! No text of specified style in document.-6: Pits and Quarries within a 2km radius of Site

6.3.12 Importance of the Receiving Environment

In accordance with the criteria in Table 6-1, the soil and geology underlying the Proposed Development Site is rated as an attribute of ‘medium’ as the gravels on Site are a sub-economical extractable mineral resource.

Based on IGI, generic types of geological environment (Table 6-3), the Site is considered to include a sensitive geological environment (presence of esker on site) (Type D).

6.4 Characteristics of the Proposed Development

6.4.1 Construction Phase

The construction Phase of the Proposed Development will require:

- Excavation of subsoil to reduce levels to construct building foundations, filter drains, surface water drainage, roads, car parking areas and all ancillary works. Preliminary cut and fill analysis outlined in the CWMP (Paul Mc Grail, 2022c) indicates the following approximate volumes will be excavated during construction.
 - Topsoil – 8,000m³
 - Sub grade material – 18,000m³
- Foundation solutions will be designed to suit the ground conditions and will include raft, pad, strip or piled foundations.
- Excavated material that cannot be reused on-site will be removed by authorized permitted (NWCPO) hauliers and consigned for reuse at other local development sites, recovery and disposal will be considered as a final option only.
- The Proposed Development will include the importation of aggregates for the construction of roads and other infrastructure.
- The esker on Site (running in an east-west direction to the south of the Site) will be retained on Site during Construction and Operation Phase of the Development.

6.4.2 Operational Phase

During the Operational Phase, the Site will be accessed through the road network currently under construction within the Site Boundary, which connections to the existing roundabout at N55 x Drumaconn Road.

There will be no excavation of soil or bedrock during the Operational Phase of the Proposed Development.

SuDs features have incorporated into the design solution at the Proposed Development Site. The SuDs proposed on Site include Modular Permeable Paving, Swales, Detention Basins and a Petrol Interceptor. Infiltration to the ground will occur from the permeable paving. Partial infiltration systems are proposed for the Site as the subsoils are not capable of absorbing all the water through infiltration, these systems are designed with a geotextile at the base and an outlet to the surface water system (Paul Mc Grail, 2022a). Surface water discharge will discharge to an existing ditch located in the central east of the subject Site. The ditch is connected to the EPA river, Garrynafela (within the WFD Shannon (Upper)_110, EU Code: IE_SH_26S021660) (refer to Chapter 7 for further information).

6.5 Potential Impact of the Proposed Development

6.5.1 Construction Phase

Direct

Land Take and Land-use

The EIA assessment area is 20.5ha, the total Site area for this phase of development is 10.84ha. The development will develop land for residential use in accordance with the zone objective of Westmeath County Council Development Plan, 2005. The change of land use will result in a “negative” “moderate” and “permanent” impact on the land at the Proposed Development due to the take of predominantly greenfield land.

Soil Quality and Contamination

The current Site use is predominately greenfield land (with the exception of the derelict house and yard to the south-east of the Site and the concrete slabs to the south of the development). The excavation and re-use of soil onsite and removal of surplus soils during construction will be subject to control procedures which will include soil quality testing to ensure suitability for use onsite and for removal offsite in accordance with engineering and environmental specifications for the Proposed Development. Based on available soil analytical data (Appendix 6.1) there is no identified environmental or human health risk associated with the existing soil condition at the Site for the proposed residential use..

There is a potential risk associated with the use of cementitious materials during construction of subsurface structures (such as foundations) on the underlying soil and geology at the Proposed Development. It is considered that this may result in a ‘negative’, ‘slight’ and ‘long-term’ impact on existing quality of soil within a localised area underlying the Proposed Development.

The potential accidental release of deleterious materials including fuels and other materials being used on-Site, through the failure of secondary containment or a materials’ handling accident on the Proposed Development could potentially result in a ‘negative’, ‘moderate to significant’, ‘long-term’ impact on the receiving soil and geology depending on the nature of the incident.

Excavation and Reuse of Topsoil and Subsoil

There will be unavoidable loss of in-situ soil and subsoil from the Proposed Development Site to achieve the required formation levels for the Proposed Development including building foundations, roads, drainage and other infrastructure. It is intended to retain and re-use suitable excavated topsoil at Proposed Development Site for soft landscaping (Paul Mc Grail, 2022b). As outlined in the CEMP (Paul Mc Grail, 2022), all surplus clean soils and topsoil will be removed offsite and brought to a permitted site or facility. The Proposed Development Site is anticipated to have a “negative” “slight” and “permanent” impact associated with the loss of soils from the Site.

During excavation works, the stockpiling of topsoil pending reuse on-site will result in the exposure of the materials to various elements including weather and construction traffic. In the absence of mitigation measures, there is a potential loss of natural soil structure and composition, resulting in a potential ‘negative’, ‘slight’ and long-term’ impact on the natural strength of the materials.

Importation of Aggregates

The Proposed Development will include the importation of aggregates during the Construction Phase of the Proposed Development.

In order to minimise the requirement to import virgin quarried materials, recycled aggregates will be used where available and subject to meeting specified design requirements and all current construction and environmental legislation. This will include where suitable, by-products that meet the legislative requirements of Article 27 of the European Communities (Waste Directive) Regulations, 2011 and other applicable statutory requirements. All imported material will require certification from suppliers that the imported soils and other fill/landscaping materials are free of Invasive Alien Plant Species (IAPS).

In the unlikely event that aggregate materials are sourced from unlicensed or unauthorised sources, it may result in the importation of contaminated materials, uncertified materials, or material not suitable for use at the Proposed Development. In the unlikely event of the importation of contaminated materials onsite, there would be a ‘negative’, ‘moderate to significant’ and ‘long term’ impact on the receiving lands, soil and geology at the Proposed Development.

Geological heritage

An esker is present running through the centre of the Site in a west to east direction. However, there is no proposal for excavation of the esker, which will be retained on Site. Thus, the impact of the Proposed Development on the Geological heritage will be “neutral” “imperceptible” and “Long-term”.

Indirect

Removal of Soil

It is anticipated that the Construction Phase of the Proposed Development will include the excavation and removal offsite of surplus topsoil and soil for reuse / recovery. In this scenario, the removal of soil and stone will be managed in accordance with all statutory obligations. Surplus material to be removed offsite will be reused as a by-product under Article 27 by-product notification or sent for recovery at a suitable authorised facility. Disposal of material will be considered only if re-use and recovery are not feasible. The receiving waste facilities will be appropriately licenced/permitted to accept the surplus soil and stone and the potential impacts will therefore have been adequately assessed and mitigated. Conditions for material to be consider under Article 27 are set out by the EPA to ensure material is suitable for reuse in the designated facility. Accordingly, it is

considered that offsite removal and recovery will have a ‘neutral’, ‘imperceptible’ ‘permanent’ impact on the receiving Site.

Importation of Fill Materials

The Proposed Development will include the importation of aggregates during the Construction Phase at the Proposed Development. The potential impacts may include loss of attribute and changes in the geological regime at the source Site. It is anticipated that the required aggregates identified for importation onsite will have a ‘neutral’, ‘imperceptible’ and ‘permanent’ impact on the source site taking account of the fact that the statutory consent process would have required the necessary environmental impacts to be assessed and mitigated as appropriate at the source Site.

Secondary

There will be no secondary impacts associated with the Construction Phase of the Proposed development.

6.5.2 Operational Phase

Direct

During the operational phase of the of the Proposed Development there is limited potential for any direct adverse impact on the receiving land, soil and geological environment at the Proposed Development Site taking account of the proposed design measures for the Proposed Development.

There will be no discharge to ground except infiltration from the permeable pavements (Paul Mc Grail, 2022a). In the event of failure of the SuDs system, there is a potential risk of surface contamination infiltration from the pavements to the ground. The potential impact would be “negative”, “moderate” and “long term”.

Indirect

There will be no indirect impacts associated with the Operational Phase of the Proposed Development.

Secondary

There will be no secondary impacts associated with the Operational Phase of the Proposed Development.

6.5.3 Potential Cumulative Impacts

Existing Planning Permissions

Cumulative Impacts can be defined as “impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project”. Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor. Such effects are not caused or controlled by the project developer.

A review of other site developments and proposed developments was complete as part of this assessment. The following planning applications are listed as granted or decision pending from within the last 5 years.

Planning Ref No.	Applicant Name	Locations Relative To The Proposed Development	Summary Of Development
22253	Marina Quarter Ltd	Within Site Boundary (North)	<p>The development will consist of the following:</p> <ul style="list-style-type: none"> • Construction of 75 no. residential units comprising: 51 no. 2 storey semi-detached and terraced houses (consisting 4 no. 2 bed houses and 47 no. 3 bed houses, ranging in size from c.78 sq.m – 120 sq.m each), and 24 no. 3 storey apartment/duplex units (consisting 12 no. 2 bed apartments and 12 no. 3 bed duplexes, ranging in size from 84sq.m to 121 sq.m each), with associated private gardens and east/west facing terraces; • All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a section of the distributor road permitted under WMCC Reg. Ref. 14/7103/ ABP Ref. PL25.244826 to the south east of the site. • All associated site development works, services provision, drainage works, residential open space (c.o.28ha) and public open space (c.o.82ha), landscaping, boundary treatment works, public lighting, 1 no. esb substation cabinets, bin stores, car and bicycle parking provision; • Provision of a new detention basin on the eastern portion of the site designed to cater for the proposed development, in lieu of the drainage works permitted under WMCC Reg. Ref. 14/7103 / ABP Ref. PL 25.244826; • This development will form part of a larger/future phase of the development; • No changes to the existing pumping station located outside the northern site boundary; • A Natura Impact Statement has been prepared in respect of this application. <p>Status Decision Made Date: 26/10/2022</p>
22340	Marina Quarter Ltd	Within Site Boundary (Southeast)	<p>to consist of the following:</p> <ol style="list-style-type: none"> 1) Construction of a two Storey childcare facility, including classrooms, reception, kitchen, associated staff areas and office, toilets, storage, plant rooms, circulation areas and photovoltaic panels at roof level (c.668sqm total gross floor area) 2) The proposed facility includes a secure outdoor play area(c. 595 sqm), 18 no. car parking spaces and 20 no. bicycle parking spaces. 3) Existing vehicular access onto the existing link road and provision of an internal access road, footpaths and 2 no. pedestrian access points. 4) All associated site development works, service provision, drainage works, landscape and boundary treatment works and public lighting. 5) This development will form part of a larger/future phase of the development. 6) A Natura Impact Statement has been prepared in respect of this planning application. <p>Status: Further Information</p>

Planning Ref No.	Applicant Name	Locations Relative To The Proposed Development	Summary Of Development
177224	Parana Properties	Within Site Boundary (Southeast)	<p>The Development of 7 no new dwellings to include 3 no 5 bedroom detached houses and 2 no 4 bedroom detached houses with optional fifth bedroom/study and 2 no 4 bedroom semi detached houses with optional fifth bedroom/study and all associated site development works including road networks, services, landscaping, and boundary treatments. A ten year permission is being sought</p> <p>Status: Application Finalised Decision Date: 09/09/2018</p>

Table Error! No text of specified style in document.-8: Planning Applications in vicinity of Site

Excavated soil and bedrock from the Proposed Development Site could potentially be directed to the same receiving waste facilities for recovery / disposal as excavated soil and stone from other developments outlined in Table 6-8 and within the wider Athlone area. All surplus soil and stone from the Proposed Development Site will be removed off-site in accordance with the requirements of the CWMP (Paul Mc Grail Consulting Engineers Limited, 2022c), the material assets (Chapter 15 of this EIAR) , waste management (Chapter 14 of this EIAR) and all statutory legislation. Surplus material to be removed off-site will be directed to appropriately permitted/licensed waste facilities operated in compliance with the relevant statutory consents for the facility. Accordingly, it is considered that any cumulative impact on the land, soils, geology associated with the Proposed Development will be ‘neutral’, ‘imperceptible’ and ‘permanent’.

There are no other cumulative impacts on land, soil or geology associated with the Construction Phase and Operational Phase of the Proposed Development.

6.5.4 Potential Cumulative Impacts

In the ‘Do Nothing’ scenario, the potential impact on the receiving land, soils and geological environment if the Proposed Development did not proceed. It is considered that there would be no change or resulting impact on the nature of the Proposed Development Site which would remain as undeveloped land and there would be no impact or change to the land, soil and geology of the Proposed Development Site.

6.6 Avoidance, Remedial & Mitigation Measures

The mitigation measures as outlined below, will ensure that there will be no significant impact on the receiving land, soil and geology.

6.6.1 Construction Phase

The Construction Environmental Management Plan (CEMP) (Paul Mc Grail Consulting Engineers Limited, 2022b) provides information on detailed construction phasing and methods to manage and prevent any potential emissions to ground having regard to the relevant industry standards including:

- Construction Industry Research and Information Association (2015) Environmental good practice on site guide (CIRIA -C741).

- Construction Industry Research and Information Association, 2001. Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors (CIRIA – C532).

The Construction Waste Management Plan (CWMP) (Paul Mc Grail, 2022c) includes estimated quantities of different types of waste associated with works and re-use (on-site and offsite), to be recycled (on-site and off-site) and to be removed from the Site for appropriate disposal.

The CEMP (Paul Mc Grail, 2022b) and the CWMP (Paul Mc Grail, 2022c) will be implemented for the duration of the Construction Phase, covering construction and waste management activities that will take place during the Construction Phase of the Proposed Development.

Export of Soil

The removal offsite of surplus soil from the Proposed Development Site will be reused as a by-product under Article 27 by-product notification subject to meeting the statutory requirements of Article 27, or sent for recovery at a suitable authorised facility. It will be the contractor's responsibility to engage a specialist waste service contractor (s) who will possess the requisite authorisations, for the collection and movement of by-product / waste materials offsite. Material will be brought to an authorised facility which currently holds an appropriate waste facility permit or licence for the specified waste types. Waste Permitting, Licences & Documentation under the Waste Management (Collection Permit) Regulations 2007, as amended, a collection permit to transport waste, which is issued by the National Waste Collection Permit Office (NWCPO), must be held by each waste collection contractor.

The reuse of excavated soil and stone for the Proposed Development (i.e., topsoil for landscaping) will be subject to assessment of the suitability for use in accordance with engineering and environmental specifications for the Proposed Development.

All surplus materials and any waste will be removed off-site in accordance with the requirements outlined in the CWMP (Paul Mc Grail, 2022c) and will be managed in accordance with all legal obligations.

Import of Aggregates

Contract and procurement procedures will ensure that all imported aggregates required for the Proposed Development will be sourced from reputable suppliers operating in a sustainable manner and in accordance with industry conformity/compliance standards and statutory obligations. The importation of aggregates shall be subject to management and control procedures which shall include testing for contaminants, invasive species and other anthropogenic inclusions and assessment of the suitability for use in accordance with engineering and environmental specifications for the Proposed Development. Therefore, any unsuitable material will be identified prior to unloading / placement onsite.

Management of Stockpiles (soil and other materials/waste)

For any excavated material identified for removal offsite while assessment and approval of acceptance at a destination re-use, recovery site or waste facility is pending, material for recovery/disposal shall be stockpiled as follows:

- A suitable temporary storage area shall be identified and designated.
- All stockpiles shall be assigned a stockpile number.
- Material identified for reuse on Site, offsite and waste materials will be individually segregated; and all segregation, storage & stockpiling locations will be clearly delineated on the Site drawings.

- Soil stockpiles will be sealed to prevent run-off from the stockpiled material generation and/or the generation of dust.
- Any waste that will be temporarily stored / stockpiled will be stored on impermeable surface high-grade polythene sheeting, hardstand areas or skips to prevent cross-contamination of the soil below or cross contamination with soil.
- Overburden material will be protected from exposure to wind by storing the material in sheltered regions of the Site.
- Regular watering will take place to ensure the moisture content is high enough to increase the stability of the soil and thus suppress dust; and
- Stockpiles will not be located near Site boundaries or sensitive receptors and a set-back of 10m will be maintained from any boundary.

When a stockpile has been sampled for re-use or waste classification purposes, it shall be considered to be complete, and no more soil shall be added to that stockpile prior to removal offsite. An excavation/stockpile register shall be maintained on-site

Any waste generated from construction activities, including concrete, asphalt and soil stockpiles, will be stored on-site in such a manner as to:

- Prevent environmental pollution (bunded and/or covered storage, minimise noise generation and implement dust/odour control measures, as may be required).
- Maximise waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent re-use, recycling and recovery; and
- Prevent hazards to site workers and the general public during construction phase (largely noise, vibration and dust).

Soils for re-use on Site will be stabilised and protected from erosion while planting becomes established (Paul Mc Grail, 2022b). Subsoils which have been compacted during construction will be broken up prior to re-application of topsoil to reinstate natural infiltration performance of the ground.

Concrete Works

As set out in the CEMP (Paul Mc Grail, 2022c) pouring of cement-based materials will only be carried out in dry conditions. Any pumped concrete will be monitored to ensure there are no accidental discharges. Mixer washings and excess concrete will not be discharged directly into the drainage network.

All concrete work will be carried out to avoid any contamination of the receiving soil and geological environment by appropriate design and methods implemented by the Contractor and in accordance with industry standards.

All ready-mixed concrete shall be delivered to the Proposed Development Site by truck. Concrete washout areas will be created to avoid any accidental discharges from the Proposed Development Site (Paul Mc Grail, 2022b). Concrete washout area will then be emptied into a skip for appropriate compliant removal offsite.

Handling of Chemicals and fuels

Refuelling of plant during the Construction Phase will only be carried out at designated refuelling bunded area to minimise any risk of potential pollutants being discharged from the Site (Paul McGrail, 2022). Each station will be fully contained equipped for spill response and a specially trained and dedicated Environmental and Emergency Spill Response team will be appointed before the commencement of works onsite.

Only emergency breakdown maintenance will be carried out onsite. Drip trays and spill kits will be available on Site to ensure that any spills from vehicles are contained and removed offsite.

Hydrocarbons or any hazardous chemicals will be stored in specific bunded areas (Paul Mc Grail, 2022b) - which will have a volume of at least 110% of the volume of the stored materials as per best practice guidelines (Enterprise Ireland, BPGCS005) and Environmental Protection Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (EPA, 2004 and 2013 amended).

Emergency procedures will be developed by the appointed contractor, and spillage kits will be available on-Site (Paul Mc Grail, 2022b). Construction staff will be familiar with emergency procedures in the event of accidental fuel spillages.

Remedial action will be immediately implemented to address any potential impacts in accordance with industry standards and legislative requirements. In the event of a leak or spill from equipment in the instance of a mechanical breakdown during operation, any contaminated soil will be removed from the Site and compliantly disposed offsite. Residual soil will be tested to validate that all potentially contaminated material has been removed. This procedure will be undertaken in accordance with industry best practice procedures and standards. These measures will ensure that there is minimal risk to soils and geology associated with the Construction Phase of the Proposed Development.

Welfare Facilities

Portaloo's and/or containerised toilets and welfare units will be used to provide facilities for Site personnel. All associated waste will be removed from the Proposed Development Site by a licensed waste disposal contractor.

6.6.2 Operational Phase

Ongoing regular operation monitoring and maintenance of drainage and the SuDs measure will be undertaken throughout the lifetime of the Operational Phase of the Proposed Development.

6.6.3 'Worst Case' Scenario

Surface water runoff including runoff of deleterious material (i.e., fuels from vehicles on-site) will be directed to the stormwater drainage system and not to ground. In a 'Worst Case' scenario there is a potential risk of accidental release of hazardous contaminated via failure or rupture of the drainage system with potential impacts on the receiving geological environment. It is considered that the potential risk of the release of untreated water will present a 'negative', 'moderate' and 'medium-term' impact on the receiving environment. However, this is deemed to be an unlikely scenario.

6.7 Residual Impacts

Residual Impacts are defined as ' effects that are predicted to remain after all assessment and mitigation measures. They are the remaining 'environmental costs' of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse impacts.

The predicted impacts of the Construction and Operational Phases are described in in terms of quality, significance, extent, likelihood and duration. The relevant mitigation measures are detailed, and the residual impacts are determined which take account of the avoidance, remedial and mitigation measures.

Activity	Attribute	Predicted Impact	Quality	Significance	Duration	Type	Mitigation	Residual Impact
Construction Phase								
Construction of the Proposed Development	Land take	The Proposed Site will develop land for residential use, resulting in a change in land from predominantly greenfield to residential.	Negative	Moderate	Permanent	Direct	Unavoidable and no mitigation. The Proposed Development is located with lands zoned of Residential Use (Westmeath County Council Development Plan, 2005)	Moderate
Use of cementitious materials.	Soil and Geology	Potential release of cementitious material during construction works for foundations, pavements and infrastructure.	Negative	Slight	Long Term	Direct	All concrete work will be carried out to avoid any contamination of the receiving soil and geological environment by appropriate design and methods implemented by the Contractor and in accordance with industry standards.	Imperceptible
Accidental release of deleterious materials including fuel and other materials being used on-site.	Land, Soil and Geology	Potential (albeit low) for uncontrolled release of deleterious materials including fuels and other materials being used on-site, through the failure of secondary and tertiary containment or a materials handling accident, to the land, soil and geological environment.	Negative	Moderate to Significant	Long Term	Direct	Refuelling of plant during the Construction Phase will only be carried in a designated impermeable area on-site equipped with spillage kits. Any other diesel, fuel or hydraulic oils stored on-site or within fuel containing equipment will be stored in banded storage tanks / drip trays.	Imperceptible
Excavation of Materials on Site	Topsoil and subsoils	The Proposed Development will require the excavation of topsoil (8,000m ³) and subsoil (18,000m ³)	Negative	Slight	Permanent	Direct	The impact of excavation of soils is unavoidable and there are no mitigation measures	Slight
Excavation and removal offsite of soil	Topsoil and subsoils	The Proposed Development will require removal of soil to offsite sites/facilities	Neutral	Imperceptible	Permanent	Indirect	Note	Imperceptible

Activity	Attribute	Predicted Impact	Quality	Significance	Duration	Type	Mitigation	Residual Impact
Stockpiling of Soils	Soil Structure and Composition	Topsoil pending reuse will stockpiled leading to a potential loss of natural soil structure and composition.	Negative	Slight	Long term	Direct	Soil and subsoil pending re-use on-site will be stockpiled in a controlled manner and in accordance with the requirements of the CEMP which will be developed by the appointed Contractor in advance of construction works commencing.	Imperceptible
Import of aggregates	Land, Soil and Geology at the Proposed Development Site	The potential impacts may include importation of unsuitable or contaminated materials	Negative	Moderate to Significant	Long Term	Direct	Contract and procurement procedures will ensure that all imported aggregates meet with industry conformity/compliance standards and statutory obligations	Imperceptible
Import of aggregates	Land, Soil and Geology at the Source Site	The potential impacts may include loss of attribute and changes in the geological regime at the source Site	Neutral	Imperceptible	Permanent	Indirect	None	Imperceptible
Construction Activities	Geological Heritage	There will be no excavation of the esker on Site	Neutral	Imperceptible	Long Term	Direct	None	Imperceptible
Operational Phase								
Failure of SuDs (permeable paving)	Soil Quality	There is a risk to the soil quality on Site due to failure of paving resulting in infiltration of contaminants to ground surface.	Negative	Significant	Long Term		Ongoing regular operational monitoring and maintenance of drainage and the SuDs measures will be undertaken throughout the lifetime of the Operational Phase of the Proposed Development.	Imperceptible

Westmeath County Council Planning Authority - Inspection Purposes Only

6.8 Monitoring

6.8.1 Construction Phase

During the Construction Phase of the Proposed Development the following monitoring measures will be considered:

- Routine monitoring and inspections during refuelling, concrete works to ensure no impacts and compliance with avoidance, remedial and mitigation measures; and
- Materials management and waste audits will be carried out at regular intervals to monitor the following:
 - Management of soils on-site and for removal offsite;
 - Record keeping;
 - Traceability of all materials, surplus soil and other waste removed from the Proposed Development Site; and
 - Ensure records are maintained of material acceptance at the end destination.

6.8.2 Operational Phase

Ongoing regular operation monitoring of the SuDs measure will be undertaken throughout the lifetime of the Operational Phase of the Proposed Development

6.9 Interactions

6.9.1 Population and Human Health

An assessment of the potential impact of the Proposed Development on human health is included in Chapter 4 of this EIAR. There are no identified human health risks associated with the existing soil condition at the Site for the Operational Phase as a residential development.

Appropriate industry standard and health and safety legislative requirements will be implemented during the operational phase of the Proposed Development that will be protective of site workers.

6.9.2 Hydrology

An assessment of the potential impact of the Proposed Development on the hydrological environment is included in Chapter 7 of this EIAR. Procedures for the protection of receiving surface water environment are set out in Chapter 7 of this EIAR.

6.9.3 Material Assets – Waste and Traffic

The Proposed Development will include the removal offsite of surplus soils and stone for reuse/recovery/disposal. An assessment of the potential impact of the Proposed Development on the material assets including built services, infrastructure and waste management is included in Chapter 12 of this EIAR.

6.9.4 Biodiversity

An assessment of the potential impacts of the Proposed Development on the Biodiversity of the Proposed Development Site, with emphasis on habitats, flora and fauna which may be impacted as a result of the Proposed Development are included in Chapter 5 of this

EIAR. It also provides an assessment of the impacts of the Proposed Development on habitats and species, particularly those protected by national and international legislation or considered to be of particular conservation importance and proposes measures for the mitigation of these impacts.

6.9.5 Landscape and Visual

During the construction phase the Site landscape will undergo a change from predominately greenfield lands to residential with landscaping. An assessment of the potential impact of the Proposed Development on the receiving land scape is included in Chapter 10 of this EIAR.

6.9.6 Air Quality and Climate

The excavation of soils across the Proposed Development Site and the temporary stockpiling of soils pending reuse or removal offsite has the potential to generate nuisance impacts (i.e., dust). An assessment of the potential impact of the Proposed Development on air quality and climate are included in Chapter 8 of this EIAR.

6.10 Difficulties Encountered When Compiling

No difficulties were encountered in the preparation of this Chapter of the EIAR.

6.11 References

Athlone Town Council, 2004. Cornamaddy Action Area Plan – 2005.

Construction Industry Research and Information Association (2015) Environmental good practice on site guide (CIRIA -C741).

Construction Industry Research and Information Association, 2001. Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors (CIRIA – C532).

Enterprise Ireland. Best Practice Guide BPGCS005. Oil Storage Guidelines.

Environmental Protection Agency, 2022. EPA Envision Maps. <https://gis.epa.ie/EPAMaps/> Consulted on 07/09/2022

Environmental Protection Agency, 2020. Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities.

Environmental Protection Agency, August 2017. Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports.

Environmental Protection Agency, September 2015. Draft Advice Notes for preparing Environmental Impact Statements.

Environmental Protection Agency, 2004. IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities with amendments

Environmental Protection Agency, 2002. Guidelines on Information to be Contained in Environmental Impact Statements.

Environmental Protection Agency, 2003. Advice Notes on Current Practice in the Preparation of Environmental Impact Statements.

Geological Survey of Ireland, 2019. The Geological Heritage of County West Meath, An audit of County Geological Sites in Westmeath 2019.

Geological Society of Ireland, 2022. GSI web mapping.
<https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aac3c228>. Consulted on 14/10/2022

Google Earth Pro, 2022. Consulted on 14/10/2022

Institute of Geologists of Ireland Guidelines, 2002. Geology in Environmental Impact Statements, A Guide. Institute of Geologists of Ireland Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements.

National Roads Authority, 2009. Guidelines on Procedures for the Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.

National Parks and Wildlife Services (NPWS) web mapping 2021.
<https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=8f7060450de3485fa1c1085536d477ba>. Consulted on 14/10/2022

OPR, June 2021. OPR Practice Note PN02. Environmental Impact Assessment Screening. Ordnance Survey Ireland, 2020 (OSI, 2021). Ordnance Survey Ireland web mapping
<http://map.geohive.ie/mapviewer.html>. Consulted on 14/10/2022

Paul Mc Grail Consulting Engineers Limited (2022a). Proposed Residential Development at Cornamaddy, Athlone, Co. Westmeath, Phase 3, Planning Submission Report for Engineering Services Westmeath County Council.

Paul Mc Grail Consulting Engineers Limited (2022b). Proposed Residential Development at Cornamaddy, Athlone, Co. Westmeath, Phase 3, Construction Environmental Management Plan

Paul Mc Grail Consulting Engineers Limited (2022c). Proposed Residential Development at Cornamaddy, Athlone, Co. Westmeath, Phase 3, Construction Waste Management Plan Teagasc, 2021 web mapping. <http://gis.teagasc.ie/soils/map.php>. Consulted on 14/10/2022

Westmeath Land Use Zoning Objectives. County Development Plan 2021-2027. Available at: <https://westmeathcoco.maps.arcgis.com/apps/webappviewer/index>. Consulted on: 17/11/2022.

7 HYDROLOGY

7.1 Introduction

This chapter of the EIAR comprises an assessment of the likely significant effects of the proposed development with respect to hydrology (surface water and groundwater). The proposed development is situated in Athlone, Co. Westmeath, on a 10.87 ha site. The proposed development will consist of 70 no. units in a variety of types. The north-eastern portion of the applicant's landholding also has the benefit of a permission granted under WMCC Ref. 22/253 for 75 no. units. It is envisaged that a further phase of development will be lodged in the future for c.170 units in the north-western portion of the applicants lands, which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units' total.

This chapter was prepared by David Casey BSc MSc MCIWEM and Conor O'Neill BA MSc of JBA Consulting Engineers & Scientists Ltd (JBA).

7.1 Assessment Methodology

The methodology used in this assessment follows current Irish guidance as outlined in:

- OPW / DoECLG planning guidance, "The Planning System and Flood Risk Management (2011);
- Environmental Protection Agency (EPA) (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.;
- Department of Housing, Planning and Local Government (DHPLG) (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.
- National Roads Authority (NRA), 2008. Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes.
- Institute of Geologists of Ireland (2013) Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements.
- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU) as amended by 2014/52/EU), European Union 2017.
- S.I No. 296 of 2018 European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

In assessing likely potential and predicted effects, account is taken of both the importance of the attributes, the sensitivity of the environment and the predicted scale and duration of the likely effects.

In accordance with guidance outlined in the EPA EIA Guidelines (2022), the following terms are used in the assessment of effects:

- Quality of an effect is described as either Positive, Neutral or Negative.
- Significance of an effect is described as either Imperceptible, Slight, Moderate, Insignificant, Significant, or Profound.
- Duration of an effect is described as either Temporary, Short-term, Medium-term, Long-term, or Permanent.

7.1.2 Site Visit

A site walkover survey was conducted by JBA on 25th January 2022. The purpose of this visit was to visually assess the site, noting any likely constraints. The findings of this site visit, including photographs taken at the site, have been used in the preparation of this chapter.

The existing environment at the site was noted during the site walkover. The site is mainly greenfield, composed of grassland and hedgerows. An esker runs across the southern half of the site in an east-west direction. There were no obvious potential sources of contamination seen on site. The topography appears to be relatively flat with some undulations within the site. There is a generally fall to the north. Ground permeability appears to be poor, however the drainage channels were predominantly dry during the site visit.

Figures 7.1 and 7.2 show drainage ditches at the northern end of the site, and Figure 7.3 the central east-west drainage ditch. Figure 7.4 shows the esker running through the southern half of the site.



Figure Error! No text of specified style in document.-6 Site Photographs

7.1.3 Sources of information

This assessment was considered in the context of the available baseline information, potential effect, and other available relevant information. In collating this information, the following sources of information and references were consulted:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022)
- EPA Catchments website (www.catchments.ie) (EPA, 2021), including the 3rd Cycle Draft Upper Shannon (Lough Ree) Catchment Report (HA 26E)
- GSI Map viewer
- OSI.ie – 6” & 25” maps
- Aerial Mapping
- Westmeath County Development Plan 2021-2027
- Site drawings and proposed layout drawings.

7.1.4 Governing Legislation

The EU has set out requirements for Environmental Impact Assessments under the EIA Directive 2011/92/EU (as amended by Directive 2014/52/EU). The principal piece of legislation under which an EIAR may be undertaken for developments in Ireland is the Planning and Development Acts, 2000-2021 as amended. Further regulations are explained in the Planning and Development Regulations and European Communities (Environmental Impact Assessment) Regulations.

The legislation relevant to surface water is listed below. This legislation was consulted during the preparation of this assessment, and the limits contained within them will be used for the purposes of monitoring during construction of the proposed development.

- Water Framework Directive (2000/60/EC);
- Groundwater Directive (2006/118/EC);
- European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009);
- European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010);
- European Communities (Technical Specifications for the Chemical Analysis and Monitoring of Water Status) Regulations, 2011 (S.I. No. 489 of 2011);
- Salmonid Regulations (S.I. No. 293 of 1988);
- Habitats Directive (92/43/EEC).

7.2 Subject Site Characteristics

The subject site is identified in Figure 7-2 below.

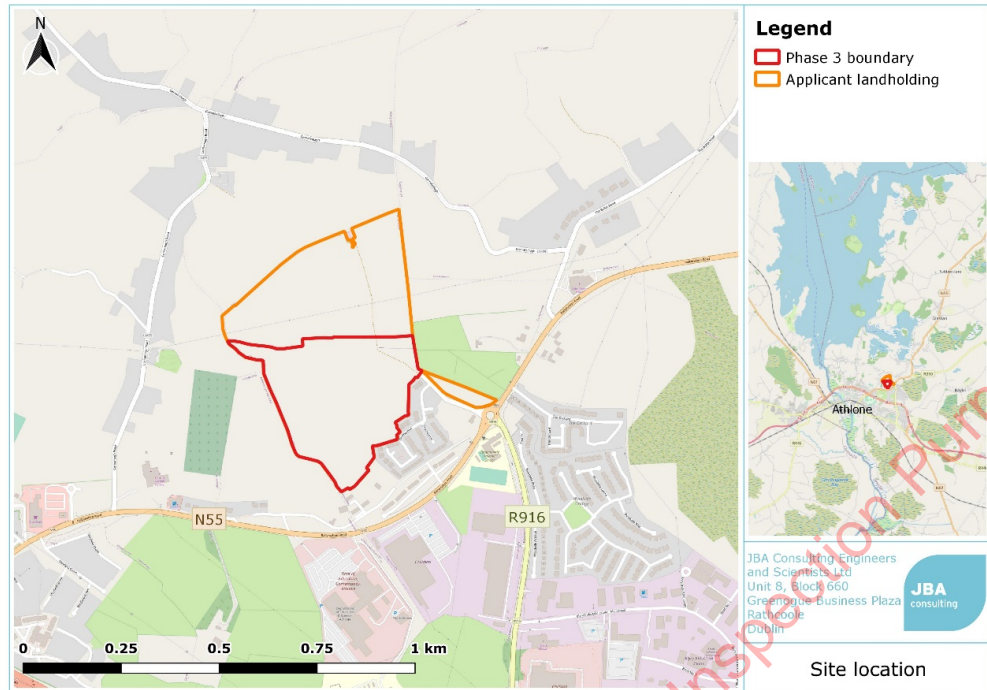


Figure Error! No text of specified style in document.-7 Application Site Area

7.2.1 Surface Water

7.2.1.1 Hydrological Environment

The site is situated within the Upper Shannon (26E) WFD catchment. The catchment is 582km² in area. The site lies within the Shannon[Upper]_SC_090 sub-catchment. The streams on site drain towards Lough Ree, one of the three major lakes on the River Shannon. From here, the River Shannon flows through Athlone and continues south, eventually meeting the sea at the Shannon Estuary, between Limerick and Clare.

Immediately east of the site is the Breensford_SC_010 sub-catchment, part of the Upper Shannon (26E) catchment. South of the site is the Upper Shannon (26G) catchment.

The sub-catchments are further divided into river sub-basins. River sub-basins act as the management and reporting units for the Water Framework Directive. The proposed development is located within SHANNON (Upper)_110 sub-basin. This sub-basin is composed of separate short watercourses which feed into Lough Ree. Pressures acting on the SHANNON (Upper)_110 sub-basin include agriculture, hydromorphology, and atmospheric pressures (EPA, 2021).

7.2.1.2 Watercourses

There is one WFD waterbody near to the site. A tributary of the River Shannon (SHANNON (Upper)_110) is adjacent to the northern boundary of the applicant's landholding, from there flowing north towards Balaghkeeran Bay, and eventually to Lough Ree. Lough Ree is one of the three largest lakes on the River Shannon.

The Shannon is not listed as a salmonid waterbody on the Salmonid Regulations. Lough Ree does not hold freshwater pearl mussel.

There is a network of drains through the site. These are shown in Figure 7-3, as noted during the site walkover. On the site walkover, the drains appeared to be dry, with water only visible at two locations.

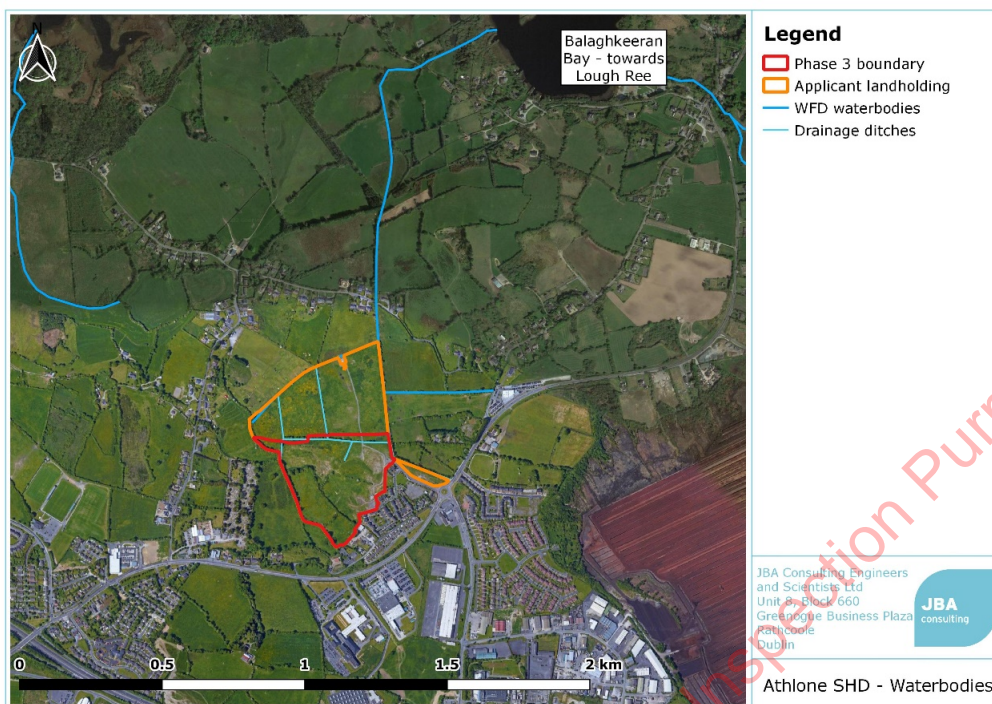


Figure Error! No text of specified style in document.-8 Waterbodies in the site and surrounding area

7.2.1.3 EPA Q Rating

The EPA’s biological river water quality classification is based on macroinvertebrate biological sampling at water monitoring stations. There are no EPA water monitoring stations on the SHANNON (Upper)_110.

7.2.1.4 Meteorological Data

Rainfall data, extracted from the Met Éireann 1981-2010 Annual Average Rainfall Grid, has been consulted. The 30-year annual average rainfall is based on a 1 x 1km grid, collated from stations around the country.

The annual average over that period in the vicinity of the scheme is between 910-923mm.

7.2.1.5 Flood Risk

There are a number of drainage channels within the site boundary that discharge to a stream at the site's north and north-eastern boundary. This stream flows in a northern direction towards Balaghkeeran Bay.

A review of the historic flood information confirms that there has been no identified flood risk information within or surrounding the site. The site walkover also did not identify any signs of inundation onsite.

The CFRAM (Catchment Flood Risk Assessment and Management) study has outlined the predicted risk for fluvial and coastal flooding scenarios. The 0.1%, 1% and 10% AEP (Annual Exceedance Probability) scenarios for the vicinity of the site are shown in Figure 7-4. The site is not indicated as being at risk of flooding for any of the three AEP scenarios.

The stream at the site boundary has not been included within the CFRAM programme. Review of the stream confirms that is a small waterbody with a minor catchment at the site, and therefore presents a limited flood risk to the site.

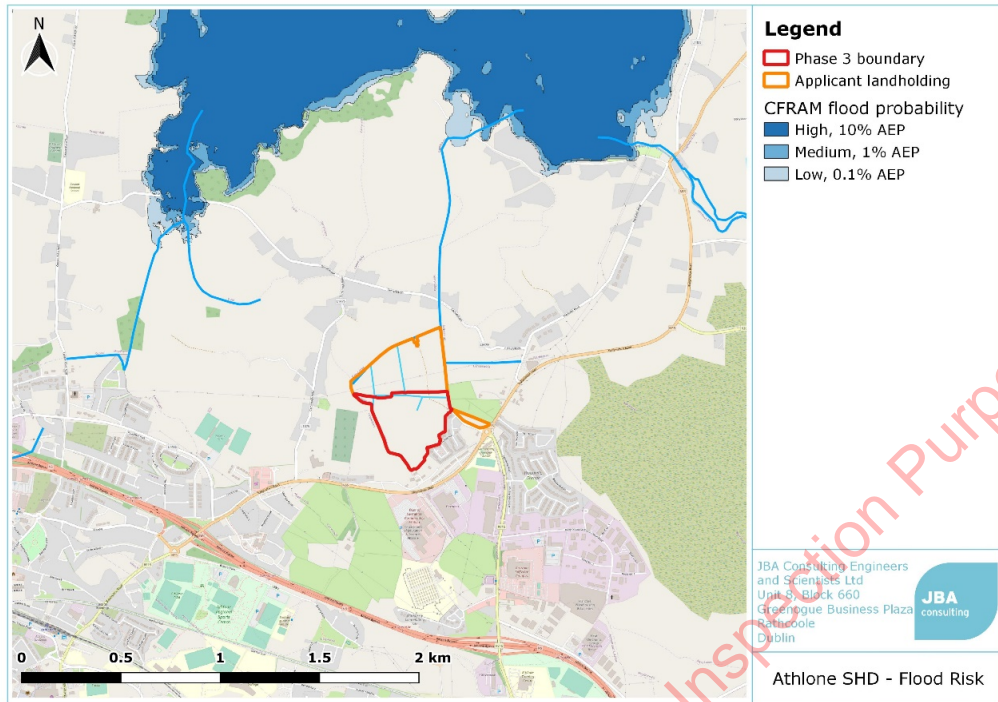


Figure Error! No text of specified style in document.-9 CFRAM Flood Zones in the vicinity

7.2.1.6 Designated Sites

Several sites designated under the EU Habitats and Birds Directives, known collectively as Natura 2000 sites, as well as those sites protected under the Wildlife Act (National Heritage Areas), are located within 5km of the proposed development.

Lough Ree SAC is approximately 1km downstream of the site. This site contains a high number of habitats and species listed on Annexes I and II of the E.U. Habitats Directive, including the priority habitats orchid-rich calcareous grassland, active raised bog, limestone pavement, and alluvial woodland.

Lough Ree SPA is also approximately 1km downstream. The site is of ornithological importance for wintering and breeding birds, including the Annex I species Whooper Swan, Golden Plover, and Common Tern.

Lough Ree pNHA is also approximately 1km downstream, with the same site boundaries as Lough Ree SAC.

Middle Shannon Callows SPA and River Shannon Callows SAC are within 5km of the site, but approximately 11.8km downstream.

River Shannon Callows pNHA, with the same site boundaries as River Shannon Callows SAC, is also within 5km of the site, and approximately 11.8km downstream.

Carn Park Bog SAC and Crosswood Bog SAC are within 5km of the site, but are not hydrologically connected.

Carrickynaghtan Bog NHA is also within 5km of the site, but is not hydrologically connected.

7.2.2 Groundwater

7.2.2.1 Regional Hydrogeology

The proposed site is located within the Athlone Gravels (IE_SH_G_246) groundwater body. The waterbody was classified as Good status for the WFD 2013-2018 and is Not at

Risk. Immediately to the south of the proposed development is the Inny (IE_SH_G_110) groundwater body. This waterbody is also good and Not at Risk status under the WFD.

There are no groundwater monitoring sites in the vicinity for Group Water Schemes, Public Water Supplies, Regional Water Supply Schemes, or Source Protection Zones, nor are there any drinking water groundwater abstraction sites.

Groundwater vulnerability at the site varies from moderate to high. Groundwater vulnerability at the site is shown in Figure 7-5. The groundwater body is subject to anthropogenic pressures.

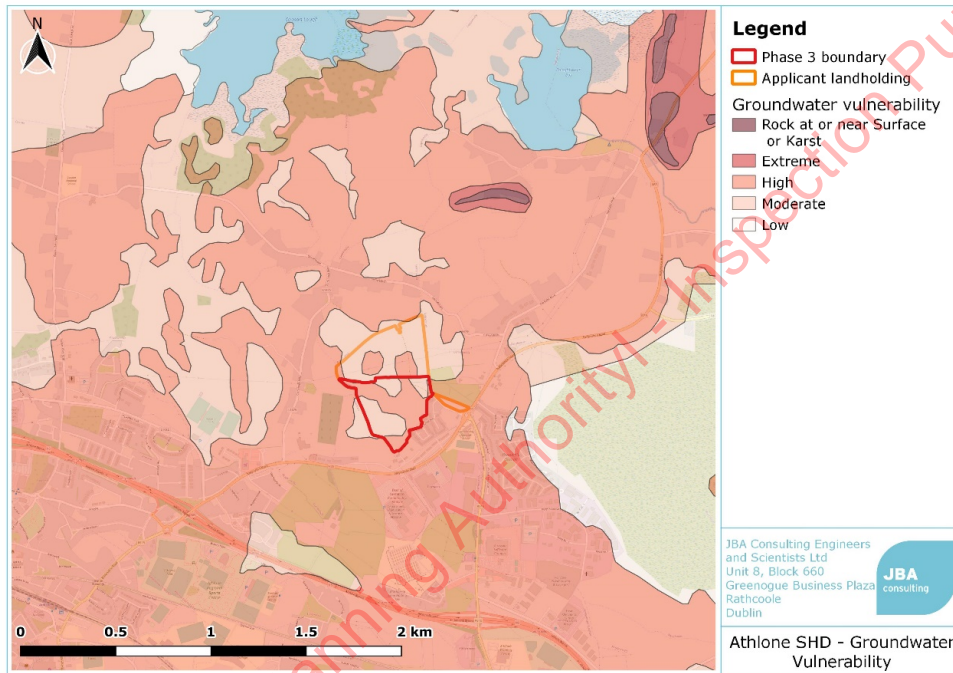


Figure Error! No text of specified style in document.-10. Groundwater vulnerability at the site

7.2.2.2 Aquifer

There are two bedrock aquifers underlying the site, with complex boundaries. One is of local importance, bedrock which is moderately productive only in local zones, while the other is a locally important gravel aquifer.

7.2.2.3 Groundwater Extractions

There are no known groundwater extractions in the immediate area surrounding the site. A review of the GSI web-portal provides information on the one groundwater extraction in the study area, shown in Table 7-1.

Abstraction ID	Abstraction type	Location accuracy (m)	Distance to site (km)	Depth (m)	Yield (m ³ /day)	Use
2023NWW102	Borehole	1000	0.95 - 1.95	81.4 (rock 3.6)	272.7	Agricultural and domestic use

Table Error! No text of specified style in document.-1 Groundwater extractions near the site

7.2.2.4 EPA Licensed Facilities and Waste Facilities

There are no waste facilities, landfills, or former landfills listed by the EPA in the immediate vicinity of the proposed development, nor any integrated Pollution Prevention Control (IPCC), Integrated Pollution Control (IPC), or Industrial Emissions Licensing (IEL) facilities.

7.2.2.5 Esker

The southern half of the site contains an esker, running approximately east-west across the site (shown in Figure 7-1). The esker is composed of Quaternary gravels of basic reaction.

The esker is not listed as a Geological Heritage Site by the GSI, nor is it listed on the Schedule of County Geological Sites in the Westmeath County Development Plan 2021-2027. Despite this, the esker will be retained by the proposed development as open space.

7.3 Description of the Characteristics of the Proposed Development

7.3.1 Detailed Description

The development will consist of a residential development and public open space comprising the following:

- Amendments to permitted application WMCC reg Ref. 14/7103/ ABP Ref. PL25.244826 for the removal of 38 no. permitted units (not constructed) to be replaced by: Construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (78 sq.m), 60 no. 3 bed semidetached (96-116 sq.m) and 6 no. 4 bed semidetached houses (147 sq.m) with associated private gardens.
- The creche facility, public open spaces, landscaping, roads layouts, car parking, boundary treatment works, public lighting and all associated site works associated with the 87 no. remaining units retained as permitted under WMCC Reg Ref. 14/7103 ABP Ref. PL25.244826 will remain unchanged.
- All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a section of the distributor road permitted under WMCC Reg. Refs 14/7103/ ABP Ref. PL25.244826 and 22/253 to the east of the site.
- All associated site development works, services provision, drainage works, public open space (c.1.03ha), landscaping, boundary treatment works, public lighting, associated ESB substation cabinets, bin stores, car and bicycle parking provision.

- This development will form part of a larger/future phase of the development.

7.3.2 Water Supply

The proposed watermain network has been designed to comply with Irish Water specification. 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 Irish Water and to facilitate possible future domestic meter installation.

A Pre-Connection Enquiry has been submitted to IW and the Confirmation of Feasibility has been granted, reference CDS20006740. These are included in Appendix B of the Engineering Report prepared by Paul McGrail Consulting Engineers

Full details of the proposed water supply are available in the Engineering Report prepared by Paul McGrail Consulting Engineers for the proposed development

7.3.3 Wastewater

The proposed foul sewer network will connect to an adjacent system which is currently under construction, which is itself connected to the existing Irish Water Wastewater Network Ø450mm pipeline. The foul water drainage system for the proposed development has been designed in accordance with the Irish Water 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 existing separate foul sewer network within the development. The foul sewerage for each house will have a separate connection to the proposed 225mm and 150mm diameter foul sewer along the road. Wastewater will be conveyed to Athlone Wastewater Treatment Plant (WWTP), approx. 2.6km southwest of the proposed site. Athlone WWTP is a tertiary treatment plant, with a Population Equivalent (PE) capacity of 30000. The WWTP has sufficient capacity to facilitate the loading of the proposed development, according to the Irish Water letter contained in Appendix B of the Engineering Report prepared by Paul McGrail Consulting Engineers.

A Pre-Connection Enquiry has been submitted to IW and the Confirmation of Feasibility has been granted, reference CDS20006740 (Appendix B, Engineering Report prepared by Paul McGrail Consulting Engineers).

Full details of the proposed water supply are available in the Engineering Report prepared by Paul McGrail Consulting Engineers for the proposed development and included in the application.

7.3.4 Surface Water

The proposed surface water network will connect to an adjacent system which is currently under construction. The proposed network was designed to comply with section C5.2 of the “Sewers for Adoption” manual, published by Water UK and referenced in the Engineering Report (Paul McGrail Consulting Engineers).

The proposed surface water network includes sustainable drainage systems (SUDS), including modular permeable paving, swales located next to roadways, detention basins, petrol and oil interceptors, and a hydrobrake flow control system.

Surface water runoff from the development will be attenuated to greenfield runoff (Qbar), in accordance with the recommendations of the GSDSDS.

Full details of the proposed water supply are available in the Engineering Report prepared by Paul McGrail Consulting Engineers for the proposed development and included in the application.

7.4 Characteristics of the Construction and Operation Phases

7.4.1 Construction Phase

Construction activities pose a significant risk to watercourses and hydrology, particularly from contaminated surface water runoff entering nearby watercourses or groundwater bodies or changes to watercourse morphology and flow patterns. The sections below outline the potential effect during construction on water and hydrology without any mitigation. Mitigation measures are discussed in Section 7.5.

A summary of the construction process is provided as follows:

- During the construction phase, soils will be excavated and removed from the site as part of the excavation for building foundations, drainage, access roads and car parking areas,
- The construction of a Contractors Compound for the storage of cement and concrete materials, temporary storage of oils and fuels,
- Construction of the stormwater system,
- Construction of the residential units,
- Construction of the access roads and footpaths.

7.4.1.1 Water Quality

During the construction phase of a development, there is potential for effect on water quality due to the numerous substances in use which act as potential pollutants. Runoff from construction areas can result in an increase in sediment loading or the suspension of solids, as well as the mobilisation and deposition of contaminants like diesel and oils.

The proposed development will involve the alteration of the existing ground level in places and associated drainage works and landscaping. Potential water pollutants arising from these operations are as follows:

- Silt and suspended solids. Sources include activities requiring excavation and stockpiling of soils and other ground material, construction of access roads or hard standing areas which require the use of aggregate, construction plant movement across disturbed soils, temporary surface water pooling in excavations, and the construction of culverts and stream realignments
- Increased dust levels at the site. During periods of extended dry weather, dispersion of dust either for hardstanding areas or from stockpiles could, without dampening, enter nearby water courses
- Use of concrete during construction. Raw concrete could reach a watercourse with consequence effect on pH and suspended solids levels in the receiving waterbodies. Washing out of the concrete trucks and chutes will generate a source of polluted runoff and without sufficient capture could enter a watercourse
- Machinery on site during the construction phase may result in contamination of the surface water. The potential effect could derive from accidental spillage of fuels, oils, paints and solvents, which could impact surface water and groundwater quality if allowed to infiltrate to runoff to surface water systems and/or receiving watercourses
- Chemicals. Sources include runoff of hydrocarbons or lubricants due to accidental spillage, refuelling, inappropriate storage, or gradual leakage from plant vehicles or at the construction compound, wastewater effluent from construction welfare facilities, and cement-based products in use during construction.

The proposed construction activities have the potential to temporarily alter water quality in the study area. This would be a significant short-term negative effect.

7.4.1.2 Hydrological Effects

Construction activities can affect the hydrological regime of the site and nearby connected waterbodies.

The existing surface water hydrological regime consists of drainage channels (Figure 7.2) which take surface runoff and discharges to the tributary of the River Shannon (SHANNON (Upper)_110), from there flowing north towards Balaghkeeran Bay, and eventually to Lough Ree. Surface runoff also infiltrates to the ground naturally. The proposed layout of the development shows that the drainage channels will be retained during the operational phase.

The potential effect on the hydrological regime on-site during the construction phase includes changes to runoff and flow pathways. Excavation of ground to formation level, excavation of services and foundations will impact on the hydrological regime at the site. As discussed, surface water runoff with entrained suspended solid material and hydrocarbons will affect surface water quality.

The proposed construction activities have the potential to temporarily alter water quality and the hydrological regime in the study area. This would be a significant short-term negative effect.

7.4.1.3 Flood Risk

Due to the location of the site, i.e., outside of the floodplain, the construction will have no effect on floodplain storage and conveyance. As construction, i.e., excavation, earthworks and construction, are limited to the site boundary, and there is no proposed works outside of that boundary, construction will not increase flood risk off site.

Exceptionally high intensity rainfall has the potential to cause localised flooding and associated damage. In addition, chemical spill has the potential to significantly affect the local drainage system and eventually the River Shannon as the receiving watercourse.

7.4.1.4 Hydrogeological Effects

Excavation of soil and the groundworks will have the effect of removing the protective cover for groundwater. This will increase the vulnerability of groundwater to pollution/contamination in localised areas. This is particularly true when excavations are left open.

As stated above, machinery on site during the construction phase may result in contamination. The potential effect could derive from accidental spillage of fuels, oils, paints and solvents, which could affect groundwater quality.

Concrete operations carried out near open excavation could affect the underlying groundwater quality as concrete (specifically, the cement component) is highly alkaline.

7.4.1.5 Potential Effects

In relation to the construction phase the potential effect, without mitigation measures, on the hydrology and hydrogeology environments is considered to be **Short Term - Significant Negative** Effect on quality, i.e., an effect which causes noticeable negative changes in the character of the environment for a short time period.

7.4.2 Operational Phase

The proposed operational stage drainage design will be similar to the existing surface drainage layout, with the drains on site to be retained. The retention of the existing hedgerows/land drains in the proposed development will help to ensure the hydrological regime remains like the existing.

The design includes on-site treatment and filtration of surface and stormwater, such as the use of green roofs, filter drains, petrol interceptors etc. The use of these methods will ensure that the levels of hydrocarbons, suspended solids and metals discharging from the site are negligible. The proposed discharge from site is limited to the greenfield run-off rate, i.e., it replicates the existing conditions with regard to flow rates.

In the operational stage, it is proposed that following interception and attenuation, stormwater will discharge from the site to an existing surface water waterbody along the northern boundary of the site. Stormwater discharges from the site will be limited to the greenfield runoff rate by a hydrobrake flow control device, as outlined in Section 2.4 of the Engineering Report prepared by Paul McGrail Consulting Engineers Ltd. Predicted increases in rainfall due to climate change have been taken into account in the drainage design.

There will be no direct discharge to groundwater post-development.

Given the drainage design, use of SuDS measures and on-site treatment methods, and expected discharge rates from the site, the potential effect on surface water and groundwater during operation is expected to be a Long Term, Imperceptible Effect, with a Neutral effect on quality i.e., an effect capable of measurement but without noticeable consequences.

7.4.2.1 Do Nothing Effect

In the event of the proposed development not being constructed, there would be no resulting effects on hydrology at the site. The hydrological regime would remain the same in the area, i.e., the Do-Nothing effect is considered to be neutral with regard to water and hydrology.

7.5 Mitigation Measures

The assessment has identified the following potential effects on water. These three areas will require management and the implementation of mitigation measures throughout the construction and operational phases of the development.

- Pollution of watercourses or groundwater by chemicals
- Pollution of watercourses or groundwater by silt or suspended solids
- Changes to runoff and flow pathways.

The construction phase will pose the greatest level of risk, with the highest levels of activity on site and use of materials and plant. Issues arising during the construction phase, if left unmitigated, have the potential to continue in the operational phase.

Mitigation measures are proposed in the sections below.

7.5.1 Mitigation During Construction

A site-specific Construction Environmental Management Plan (CEMP) will be devised and implemented by the appointed contractor, to be put in use and kept up to date throughout the construction phase. The CEMP will assist the contractor in preventing, minimising, or managing environmental effects during the construction phase of the development. The CEMP will outline methods for preventing or reducing environmental effects, incorporate an Emergency Response Plan for dealing with an accidental spillage or environmental contamination, and detail training to be provided to on-site staff. The CEMP will be designed in accordance with standard best practice guidance outlined in the following:

- CIRIA – Guideline Document C532 Control of Water Pollution from Construction Sites (CIRIA, 2001);
- CIRIA – Environmental Good Practice on Site C741 (4th Edition) (CIRIA. 2015).

The CEMP will also include site-specific measures to mitigate potential effects on water and hydrology. These are outlined below.

7.5.1.1 Surface Water Runoff

Surface water generated on site from rainfall will be contained locally and subsequently pumped to the local drainage network. Prior to discharge, the surface water will pass through a treatment train consisting of silt traps and hydrocarbon interceptors to remove suspended solids and hydrocarbons. Regular visual inspection of the discharged surface water and monitoring of the treatment train will be undertaken (Section 7.6). Regular sampling of the surface water discharge will be carried out by the contractor. Samples will be submitted to a laboratory for biological oxygen demand, chemical oxygen demand, suspended solids, pH, conductivity and total petroleum hydrocarbon analysis. The results will be compared with compliance levels given in the Surface Water Regulations. Exceedances in levels will be investigated and improved mitigation measures will be put in place. The success of the revised/updated mitigation measures will be validated with on-going monitoring.

Temporary storage of soil will be carefully managed to prevent any potential negative effect on the receiving hydrological environment and the material will be stored away from any existing drains within site. Movement of material will be minimised in order to reduce degradation of soil structure and generation of dust. Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise potential for water ingress into excavations.

Weather conditions will be monitored when planning construction activities to minimise risk of run-off from the site and the suitable distance of topsoil piles from drainage ditches/sewerage systems will be maintained. In the event of an extended period of dry weather, stockpiles will be dampened using a water spray. The level of spraying will be sufficient to just dampen the soil to avoid dust blow, and excessive runoff will arise during this process. Site roads will also be subject to similar mitigation to avoid dust blow.

7.5.1.2 Chemical Pollution

Mitigation measures for the protection of surface and groundwater quality from chemical pollution involve environmental operating plans, chemical storage, and Emergency Response Procedures.

At construction stage, the following mitigation measures are proposed:

- The contractor will construct a site compound at a location remote from any water bodies, drains, or open excavations
- Any lubricants or hydraulic oils will be banded in bunds that can contain 110% volume of the largest container. Absorbent pig bags will be kept in the site offices. These will be disposed of correctly if used and replaced with new ones immediately. Disposal records for used adsorbent will be retained by the Site Manager
- All materials taken on-site will be clearly labelled and stored in sealable containers
- The diesel fuel tank will be adequately banded (110%) and the filling nozzle will be stored within the banded area. The Site Manager will as part of their daily site walkaround check the integrity of the fuel tank(s). The condition of the tanks will be recorded by the Site Manager
- Re-fuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area which will be away from any existing surface water drains which could also provide pathways to the underlying geology

- The contractor will ensure that no hazardous or noxious materials enter a watercourse or drain or open excavation. Should this situation arise emergency procedures will be activated
- The contractor will maintain stocks of adsorbent bags and spill mats at the site. When used the adsorbent bags will be disposed of as a hazardous waste. Stocks will be immediately replenished.
- An Emergency Plan will be developed for the site and information on the Plan will be provided to contractors and sub-contractors during site induction.
- During all works the weather forecast will be monitored and a contingency plan developed to prevent damage or pollution during extreme weather. Machinery and equipment will not be left on-site during such events and will be removed beforehand
- Trucks delivering concrete to the site will not be allowed to washout their vehicles on site. Only washing of the chute will be allowed. The washing facilities will be remote from watercourses and will be bunded by a low earthen berm and liner. Dried concrete will be removed and used as blinding on site roads.
- The Contractor will clean equipment prior to delivery to the site. The Contractor will avoid using any equipment which leaks fuel, hydraulic oil or lubricant. The Contractor will maintain equipment to ensure efficiency and to minimise emissions
- No excavation shall take place below the water-table on the site
- Management/Response plans will be implemented to identify mobilisation of soil particles/pollution and initiate the interception and treatment of pollution/silt run-off
- Precast elements should be maximised to avoid wet concreting in close proximity to water.

7.5.1.3 Silt and Suspended Solids

Mitigation measures for the protection of surface and groundwater quality from silt and suspended solids on site involve silt control, particularly close to drainage channels or open excavations.

At construction stage, the following mitigation measures are proposed:

- The contractor will construct a site compound at a location remote from any drains
- All soil stockpiles shall be covered (i.e., vegetated) to minimise the risk of rain / wind erosion. Vegetation should be established as soon as possible on all exposed soils.
- During extended dry periods, soil stockpiles should be soaked periodically to minimise the risk of airborne particles entering watercourses
- A Storm Water Management Plan should be completed to address sediment control during the construction works and address the potential risk to release of sediments and various pollutants into local watercourses.
- Management/Response plans will be implemented to identify mobilisation of soil particles/pollution and initiate the interception and treatment of pollution/silt run-off.
- Silt fencing or other appropriate measures shall be put in place downstream of exposed soils or soil stockpiles.

7.5.1.4 Changes to Runoff and Flow pathways

Mitigation measures to minimise effects on runoff and flow pathways involve the following mitigation measures:

- The contractor will construct a site compound at a location remote from any drains

- Vegetation should be established as soon as possible on all exposed soils.

7.5.2 Mitigation During Operation

The proposed development will retain the existing drainage channels on site and incorporate SuDS features, which will help to mitigate against additional surface water runoff.

During the operational phase, regular visual inspection of the silt traps and hydrocarbon interceptors should be carried out to ensure they are operating correctly. No additional mitigation measures are required.

7.5.3 Predicted Effect of the Proposed Development

7.5.3.1 Construction Phase

Following implementation of the proposed mitigation measures the residual environmental effect at the site will be minimised. The mitigation measures will ensure that no waterbodies in the site will be significantly negatively affected.

Following the implementation of the mitigation measures, the effect during the construction phase will be short-term, neutral and imperceptible.

7.5.3.2 Operational Phase

The design of the scheme has been such that there are no predicted effect on the water and hydrogeological environment during the operational phase of the development.

Overall, the effect of the proposed development will be long-term, neutral and imperceptible.

7.6 Monitoring

7.6.1 Construction Phase

During construction, visual and chemical monitoring of treated surface water will take place to ensure that water draining from the site is not affected by the proposed development. This will take place during the regular site audits during the construction process.

Surface water collected in sumps will be monitored prior to discharge. Samples will be taken and the pH, conductivity, chemical oxygen demand, total petroleum hydrocarbons, and suspended solids levels will be recorded. The monitoring results will be compared to the allowable limits given in the Surface Water Regulations. If the results shows an exceedance in the allowable levels, then the appointed contractor will review the mitigation measures and remedy them to lower the levels of the pollutant. A record of these upgrades/changes to the mitigation measures will be recorded.

The contractor is required to monitor the weather forecasts to inform the programming of earthworks and stockpiling of materials.

7.6.2 Operational Phase

Once operational, silt traps and hydrocarbon interceptors should be visually inspected on a regular basis. Any spillages on site should be acted upon immediately. No other monitoring measures are required during the operational phase.

7.7 Residual Effects

The residual effects are those which will remain after mitigation measures have been implemented.

7.7.1 Construction Phase

All construction works will follow best practice guidance and will implement mitigation measures for the predicted effects.. With the implementation of these measures, there will be no significant residual effect on water or hydrogeology during construction.

7.7.2 Operational Phase

The operational phase is predicted to have an overall neutral long-term effect on water and hydrogeology, and there are no mitigation measures required. As such, there will be no significant residual effect on water or hydrogeology during operation.

7.7.3 Reinstatement

Following the construction phase, all greenspace will be made good, and the ground will be revegetated.

7.8 In- Combination Effects and Cumulative Effects

7.8.1 In- combination effects

The EIAR must also consider in-combination effects, or the interactions between the different factors discussed.

Effects on water or hydrogeology can have further effects on biodiversity and ecology, through the mobilisation of silts, suspended solids, oils, or chemicals. On entering watercourses, these can negatively affect fish and aquatic ecology, as well as have an effect on Natura 2000 sites. These effects are further discussed in the Biodiversity chapter of this EIAR (Chapter 8), and the NIS prepared by Enviroguide Consulting.

Surface water runoff can also have an effect on soil quality in the area, with chemicals or suspended solids having an effect on soil fertility and contamination. These effect are further discussed in the Land and Soils chapter of this EIAR (Chapter 6).

7.8.2. Cumulative Effects

Cumulative effects are the result of several minor effects combining to create one major effect. The assessment of cumulative effects considers existing stresses on the water environment as well as developments that are in planning or are underway.

The cumulative effect of the proposed development surface runoff to the River Shannon and Lough Ree with other developments in the area could affect water quality and flood risk upstream and downstream. As the proposed discharges will be similar to the existing runoff rate, and the proposed development includes SuDS measures and on-site treatment measures, the cumulative effect will not be significant. The significant pressures acting on the waterbody leading to Lough Ree are hydromorphology, agriculture, urban runoff, and other (EPA, 2021). The cumulative effects associated with hydrology will be long-term and imperceptible.

Applications for development in the vicinity of the site have been reviewed to assess their potential for cumulative effects with the proposed development. These developments are outlined in Chapter 16 - Cumulative Impacts. Planning application documents and planners reports for each of the developments within close proximity to the proposed development were reviewed and it was determined that their drainage systems have been designed in line with best practice.

All future development will need to comply with the governing development plan objectives regarding SuDS and ensuring that any development does not increase flood risk elsewhere in the catchment.

Overall, once the relevant legislation and guidelines are implemented, the cumulative effects associated with the development are long-term, with an imperceptible effect on hydrology.

7.9 References

EPA, 'Advice Notes on Current Practice in the Preparation of Environmental Impact Statements' (EPA, 2015)

EPA, Catchments website. Available at: <https://www.catchments.ie/> (2021)

EPA, 'Guidelines on the Information to be Contained in Environmental Assessment Report' (2022)

Westmeath County Development Plan 2021-2027

DoEHLG & OPW, Planning System and Flood Risk Management Guidelines for Planning Authorities (2009)

OPW, Shannon Catchment and Flood Risk Assessment Management (CFRAM), Flood Maps (2016)

Westmeath County Council Planning Authority - Inspection Purposes Only

8 BIODIVERSITY

8.1 Introduction

Enviroguide Consulting was commissioned by Marina Quarter Limited to prepare a Biodiversity Chapter for a Proposed Development at Cornamaddy, Athlone, Co. Athlone.

This Chapter of the Environmental Impact Assessment Report (EiAR) describes the Biodiversity of the Site of the Proposed Development (the ‘Site’) and surrounding environs, with emphasis on habitats, flora and fauna, and details the methodology of assessment used in each case. It provides an assessment of the impacts of the Proposed Development on habitats and species, particularly those protected by national and international legislation, or considered to be of conservation importance; and proposes measures for the mitigation of these impacts, where appropriate. A description of residual effects that will remain following the implementation of mitigation is also outlined in this Chapter.

The Chapter has been completed having regard to the *Guidelines for Ecological Impact Assessment in the UK and Ireland*, by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018), together with the guidance outlined in the Environmental Protection Agency (EPA) documents *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (May 2022) and *Advice Notes for Preparing Environmental Impact Statements* (Draft, September 2015). The value of the ecological resources, the habitats, and species present or potentially present, was determined using the ecological evaluation guidance given in the National Roads Authority’s (NRA, now Transport Infrastructure Ireland) *Ecological Assessment Guidelines* (NRA, 2009).

8.1.1 Author Information and Competency

Synergy Environmental Ltd., T/A Enviroguide Consulting, is wholly Irish Owned multi-disciplinary consultancy specialising in the areas of the Environment, Waste Management and Planning. All of our consultants carry scientific or engineering qualifications and have a wealth of experience working within the Environmental Consultancy sectors, having undergone extensive training and continued professional development. Enviroguide Consulting professional memberships include the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association and Chartered Institute of Ecology and Environmental Management (CIEEM).

All surveying and reporting has been carried out by qualified and experienced ecologists and environmental consultants. Aisling Walsh, professional bat Ecologist with Ash Ecology and Environmental Ltd. undertook the on-site bat surveys. Billy Flynn, professional Ecologist with Flynn Furney Environmental Consultants Ltd. undertook the on-site badger survey. Rozalyn O’Hora, Ecologist with Enviroguide Consulting, prepared this chapter and undertook the desktop research, habitat surveys, invasive species surveys and winter bird surveys at the Site. Liam Gaffney, Senior Ecologist with Enviroguide Consulting undertook habitat and mammal surveys of the Site. Brian McCloskey, Graduate Ecologist and Ornithologist with Enviroguide Consulting undertook the breeding bird surveys at the Site.

Aisling Walsh M.Sc. MCIEEM Trading as Ash Ecology & Environmental Ltd. prepared the Bat Survey Report for the Proposed Developments. Aisling’s qualifications include M.Sc. (Dist) in Biodiversity and Conservation (TCD) and B.Sc. (Hons) Zoology (NUIG), a diploma in Applied Aquatic Science (GMIT) and a Certificate in Applied Biology (GMIT). Aisling has over 15 years of experience providing environmental consultancy and environmental assessment services. Aisling has written numerous Ecological Impact Assessments (EiA), Screening for Appropriate Assessment (AA) Stage I and Stage II Natura Impact Statements (NIS), chapters for Environmental Impact Assessments/Statements (EiAR), Badger Surveys, Bat Surveys, Bird and Habitat Surveys. Aisling is a licenced bat ecologist (example of recent licences: DER/BAT 2020 – 46 EUROPEAN, DER/BAT 2020 – 48 EUROPEAN, DER/BAT 2021 – 89 EUROPEAN, DER/BAT 2022 – 12 EUROPEAN) and a member of Bat Conservation Ireland. In addition, she has completed several bat courses to continue her training and CPD with the most recently (May 2021) a Lantra-accredited course, developed by the Bat Conservation Trust and supported by the Arboricultural Association to

access bat tree roost features. Over the past 15 years Aisling has completed 100s of bat surveys providing her with more than adequate experience in the profession.

Billy Flynn B.Sc., M.Sc., Member, Chartered Institute of Ecology and Environmental Management (MCIEEM), Member, Institute of Environmental Sciences (MIEnvSci) and Chartered Environmentalist (CEnv). Billy has over 20 years of experience in mammal survey and mammal mitigation design. Billy is a Director of the Irish Wildlife Trust and a former Director of Voluntary Service International and the Irish Environmental Network.

Rozalyn O’Hora, Project Ecologist with Enviroguide, has a M.Sc. (Hons.) in Ecological Assessment from University College Cork, and a BSc (Hons.) in Environmental Science from the University of Galway. She has a wealth of experience in desktop research, literature scoping-review, and report writing, as well as practical field experience (Habitat surveys, invasive species surveys and bird surveys). Rozalyn has extensive experience in compiling Biodiversity Chapters of EIARs, EclAs, AA screening and NIS reports, and in the overall assessment of potential impacts to ecological receptors from a range of developments.

Liam Gaffney, Senior Ecologist with Enviroguide, has a M.Sc. (Hons.) in Wildlife Conservation and Management and a B.Sc. (Hons.) in Zoology from University College Dublin and a wealth of experience in desktop research, literature scoping-review and report writing as well as abundant practical field experience (Wintering bird surveys, large mammals, fresh water macro-invertebrates etc.). Liam is also a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Brian McCloskey is a graduate Ecologist and experienced Ornithologist with 11 years of birding experience. Brian holds a degree in Planning and Environmental management from Technological University Dublin. Brian is a longstanding and active member of Bird Watch Ireland and has provided Ornithology survey work for ecological consultancies, e.g., Vantage points surveys of Gulls, Terns, Raptors, Waders and Wildfowl; hinterland surveys of the above as well as riverine species; and breeding waders and country birds. Brian is highly experienced with all survey methodologies and with surveying all species groups of Irish birds and migrants.

8.1.2 Reference to Guidelines Relevant to Discipline

The following guidelines were referenced in the preparation of this chapter:

- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester, UK. CIEEM. (2018).
- Advice Notes for Preparing Environmental Impact Statements (Draft) Environmental Protection Agency. (2015).
- Guidelines on the information to be contained in Environmental Impact Assessment Reports. Published by the Environmental Protection Agency, Ireland. Environmental Protection Agency. (2022).
- Guidelines for Assessment of Ecological Impacts of National Road Schemes. National Roads Schemes (now Transport Infrastructure Ireland), Dublin. NRA. (2009).
- Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads(now Transport Infrastructure Ireland), Dublin. NRA. (2010).
- Best practice guidance for habitat survey and mapping. The Heritage Council, Kilkenny. Smith, G.F., O’Donoghue, P., O’Hora, K. and Delaney, E. (2011).
- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters. Inland Fisheries Ireland. (2016).

8.1.2.1 International Legislation

EU Birds Directive

The Birds Directive constitutes a level of general protection for all wild birds throughout the European Union. Annex I of the Birds Directive includes a total of 194 bird species that are considered rare, vulnerable to habitat changes or in danger of extinction within the European

Union. Article 4 establishes that there should be a sustainable management of hunting of listed species, and that any large scale non-selective killing of birds must be outlawed. The Directive requires the designation of Special Protection Areas (SPAs) for: listed and rare species, regularly occurring migratory species and for wetlands which attract large numbers of birds. There are 25 Annex I species that regularly occur in Ireland.

EU Habitats Directive

The Habitats Directive aims to protect some 220 habitats and approximately 1000 species throughout Europe. The habitats and species are listed in the Directives annexes, where Annex I covers habitats and Annex II, IV and V cover species. There are 59 Annex I habitats in Ireland and 33 Annex IV species which require strict protection wherever they occur. The Directive requires the designation of Special Areas of Conservation (SACs) for areas of habitat deemed to be of European interest. The SACs together with the SPAs from the Birds Directive form a network of protected sites called Natura 2000.

Water Framework Directive (WFD)

The EU WFD 2000/60/EC is an important piece of environmental legislation which aims to protect and improve water quality. It applies to rivers, lakes, groundwater, estuaries, and coastal waters. The Water Framework Directive was agreed by all individual EU member states in 2000, and its first cycle ran from 2009 – 2015. The Directive runs in 6-year cycles; the second cycle ran from 2016 – 2021, and the current (third) cycle runs from 2022-2027. The aim of the WFD is to prevent any deterioration in the existing status of water quality, including the protection of good and high-water quality status where it exists. The WFD requires member states to manage their water resources on an integrated basis to achieve at least ‘good’ ecological status, through River Basin Management Plans (RBMP), by 2027.

Bern and Bonn Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982) was enacted to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was introduced to give protection to migratory species across borders in Europe.

Ramsar Convention

The Ramsar Convention on Wetlands is an intergovernmental treaty signed in Ramsar, Iran, in 1971. The treaty is a commitment for national action and international cooperation for the conservation of wetlands and their resources. In Ireland there are currently 45 Ramsar sites which cover a total area of 66,995 Ha.

8.2 Methodology

This section details the steps and methodology employed to undertake an EclA of the Site of the Proposed Development.

8.2.1 Scope of Assessment

The specific objectives of the study were to:

- Undertake baseline ecological surveys of the Site and evaluate the nature conservation importance of the Site;
- Identify and assess the direct, indirect and cumulative ecological implications or impacts of the project during its lifetime;
- Where possible, propose mitigation measures to remove or reduce those impacts at the Design, Construction and Operational Phases; and
- Achieve the best possible biodiversity outcome for the future of the Site.

8.2.2 Zone of Influence

The ‘zone of influence’ (ZOI) for a project is the area over which ecological features may be affected by changes as a result of the Proposed Development and associated activities. This is likely to extend beyond the development Site, for example where there are ecological or

hydrological links beyond the Site boundaries (CIEEM, 2018). The ZOI will vary with different ecological features, depending on their sensitivities to an environmental change. Given the urban context of the Proposed Development, the ZOI is regarded to be relatively limited and within the Site boundary for most ecological receptors, with the exception of aquatic habitats or fauna linked to the Site, mammals linked to the Site and designated sites, e.g., European sites, Ramsar sites, NHAs and pNHAs – see below.

To determine the ZOI of the Proposed Development for *designated sites*, reference was made to the OPR Practice Note PN01 - 'Appropriate Assessment Screening for Development Management' (OPR, 2021), a practice note produced by the Office of the Planning Regulator, Dublin. This note was published to provide guidance on screening for AA during the planning process, and although it focuses on the approach a planning authority should take in screening for AA, the methodology is also readily applied in the preparation of Biodiversity Chapters of EIAR such as this; to identify relevant designated sites potentially linked to the Proposed Development.

In addition, the guidance document published by the Department of Housing, Planning and Local Government (then DEHLG) 'Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities' (2009) was considered, which recommends an arbitrary distance of 15km as the precautionary ZOI for a plan or project being assessed for likely significant effects on European sites, stating however that this should be evaluated on a case-by-case basis.

As such, the 15km ZOI is used in this report as an initial starting point for collating *designated sites* for this Biodiversity Chapter.

The methodology used to identify relevant designated sites comprised the following:

- Use of current GIS spatial datasets for designated sites and water catchments – downloaded from the NPWS website (www.npws.ie) and the EPA website (www.epa.ie) to identify designated sites which could potentially be affected by the Proposed Development;
- The catchment data were used to establish or discount potential hydrological connectivity between the project boundary and any designated sites;
- All designated sites within the ZOI (within 15km of the Proposed Development) were identified and are shown in Figure **Error! No text of specified style in document.-11** and Figure **Error! No text of specified style in document.-12**;
- The potential for connectivity with designated sites at distances greater than 15km from the Proposed Development was also considered in this initial assessment. In this case, there is no potential connectivity between the Proposed Development Site and designated sites located outside of the ZOI based on the Source-Pathway-Receptor (S-P-R) model;
- Table **Error! No text of specified style in document.-10** provides details of all relevant designated sites as identified in the preceding steps. The potential for pathways between designated sites and the Proposed Development were assessed on a case-by-case basis using the S-P-R framework as per the OPR Practice Note PN01 (March,2021). Pathways considered included:
 - Direct pathways e.g., proximity (i.e., location within a designated site), water bodies, air (for both air emissions and noise impacts).
 - Indirect pathways e.g., disruption to migratory paths, 'Sightlines' where noisy or intrusive activities may result in disturbance to shy species.

8.2.3 Desk Study

A desktop study was carried out to collate and review available information datasets and documentation sources pertaining to the Site's natural environment. The desktop study, completed in November 2022, relied on the following sources:

- Information on species records¹ and distribution, obtained from the National Biodiversity Data Centre (NBDC) at www.maps.biodiversityireland.ie;
- Information on waterbodies, catchment areas and hydrological connections obtained from the EPA at www.gis.epa.ie;
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at www.gsi.ie;
- Information on the network of designated conservation sites, boundaries, qualifying interests and conservation objectives, obtained from the NPWS at www.npws.ie;
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland;
- Information on the existence of permitted developments, or developments awaiting decision, in the vicinity of the Proposed Development from the National Planning Application Database available at: <https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de>;
- Information on the extent, nature and location of the Proposed Development, provided by the applicant and/or their design team;
- The current conservation status of birds in Ireland taken from Gilbert et al. (2021); and
- The pollinator friendly planning code provided by The All-Ireland Pollinator Plan (2015 – 2020, 2021 – 2025) available at www.pollinators.ie.

A comprehensive list of all the specific documents and information sources consulted in the completion of this document is provided in section **Error! Reference source not found.** References.

8.2.4 National Biodiversity Data Centre (NBDC) records

The Site is located within the Ordnance Survey Ireland National 2km grid squares N04L and N04R. Species records dated within the last 20 years were studied for the presence of invasive, rare or protected flora and fauna. In addition, data from various sources (e.g., Inland Fisheries Ireland) were used to determine the presence of species in the vicinity of the Proposed Development. These records are presented in section **Error! Reference source not found.**

8.2.5 Field Surveys

A range of field surveys have been carried out at the Site of the Proposed Development to inform this Biodiversity Chapter. The following sections provide details of the field surveys carried out and a summary of ecological surveys is provided in Table **Error! No text of specified style in document.**-4.

Survey	Survey Date(s)	Surveyor
Ecological Walkover Survey	24/07/2022	Rozalyn O’Hora (Enviroguide)
	17/07/2022	Rozalyn O’Hora (Enviroguide)
	22/10/2020	Liam Gaffney (Enviroguide)
Dedicated Badger Survey	06/11/2022	Billy Flynn (Flynn Furney Environnemental Consultants)
Bat Survey	28/07/2022	Aisling Walsh (AEE Ltd.)
	29/09/2021	
Breeding Bird Survey	11/07/2022	Brian McCloskey (Enviroguide)

¹ The Site of the Proposed Development lies within the 2km grid square N04L and N04R and 1km grid squares N0542, N0543, N0642 and N0643. Records from the last 20 years from available datasets are given in the relevant sections of this report.

Survey	Survey Date(s)	Surveyor
Wintering Bird Survey	30/03/2022	Rozalyn O’Hora (Enviroguide)
	11/03/2022	
	28/02/2022	
	15/02/2022	
	31/01/2022	
	14/01/2022	
	17/12/2021	
	30/11/2021	

Table Error! No text of specified style in document.-4: Summary of Ecological Surveys Carried Out at the Site.

8.2.5.1 Habitat Surveys

A habitat survey of the Site was undertaken by Enviroguide Ecologist Rozalyn O’Hora on the 17th and 24th of August 2022 and by Senior Ecologist Liam Gaffney on the 22nd of October 2020. Habitats were categorized according to the Heritage Council’s ‘A Guide to Habitats in Ireland’ (Fossitt, 2000) to level 3. The habitat mapping exercise has regard to the ‘Best Practice Guidance for Habitat Survey and Mapping’ (Smith et al., 2011) published by the Heritage Council. Habitats within the surrounding area of the Proposed Development were classified based on views from the Site and satellite imagery where necessary (Google Earth, Digital Globe and OSI).

8.2.5.2 Invasive Species Surveys

The Site was assessed for the presence of invasive plant species during the habitat surveys undertaken on the 17th and 24th of August 2022 and on the 22nd of October 2020. The location of invasive species was documented on the field map or through the use of GPS in the field. Non-native species in Ireland have been assessed and assigned an impact rating of either ‘High’, ‘Medium’ or ‘Low’ impact based on a number of factors that determine a species’ potential to become established in this country and have significant impacts (Kelly et al., 2013). Invasive species can also be rated as an ‘Amber-list species’, which signifies a ‘Medium’ impact potential or established invasive species that may pose a threat to conservation goals (Invasive Species Ireland, 2022).

The invasive plant species surveys were primarily focused on plant species that are listed on Schedule III of the European Communities (Birds and Habitats) Regulations and considered to be ‘High impact’ invasive species e.g., Japanese knotweed (*Reynoutria japonica*). Incidental observations of other terrestrial plant species known to be potentially invasive, such as butterfly bush (*Buddleja davidii*), were also recorded. The invasive flora surveys were undertaken during the growing season of May – August.

It is an offence to plant, disperse, allow or cause to disperse, spread or otherwise cause to grow any invasive species scheduled on the European Communities (Birds and Habitats) Regulations and species listed as ‘high’ impact under the NBDC ‘Invasive Species in Ireland Prioritisation Risk Assessment’ (Kelly, et al., 2013).

8.2.5.3 Mammal Surveys

Mammal surveys of the Site were carried out in conjunction with field surveys undertaken on 17th and 24th of August 2022 and on the 22nd of October 2022. In addition, any signs of mammal presence were recorded, where relevant, during other surveys undertaken at the Site of the Proposed Development. The mammal surveys conducted had regard to the survey guidelines contained in *Guidelines for the Assessment of Ecological Impacts of National Road schemes* (NRA, 2009). The Site was searched for signs of mammals such as burrows, setts, droppings, foraging signs and tracks as per Bang and Dahlstrom (2001). The habitat types recorded throughout the survey area were used to assist in identifying the fauna considered likely to utilise the area.

A focused badger (*Meles meles*) survey of the Site was conducted by Mammal specialist Billy Flynn on the 6th of November 2022. This survey involved examining all hedgerows, scrub, mounds and other areas where setts were possible, from ditches, drains, dense vegetation to suitable slopes and banks. The purpose of this survey was to assess the activity of badger on Site and determine whether any refugia or resting places of badger occur on Site. Survey methodology for the dedicated badger survey followed guidelines for surveys of this species given by the NRA (NRA, 2010, 2005). Habitats were classified as per Fossitt (2000). The surveys involved direct search for signs of mammalian activity which included prints, tracks, hairs, droppings, odour, digging and evidence of feeding. Places of refuge, rest and other activity such as badger setts were also observed and recorded.

8.2.5.4 Bird Surveys

The Birds of Conservation Concern in Ireland (Gilbert et al., 2021) established the appropriate Red-Amber-Green listing category and individual species are assessed against a range of quantitative criteria. These criteria assess a number of important characteristics of populations such as changes in range and population size in Ireland, Europe and globally. Meeting one or more of these criteria qualifies a species for the relevant list with each species being listed according to the highest category for which they qualify. Amber-listed species include species that have an unfavorable status in Europe, have moderately declined in abundance or range, a very small population size, a localized distribution, or occur in internationally important numbers.

Breeding Bird Surveys

A breeding bird survey of the entire Site was undertaken by Enviroguide Ecologist/Ornithologist Brian McCloskey on the 11th of July 2022. Several transects were completed through the Site to record all species present therein. The survey methodology followed the British Trust for Ornithology's (BTO) *Common Bird Census* (CBS) technique (2nd edn) (Bibby et al., 2000). Several transects were walked and all bird species identified were recorded on field sheets including where possible their locations, behaviour and numbers. Three transects were completed through the Site to record all species present therein. A final zig-zag walk through the Site was carried out at the end of each survey to ensure no additional species were missed.

Wintering Bird Surveys

A set of targeted winter bird surveys were carried out at the Site of the Proposed Development during 2021/22. The purpose of these surveys was to provide a robust evidence-based assessment of whether the Site of the Proposed Development is, or has the potential to be, in its current state, utilised as *ex-situ* feeding/roosting grounds by species of shorebird and waterfowl listed as Special Conservation Interests (SCI) species for nearby SPAs.

The survey methodology was as followed:

- Each survey day either commenced at dawn and continued for 6 hours or commenced 6 hours prior to dusk and ended at dusk. These timings were alternated each survey day to capture any possible temporal trends in the usage of the lands by SCI species.
- Each day, prior to the commencement of the survey, the Site was walked and checked for any obvious evidence of SCI species usage e.g., Light-bellied Brent Goose (LBBG) droppings.
- Each hour the Site was walked and observed for a period of approx. 20 minutes with any SCI species activity on, or in flight over the Site recorded.
- All SCI species that were observed visiting the Site or flew overhead were recorded, as were any other species of note e.g., rare passerines etc.

All surveys were undertaken using:

- Optricon 8x42 binoculars (or equivalent)
- Optricon 20x Telescope (or equivalent)
- Agreed survey methodology
- Field notebook

During the 2021/22 survey season, a total of 8 survey days were carried out at the Site; covering November and December 2021 and January, February, March and April 2022. These surveys provide

a summary of the usage of the Site by SCI species during the winter. A total of 48 hours of surveys were carried out at the Site.

8.2.5.5 Bat Surveys

Bat activity surveys and bat roost assessments were carried out at the Site of the Proposed Development. Survey methodologies followed those of the Bat Conservation Trust *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016). Evidence of bats if present includes live/dead bats, droppings, urine staining, feeding remains etc. Features of the Site were also assessed for potential roosting habitat (natural hollows in trees, cracks in stems or branches, man-made cavities in woody vegetation). A bat detector was used to determine the species of bats present on or near the Site of the Proposed Development.

The data collected was analysed and species assigned to each record with reference to species identification guides such as Russ (2012). Bat survey works were undertaken within the recommended survey period of May to September inclusive (Collins, 2016).

Bat Activity Surveys

Bat activity surveys were carried out at the Site on the 28th of July 2022 (from 21:05 to 23:30, sunset on the night was 21:35, temperature 15°C for the duration of the survey in calm cloudy conditions) and the 29th of September 2021 (from 18:45 to 21:15, sunset on the night was 19:13, temperature 12-14°C with a gentle breeze). The surveys were conducted in optimal conditions for bat surveys i.e., calm, dry and warm.

The equipment used included an Elekon Bat Logger M detector. Visual observations were taken with the aid of a powerful L.E.D. torch (AP Pros-Series 220 Lumens High Performance Spotlight). A Seek Thermal Reveal Pro High-Resolution Thermal Imaging Camera was also used along with a RIDGID 36848 Micro CA-150 Hand-held Borescope for inspection of any crevices on trees.

A predetermined transect of the Site based on the daytime walkover was walked, allowing the Site's field boundaries and areas of vegetation to be surveyed for bat usage. Where activity was noted, the surveyors remained in place for several minutes to ensure a representation of the activity was recorded.

Bat Roost Potential Tree Assessment

Trees that may provide a roosting space for bats were classified using the Bat Tree Habitat Key (BTHK, 2018)² and the classification system adapted from Collins (2016)³. The Potential Roost Features (PRFs) listed in BTHK (2018) were used to determine the PRF value of the trees on Site. A Phase 1 inspection was undertaken to make a list of the trees within the Proposed Development Site that may be suitable as roosting sites for bats. Inspections were undertaken visually with the aid of a strong torch beam (AP Pros-Series 220 Lumens High Performance Spotlight) and Celestron 12x56 Prism Binoculars during the daytime searching for PRFs, if visible. To aid this Phase 1 inspection, tree reports, where available, were consulted to supplement the data collected. A RIDGID 36848 Micro CA-150 Hand-Held Borescope was used for inspection of any accessible crevices on trees (3m from the ground).

During the survey, the features listed below on the affected trees were sought as they may provide suitable roost sites for bats:

- Natural holes (e.g., knot holes) arising from naturally shed branches or branches previously pruned back to a branch collar.
- Man-made holes (e.g., cavities that have developed from flush cuts or cavities created by branches tearing out from the parent stems).
- Cracks/spits in stems or branches.
- Partially detached, loose or bark plates.
- Cankers (caused by localised bark death) in which cavities have developed.

² BTHK (2018) *Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals*. Exeter: Pelagic Publishing

³ *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (J., Collins (Bat Conservation Trust), 2016).

- Other hollows or cavities, including butt rots.
- Compression stems or branches with suitable roosting space between.
- Ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk).
- Bat or bird boxes.
- Other suitable places of rest or shelter.

Trees within the Proposed Development Site, if identified as Potential Bat Roosts, were inspected during the daytime, where possible, for evidence of bat usage. Evidence of bat usage is in the form of actual bats (visible or audible), bat droppings, urine staining, grease marks (oily secretions from glands present on stonework) and claw marks. In addition, the presence of bat fly pupae (bat parasite) also can indicate that bat usage of a crevice, for example, has occurred in the past.

Landscape Evaluation

The landscape at the Site of the Proposed Development was assessed for its potential suitability for bats. The Bat Conservation Trust (BCT, 2016) guidelines were followed for the assessment rating⁴ and classified using Table 4.1 of the same which is recreated in **Table Error! No text of specified style in document.**⁵ of this report.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on Site likely to be used by roosting bats.	Negligible habitat features on Site likely to be used by commuting or foraging bats.
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions⁵ and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity or hibernation⁶).</p> <p>A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only limited roosting potential⁷.</p>	<p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e., not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable, but isolated habitat that could be used by small numbers or foraging bats such as a long tree (not in a parkland situation⁰ or a patch of scrub.</p>

⁴ Bat Surveys for Professional Ecologists, Good Practice Guidelines (2016)

⁵ For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

⁶ Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

⁷ This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015)

Suitability	Description Roosting habitats	Commuting and foraging habitats
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions Error! Bookmark not defined. and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub of linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ⁵ and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Table Error! No text of specified style in document.-5. Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of roost features within the landscape, to be applied using professional judgement (BCT,2016).

8.2.5.6 Bat Surveys

The drainage ditches on Site were visually assessed for their potential habitat suitability for fish species during the habitat surveys of the Site. The drainage ditches held water periodically. Flow was observed in the Garrynafela stream to the north of the Site.

8.2.5.7 Amphibians

Three species of amphibian are found in Ireland, the common frog (*Rana temporaria*) the smooth newt (*Lissotriton vulgaris*) and the natterjack toad (*Epidalea calamita*). The current distribution of the natterjack toad is restricted to counties Kerry and Wexford (NBDC, 2022).

The common frog is the most widespread amphibian in Ireland, and hibernates over winter in damp areas close to waterbodies and often submerged in muds at the bottom of ponds (Inns, 2009). Adults emerge from hibernation in late February and early March, congregating in breeding pools. Common frogs will typically breed in small shallow ponds however they are opportunistic breeders and can utilise ditches, puddles and slow flowing water (Inns, 2009).

Smooth newts can be found in a diversity of terrestrial and aquatic habitats including uplands, woodlands, marshland and urban areas with garden ponds becoming extremely important for this species. Smooth newts hibernate on land during the winter months (under log piles, hedgerows and dense vegetation), and return to wetland sites to breed in February and March. Breeding habitats vary but typically include waterbodies with still or slow flowing water. The ideal breeding habitat for the smooth newt is small ponds (<200m²) between 0.5 – 1.0m deep and partly vegetated (O'Neill et al., 2004). Courting, mating and egg-laying typically occurs between March – June, eggs take two weeks to hatch and larvae develop slowly with the majority emerging between July and September (Inns, 2009).

The Site was assessed for the presence of common frog and smooth newt during the winter months, in accordance with the Irish Wildlife Manuals National Frog Survey of Ireland 2010/11 and the IWT National Smooth Newt Survey 2013. Drainage ditches at the Proposed Development Site were identified and mapped and the presence or absence of breeding frogs or newts was recorded, wet areas of the Site were also identified, and the presence or absence of breeding amphibians was recorded. Techniques of visual inspection were used with no trapping activity involved.

8.2.5.8 Reptiles

The common Lizard (*Lacerta vivipara*) is Ireland's only native reptile species. Due to their reliance on plentiful sunshine, the common lizard hibernates during the winter months, emerging in early March. They may emerge before March in mild winter weather. The common lizard frequents damp habitats, as the humidity has a beneficial effect on growth rate and activity. Ideal habitats for the species are south-facing damp tussocky grassland, scrub covered hillsides, dunes or banks, and woodland tracks. It can also reside in peat bogs, dry grasslands and heathlands. This species is tolerant, to a degree, of habitat disturbance and is relatively tolerant of human presence in rural Ireland⁸. The Site of the Proposed Development was assessed for the presence of common lizard via visual inspections during the habitat surveys in July 2022.

8.2.6 Baseline Assessment

The value of the ecological resources, i.e., the habitats and species present or potentially present, was determined using the ecological evaluation guidance given in the National Roads Authority's Ecological Assessment Guidelines (NRA, 2009). This evaluation scheme, with values ranging from locally important to internationally important, seeks to provide value ratings for habitats and species present that are considered ecological receptors of impacts that may ensue from a proposal. The NRA (2009) defines Key Ecological Receptors (KERs) as those ecological features which are evaluated as Locally Important (higher value) or higher, that are likely to be impacted significantly by the Proposed Development. Internationally important receptors would include SACs or SPAs while those of national importance would include NHAs.

This evaluation scheme has been adapted here to assess the value of habitats and fauna within the site. The value of fauna is assessed on its biodiversity value, legal status and conservation status. Biodiversity value is based on its national distribution, abundance or rarity and associated trends. Using the evaluation criteria as described above, some of the habitats and species identified as being present were assessed as KERs. As per the NRA guidelines, impact assessment is only undertaken of KERs.

8.2.6.1 Value of Ecological Resources

The ecological features identified within the Site and the wider area are evaluated based on their value, as detailed in Table Error! No text of specified style in document.-6.

⁸ The Herpetological Society of Ireland [online] Available at: <https://thehsi.org/native-reptiles-and-amphibians/common-lizard/> [Accessed 10/11/2022]

Importance	Criteria
International Importance	<ul style="list-style-type: none"> - 'European site' including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA) or proposed Special Area of Conservation. - Proposed Special Protection Area (pSPA). Site that fulfils the criteria for designation as a 'European site' (see Annex III of the Habitats Directive, as amended). - Features essential to maintaining the coherence of the Natura 2000 Network - Site containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive. - Resident or regularly occurring populations (assessed to be important at the national level) of the following: <ul style="list-style-type: none"> o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive - Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971). - World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972). - Biosphere Reserve (UNESCO Man & The Biosphere Programme) - Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979). - Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979). - Biogenetic Reserve under the Council of Europe. - European Diploma Site under the Council of Europe. - Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).
National Importance	<ul style="list-style-type: none"> - Site designated or proposed as a Natural Heritage Area (NHA). - Statutory Nature Reserve. - Refuge for Fauna and Flora protected under the Wildlife Acts. - National Park. - Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park. - Resident or regularly occurring populations (assessed to be important at the national level) of the following: <ul style="list-style-type: none"> o Species protected under the Wildlife Acts; and/or o Species listed on the relevant Red Data list. o Site containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive
County Importance	<ul style="list-style-type: none"> - Area of Special Amenity. - Area subject to a Tree Preservation Order. - Area of High Amenity, or equivalent, designated under the County Development Plan.

	<ul style="list-style-type: none"> - Resident or regularly occurring populations (assessed to be important at the County level) of the following: <ul style="list-style-type: none"> o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; o Species protected under the Wildlife Acts; and/or o Species listed on the relevant Red Data list. o Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance. - County important populations of species; or viable areas of semi-natural habitats; or natural heritage features identified in the National or Local BAP; if this has been prepared. - Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county. - Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.
Local Importance (higher value)	<ul style="list-style-type: none"> - Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared; - Resident or regularly occurring populations (assessed to be important at the Local level) of the following: <ul style="list-style-type: none"> o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; o Species protected under the Wildlife Acts; and/or o Species listed on the relevant Red Data list. o Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality; - Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.
Local Importance (lower value)	<ul style="list-style-type: none"> - Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; - Sites or features containing non-native species that is of some importance in maintaining habitat links.

Table Error! No text of specified style in document.-6: **Description of Values for Ecological Resources Based on Geographic Hierarchy of Importance (NRA,2009).**

8.2.6.2 Impact Assessment Criteria

Once the value of the identified KERs was determined, the next step was to assess the potential effect or impact of the Proposed Development on these KERs. This was carried out with regard to the criteria outlined in various impact assessment guidelines (NRA, 2009; CIEEM, 2018; EPA, 2022) that set down a number of parameters such as quality, magnitude, extent and duration that should be considered when determining which elements of the proposal could constitute impacts or

sources of impacts. Once impacts are defined, their significance was categorised using EPA Guidelines (EPA, 2022).

Identification of a risk does not constitute a prediction that it will occur, or that it will create or cause significant impact. However, identification of the risk does mean that there is a possibility of ecological or environmental damage occurring, with the level and significance of the impact depending upon the nature and exposure to the risk and the characteristics of the ecological receptor.

Criteria Used to Define Quality of Effects

In line with the EPA Guidelines (EPA, 2022), the following terms are defined when quantifying the quality of effects (Table Error! No text of specified style in document.-7).

Quality	Definition
Positive Effects	A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral Effects	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).

Table Error! No text of specified style in document.-7: Definition of quality of effects.

Criteria Used to Define Significant of Effects

European Commission (EC) Guidance on EIAR (EC, 2017) states that assessment of significance should be determined using appropriate, clear, and unambiguous criteria which take “the characteristics of the impact and the values associated with the environmental issues affected into account”. Consequently, in line with the EPA EIAR Guidelines (EPA, 2022), the following terms are defined when quantifying the significance of impacts (Table Error! No text of specified style in document.-8).

Significance of Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics

Table Error! No text of specified style in document.-8: Definition of Significance of Effects

Criteria Used to Define Duration of Effects

In line with the EPA Guidelines (EPA, 2022), the following terms are defined when quantifying duration and frequency of effects (Table Error! No text of specified style in document.-9).

Quality	Definition
Momentary Effects	Effects lasting from seconds to minutes
Brief Effects	Effects lasting less than a day
Temporary Effects	Effects lasting less than a year
Short-term Effects	Effects lasting one to seven years.
Medium-term Effects	Effects lasting seven to fifteen years.
Long-term Effects	Effects lasting fifteen to sixty years
Permanent Effects	Effects lasting over sixty years
Reversible Effects	Effects that can be undone, for example through remediation or restoration

Table Error! No text of specified style in document.-9: Definition of Duration of Effects.

8.2.7 Difficulties Encountered in Compiling Information

An extensive search of available datasets for records of rare and protected species within proximity of the Site has been undertaken as part of this assessment. However, the records from these datasets do not constitute a complete species list. The absence of species from these datasets does not necessarily confirm an absence of species in the area.

Minor areas of dense scrub habitat on Site were inaccessible during field surveys. The perimeter of the dense scrub habitat was surveyed and any evidence of mammal activity (entrance/exit trails, scat, snuffle holes etc.) were noted. No limitations were encountered which would prevent robust conclusions being drawn as to the potential impacts of the Proposed Development.

8.3 Description of Existing and Receiving Environment (Baseline Situation)

The proposed development is situated in Cornamaddy, Athlone, Co. Westmeath. The Proposed Development will consist of a residential development and public open space comprising the following:

- Amendments to permitted application (Westmeath County Council (WMCC) ref. 14/7103, An Bord Pleanala (ABP) Ref. PL25.244826) for the removal of 38 no. permitted units (not constructed) to be replaced by: construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (78 sq.m), 60 no. 3 bed semidetached (96-116 sq.m) and 6 no. 4 bed semidetached houses (147 sq.m) with associated private gardens.
- The creche facility, public open spaces, landscaping, roads layouts, car parking, boundary treatment works, public lighting and all associated site works associated with the 87 no. remaining units retained as permitted under WMCC ref. 14/7103 and ABP ref. PL25.244826 will remain unchanged.
- All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a section of the distributor road permitted under WMCC ref. 14/7103 and ABP PL25.244826 and 22/253 to the east of the Site.
- All associated site development works, services provision, drainage works, public open space (c.1.03ha), landscaping, boundary treatment works, public lighting, associated ESB substation cabinets, bin stores, car and bicycle parking provision.
- This development will form part of a larger/future phase of the development.

The north-eastern portion of the applicant's landholding also has the benefit of a permission granted under WMCC ref. 22/253 for 75 no. units. It is envisaged that a future phase of a development will be lodged in the future for c/170 units in the north-western portion of the applicants' lands, which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c.400 units' total.

8.3.1 Site Overview

8.3.2 Geology, Hydrology and Hydrogeology

The Site of the Proposed Development is within the Upper Shannon catchment (26E) WFD catchment and the Shannon [Upper]_SC_090 sub catchment (EPA, 2022).

There is one WFD waterbody adjacent to the Site of the Proposed Development. A tributary of the River Shannon (Shannon (upper)_110) known locally as the Garrynafela stream and Kippinstown stream, which flow along the northern and eastern Site boundaries. From here the stream flows north for approximately 1.7 river km towards Ballaghkerran Bay (IS_SH_26_750d) and eventually to Lough Ree. The Garrynafela and Kippinstown streams were assigned a WFD status of Poor and the waterbodies are At Risk of not meeting their WFD status objectives (EPA, 2022). Ballaghkeeran bay is assigned a WFD status of Good and the lake is Not At Risk of not meeting its WFD status objectives. Ballaghkeeran lough is closely connected to Killinure Lough (IE_SH_26_750b), Coosan Lough (IE_SH_26_750c) and Lough Ree (IE_SH_26_750a) and together they form Lough Ree SAC and Lough Ree SPA (EPA, 2022).

The Site is situated on the Athlone Gravels groundwater body (IE_SH_G_246). The groundwater body has a status of Good and is Not At Risk of not meeting its WFD objectives. Based on the Geological Survey of Ireland (GSI) database, the bedrock beneath the Site is mapped as the *Waulsortian Limestone Formation* (Stratigraphic Code: WA) (New Code: CDWAUL), which comprises *massive unbedded lime-mudstone* (GSI, 2022). The groundwater rock units are described as *Dinantian Pure Unbedded Limestones* (GSI, 2022). The GSI (2022) has classified the aquifer beneath the Site as a *Locally Important Aquifer (LI) – Bedrock which is moderately productive only in local zones*. The groundwater vulnerability rating assigned to the groundwater beneath Site varies from *Moderate to High* (GSI, 2022).

The subsoils or quaternary sediments beneath the Proposed Development Site are mapped by the GSI (GSI, 2022), the following is present on Site:

- Fen Peat (FenPt) is present predominately in the north of the Site.
- Gravels derived from Limestone (GLs) is predominately in the southeast of the Site.
- Esker comprised of gravels of basic reaction (BasEsk) is present along the centre of the Site, running in a west to east direction.
- Lacustrine sediment (L) IS present in the southwest of the Site.

8.3.3 Designated Sites

No NHAs are located within or directly adjacent to the Proposed Development. The nearest pNHA to the Proposed Development is the Lough Ree pNHA located 0.9 km north of the Site. The Proposed Development maintains a potential impact pathway with this pNHA via the onsite drainage ditches and Garrynafela stream to the north of the Site (Figure Error! No text of specified style in document.-12). Lough Ree pNHA is located approximately 1.7 river km downstream of the Proposed Development.

The River Shannon Callows pNHA lies 2.6km southwest of the Proposed Development and maintains a weak hydrological connection with the Site. This hydrological connection is deemed insignificant given that the waterbodies near the Site flow northwards and away from the River Shannon Callows pNHA, and must flow over 12 river km from the Site to reach this pNHA (via the on-site drainage ditches and waterbodies such as the Garrynafela stream, Ballaghkerran Bay, Killinure Lough, Lough Ree and the River Shannon). Any potential surface water discharges containing sediment, silt and/or pollutants arising from the Construction and Operational Phase of the Proposed Development would become diluted to non-discernible levels over the course of this distance.

No Ramsar Sites are located within the ZOI of the Proposed Development. Details of the designated sites within the ZOI of the Proposed Development are presented in Table 8-7 below. The results of this preliminary screening concluded that there is a total of ten SACs, three SPAs, seventeen pNHAs and three NHAs located within the precautionary ZOI of the Proposed Development Site (Figure **Error! No text of specified style in document.-11** and Figure **Error! No text of specified style in document.-12**). The distances to each site listed are taken from the nearest possible point of the Proposed Development boundary to the nearest possible point of each designated site. Designated sites outside of this 15km radius were also considered but are deemed to be either; located a considerable physical distance inland; separated by a significant buffer; and/or located within different catchment zones to the Proposed Development (i.e., no S-P-R linkage exists).

A **Screening for AA** (Enviroguide, 2022) and **NIS** (Enviroguide, 2022), prepared in accordance with the requirements of Part XAB of the Planning and Development Act, 2000 (as amended) are submitted with this application under a separate cover. The following conclusions are extracted from the AA Screening Report and NIS, which concluded that the Proposed Development would not have a significant effect on any European sites:

“The Proposed Development at Cornamaddy, Athlone, Co. Westmeath, has been assessed taking into account:

- *The nature, size and location of the Proposed Development works and possible impacts arising from the associated construction works and its operational lifetime;*
- *The potential for in-combination effects alongside other plans and projects leading to effects on European sites; and*
- *The qualifying interests and conservation objectives of all relevant European sites.*

*In conclusion, upon the examination, analysis and evaluation of the relevant information and applying the precautionary principle, it is concluded by the authors of this report that, on the basis of objective information; the possibility **may be excluded** that the Proposed Development will have a significant effect on any of the European sites listed below:*

- Crosswood Bog SAC (002337)
- River Shannon Callows SAC (000216)
- Carn Park Bog SAC (002336)
- Ballynamona Bog and Corkip Lough SAC (002339)
- Castlesampson Esker SAC (001625)
- Pilgrim’s Road Esker SAC (001776)
- Mongan Bog SAC (000580)
- Fin Lough (Offaly) SAC (000576)
- Lough Funshinagh SAC (000611)
- Middle Shannon Callows SPA (004096)
- Mongan Bog SAC (004017)

In carrying out this AA screening, mitigation measures have not been taken into account. Standard best practice construction measures which could have the effect of mitigating any effects on any European sites have similarly not been taken into account.

*On the basis of the screening exercise carried out above, it can be concluded, on the basis of the best scientific knowledge available, that the possibility of any significant effects on the above listed European sites, whether arising from the project itself or in combination with other plans and projects, **can be excluded**.*

*However, upon examination of the relevant information including in particular the nature of the potential impact pathways associated with the Proposed Development, **the possibility can-not be excluded** that the Proposed Development will have a likely significant effect on the European sites listed below:*

- Lough Ree SAC (000440)
- Lough Ree SPA (004064)

As the likelihood of significant effects on European sites cannot be excluded, a NIS will be prepared for the Proposed Development and is included under a separate cover. The NIS will assess the impact of the project (alone and in combination with other projects) on the integrity of the European sites, having regard to the conservation objectives of the sites. The NIS will describe proposed mitigation measures to avoid and reduce significant effects and will provide objective scientific information to enable the competent authority to carry out an AA of the Proposed Development.”

“This NIS details the findings of the Stage 2 AA conducted to further examine the potential effects of the Proposed Development at Cornamaddy, Athlone, Co. Westmeath on the following European sites:

- Lough Ree SAC
- Lough Ree SPA

The above sites were identified by a screening exercise that assessed likely significant effects of a range of impacts that have the potential to arise from the Proposed Development. The AA investigated the potential direct and indirect impacts of the proposed works, both during construction and operation, on the integrity and qualifying interests of the above European sites, alone and in combination with other plans and projects, taking into account the Site's structure, function and conservation objectives.

Where potentially significant adverse impacts were identified, a range of mitigation and avoidance measures have been proposed to negate them. This NIS has concluded that, once the avoidance and mitigation measures are implemented as proposed, the Proposed Development will not have an adverse effect on the integrity of the above European sites, individually or in combination with other plans and projects.

As a result of the complete, precise and definitive findings in of this NIS, it has been concluded, beyond reasonable scientific doubt, that the Proposed Development will have no adverse effects on the QI, SCI and on the integrity and extent of Lough Ree SAC and Lough Ree SPA. Accordingly, the Proposed Development will not adversely affect the integrity of any relevant European site.”

Site Name & Code (Receptor)	Qualifying Interests	Distance to Proposed Development	Potential Pathway to receptors
SAC			
Lough Ree SAC (000440)	[3150] Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [7110] Active raised bogs [7120] Degraded raised bogs still capable of natural regeneration [7230] Alkaline fens [8240] Limestone pavements [91D0] Bog woodland [91E0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion	0.9km	Yes – Potential impact via the onsite drainage ditches. Refer to NIS accompanying this application

	<i>incanae, Salicion albae</i> [1355] Otter (<i>Lutra lutra</i>).		
Crosswood Bog SAC (002337)	[7110] Active raised bogs [7120] Degraded raised bogs still capable of natural regeneration	2.5km	None – Refer to AA Screening Report accompanying this application
River Shannon Callows SAC (000216)	[6410] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caerulea</i>) [6510] Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>) [7230] Alkaline fens [8240] Limestone pavements [91E0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae, Salicion albae</i>) [1355] Otter (<i>Lutra lutra</i>).	2.5km	
Carn Park Bog SAC (002336)	[7110] Active raised bogs [7120] Degraded raised bogs still capable of natural regeneration	4km	
Ballynamona Bog and Corkip Lough SAC (002339)	[3180] Turloughs [7110] Active raised bogs [7120] Degraded raised bogs still capable of natural regeneration [7150] Depressions on peat substrates of the Rhynchosporion [91D0] Bog woodland	10.9km	
Castlesampson Esker SAC (001625)	[3180] Turloughs [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)	10.9km	
Pilgrim's Road Esker SAC (001776)	[6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)	11km	
Mongan Bog SAC (000580)	[7110] Active raised bogs [7120] Degraded raised bogs still capable of natural regeneration [7150] Depressions on peat substrates of the Rhynchosporion	11.4km	
Fin Lough (Offaly) SAC (000576)	[7230] Alkaline fens [1013] Geyer's Whorl Snail (<i>Vertigo geyeri</i>)	13km	
Lough Funshinagh SAC (000611)	[3180] Turloughs [3270] Rivers with muddy banks with <i>Chenopodium p.p</i> and <i>Bidention p.p</i> vegetation.	13.2km	
SPA			
Lough Ree SPA (004064)	[A004] Little Grebe (<i>Tachybaptus ruficollis</i>) [A038] Whooper Swan (<i>Cygnus cygnus</i>) [A050] Wigeon (<i>Anas penelope</i>) [A052] Teal (<i>Anas crecca</i>) [A053] Mallard (<i>Anas</i>	0.9km	Yes – Potential impact via the onsite drainage ditches. Refer to

	<i>platyrhynchos</i>) [A056] Shoveler (<i>Anas clypeata</i>) [A061] Tufted Duck (<i>Aythya fuligula</i>) [A065] Common Scoter (<i>Melanitta nigra</i>) [A067] Goldeneye (<i>Bucephala clangula</i>) [A125] Coot (<i>Fulica atra</i>) [A140] Golden Plover (<i>Pluvialis apricaria</i>) [A142] Lapwing (<i>Vanellus vanellus</i>) [A193] Common Tern (<i>Sterna hirundo</i>) [A999] Wetland and Waterbirds		NIS accompanying this application
Middle Shannon Callows SPA (004096)	[A038] Whooper Swan (<i>Cygnus cygnus</i>) [A050] Wigeon (<i>Anas penelope</i>) [A122] Corncrake (<i>Crex crex</i>) [A140] Golden Plover (<i>Pluvialis apricaria</i>) [A142] Lapwing (<i>Vanellus vanellus</i>) [A156] Black-tailed Godwit (<i>Limosa limosa</i>) [A179] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A999] Wetland and Waterbirds	2.6km	None – Refer to AA Screening Report accompanying this application.
Mongan Bog SPA (004017)	[A395] Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)	11.6km	None – Refer to AA Screening Report accompanying this application.
pNHA			
Lough Ree pNHA (000440)		0.9km	Yes - potential pathway via on Site drainage ditches and the Garrynafela stream.
Crosswood Bog pNHA (000678)		2.5km	None – No impact pathway between the Site and this pNHA.
River Shannon Callows pNHA (000216)		2.6km	None – Refer to AA Screening Report accompanying this application.
Walterstown Lake pNHA (001732)		4km	None – No impact pathway between the Site and these pNHAs.
Carn Park Bog pNHA (000676)		4km	
Castlesampson Esker pNHA (001625)		10.6km	
Ballynagarbry pNHA (001713)		11.2km	
Monagan Bog pNHA (000580)		11.4km	

Pilgrim's Road Esker pNHA (001776)	11.5km	
Don Esker Wood pNHA (001830)	11.5km	
Clonfinlough Esker pNHA (000892)	12.7km	
Fin Lough (Offaly) pNHA (000576)	13km	
Lough Funshinagh pNHA (000611)	13.1km	
Clonlyon Gleve Bog pNHA (000893)	14.3km	
Feacle Turlough pNHA (001634)	14.4km	
Lough Slawn pNHA (001443)	14.4km	
Lough Nanag Esker pNHA (000910)	14.5km	
NHA		
Carrickynaghtan Bog NHA (001623)	4.7km	None – No impact pathway between the Site and these NHAs.
Clonydonnin Bog NHA (000565)	10km	
Ballynagrenia and Ballinderry bog NHA (000674)	13km	

Table Error! No text of specified style in document.-10: Designated Sites of Conservation Importance Within the Precautionary ZOI of the Proposed Development (15km)

8.3.4 NBDC Species and Species Groups

8.3.4.1 Flora

Rare and Protected Flora

Species records from the NBDC online database and the Flora Protection Order - Bryophytes Map Viewer⁹ were studied for the presence of rare or protected flora. Large white-moss (*Leucobryum glaucum*) was recorded within the Grid Square N04R.

Invasive Plant Species

Species records from the NBDC online database were studied for the presence of invasive plant species. One invasive species is for the 2km grid squares N04L and N04R. The “High” impact species, Japanese knotweed was recorded within both grid squares

8.3.4.2 Mammals (excl. bats)

Records for terrestrial mammals were retrieved from the NBDC online database. Table Error! No text of specified style in document.-11 lists the terrestrial mammals recorded within the relevant 2km tetrads.

Species	Grid Square	Date of last record	Source	Designation
Eurasian badger (<i>Meles meles</i>)	N04L	22/03/2013	Atlas of Mammals in Ireland 2010 – 2015	Protected species - Wildlife (Amendment) Act 2000 EU Habitats Directive – Annex II & IV Bern Convention Appendix III
Eurasian pygmy shrew (<i>Sorex minutus</i>)	N04L	31/05/2016	Mammals of Ireland 2016 – 2025	Protected Species - Wildlife (Amendment) Act 2000
West european hedgehog (<i>Erinaceus europaeus</i>)	N04L	22/04/2021	Hedgehogs of Ireland	Protected species - Wildlife (Amendment) Act 2000 Bern Convention Appendix III
Red fox (<i>Vulpes vulpes</i>)	N04L N04R	06/10/2017 02/07/2014	Mammals of Ireland 2016 – 2025 Atlas of Mammals in Ireland 2010 – 2015	n/a

Table Error! No text of specified style in document.-11: Records of Mammals for the Surrounding 2km Grid Square from the NBDC.

The above species are protected under the Wildlife act 1976 (as amended), the Bern Convention and the EU Habitats Directive 1992 and EC (Birds and Natural Habitats) Regulations. The invasive eastern grey squirrel (*Sciurus carolinensis*) was also recorded within the 2km grid square N04L.

⁹

<https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=71f8df33693f48edbb70369d7fb26b7e>

8.3.4.3 Birds

A total of 7 bird species have been recorded within the 2km tetrad No4R and No4L by the NBDC. Of these, 1 is listed as Red, 3 as Amber and 3 as Green in *Birds of Conservation Concern in Ireland 2020-2026* (Gilbert et al., 2021).

Red-listed species include:

- Common snipe (*Gallinago gallinago*)

Amber listed species include:

- Barn swallow (*Hirundo rustica*)
- Common starling (*Sturnus vulgaris*)
- Willow warbler (*Phylloscopus trochilus*)

8.3.4.4 Bats

All bat species found in Ireland are protected under the Wildlife Act (1976 to 2021) and Annex IV of the Habitats Directive. The lesser horseshoe bat is further protected under Annex II. Records for Bat species recorded in the 2km National Grid Squares were retrieved from the NBDC online database, no bat species were recorded within the relevant tetrads.

According to the NBDC maps landscape suitability for bats based on Lundy et al., (2011), which provides a visual map of the broad scale geographic patterns of occurrence and local roosting habitat requirements for Irish bat species; the area surrounding the Site of the Proposed Development carries an overall bat suitability score of 41.22 out of 100. The species with the highest individual suitability scores for the area encompassing the Site are common pipistrelle (*Pipistrellus pipistrellus*), lesser noctule (*Nyctalus leisleri*) and brown long-eared bat (*Plecotus auratus*), with 58, 55 and 53, respectively.

8.3.4.5 Fish

There are three species of salmonid associated with freshwater habitats in Ireland, namely Atlantic salmon (*Salmo salar*), brown trout (*Salmo trutta*) and arctic char (*Salvelinus alpinus*), the latter of which is only associated with lake waterbodies in Ireland. The Atlantic salmon is listed as an Annex II species under the Habitat Directive. There are three lamprey species native to Ireland including sea lamprey (*Petromyzon marinus*), river lamprey (*Lampetra fluviatilis*) and brook lamprey (*Lampetra planeri*). All three species are listed under Annex II of the Habitats Directive and are protected by the Fisheries Acts 1959 to 2006. The European eel (*Anguilla Anguilla*) is a red listed, native Irish species and is considered one of the most threatened fish species in Ireland (King et al., 2011).

No fish species were recorded within the 2km grid squares by the NBDC. Ballaghkerran Bay, Killinure Lough and Lough Ree are hydrologically connected to the Proposed Development Site via the Garrynafela stream and on-Site drainage ditches. Inland Fisheries Ireland conducted a fish stock survey of Lough Ree in 2013 which recorded a total of 6 fish species and 1 hybrid species within Lough Ree, perch (*Perca sp.*), roach (*Rutilus rutilus*), roach x bream hybrids, brown trout, eel, pike (*Esox Lucius*) and stone loach (*Barbatula barbatula*) were all recorded.

8.3.4.6 Amphibians and Reptiles

The common frog is protected under Annex V of the Habitats Directive, Annex III of the Bern Convention and the Irish Wildlife Acts, smooth newt is protected under the Irish Wildlife Acts. There are no records on the NBDC database for common frog or smooth newt within the 2km tetrads associated with the Proposed Development Site.

8.3.4.7 Reptiles

The common lizard is afforded protection in Ireland under the Irish Wildlife Acts. Common lizard was recorded within the 2km tetrad No4L associated with the Proposed Development Site.

8.3.4.8 Other Species and Species Groups

White-clawed Crayfish (*Austropotamobius pallipes*)

In Ireland, the white-clawed crayfish most commonly occurs in small and medium-sized lakes, large rivers, streams and drains, wherever there is sufficient lime (Reynolds, 2007). The overall conservation status of the white-clawed crayfish in Ireland is inadequate, due to the reduction in its range and the continuing pressures that it faces (NPWS, 2013).

There are no records of white-clawed crayfish within the 2km National Grid Squares associated with the Proposed Development or within Lough Ree (NBDC, 2022).

Marsh fritillary (*Euphydryas aurinia*)

The marsh fritillary butterfly is listed under Annex II of the EU Habitats Directive and is the only insect protected by law in Ireland. There are no records of this species within the 2km National Grid Squares N04R and N04L.

8.3.5 Field Surveys

8.3.5.1 Habitats and Flora

The habitats within the Site are coded and categorised for the most part as per Fossitt (2000) and are described in detail in the following sections. The habitat map of the Site is shown in

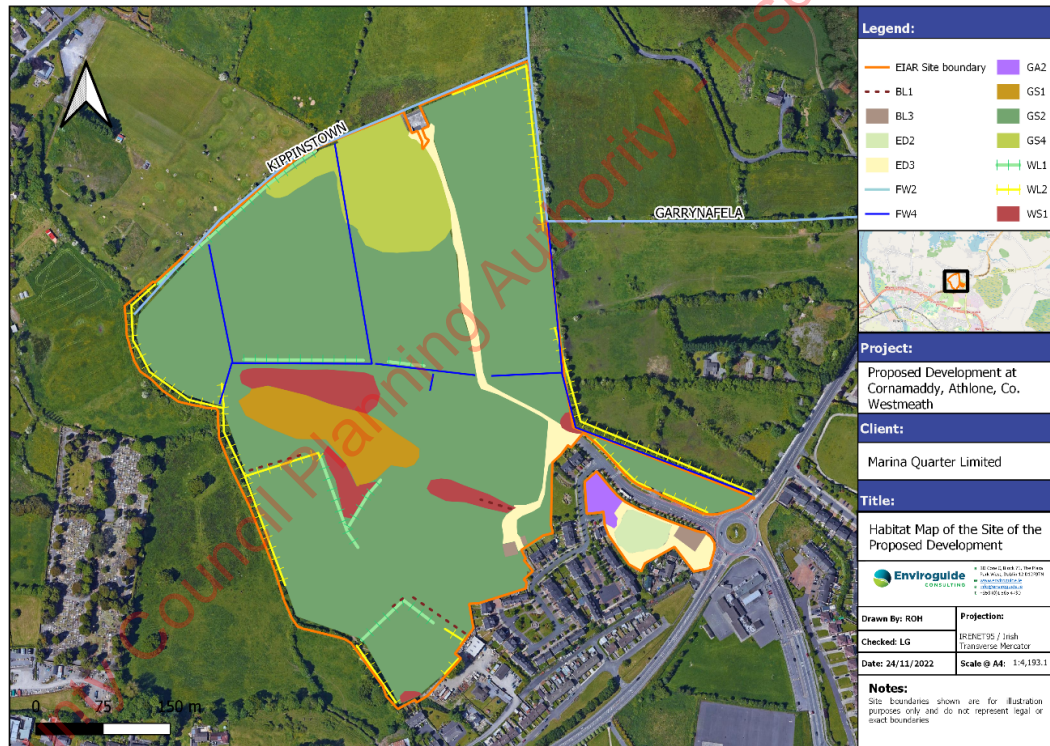


Figure Error! No text of specified style in document.-22 below. The habitats at the Site are listed and described below:

- BL3 – Buildings and Artificial Surfaces
- ED3 – Recolonising Bare Ground
- ED2 – Spoil and Bare Ground
- GA2 – Amenity Grassland
- GS1 – Dry Calcareous and Neutral Grassland
- GS2 – Dry Meadows and Grassy Verges
- GS4 – Wet Grassland
- WL1 – Hedgerow
- WL2 – Treeline

- WS1 – Scrub
- FW4 – Drainage Ditches
- FW2 – Depositing/lowland River

Habitats at the Site of the Proposed Development are primarily semi-natural in nature, with fields over the majority of the Site comprising of GS2 – Dry Meadows and Grassy Verges and small areas of GS4 – Wet Grassland. An area of GS1 – Dry Calcareous and Neutral Grassland is present along the raised esker ridge that runs through the center of the Site. WD1 – Scrub habitat is present throughout the Site and along field boundaries within the main Site lands, merging in places with WL1 – Hedgerow and WL2 – Treeline habitat. A number of FW4 – Drainage Ditches and BL1 – Stone Walls and Other Stonework habitat mirror the hedgerows and treelines that run along the field boundaries in places. A stretch of FW2 – Depositing/ lowland river habitat was recorded along the north-western and north-eastern Site boundaries, these waterbodies are listed by the EPA as the Kippinstown and Garrynafela watercourses respectively (EPA, 2022). Areas of ED3 – Recolonising Bare Ground habitat, ED2 – Spoil and Bare Ground and BL3 – Buildings and Artificial Surfaces habitat are present at the south-east of the Site. No rare or protected flora were identified on Site.

BL3 – Buildings and Artificial Surfaces

This habitat is present in the form of the access roads and a parcel of land located along the eastern side of the Drumaconn residential estate. This habitat has no ecological value.

ED3 – Recolonising Bare Ground

Areas of this habitat is present along the south-eastern margin of the Site lands, where construction activity associated with the adjacent residential areas has likely taken place. This habitat type has little ecological value and is shown in **Figure Error! No text of specified style in document.-13.**



Figure Error! No text of specified style in document.-13: ED3 – Recolonising Bare Ground habitat at the Site.

ED2- Spoil and Bare Ground

Spoil and bare ground habitat is present in the south-east of the Site lands. Vegetation cover is sparse, and this habitat type has little ecological value.

GA2 – Amenity Grassland

A small area of amenity grassland lies adjacent to Drumaconn residential estate. This maintained grassland is species poor and has little ecological value.

GS1 – Dry Calcareous and Neutral Grassland

This habitat is present along the raised esker ridge that runs through the Site of the Proposed Development and is shown in Figure **Error! No text of specified style in document.-14**. Herb species recorded include yarrow (*Achillea millefolium*), white clover (*Trifolium repens*), selfheal (*Prunella vulgaris*), common bird's-foot trefoil (*Lotus corniculatus*), oxeye daisy (*Leucanthemum vulgare*), willow saplings (*Salix* spp.) and mouse-ear hawkweed (*Pilosella officinarum*).



Figure **Error! No text of specified style in document.-14**: GS1 – Dry Calcareous and Neutral Grassland habitat at the Site.

GS2 – Dry Meadows and Grassy Verges

This is the dominant habitat present at the Site of the Proposed Development, with a lack of management at the Site having encouraged the growth of tall, coarse grasses and broadleaved herbs (Figure **Error! No text of specified style in document.-15**). Species found here include red clover (*Trifolium pratense*), ribwort plantain (*Plantago lanceolata*), meadow buttercup (*Ranunculus acris*), creeping thistle (*Cirsium arvense*), broadleaved dock (*Rumex obtusifolius*), wild angelica (*Angelica sylvestris*), prickly sowthistle (*Sonchus asper*), cleavers (*Galium aparine*), meadow vetchling (*Lathyrus pratensis*), hedge bindweed (*Calystegia sepium*), great willowherb (*Epilobium hirsutum*), cock's foot (*Dactylis glomerata*), nettle (*Urtica dioica*), spear thistle (*Cirsium vulgare*) and meadow foxtail (*Alopecurus pratensis*).



Figure Error! No text of specified style in document.-15: GS2 – Dry Meadows and Grassy Verges habitat at the Site.

GS4 – Wet Grassland

A section of wet grassland habitat is associated with a depression in the land within the north-eastern parcel of the Site (Figure Error! No text of specified style in document.-16). Species present within this habitat include soft rush (*Juncus effusus*), silverweed (*Potentilla anserina*), creeping bent-grass (*Agrostis stolonifera*), curled dock (*Rumex crispus*), meadowsweet (*Filipendula ulmaria*), nettle, willow saplings, great willowherb and spear thistle. Wetland indicator species recorded here indicate this area holds water seasonally during periods of high rainfall.



Figure Error! No text of specified style in document.-16: GS4 – Wet Grassland habitat at the Site

WL1 – Hedgerow and WL2 - Treelines

The Hedgerow (Figure Error! No text of specified style in document.-17) and Treeline (Figure Error! No text of specified style in document.-18) habitats that run along the various field boundaries of the Site were predominately mature in nature and reasonably old. Common hedgerow species recorded include hawthorn (*Crataegus monogyna*), bramble (*Rubus fruticosus*), elder (*Sambucus nigra*), willow and blackthorn (*Prunus spinosa*). The understorey is dominated by nettle, ivy (*Hedra helix*), cleavers and hedge bindweed. The treelines are dominated by hazel (*Corylus avellana*), ash (*Fraxinus excelsior*), pendunculate oak (*Quercus robur*), beech (*Fagus sylvatica*), hawthorn, elder and silver birch (*Betula pendula*). Non-native sycamore (*Acer pseudoplatanus*) was also recorded within the treelines on Site.



Figure Error! No text of specified style in document.-17: WL1 – Hedgerow habitat at the Site



Figure Error! No text of specified style in document.-18:WL2 – Treeline habitat at the Site

WS1 – Scrub

Areas of Scrub (Figure **Error! No text of specified style in document.-19**) habitat containing species such as blackthorn, bramble, gorse (*Euopaeus ulex*), willow and hazel are present along some of the field boundaries and adjacent to the esker on Site.



Figure Error! No text of specified style in document.-19: WS1 – sections of Scrub habitat at the Site

FW4 – Drainage Ditch

A number of Drainage Ditches (Figure **Error! No text of specified style in document.-20**), containing varying levels of water and vegetation are present along the field margins throughout the Site. Wetland indicator species found here include bullrush (*Typha latifolia*), water parsnip (*Berula erecta*) and silverweed.



Figure Error! No text of specified style in document.-20: FW4 – Drainage Ditch habitat at the Site

FW2 – Eroding / Lowland River

Stretches of Eroding / Lowland River (Figure Error! No text of specified style in document.-21) habitat is located along the northern and north-eastern Site boundary, these waterbodies are listed by the EPA as the Kippinstown and Garrynafela watercourses respectively (EPA, 2022). The Garrynafela

stream flows off Site at the north-eastern corner, flowing in a northern direction towards Lough Ree.



Figure Error! No text of specified style in document.-21: FW2 – Eroding/ Lowland River at the north of the Site (Garrynafela stream)

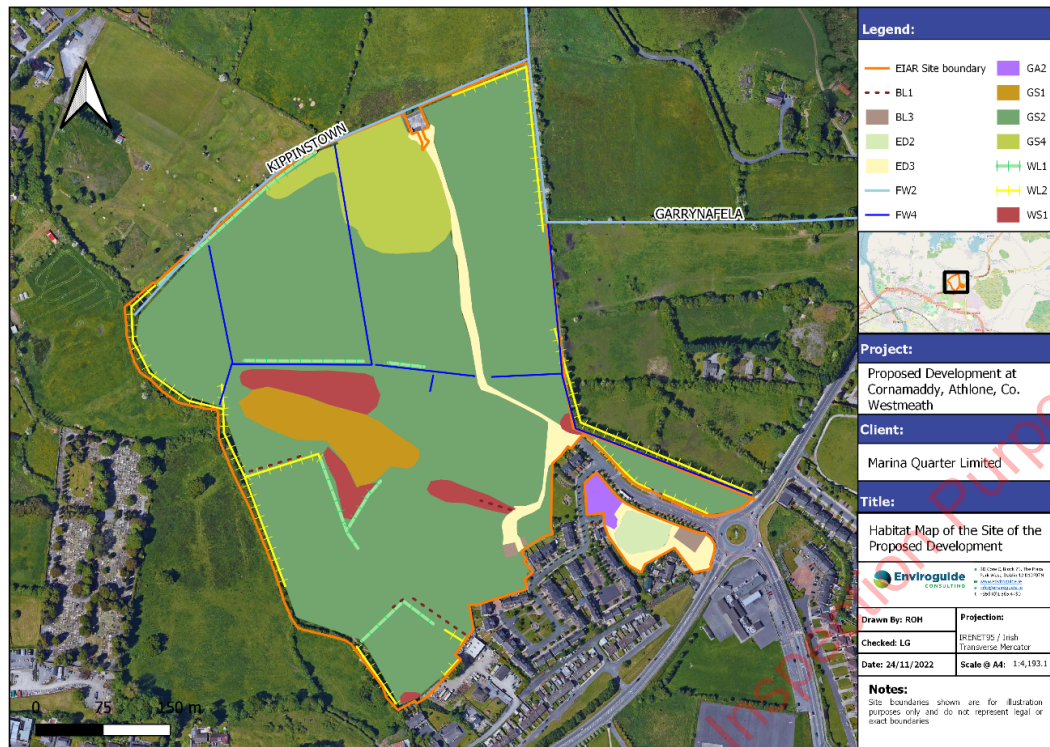


Figure Error! No text of specified style in document.-22: Habitat Map of the Site of the Proposed Development

8.3.5.2 Invasive Flora

No invasive species listed on Schedule III of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011, as amended) were recorded at the Site of the Proposed Development.

Medium impact invasive species, sycamore was recorded on Site (Kelly et al., 2013), within the treelines and hedgerows. Small growths of Butterfly Bush were recorded in the south of the Site.

8.3.5.3 Mammals (excl. bats)

Small Mammals

Pygmy shrew (*Sorex minutus*) and western European hedgehog (*Erinaceus europaeus*) are likely present at the Site of the Proposed Development due to an abundance of suitable habitat (i.e., hedgerows and scrub for hedgehogs, grassland for shrew) and evidence of smaller mammal trails throughout the Site.

The Irish stoat (*Mustella erminea Hibernica*) is protected under the Wildlife act (1976) and the Wildlife (Amendment). A number of low old stone walls run adjacent to treelines and hedgerows at the Site, providing suitable habitat for Irish stoat and this species may utilise the Proposed Development Site. Scat potentially belonging to pine marten (*Martes martes*) was also recorded on boulders lying along the southern margin of the larger northern fields during the 2020 Site surveys, however no other evidence of this species was found on Site. Although not recorded during field surveys, red squirrel has seen a resurgence in Co. Westmeath in recent years (Lawton et al. 2020) and could be present along the more mature treelines within and adjacent to the Site however the Site of the Proposed Development would not support significant habitat for red squirrel.

Irish mountain hare (*Lepus timidus hibernicus*) is not likely present at the Site and no signs e.g., droppings were noted during Site surveys. The Irish hare is legally protected in Ireland under the Wildlife Act (1976) and Wildlife (Amendment) Acts 2000, it is also listed on Appendix III of the

Berne Convention, Annex V(a) of the Habitats Directive (92/43/EEC) and as an internationally important species in the Irish Red Data Book.

Rabbit (*Oryctolagus cuniculus*) were recorded utilising the inactive badger sett on Site, rabbit are not a protected species in Ireland and will not be considered further in this report.

Eurasian Badger

Mammal activity at the Site of the Proposed Development was noted to be relatively high, with several well-established mammal trails visible throughout the grassland and scrub habitats, and frequent scats and foraging excavations observed on Site. Evidence of badger feeding signs are known as ‘snuffles’ or ‘scrapes’ in the vegetation, usually in grassland where badgers seek invertebrate prey at shallow depths beneath the soil surface. Four badger setts were found on Site. These are concentrated within the south-western portion of the Site. Three of these are associated with a substantial field boundary, the fourth is on an esker to the north of this. Details of the setts recorded on Site are given in Table Error! No text of specified style in document.-12 and shown in Figure Error! No text of specified style in document.-23. The large sett (sett no. 3) was located in dense scrub/hedgerow with at least 3 potential entrances. A large mature elder bush was present above this sett indicating the sett may be of a significant age. An inactive, above ground badger sett/resting place (sett no. 1) was recorded within a hollowed out mature beech tree, this inactive sett was in relatively close proximity to sett no.2 and sett no.3, and is currently utilised by rabbits. Where required, evacuation and destruction of active badger setts within the Site may be carried out by an appropriately qualified ecologist under licence from the NPWS. Evacuation and destruction, where required, will be undertaken during the period of 1st July to 30th November, in accordance with the *NRA Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes* (2005).

Sett No.	Description and notes	Activity
1	Single-entrance subsidiary sett in the remnant of a treeline that runs approximately north-south. This treeline is perpendicular to the treeline where setts no. 2 and no. 3 are located. Currently used by rabbits.	Inactive Subsidiary
2	Single-entrance Annex sett, located between semi-mature elder trees. Recent prints were noted here. This sett may have been interfered with or dogs may have dug at this entrance. Sett remains active with a long spoil heap present with fresh spoil.	Active Annex
3	Multiple-entrance sett. This sett has a minimum of 3 no. entrances. In order to minimise disturbance to this sett, no vegetation was removed during surveys. It is therefore possible that there are further entrances to this sett. Some fresh bedding was noted at one entrance. Another entrance is active but has a partial collapse. The third entrance was not in use and was covered by vegetation.	Active, Possibly Main Sett
4	Single-entrance outlier sett, located on the esker. This was previously identified as a possible fox den however the presence of bedding and the size of the spoil heap here would indicate that this is a badger sett that has been in recent use.	Recently Active Outlier

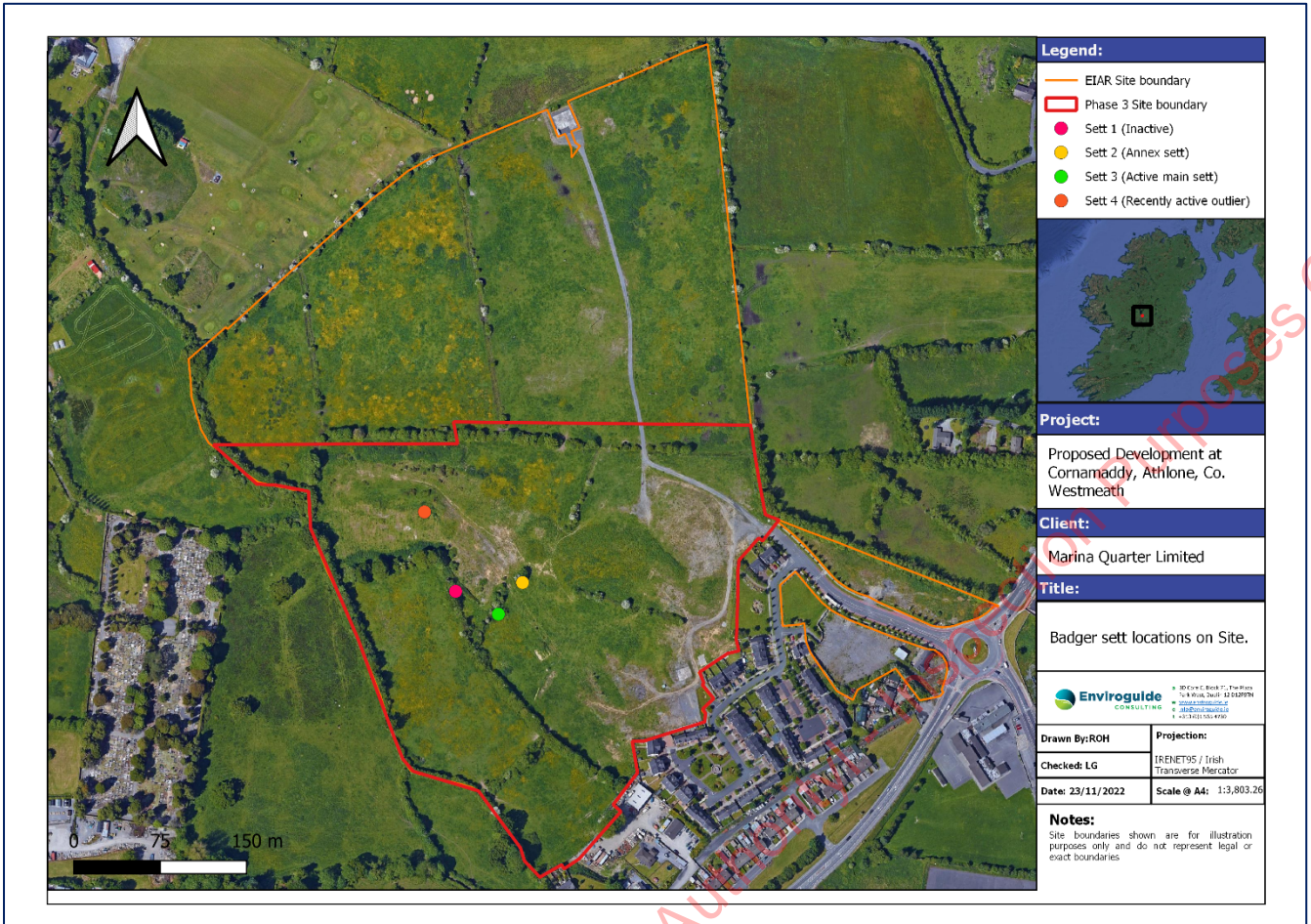


Table Error! No text of specified style in document.-12: Details of badger setts recorded on Site.

Figure Error! No text of specified style in document.-23: Badger setts recorded at the Site of the Proposed Development.



Figure Error! No text of specified style in document.-24: Inactive badger sett on Site (sett no.1) within a Beech tree, currently utilised by rabbits.



Figure Error! No text of specified style in document.-25: Entrance to badger sett no. 4 on Site.

Evidence of badger activity was found throughout much of the Site. However, this tended to be concentrated towards the south of the Site. Most of the evidence of badger commuting and feeding was found here (Figure Error! No text of specified style in document.-26). There is some evidence of badger accessing lands to the north and west of the Site, a substantial drainage ditch on the eastern Site boundary may present a barrier to badgers accessing lands to the east. It may be concluded that an active badger territory exists within the lands at Cornamaddy. Full details of the badger survey at the Site is presented in the badger survey report in Appendix 6.3.

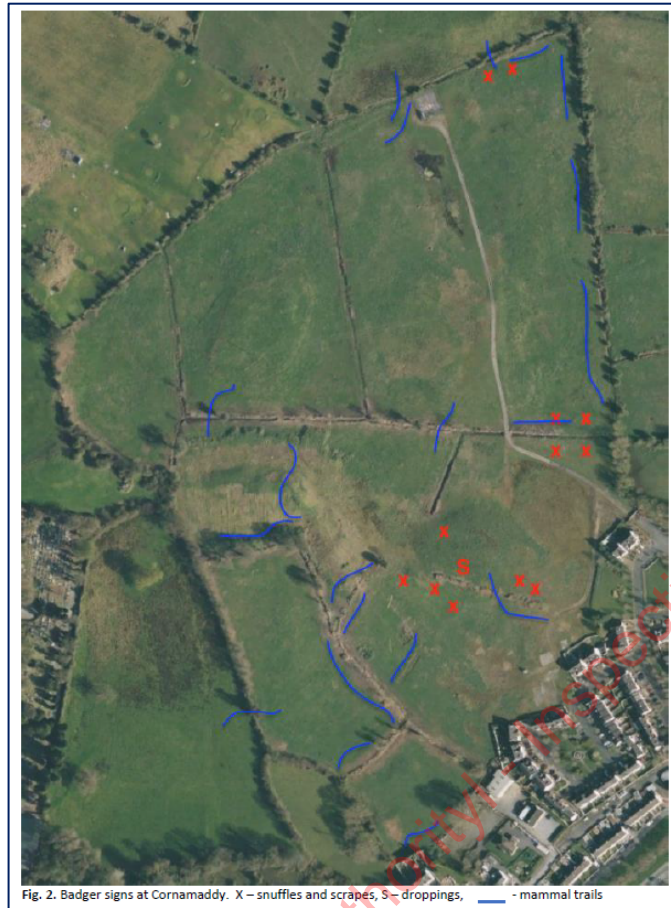


Figure Error! No text of specified style in document.-26: Badger activity signs at the Site of the Proposed Development (extracted from the badger survey report in Appendix 6.3).

Otter

The otter (*Lutra lutra*) population in Ireland remains one of the most stable in Europe and otter are protected under the Wildlife Act (1976) and Wildlife (Amendment) Act 2000. Otter is a QI for Lough Ree SAC, the majority of the habitats at the Site of the Proposed Development are considered unsuitable for otter however the Garrynafela stream may provide potential commuting habitat for otter.

Red Fox

No evidence of fox was recorded on Site, the badger sett within the esker onsite was initially identified as a possible fox den but the size of the spoil heap and the quantity of discarded bedding indicate this is a recently active badger sett. Fox are widespread in the locality however they are not a protected species in Ireland, partly due to their apparent success in urban environment, but as our only wild canid they should be considered as best practice in terms of avoiding direct harm.

8.3.5.4 Birds

Breeding Bird Survey

A total of 32 species were recorded during the July 2022 Breeding Bird Survey, of which one is listed as Red, seven are listed as Amber, and 23 are listed as Green and 1 is unclassified in *Birds of Conservation Concern in Ireland 2020-2026* (Gilbert et al., 2021). All bird species recorded during the survey are shown in Table Error! No text of specified style in document.-13.

Species	Scientific name	BoCCI Status	Breeding Activity
Blackbird	<i>Turdus merula</i>	Green	
Blackcap	<i>Sylvia atricapilla</i>	Green	

Species	Scientific name	BoCCI Status	Breeding Activity
Bullfinch	<i>Pyrrhula pyrrhula</i>	Green	
Blue tit	<i>Cyanistes caeruleus</i>	Green	
Buzzard	<i>Buteo buteo</i>	Green	
Chaffinch	<i>Fringilla coelebs</i>	Green	
Chiffchaff	<i>Phylloscopus collybita</i>	Green	
Dunnock	<i>Prunella modularis</i>	Green	Confirmed. Recently fledged young
Feral pigeon	<i>Columba livia f. domestica</i>	Unclassified	
Goldcrest	<i>Regulus regulus</i>	Amber	
Goldfinch	<i>Carduelis carduelis</i>	Green	
Great tit	<i>Parus major</i>	Green	
Grey heron	<i>Ardea cinerea</i>	Green	
Hooded crow	<i>Corvus cornix</i>	Green	
House martin	<i>Delichon urbicum</i>	Amber	
House sparrow	<i>Passer domesticus</i>	Amber	
Jackdaw	<i>Corvus monedula</i>	Green	
Linnet	<i>Linaria cannabina</i>	Amber	
Lesser redpoll	<i>Acanthis flammea</i>	Green	
Magpie	<i>Pica pica</i>	Green	
Meadow Pipit	<i>Anthus pratensis</i>	Red	
Reed bunting	<i>Emberiza schoeniclus</i>	Green	
Robin	<i>Erithacus rubecula</i>	Green	Confirmed. Recently fledged young.
Rook	<i>Corvus frugilegus</i>	Green	
Siskin	<i>Spinus spinus</i>	Green	
Starling	<i>Sturnus vulgaris</i>	Amber	
Stonechat	<i>Saxicola torquatus</i>	Green	Confirmed. Recently fledged young.
Swallow	<i>Hirundo rustica</i>	Amber	
Whitethroat	<i>Sylvia communis</i>	Green	Confirmed. Recently fledged young.
Woodpigeon	<i>Columba palumbus</i>	Green	
Wren	<i>Troglodytes troglodytes</i>	Green	Confirmed. Recently fledged young.
Willow warbler	<i>Phylloscopus trochilus</i>	Amber	

Table Error! No text of specified style in document.-13: Bird Species Recorded at the Site of the Proposed Development During the Breeding Bird Survey in July 2022.

Winter Bird Survey

The set of winter bird Surveys at the Site of the Proposed Development comprised of 8 survey days i.e., a total of 48 hourly counts across November and December 2021 and January, February and March 2022.

Out of the total of 48 hourly counts: 100% recorded no SCI waterfowl/shorebird species of Lough Ree and Middle Shannon Callows SPA utilising the Site lands. Common species observed foraging on the lands included robin (*Erithacus rubecula*), wren (*Troglodytes troglodytes*), feral pigeon (*Columba livia f. domestica*) and hooded crow (*Corvus cornix*). The occasional herring gull (*Larus argentatus*) was the only waterbird observed flying at height over the Site lands. Herring gull is not a listed SCI species for the SPAs within the ZOI and were not observed utilising the Site lands.

The initial assessment of the quality and composition of the habitats present at the Site confirmed that it is largely unsuitable as an *ex-situ* feeding/roosting resource for the SCI species for Lough Ree SPA and the Middle Shannon Callows SPA i.e., ducks, geese, waders and shorebirds. The overgrown nature of much of the Site does not provide suitable feeding resources for the above groups, of which the majority favour waterbodies (i.e., diving/dabbling species, arable/cultivated lands, or open green spaces with short swards such as playing pitches and maintained greens. The rank grassland that covers much of the Site render it largely unsuitable for the species listed for the above SPAs, as was borne out in the survey data. The distance of 0.9 km between the Site and Lough Ree SPA and 2.6 km between the Site and the Middle Shannon Callows SPA is sufficient to exclude the possibility of significant effects from construction or operational related noise disturbance impacts to the SCI bird species.

8.3.5.5 Bats

Landscape Evaluation

The Site of the Proposed Development is considered of local importance (higher value) for bats with a 'high' landscape suitability for bats. The treelines and hedgerows radiating out from the Site provide commuting and foraging corridors to other important habitats for bats in the wider landscape and are considered to be of 'moderate' habitat value.

Dusk Transect Bat Activity Survey

A dusk transect bat activity survey was carried out at the Site in July 2022 and September 2021. In total, three species of bat were detected at the Site of the Proposed Development. The tabulated results of the surveys are summarised in Table Error! No text of specified style in document.-14, with the complete dataset of bat species identified in real time in the field using the Elekon Batlogger M detector presented in the Bat Reports presented in Appendix 6.4.

The passes are indicative of bat activity, and not absolute bat number. Bats tended to pass up and down repeatedly along the treelines which can suggest there are more bats present than is the case. Visual results of the bat surveys (28th July 2022 and 29th September 2021) are shown in Figure Error! No text of specified style in document.-27 and Figure Error! No text of specified style in document.-28. As a general guide activity level is determined as follows: Low = <10 bat passes/hr, Moderate = >10 bat passes/hr and High = >50 bat passes/hr. The activity during the surveys is considered Moderate – High given the optimal weather conditions on both occasions.

Species	Scientific name	Number of passes	Peak (kHz)	Frequency
July 28th 2022				
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	19	46.5	

Leisler's Bat	<i>Nyctalus leisleri</i>	2	26.9
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	22	56.5
September 29th 2021			
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	15	46.5
Leisler's Bat	<i>Nyctalus leisleri</i>	5	26.9
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	12	56.5

Table Error! No text of specified style in document.-14: Summary of Bat Activity Recorded at the Site of the Proposed Development.



Figure Error! No text of specified style in document.-27: July 28th, 2022, Bat Activity Survey Result for The Proposed Development Site.

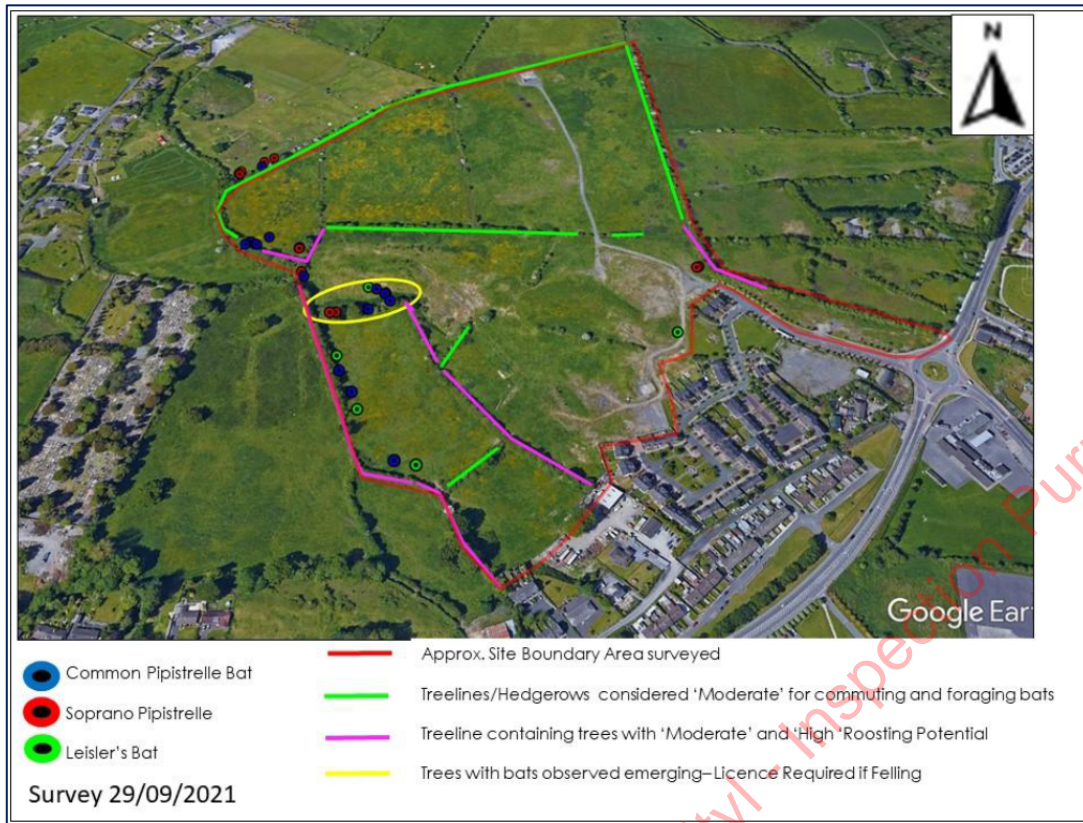


Figure Error! No text of specified style in document.-28: September 29th, 2021, Bat Activity Survey Result for the Proposed Development Site.

Bat Roost Potential Tree Assessment

The Tree Removal Plan available at the time of the bat survey (Charles McCorkell, August 2021) identified, assessed and described 18 trees for removal to facilitate the Phase 3 development. These 18 trees and a further 6 trees plus a tree group were assessed on the 28th of July 2022 for any bat roost potential features along with risk for same and classified.

Trees to be retained but noted as having bats emerge or being trees with high bat roost potential were noted (trees T916, T917, T918, T919, T920, T921, T922, T923 and T924). During the bat survey of the Site in September 2021, Tree T922 was noted with soprano pipistrelle bat emerging. This tree is to be retained according to the most recent Site layout, the crown will be reduced by 10%. Tree T914 was noted as having soprano and common pipistrelle emerge during July 28th, 2022, surveys. The tree alongside it, T915 was noted as holding High Bat Roost potential and bats emerging may have been missed.

A NPWS derogation licence will be required for both T914 and T915 if justification is found for their removal. An assessment of the affected trees at the Site of the Proposed Development for bats is provided in Table Error! No text of specified style in document.-15.

Tree Number	Species	Category ¹⁰	Bat Roost Potential	Classification of trees for risk of bat roost presence
T881	Ash	C2 – Low quality / value with a minimum of 10	Negligible	No Risk

¹⁰ Refers to the BS5837: 2012 – Category Retention Rating.

Tree Number	Species	Category ¹⁰	Bat Potential	Roost	Classification of trees for risk of bat roost presence
		years life expectancy			
T879	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Negligible		No Risk
T880	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Low		Low Risk
T878	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Negligible		No Risk
T877	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Negligible		No Risk
T876	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Negligible		No Risk
T875	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Negligible		No Risk
T874	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Low		Low Risk
T872	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Low		Low Risk
T915	Hawthorn	C2 – Low quality / value with a minimum of 10 years life expectancy	High		High Risk
T914	Beech	U – Trees in such a condition that any existing value would be lost within 10 years or being recommended for removal as sound	Bat Roost		High Risk

Tree Number	Species	Category ¹⁰	Bat Potential	Roost	Classification of trees for risk of bat roost presence
		Arboricultural practice			
T913	Sycamore	C2 – Low quality / value with a minimum of 10 years life expectancy	Negligible		No Risk
T912	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Negligible		No Risk
T911	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Negligible		No Risk
T908	Ash	U – Trees in such a condition that any existing value would be lost within 10 years or being recommended for removal as sound Arboricultural practice	Negligible		No Risk
T885	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Low		Low Risk
T886	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Low		Low Risk
T887	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Low		Low Risk
T864	Beech	B2 – Trees of moderate quality / value with a minimum of 20 years life expectancy.	Low		Low Risk
T865	Beech	B2 – Trees of moderate quality / value with a minimum of 20 years life expectancy.	Low		Low Risk

Tree Number	Species	Category ¹⁰	Bat Potential	Roost	Classification of trees for risk of bat roost presence
T840	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Low		Low Risk
T839	Beech	B2 – Trees of moderate quality / value with a minimum of 20 years life expectancy.	Moderate		Medium/High Risk
T838	Beech	C2 – Low quality / value with a minimum of 10 years life expectancy	Low		Low Risk
T837	Ash	C2 – Low quality / value with a minimum of 10 years life expectancy	Low		Low Risk
G843	Group (Hawthorn, Hazel, Elder)	B2 – Trees of moderate quality / value with a minimum of 20 years life expectancy.	Negligible		No Risk

Table Error! No text of specified style in document.-15: Assessment of Affected Trees for Bats at the Proposed Development Site.

8.3.5.6 Fish

The drainage ditches on Site periodically held water and do not have the potential to support any fish species, the Garrynafela stream downstream of the Proposed Development has the potential to support some fish species. Lough Ree is hydrologically connected to the Proposed Development Site via the local drainage ditches and the Garrynafela stream. Lough Ree supports eel and brown trout.

8.3.5.7 Amphibians

The drainage ditches on Site provide potential habitat for common frog and smooth newt, the wet grassland also provides potential habitat for common frog. The drainage ditches and wet grassland habitat on Site were assessed for the presence of amphibians during the targeted winter bird survey dates across January, February, March and April 2022. Frog spawn was present on one occasion within the wet grassland habitat (Figure Error! No text of specified style in document.-29 and Figure Error! No text of specified style in document.-30).



Figure Error! No text of specified style in document.-29: Frog Spawn recorded within the wet grassland habitat on Site

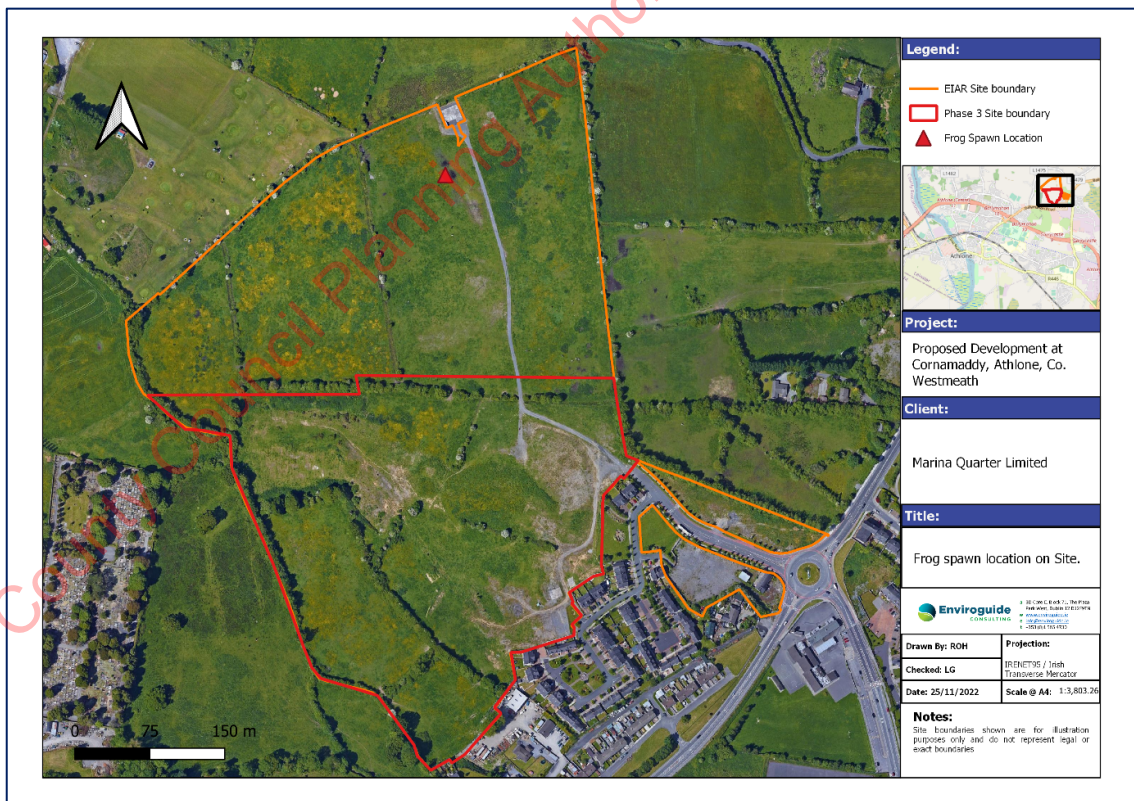


Figure Error! No text of specified style in document.-30: Location of frog spawn on Site

8.3.5.8 Reptiles

The common lizard frequents south-facing damp tussocky grassland, scrub covered hillsides, dunes or banks and woodland tracks. It can also reside in peat bogs, dry grassland, and heathlands.

No reptiles were directly recorded during field surveys, there is potential habitat at the Site for common lizard within the stone walls, hedgerows, grassland and scrub habitat.

8.3.5.9 Other Species and Species Groups

Butterfly forms of marsh fritillary are active in May-June and its associated food plant: devil's bit scabious (*Succisa pratensis*) flower in July-September. The surveys conducted at the Site covered the flowering period of devil's bit scabious no evidence of the food plant was recorded during Site surveys.

The drainage ditches on Site do not provide suitable habitat for white-clawed crayfish and there are no records of this species within Lough Ree

8.3.6 Designated Sites, Habitat and Specification

The ecological value of designated sites, habitats, flora and fauna associated with the Proposed Development Site are evaluated in **Error! Reference source not found.** This evaluation follows the Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009). KERs are those ecological receptors for which detailed assessment is required, on the basis of ecological value and likely significant impacts. The rationale behind these evaluations is also provided. Ecological resources of below 'Local Importance (higher value)' should not be selected as 'KER' for which detailed assessment is required (NRA,2009).

Westmeath County Council Planning Authority - Inspection Purposes Only

Designated Sites/Species/Habitats	Evaluation	Key Ecological Receptor (KER)	Rationale
Designated Sites			
SACs & SPAs	International importance	Yes	Potential impacts on European sites are addressed in the AA Screening and NIS accompanying this application. The Proposed Development is hydrologically linked to Lough Ree SAC and Lough Ree SPA via the drainage ditches on Site.
pNHAs / NHAs	National importance	Yes	A hydrological connection between the Site and Lough Ree pNHA was identified via the onsite drainage ditches.
Habitats			
BL3 – Buildings and artificial surfaces	Local importance (lower value)	No	Artificial habitat of little biodiversity value
BL1 – Stone walls and other stonework	Local importance (higher value)	Yes	Old stone walls may offer habitat for local lizards and stoats.
ED3 – Recolonising Bare Ground.	Local importance (lower value)	No	Habitat of little biodiversity value.
ED2 – Spoil and Bare Ground	Local importance (lower value)	No	Habitat of little biodiversity value.
GA2 – Amenity Grassland	Local importance (lower value)	No	Small area of managed amenity with a low level of plant diversity.
GS1 – Dry Calcareous and Neutral Grassland	Local importance (lower value)	No	A recently active badger sett was identified within this habitat, the grassland may also provide important foraging habitat for local birds and insects. The esker on Site was considered as part of the overall design of the Proposed Development and will not be impacted by the Proposed Development. The majority of this habitat will be retained and has been incorporated into the design of the Proposed Development.
GS2 – Dry Meadows and Grassy Verges	Local importance (lower value)	No	Low to moderate diversity grassland covering the majority of the Site lands. Of some value to local insects, birds and foraging mammals however this habitat is widely present throughout the surrounding landscape.
GS4 - Wet Grassland	Local importance (higher value)	Yes	Small area of wet grassland present in the north-eastern parcel of the Site. This habitat provides suitable habitat for common frog and will be impacted by the Proposed Development.

WS1 – Scrub	Local importance (higher value)	Yes	May provide some shelter/foraging habitat for local fauna and will be impacted by the Proposed Development.
WL1 – Hedgerow	Local importance (higher value)	Yes	May provide important nesting, resting and foraging habitat for local birds and bats and will be impacted by the Proposed Development.
WL2 – Treeline	Local importance (higher value)	Yes	May provide important nesting, resting and foraging habitat for local birds and bats and will be impacted by the Proposed Development.
FW4 – Drainage Ditch	Local importance (higher value)	Yes	The drainage ditches on Site are connected to Lough Ree. The drainage ditches on Site also provide potential habitat for common frog and smooth newt. Sections of the drainage ditches on Site will be piped as required.
FW2 – Depositing/Lowland River	Local importance (higher value)	Yes	Hydrologically connected to Lough Ree.
Fauna			
Small mammals e.g., Eurasian pygmy shrew and hedgehog	Local importance (higher value)	Yes	These small mammals likely utilize the habitats at the Site which will be affected by the Proposed Development, namely the grassland, hedgerow, old mature wood piles and scrub habitats.
Badger	Local importance (higher value)	Yes	The badger is an adaptable species of lowland grassland and woodland habitats (Marnell et al., 2009). Badger setts were recorded at the Site of the Proposed Development with evidence of recent activity recorded.
Red fox	Local importance (higher value)	No	No evidence of fox onsite. Fox are also abundant locally however they are not a protected species in Ireland.
Pine marten	Local importance (lower value)	No	Possible pine marten scat identified during 2020 surveys, but no further evidence of this species found on Site. Pine martens are arboreal and generally inhabit forests of coniferous or mixed tree types but can also be found within scrub. The Site is not considered to support a significant habitat for this species.
Irish stoat	Local importance (higher value)	Yes	Potential suitable habitat onsite for this species (stone walls, scrub).
Red squirrel	Local important (lower value)	No	No evidence of this species on Site and unlikely to be present. This species is primarily associated with broadleaved woodland habitat and conifer plantations.
Irish mountain hare	Local importance (lower value)	No	No evidence of this species on Site and unlikely to be present.
Otter	Local importance (higher value)	Yes	No suitable habitat present within the Site for otter however otter are present within Lough Ree which is hydrologically connected to the Site. The Garrynafela stream provides potential commuting habitat for otter.

Bird assemblage	Local importance (higher value)	Yes	Suitable breeding and foraging habitat for a range of common and widespread bird species.
Bat assemblage	Local importance (higher value)	Yes	Three species of bat recorded in the Site environs. Moderate - high activity recorded on Site during the Bat Activity Survey. Two trees on Site were identified as confirmed Bat Roosts. The mature treelines and hedgerows within the Site boundary are important for foraging commuting bats in a local context.
Amphibians	Local Importance (higher value)	Yes	Frog spawn was recorded within the wet grassland habitat on Site, the drainage ditches running along the field boundaries also provide potential habitat for common frog and smooth newt.
Common lizard	Local importance (higher value)	Yes	Suitable habitat (stone walls, hedgerows, scrub) on Site for common lizard.
Brown trout & European eel	Local importance (higher value)	Yes	No potential habitat at the Site to support these species, however they likely occur within Lough Ree which is hydrologically connected to the Site.
White-clawed crayfish	Local importance (lower value)	No	No potential habitat at the Site to support these species, no NBDC records of white-clawed crayfish in Lough Ree.
Marsh fritillary	Local importance (lower value)	No	Neither Marsh Fritillary, nor its associated food plant; Devil's bit scabious were recorded during Site surveys.

Evaluation of Designated Sites, Habitats and Fauna Recorded Within the Surrounding Area.

8.4 Predicted Impacts

As per the NRA guidelines (NRA, 2009), likely effects have been assessed for the KERs only, as listed in **Error! Reference source not found.** The following sections provide an assessment of the impact of the Proposed Development on local ecology. As per CIEEM (2018), where mitigation is fully integrated into the scheme and there is high confidence that it will be implemented, the significance of effects of the mitigated project are assessed. Where mitigation has not been integrated into the scheme, for example where it is necessary to include specific measures within a Construction Environmental Management Plan (CEMP), the potential impacts are assessed in the absence of mitigation.

The following is extracted from CIEEM (2018): “Presenting the results of the assessment ‘with’ and ‘without’ mitigation allows the need for mitigation and/or compensation to be clearly identified. Where mitigation is fully integrated into the scheme and there is high confidence that it will be implemented, it may be appropriate simply to assess the significance of effects of the mitigated project, with this assessment reflecting the likelihood of the incorporated measures being successful. Where there is any uncertainty, then the with/without mitigation approach to assessment described above should be used to ensure transparency”.

8.4.1 Do Nothing Scenario

If the Proposed Development were not to go ahead, it is anticipated that the land would continue to evolve. The treelines and hedgerows would continue to provide foraging, roosting and commuting habitat for birds, bats and small mammals, the grasslands would

continue to offer resources to local pollinators and the scrub habitat would persist in provided habitat for local wildlife.

8.4.2 Construction Phase

The Construction Phase of the Proposed Development will involve Site preparation works, the establishment of construction services and finally the construction of the proposed units. Site preparation works will involve Site clearance, establishing entranceways and haul roads for vehicles, surveying and setting out, setting up the construction Site fencing and compounds etc. It is noted that much of the haul road and entranceway to the Site have been established to cater for the existing surrounding developments.

8.4.2.1 Designated Sites

Lough Ree SAC, SPA and pNHA are hydrologically linked to the Site via surface water discharges from the Site reaching the Kippinstown and Garrynafela streams and ultimately Lough Ree. Although unlikely, in the absence of appropriate mitigation measures, there is potential for sediments/pollutants from the Site to enter Lough Ree via the Garrynafela stream via the drainage ditches, which could result in impacts on water quality within Lough Ree. The potential impact to the designated sites as a result of the Construction Phase of the Proposed Development is considered to be *negative, short-term, moderate* in the absence of suitable mitigation. The nature of the weak hydrological link (i.e., transient wet drainage ditches at the Site) and the distance upstream of the Proposed Development from the designated sites have been taken into account when categorizing the potential impact of construction phase surface waters on the designated sites.

8.4.2.2 Habitats and Flora

As per **Error! Reference source not found.**, the following habitats were identified as KERs:

- Stone Walls and Other Stonework (BL1)
- Wet Grassland (GS4)
- Scrub (WS1)
- Hedgerows (WL1)
- Treelines (WL2)
- Drainage Ditch (FW4)
- Lowland / Depositing River (FW2)

The Proposed Development will require the removal of trees and hedgerows, the majority of which are of low and poor quality. All treelines within the Site being retained will be protected by using robust fencing throughout the Construction Phase of the Proposed Development as per the Arboricultural Impact Assessment Report (Charles McCorkell, 2022). There is potential, in the absence of mitigation, for works accidentally being carried out within the root protection area of trees being retained and subsequent impacts on the trees via accidental damage, storage of materials in this habitat and 'spilling out' of materials into the root protection area, for example. As such, there is potential for *negative, long-term, moderate* impacts on the trees designated for retention within the Site of the Proposed Development.

The hedgerow, treelines and scrub identified for removal on Site provide potential nesting, roosting, resting and foraging habitat for local bird and bat populations, as well as small mammals such as hedgehog and pygmy shrew. The loss of hedgerows and treelines will be offset to a degree by the provision of new, partly native, hedge and tree planting in the landscape plan for the Proposed Development. However, it will take several years before the newly planted hedges and trees provide the same level of support to local fauna as the existing habitats. It is noted that similar habitat is available

in the surrounding landscape to the north, east and west of the Site. Therefore, the loss of these habitats represents a *negative, long-term, moderate* impact in the context of anticipated increased urbanisation and hedgerow removal associated with the Athlone Town Development Plan. A large portion of the Site is zoned for open space and features an esker running through the northern portion of the Site. This area will be retained and has been incorporated into the overall masterplan for the Proposed Development Site. The retention of the grassland and scrub habitats in this area represents a *positive, permanent, neutral* impact.

Sections of low stone walls habitat mirror the hedgerows and treelines that run along the field boundaries in places, the majority of this habitat will be lost as a result of the proposed works. This loss represents a *negative, permanent, significant* impact in the absence of suitable mitigation.

The wet grassland habitat at the Site will also be lost due to the previously permitted application (WMCC Ref. 22253). This habitat represents a small area and was species poor. Its removal is not significant at a local scale, its conservation evaluation relates primarily to the fact that it provides breeding habitat for common frog.

Sections of the drainage ditches on Site will be culverted to facilitate the Proposed Development, these ditches were periodically wet. The loss of the drainage ditches on Site constitutes a *negative, permanent, slight* impact at a local scale.

8.4.2.3 Mammals

The Site of the Proposed Development contains habitats suitable for small mammals such as hedgehog, pygmy shrew and stoat (hedgerow, scrub, grassland, stone walls). Clearance of vegetation and stone walls may put these species at risk of injury or death if present when clearance is taking place. This risk constitutes a potential *negative, short-term, significant* impact on the local populations of these species.

Small mammals such as hedgehog have the potential to become entangled in construction materials such as netting and plastic sheeting, as well as other waste materials, causing entrapment and injury or death. This constitutes a *negative, short-term, significant* impact at a local scale. Noise and dust generated during the Construction Phase has the potential to cause a disturbance impact on small mammals, in the absence of appropriate mitigation this represents a *negative, short-term, slight* impact.

The Site does not contain habitat suitable for otter, however there is potential for the Proposed Development to result in indirect effects on otter within the Garrynafela stream and Lough Ree as a result of reduction of water quality within the waterbodies. The reduction of water quality and consequent impact on fish species has the potential to affect otter by reducing prey availability. This constitutes a *negative, short-term, moderate* impact in the absence of suitable water quality mitigation. The nature of the weak hydrological link (i.e., wet drainage ditches at the Site) has been taken into account when categorizing the potential impact of construction phase surface waters on the Garrynafela stream and otters should they be using this watercourse.

Evidence of badger activity was found throughout the Site, most of the evidence of badger commuting and foraging was found in the south of the Site. There is some evidence of badger accessing lands to the north and west of the Site and it is concluded that an active badger territory exists within the lands at Cornamaddy. Four badger setts were identified on Site, two of these were active at the time of survey, with another recently active and one inactive. Badgers are protected species under national and international legislation in Ireland, and no actions may be carried out that may impact badger without a suitable licence/ consent being received from the NPWS.

It is acknowledged that in order to allow the Proposed Development to proceed, the active badger setts may require removal and/or works in close proximity to them. This represents a *negative, permanent, very significant* impact on the local populations of

badger i.e., the clan whose territory exists within the Site, in the absence of suitable mitigation.

The excavation of a badger setts on Site, in the absence of suitable surveys and mitigation, and exclusions of badgers if present, could lead to death or injury of badgers and would represent a *negative, permanent, profound* effect at the Site scale, through the injury/death of members of a badger clan. Sett no. 1 is located within a tree proposed for removal, as this sett was inactive at the time of surveys and is now being used by rabbits, the loss of this inactive sett represents a *neutral* effect on local badgers.

Sections of dense vegetation on Site has prevented absolute determination of the presence or absence of setts, these areas as shown in (Figure Error! No text of specified style in document.-31) will require monitoring during vegetation clearance to ensure that any setts present will be found and treated appropriately. The removal of these sections of vegetation in the absence of monitoring for badger represents a potential *negative, permanent, significant* impact should badger be present at the time. Should scrub clearance take place within 10m of the active badger sett entrances this would represent a *negative, permanent, significant* impact on badger in the absence of mitigation.

Noise generated during the Construction Phase has the potential to cause a disturbance impact to badgers, in the absence of appropriate mitigation this constitutes a *negative, short-term, significant* impact at a local scale.



Fig. 3. Setts (in red) and areas to be cleared under supervision shown in blue.

Figure Error! No text of specified style in document.-31: Site location showing badger setts (red) and areas of vegetation to be cleared under supervision of a suitably qualified ecologist (blue). Extracted from the badger survey report for this Site (Appendix 6.3).

8.4.2.4 Birds

Results of the winter bird surveys carried out over the 2021/2022 winter confirm no usage of the Site of the Proposed Development by species listed as SCI for the relevant SPAs (Lough Ree SPA and Middle Shannon Callows SPA). It is therefore concluded that there

will be no loss of any important *ex-situ* foraging/roosting habitat as a result of the Proposed Development.

Several bird species were recorded utilising the hedgerow, scrub and treeline habitats within and bordering the Site. Should vegetation be cleared or cut back during the breeding bird season (March 1st to August 31st); there is the potential for nesting birds to be harmed and nests to be destroyed. This would be in contravention of the Wildlife Act 1976 (as amended) which provides protection to breeding bird species and their nests and young. In the absence of mitigation or preventative measures, this risk constitutes a *negative, short-term, significant* impact on local bird populations. The loss of potential nesting and foraging habitat at the Site through the removal of vegetation represents a *negative, permanent, moderate* impact in the absence of suitable mitigation.

A number of mature trees are present on Site and have been included in the proposed project design, the retention and inclusion of the boundary vegetation into the project design represents a *positive, neutral* effect on local bird populations.

The increased noise and dust levels associated with the Construction Phase of the Proposed Development may have the potential to cause *negative, short-term, not significant* impacts on local bird populations. Increased human presence during the Construction Phase, in addition to increased lighting at the Site also has the potential to cause *negative, short-term, not significant* disturbance to birds in the locality.

8.4.2.5 Bats

There will be a loss of suitable foraging and commuting habitat for bats that reside within the vicinity of the Site through the loss of treelines, hedgerows and scrub habitats. The loss of Moderate commuting and foraging habitat for bats represents a *negative, short-term, significant* impact to local bats. This loss and fragmentation of habitat, along with an increased noise and light levels associated with human activity during the Construction Phase, represents a *negative, short-term, significant* impact on local bat species in the absence of mitigation. There will be a loss of sections of hedgerows and treelines in the south of the Site, some of which will be replaced with native hedgerow and tree planting as per the Landscape plan (Cunnane Stratton Reynolds, 2022).

Tree T922 was noted with soprano pipistrelle bat emerging during bat surveys of the Site. This tree will be retained according to the most recent Site layout, the crown will be reduced by 10%. Tree T914 was noted as having soprano and common pipistrelle emerge during July 28th, 2022, surveys. The tree alongside it, T915 was noted as holding High Bat Roost potential and may also support roosting bats.

A NPWS derogation licence will be required for both T914 and T915 if justification is found for their removal.

Felling of trees may place a bat at risk of injury or death if it is present within a tree at the time of felling.

This constitutes a *negative, short-term, significant* impact on bats at a local scale. In addition, there is a potential *negative, short-term, moderate* impact on bats from Construction Phase lighting at the Site in the absence of mitigation measures.

8.4.2.6 Fish

The drainage ditches on Site do not provide habitat for fish species, however, there is potential for negative impacts on fish in the Garrynafela stream or Lough Ree, due to the works undertaken as part of the Proposed Development. Negative impacts could result from water quality deterioration due to surface water run-off from the Site during the Construction Phase. Potential pollutants could include silt, hydrocarbons, cementitious material and other chemicals used in construction. This constitutes a potential *negative,*

short-term, moderate impact downstream at the local level, in the absence of suitable mitigation.

8.4.2.7 Amphibians

The Site contains habitats deemed potentially suitable for common frog and smooth newt (wet grassland, drainage ditch) and a confirmed instance of frog spawn at the Site. The removal of potentially suitable habitats may place these species at risk of injury or death, as well as cause disturbance and/or displacement of these species from the Site and general area. This constitutes a potential *negative, short-term, significant* impact to local populations of these species if present during construction works, in the absence of suitable mitigation.

8.4.2.8 Reptiles

The Construction Phase will involve the removal of vegetation and stone walls on Site. The stone walls, scrub and grassland habitats on Site provide potential habitat for common lizard. The clearance of scrub/grassland/stone walls could cause injury or death to lizards should they be present during the clearance. In the absence of mitigation, this could constitute a *negative, short-term, significant* impact at a local scale.

8.4.3 Operational Phase

During the Operational Phase of the Proposed Development will consist of the normal day-to-day operations necessary for the management of a residential development and the ongoing maintenance of the dwelling units, operational infrastructure and landscape features.

8.4.3.1 Designated Sites

No significant effects on any designated site during the Operational Phase of the Proposed Development are anticipated.

8.4.3.2 Designated Sites

Retained hedgerows

The Proposed Development will see the retained hedgerows and treelines on Site being managed during its Operational Phase, to ensure safety and aesthetic value of these boundary habitats. It is possible, in the absence of an appropriate management plan, for these habitats to lose their biodiversity value through disturbance and poor management. This constitutes a *negative, long-term, moderate* impact on a local scale.

Landscape design

The landscape design for the Proposed Development includes a planting palette which has been specifically chosen for its pollinator friendly species as well as the overall aesthetic value of the trees, shrubs and perennials. The landscaped green spaces create a natural link throughout the Proposed Development Site. The open spaces within the Site provide both active and passive areas for residents to enjoy, with an objective to create a natural environment within the Site to invite interaction and communication.

Pollinator friendly species incorporated in the landscape design include species such as lavender (*Lavandula sp.*), bugle (*Ajuga reptans*), mountain cornflower (*Centaurea montana*) and cranesbill (*Geranium macrorrhizum (Czakor)*). Pollinator friendly hedgerow species including wild privet (*Ligustrum vulgare*) dog rose (*Rosa caniana*) and guelder rose (*Viburnum opulus*) and are also included in the landscape design. An area of wilding planting is proposed in the landscape design. All wildflower seeds will be Irish Provenance Certified Seed, from a reputable source such as Design by Nature (Wildflowers.ie). To

maximise the biodiversity value of the landscaping at the Site, consideration has been made to the All-Ireland Pollinator Plan planting code (NBDC, 2015).

Overall, the landscape design will have a *positive, permanent, significant* impact at a local scale to the Site. Great efforts have been made in the design and layout of the Proposed Development to retain and protect as much of the existing hedgerows and mature trees as possible. The majority of trees scheduled for removal are of low and poor quality, the significant replacement planting proposed across the Site will ensure that these trees are replaced, and that local canopy cover is increased in the long term.

Drainage ditches and the Garrynafela stream

No impacts on drainage ditches or the Garrynafela stream are anticipated during the Operational Phase of the Proposed Development. All surface water from the Operational Phase of the Proposed Development will be attenuated on Site using several SuDS measures and discharged at a controlled rate via a hydro-brake.

8.4.3.3 Mammals

The Operational Phase of the Proposed Development will result in a general loss of foraging habitat for local mammals, as much of the open rank grassland and hedgerows will be replaced with buildings, artificial surfaces, and landscaped areas. Walls and fencing on Site may affect free movement of badgers throughout the Site in addition to human presence, pet dogs and other disturbances.

It is noted that the proposed Site layout includes the retention of the esker on Site and abundant planting of new hedgerows and treelines. The ecological value of new hedgerows will be maximized, with habitat connectivity ensured along the margins of the Proposed Development, connecting it in with the wider field boundary network in the area. As such, the loss of potential foraging and commuting habitat at the Site represents a *negative, permanent, slight* impact, to small mammals at a local scale.

The presence of humans within a currently unoccupied Site, and the possible associated introduction of dogs, will lead to an increased disturbance potential for any resident badgers. This will further reduce or even remove the ability of badgers to forage successfully within the Site going forward and in the worst scenario could lead to injury from a dog attack. This will equate to a *negative, permanent, moderate to significant* impact at the Site scale in the absence of any mitigation.

Noise and potential physical disturbance associated with the Operational Phase has the potential to cause a *negative, permanent, moderate* impact to badger and small mammals in the absence of suitable mitigation.

No other negative impacts on non-volant mammals during the Operational Phase of the Proposed Development are anticipated.

8.4.3.4 Birds

No negative impacts to birds during the Operational Phase of the Proposed Development are anticipated. Bird species recorded and likely breeding on Site are common species found in suburban areas, parks and in residential gardens. Therefore, the impact of the operation of the Proposed Development is deemed to be an imperceptible effect on local breeding bird populations.

8.4.3.5 Bats

During the Operational Phase, there is potential for disturbance to local bats utilising the general area through night-time light pollution. Excess light spill could render normally dark commuting and foraging routes unsuitable for bats. Bats were recorded commuting and foraging along the trees, treelines and hedgerows at the Site. The lighting alterations to the Site may act cumulatively with other changes to the area associated with housing

or other construction. This is considered to be a *negative, permanent, significant* impact to bats in the absence of mitigation.

8.4.3.6 Fish

No negative impacts on fish species are anticipated during the Operational Phase of the Proposed Development.

8.4.3.7 Amphibians

No negative impacts on amphibians are anticipated during the Operational Phase of the Proposed Development.

8.4.3.8 Reptiles

No negative impacts on reptiles are anticipated during the Operational Phase of the Proposed Development.

8.4.4 Cumulative

If the Proposed Development and the existing or proposed projects or plants impact on the same KERs, there is potential to lead to cumulative impacts which could be of a higher level of significance. This applies to potential impacts on birds and small mammals due to the combined loss of nesting or foraging habitat in the locality of the Site, potential impacts to badger due to the combined loss of foraging habitat and the loss of setts and potential impacts on bats due to the combined loss of suitable foraging and commuting habitat in the locality.

8.4.4.1 Existing Granted Planning Permissions

Planning Reference	Location relative to the Proposed Development	Development description
22254	Within Site boundary (North)	Planning permission was sought the following: 1) Construction of 75 no. residential units comprising: 51 no. 2 storey semi-detached and terraced houses (consisting 4 no. 2 bed houses and 47 no. 3 bed houses, ranging in size from c.78 sq.m – 120 sq.m each), and 24 no. 3 storey apartment/duplex units (consisting 12 no. 2 bed apartments and 12 no. 3 bed duplexes, ranging in size from 84sq.m to 121 sq.m each), with associated private gardens and east/west facing terraces. 2) All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a section of the distributor road permitted under WMCC Reg. Ref. 14/7103/ ABP Ref. PL25.244826 to the southeast of the site. 3) All associated site development works, services provision, drainage works,

		residential open space (c.o.28ha) and public open space (c.o.82ha), landscaping, boundary treatment works, public lighting, 1 no. esb substation cabinets, bin stores, car and bicycle parking provision. 4) Provision of a new detention basin on the eastern portion of the site designed to cater for the proposed development, in lieu of the drainage works permitted under WMCC Reg. Ref. 14/7103 / ABP Ref. PL 25.244826. This development will form part of a larger/future phase of the development; No changes to the existing pumping station located outside the northern site boundary; A NIS was submitted with this application.
22340	Within Site boundary (South-east)	Planning permission was sought for the following: 1) Construction of a two Storey childcare facility, including classrooms, reception, kitchen, associated staff areas and office, toilets, storage, plant rooms, circulation areas and photovoltaic panels at roof level (c.668sqm total gross floor area) 2) The proposed facility includes a secure outdoor play area (c. 595 sqm), 18 no. car parking spaces and 20 no. bicycle parking spaces. 3) Existing vehicular access onto the existing link road and provision of an internal access road, footpaths and 2 no. pedestrian access points. 4) All associated site development works, service provision, drainage works, landscape and boundary treatment works and public lighting. 5) This development will form part of a larger/future phase of the development. A NIS was submitted with this application.
177224	Within Site boundary (South-east)	Planning permission was sought for the development of 7 no. new dwellings to include 3 no 5 bedroom detached houses and 2 no 4 bedroom detached houses with optional fifth bedroom/study and 2 no. 4 bedroom semi-detached houses with open fifth bedroom/study and all associated site development works including road networks, services, landscaping, and boundary treatments. A ten-year permission is

being sought. Decision date: 07/09/2018, planning permission granted with conditions
--

The above-mentioned applications have been previously granted planning permission but are within the boundary of this EIAR application, as such the loss of KER's has been assessed for the Site as a whole. Given the location of the above granted projects within the EIAR boundary, there is potential for combined environmental impacts in the vicinity of the Site. These would likely amount to combined noise disturbance, dust and surface water run-off related impacts and loss of habitats on Site and would largely be expected to be limited to the construction sites and their immediate surrounds. Where potential significant effects are identified, mitigation measures will be put in place to ensure no significant in-combination effects occur as a result of the project as a whole.

8.4.4.2 Relevant Policies and Plans

The following policies and plans were reviewed and considered for possible in-combination effects with the Proposed Development:

- Westmeath County Development Plan 2021 – 2027
- Athlone Town Development Plan 2014 – 2020
- Westmeath Biodiversity Action Plan 2014 – 2020
- Westmeath Heritage Plan 2018 - 2023

The Westmeath Biodiversity Plan is set out to protect and improve biodiversity, and as such will not result in negative in-combination effects with the Proposed Development. Furthermore, such developments are required to conform to the relevant regulatory provisions for the prevention of pollution, nuisance or other environmental effects likely to impact biodiversity.

The Proposed Development would contribute to a general loss of semi-natural habitats in the area around Athlone town. However, the Proposed Development is located on the outskirts of an urban area and is bounded to the south and east by existing residential lands. As such, the development of the Site is in keeping with the baseline trends for agricultural lands on the periphery of a growing town. Given the quantity of analogous agricultural land around Athlone and in the wider area, the Proposed Development will not result in any significant cumulative impacts in terms of habitat loss involving other developments in the area. It is also noted that the habitats at the Site are largely ecologically-poor grasslands, with the exception of their associated hedgerows and treelines which are valuable ecological features. The loss of grassland will not represent a significant loss of habitat, however, the overall fragmentation and loss of hedgerows and treelines in the area is to be avoided.

The Westmeath County Development Plan 2020-2027 details a number of policy objectives regarding the protection and retention of hedgerows and treelines in the county; specifically CPOs 12.37, 12.38, 12.39 and 12.40.

CPO 12.40 states:

It is a policy objective of Westmeath County Council to:

Protect and preserve existing hedgerows in new developments, particularly species rich roadside and townland boundary hedgerows, and where their removal is necessary during the course of road works or other works seek their replacement with new hedgerows of native species indigenous to the area.

CPO 12.39 states:

Discourage the felling of mature trees and hedgerow, particularly species rich roadside and townland boundary hedgerows to facilitate development and seek Tree Management Plans to ensure that trees are adequately protected during development and incorporated into the design of new developments.

In keeping with the above policies the Proposed Development entails the retention of much of the hedgerows and treelines at the Site, along with the provision of additional green infrastructure through tree and hedgerow planting at various locations therein. The policy objectives of the County Development Plan will act to minimize the loss of habitats in the county as a result of development by encouraging developments that are in keeping with its aims.

8.5 Mitigation Measures

The following sections outline the mitigation and enhancement measures that address the negative impacts as identified in this chapter on the KERs.

8.5.1 Construction Phase Mitigation

8.5.1.1 Construction Phase Surface Water Management

All works carried out as part of the Proposed Development will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990 and the contractor will cooperate fully with the Environmental Section of Westmeath County Council.

Personnel working on the Site will be trained in the implementation of environmental control and emergency procedures. Procedures and relevant documents produced will be formulated in consideration of standard best international practice including but not limited to:

- CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- Construction Industry Research and Information Association (CIRIA) Environmental Good Practice on Site (C650), 2005.
- BPGCS005, Oil Storage Guidelines.
- UK Pollution Prevention Guidelines (PPG) UK Environment Agency, 2004; Construction Industry Research and Information Association CIRIA C648: Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006).
- CIRIA C648: Control of water pollution from linear construction projects: Site guide (Murnane et al. 2006); and
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

The following standard measures will protect surface waters during the Construction Phase of the Proposed Development:

- Silt fencing will be installed along the drainage ditches identified to be retained within the Proposed Development Site. The silt fencing will act as a temporary sediment control device to protect the drainage ditches, Garrynafela and Kippinstown stream and Lough Ree.
- Silt fencing will be installed with the folding lip at the base of the fencing facing in to the Site and buried within the ground, to intercept sediment flows from the Site towards the ditches. Along Site roads and areas of gravel where burial is less feasible, sandbags will be installed along the folding lip at the base of the silt fencing, facing into the site, to secure the silt fencing and ensure runoff does not seep underneath.

- This fencing will be inspected daily based on Site and weather conditions for any signs of damage or excessive silt deposits and records of these checks will be maintained.
- There will be no cement washout on Site except for washout of chutes, the washings of which will be collected into an appropriate container for compliant off-Site management.
- Run-off from the working Site or any areas of exposed soil will be channelled and intercepted at regular intervals for discharge to silt-traps or lagoons with overflows directed to land rather than a watercourse or surface water sewer.
- Silty water generated on Site will be treated using silt traps/settlement ponds and temporary interceptors and traps will be installed until such time as permanent facilities are constructed.
- A regular review of the weather forecasts of heavy rainfall will be conducted, and a contingency plan will be prepared for before and after such events to minimise any potential nuisances. As the risk of the break-out of silt laden run-off is higher during these weather conditions, no work will be carried out during such periods where possible.
- The developer will ensure that erosion control i.e., silt-traps, silt fencing and swales are regularly maintained for the duration of the Construction Phase.
- Any imported materials will, as much as possible be placed on Site in their proposed location and double handling will be avoided. Where this is not possible, designated temporary material storage areas will be used.
- These temporary storage areas will be located at least 10m from the drainage ditches and surface water sewers and will be surrounded with silt fencing (folding lip facing inwards towards the material stockpile and buried/sandbagged) to filter any suspended solids from surface water arising from these materials.
- Where cast-in-place concrete is required, all work will be carried out in the dry and effectively isolated from any water course or drainage ditch.
- Refuelling of plant during the Construction Phase will only be carried out at designated refuelling stations located on Site. Each station will be fully equipped for spill response and a specially trained and dedicated Environmental and Emergency Spill Response team will be appointed before the commencement of works on Site.
- Only emergency breakdown maintenance will be carried out on Site. Drip trays and spill kits will be available on Site to ensure that any spills from vehicles are contained and removed off Site.
- All personnel working on Site will be trained in pollution incident control response.
- Any other diesel, fuel or hydraulic oils stored on Site will be stored in bunded storage tanks. The bunded area will have a volume of at least 110% of the volume of the stored materials as per best practice guidelines (Enterprise Ireland, BPGCD005).
- All associated waste from Portaloos and/or containerised toilets and welfare units will be removed from Site by a licenced waste disposal contractor.
- Under no circumstances will any untreated wastewater generated onsite (from equipment washing, road sweeping etc.) be released into nearby ditches or surface water sewers.

8.5.1.2 Protection of Habitats

Trees that are proposed to be retained will be protected by robust protective fencing, signage and/or ground protection prior to any materials or machinery being brought on site and prior to any development, demolition or soil stripping takes place. Areas that are designated for new plantings will be similarly protected. Barriers will be fit for the purpose of excluding construction activity. In most cases barriers should consist of a scaffold

framework comprising a vertical and horizontal framework, well braced to resist impacts. To ensure the protective barriers are respected, clear concise signage will be affixed to the barrier in an unrestricted easily viewed location. The protective barriers will remain in an undisturbed condition and only removed on completion of all construction activity. Any breach of the protective fence will be reported to the consulting arborist.

During the course of the construction works the integrity of the fencing must be respected and remain in place at all times. No building materials or soil heaps will be stored within this area. Should essential works need to take place within the root protection area, the project arborist must be informed in advance and any necessary mitigation measures will be put in place. The protective fencing will remain in situ for the duration of the Construction Phase and will only be removed upon completion of all works. Construction on Site will not commence until the protective barriers and/or ground protection have been erected.

Further information on Tree Protection measures can be found in the Arboricultural Impact Assessment accompanying this application.

8.5.1.3 Invasive Species

There were no high impact or legally controlled invasive plant species identified at the Site during field surveys by Enviroguide Consulting.

The following measures will be adhered to, to avoid the introduction or dissemination of invasive species to and from the Site of the Proposed Development. For the Construction Phase, the contractor will prepare a project specific Invasive Alien Plant Species (IAPS) standard operating procedure document, in advance of work commencement. The document will cover the bio-security measures to be taken, including the maintenance of records, to screen for the introduction of IAPS onsite, and to enable their tracing if such an introduction occurs; and to ensure no transmission of IAPS offsite. These measures to include:

- Validation that all machinery/vehicles are free of IAPS, prior to their first introduction to Site.
- Certification from the suppliers that all imported soils and other fill/landscaping materials are free of IAPS.
- A regular schedule of Site inspections across the IAPS growing seasons, for the duration of the construction works programme.
- Validation that all machinery/vehicles are free of IAPS, prior to leaving the Site.
- Appropriate and effective Site biosecurity hygiene to ensure that no IAPS are transmitted offsite for the duration of the Proposed Works.

8.5.1.4 Vegetation Clearance

To ensure compliance with the Wildlife Act 2000 as amended, the removal of areas of vegetation will not take place within the nesting bird season (March 1st to August 31st inclusive) to ensure that no significant impacts (i.e., nest/egg destruction, harm to juvenile birds) occur as a result of the Proposed Development. Where any removal of vegetation within this period is deemed unavoidable, a qualified ecologist will be instructed to survey the vegetation prior to any removal taking place. Should nesting birds be found, then the ecologist will liaise with the Site manager and measures will be put in place to protect the area of habitat in question will be noted and suitably protected (e.g., with a suitable fenced buffer to minimise disturbance to the nest) until the ecologist confirms the young have fledged. Vegetation confirmed to be free of nests and breeding activity by the ecologist will be cleared within 24 hours of their survey. Any longer than this and an updated survey will be required.

Guidance for when vegetation/habitat clearance is permissible is shown below in Table Error! No text of specified style in document.-16. Information sources include

Herpetological Society of Ireland, British Hedgehog Preservation Society’s *Hedgehogs and Development* and the *Wildlife (Amendment) Act, 2000*, Collins (2016) and NRA (2009).

The optimal period for vegetation/habitat clearance is within the months of **September and October**. Where this seasonal restriction cannot be observed, a check for active roosts and nests will be carried out immediately prior to any Site clearance by an appropriately qualified ecologist/ornithologist and repeated as required to ensure compliance with legislative requirements. Works will be undertaken in adherence to a detailed Method Statement for vegetation removal. Specific mitigation measures for Lizard are detailed in section **Error! Reference source not found.**

Ecological Feature	January	February	March	April	May	June	July	August	September	October	November	December
Amphibians	Vegetation /habitat clearance permissible (Jan – Feb)		Amphibian breeding season (estimated). No ditch or pond destruction unless confirmed to be devoid of tadpoles and other signs of amphibians (March – June)				Vegetation/habitat clearance permissible if devoid of tadpoles and signs of amphibians (July – Dec)					
Common lizard	Lizard Hibernation Season No habitat clearance permissible (Nov – March)		Active period Habitat (Scrub, old stone walls) clearance permissible (Early March - October)								Lizard Hibernation Season No habitat clearance permissible (Nov – March)	
Breeding Birds	Vegetation clearance permissible (Sept – Feb)		Nesting bird season. No clearance of vegetation permitted unless confirmed to be devoid of nesting birds by an ecologist (Mar – Aug)					Vegetation clearance permissible (Sep – Feb)				
Hibernating small mammals	Mammal hibernation season. No clearance of vegetation permitted unless confirmed to be devoid of hibernating mammals by an ecologist (Jan – March)		Vegetation clearance permissible. (April – Oct)						Mammal hibernation season. No clearance of vegetation permitted unless confirmed to be devoid of hibernating mammals by an ecologist (Nov – Dec)			
Bats	Tree felling to be avoided unless confirmed to be devoid of bats by an ecologist (Jan – Aug)								Preferred period for tree-felling (Sep – Oct)		Tree felling to be avoided unless confirmed to be devoid of	

Ecological Feature	January	February	March	April	May	June	July	August	September	October	November	December
										bats by an ecologist (Nov – Dec)		

Table Error! No text of specified style in document.-16: Seasonal Restrictions on Vegetation Removal. Red Boxes Indicate Periods When Clearance/Works Are Not Permissible.

8.5.1.5 Protection of Fauna

Waste Management

As best practice all construction-related rubbish on Site e.g., plastic sheeting, netting etc. will be kept in a designated area and kept off ground level so as to prevent small mammals such as hedgehogs from entrapment and death.

Lizard and Scrub/Stone Wall Clearance

Any removal of the scrub/stone wall habitats on Site will be carried out as per the following approach:

- Removal of scrub/stone walls will be carried out in **September/October** to ensure that Lizards are active but also that nesting birds aren't impacted.
- Any removal of scrub/stone walls will be carried out in a consistent direction; working away from the area or works and towards the nearest Site boundary; to allow any lizards present to escape.
- Removal of the scrub/stone wall habitats will be supervised by a suitably qualified ecologist in case any Lizards are encountered.
- Stone walls to be removed will be pushed over by a mini-digger or similar and the stones spread out on the ground. The stones will be left for 2 hours before they are collected and moved; to allow any lizards present to escape.
- Any lizards encountered will be moved by the ecologist to a designated area of retained habitat that will be fenced and protected for the lifetime of the Proposed Development. The lizards will only be handled with gloves to ensure that should torpid reptiles be found their body temperature will not be raised through handling.
- The location of this retained habitat area will be confirmed with the applicant prior to the works commencing on-site.
- The stones and debris from stone walls that are to be cleared will be moved to the outer boundaries of the Site to locations where they will not be disturbed. Here they will provide replacement habitat for wildlife including lizards at the Site.
- Once an area of the Site has been cleared of suitable scrub/stone wall habitat to allow works, it will be maintained this way to ensure no suitable habitat for lizard develops i.e., no new piles of rocks/logs etc will be created within the active construction site; these can be deposited along the outer margins of the Site as new habitat.
- Construction staff will be briefed on lizards and remain vigilant for the presence of lizards throughout the Construction Phase. Should any hibernating lizards be discovered, the works in that area will cease, the ecologist will be contacted immediately and will move the lizard carefully to the Site's outer boundaries. The

works can the continue in that area once the ecologist confirms no lizards are at risk.

Log Piles

Piles of logs and other woody vegetation arising from the vegetation removal on Site will be left in suitable secluded corners/margins of the Site; to provide habitat for common frogs, lizards and small mammals such as hedgehog and pygmy shrew for the duration of the construction works and operational lifetime of the Proposed Development where possible. These areas of woody debris will also benefit local invertebrate species through the provision of shelter and food sources.

Common frog and smooth newt

The Site provides some potential breeding habitat for both common frog and smooth newt in the form of drainage ditches and a small area of wet grassland. Prior to the commencement of any works in the vicinity of or in the wet grassland or ditches themselves; a suitably qualified ecologist will be retained to conduct surveys for breeding frog and newts. The Site will be surveyed during the optimal time of year for signs of breeding activity (amphibian adults, spawn and juveniles). Survey methodology will take consideration of the National Roads Authority (NRA, 2009), now Transport Infrastructure Ireland (TII) Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes, The Irish Wildlife Trust National Smooth Newt Survey 2013 Report (Meehan, 2013) and the National Frog Survey of Ireland 2010/11 (Reid et al. 2013). Should frog or newt or their young require removal to allow works to proceed, the NPWS will be consulted by the project ecologist prior to any such works commencing and a method statement may be provided on how to proceed with works.

Otter

The drainage ditches on Site do not provide suitable habitat for otter however otter are likely present downstream of the Site within Lough Ree and the Garrynafela stream. The surface water protection measures outlined in **Error! Reference source not found.** will serve to protect water quality in the Garrynafela stream, which will in turn limit and/or eliminate any potential negative impacts on prey availability for otter downstream of the Site.

Fish

There is no habitat for these species within the Proposed Development Site however they are likely present downstream of the Site within Lough Ree. The surface water protection measures outlined in **Error! Reference source not found.** will serve to protect water quality within Lough Ree, which in turn will limit and/or eliminate any potential negative impacts on aquatic species within Lough Ree which are sensitive to water quality changes.

8.5.1.6 Protection of Badgers

Transport Infrastructure Ireland's (TII, previously the NRA) Guidelines for the treatment of badgers prior to the construction of national road schemes, was consulted in terms of the management of potential badger setts at the Site. The following measures are taken from the guidance document and the badger Survey Report prepared by Billy Flynn (2022) (See Appendix 6.3) and adapted to apply to the Proposed Development.

Prior to the commencement of construction works, a badger activity survey will be carried out by a suitably qualified badger specialist; to establish the current status and activity levels of the badger setts (main and annex sett) located on Site, this may involve the use of camera traps and other forms such as placing sand and 'sticky sticks' near the sett entrance to determine presence/absence. As badgers are known to inhabit the Site and surrounding lands, a Construction Phase Management Plan will be prepared by a badger specialist and approved by the NPWS prior to any works commencing. This document will detail any protection zones required to ensure the works do not undermine the setts or their tunnels, and the mitigation measures that will be required to protect

badger for the extent of the Construction Phase (e.g., no works buffer zone, badger-proof fencing to prevent access to the Site during works etc.).

Works close to an active badger sett or the removal of vegetation identified in Figure Error! No text of specified style in document.-31 will only be conducted under the supervision of the badger specialist under licence from the NPWS. During the breeding season (December to June inclusive), no works should be undertaken within 50m of active setts. Badger sett tunnel systems can extend up to 20m from sett entrances. As there is the possibility that tunnels would be destroyed by the movement of heavy plant over the ground above the tunnel system, it is essential that no heavy plant cross within 30m of a sett entrance. This will ensure that setts are not damaged and that badgers are not inadvertently crushed during construction. Lighter machinery (generally wheeled vehicles) will not be used within 20m of a sett entrance, light works such as digging by hand or scrub clearance will not take place within 10m of a sett entrance unless under the supervision of the badger specialist.

Sett removal

The retention of the setts in-situ is unfeasible due to spatial constraints and the footprint of the Proposed Development. As such, a suitably qualified badger specialist will be instructed to prepare an exclusion plan for the decommissioning of the setts and their destruction once all badgers have been confirmed to have vacated. The objective is to allow the badgers to remain within their territory, even though a portion of their current territory will be lost as a result of the Proposed Development. The provision of an artificial sett within the Site will also be incorporated into the landscape plan as detailed below.

The existing active setts will not be excluded or destroyed until the artificial replacement sett has been constructed.

Exclusion of badgers from active setts

Exclusion of badgers from active setts will only be carried out during the period of July to November (Inclusive) to avoid the badger breeding season. As per the TII guidelines, the removal of badgers from affected setts and subsequent destruction of these setts will only be conducted with NPWS permission/approval and by experienced badger specialists. The exclusion process will include monitoring to ensure that badgers have fully evacuated the setts prior to their destruction. The NPWS grant permission/approval to the experts undertaking the badger operations and not to the development or contractor. A badger sett exclusion plan and method statement will be prepared by the badger specialist and provided to the NPWS prior to commencement for their approval. No works will take place in the vicinity of the active setts, or vegetation clearance in the areas identified in Figure Error! No text of specified style in document.-31 without the supervision of the badger specialist.

Measures to ensure the sett has been vacated and is devoid of all badgers will be designed by the badger specialist, involving a combination of:

- One-way badger proof gates on active entrances.
- Badger proof fencing.
- Soft and hard blocking of inactive entrances, and
- Recurring inspections.

Gates will be left installed, with regular inspections over a minimum period of 21 days before the sett is deemed inactive. Any badger activity at all will require the procedures to be repeated or additional measures taken. No exclusion will commence in advance of the completion of the artificial sett. All sets should be assessed on a case-by-case basis by a suitably qualified experienced badger expert, with measures adapted to suit the situation as per the expert's direction.

Sett destruction

Sett destruction should commence immediately following the 21-day exclusion period, provided that all badgers have been excluded. Should a badger be discovered during this operation, the NPWS will be advised immediately, and all excavation will cease until it is agreed with the NPWS that it may continue. The destruction of a successfully evacuated badger sett may only be conducted under the supervision of qualified and experienced personnel with approval/permission from the NPWS. The possibility of badgers remaining within a sett must always be considered; suitable equipment should be available on hand to deal with badgers within the sett or any badgers injured during sett destruction.

TII guidelines recommend that sett destruction is usually undertaken with a tracked 12-25 ton excavator, commencing at ca. 25m from the outer sett entrance and working towards the centre of the sett, cutting ca. 0.5m slices in a trench to a depth of 2m. exposed tunnels may be checked for recent badger activity with full attention paid to safety requirements. A report detailing the evacuation procedures, sett excavation and destruction, and any other relevant issues will be prepared by the badger specialist and submitted to the NPWS.

Artificial sett provision

An artificial main sett will be provided adjacent to the western Site boundary as compensation for the loss of the existing main sett. The possibility of installing an artificial sett elsewhere on Site was also considered, however this location was the preferred option due to its location within the appropriate territory and proximity to the existing setts on Site. This location also gives the badgers access to the open spaces to the north and west of the Site (see Figure Error! No text of specified style in document.-32 for example of proposed artificial sett).

The proposed artificial sett location is located along the western Site boundary, approximately 170m northwest of the existing main sett and linked by the existing esker (Figure Error! No text of specified style in document.-33). The new sett will be constructed and established before the badgers are excluded from the existing setts and the existing setts are destroyed.

A dense section of scrub vegetation (e.g., bramble, elder, hawthorn, blackthorn) will be planted within the designated artificial sett area; the goal being to connect the sett with the boundary hedgerow and treelines and provide cover, shelter and protection for the badgers and minimise human related disturbance from the Proposed Development, maximising the setts chances of being adopted. Wildlife friendly lighting will ensure the artificial sett is not illuminated.



Figure Error! No text of specified style in document.-32: An example of an artificial sett under construction with pipe tunnels and 7 chambers (Extracted from NRA (now TII), 2005b)

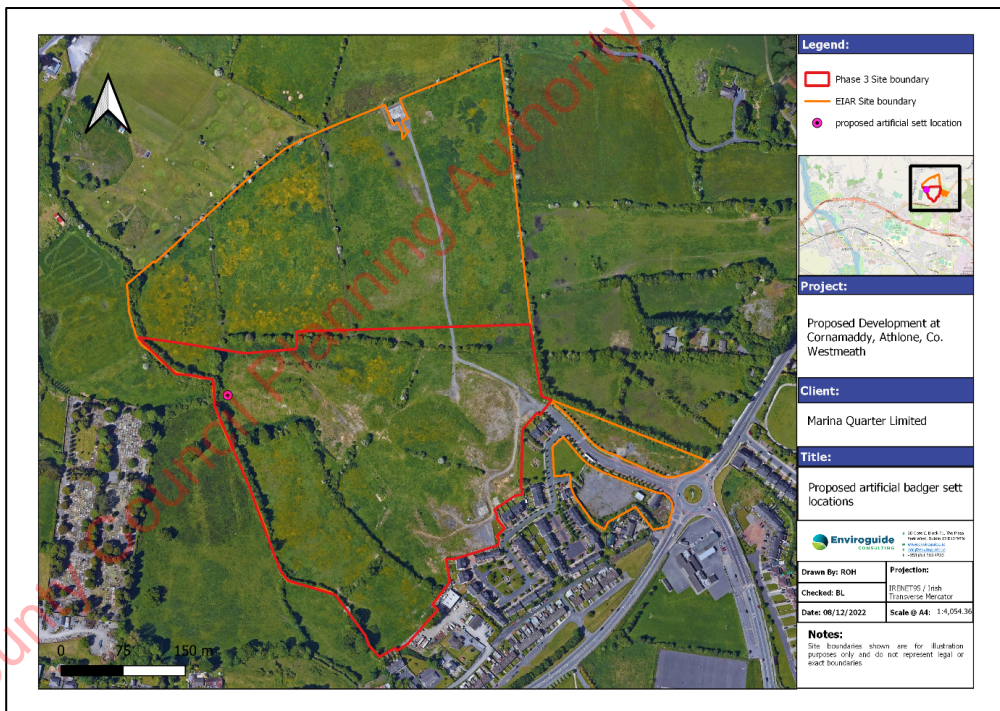


Figure Error! No text of specified style in document.-33: Location of proposed artificial sett location adjacent to the esker on Site.

Construction of the artificial sett must not place existing setts in danger. All construction equipment must remain a minimum of 30m (up to 50m during breeding season) from all existing (naturally constructed) active sett entrances during the creation of the new sett. The artificial sett will be constructed several months in advance of the closure of the active setts. In this interval, the affected badgers will be encouraged to utilise the artificial sett by means of attractive food baits (peanuts etc.) and materials from the active sett added to the new artificial sett (bedding, discarded spoil). The construction of an effective artificial sett is an exercise best conducted by experienced personnel. The

constructed tunnels and chamber system will be located in well-drained soils and be landscaped and planted to ensure adequate cover and lack of disturbance.

Disturbance limitation

In order to minimise the potential for human and dog related disturbance of the new sett area and its surrounding vegetation, access to this portion of the Site will be restricted and discouraged through landscaping (e.g., fencing, dense planting) and signage (e.g., ‘Dogs to be kept on leads to protect wildlife’). Timing of works in the vicinity of the artificial sett will ensure any noisy or intrusive works required in this area take place prior to the artificial sett becoming active.

8.5.1.7 Protection of Bats

Bat Friendly Tree Felling

To avoid injury/death of bats, a dedicated bat survey of tree T915 is required to assess if there is bat usage, inspection at height may also be required. A Bat Derogation Licence is required for tree T914. If this is granted, conditions for felling will be stated within. Tree T914 will also need a dedicated bat survey to assess level of bat usage for the licence application. Inspection at height may also be required.

As good practice, all trees on Site to be felled should be left in situ for 24 hours once felled or section felled. Trees identified as holding **Moderate** bat roost potential will be subject to a pre-felling survey by a qualified bat ecologist, the evening/dawn before felling; to confirm the presence or absence of bats. This is required as the roost potential of trees on Site may change between the time of writing this report and the commencement of works; through storm damage etc. Should bats be found, felling will be postponed until a derogation licence is obtained by the bat ecologist from the NPWS. This will avoid any harm to bats and the committing of an offence under the Wildlife Act 1976 as amended. Should the trees be found to be free of bats by the bat ecologist then felling can proceed within 24hrs of the survey, any longer than this and a second survey will be required to ensure bats are not present.

Felling of trees of **Moderate** bat roost will be by ‘soft-felling’, where the tree in question is section felled by a tree surgeon under the supervision of a bat ecologist, if the bat ecologist recommends it. If the bat ecologist is content that section felling is not required, then Moderate bat roost potential trees should be felled as follows (as per NRA (Now TII) 2005 Guidelines):

- Tree-Felling of trees will be undertaken during **September and October**. During this period bats are capable of flight, and this may avoid risks associated with tree-felling. It is also outside of the bird nesting season. Felling in the winter months creates the additional risk that bats may be in hibernation and thus unable to escape from a tree that is being felled. Additionally, disturbance during winter may reduce the likelihood of survival as the bats’ body temperature is too low and they may have to consume too much body fat to survive.
- Tree-felling will be undertaken using heavy plant and chainsaw. Prior to felling, the tree will be pushed lightly two to three times, with a pause of approximately 30 seconds between each nudge to allow bats to become active.
- The tree should then be pushed to the ground slowly.
- Trees **will not be sawn up or mulched immediately**. A period of at least 24 hours, and preferably 48 hours, will elapse prior to such operations to allow bats to escape.
- Trees for future landscaping will comprise of semi-mature native Irish species where possible.
- When felling trees with a chainsaw, it is important to ensure that the rate of fall is not accelerated by the use of a chain and vehicle (e.g., tractor). It is unlikely that a bat would survive such a heavy impact.

Bat Roosting Opportunities

To offset the loss of trees on Site, a series of 10 bat boxes will be erected on suitably large trees along the boundaries of the Site to provide future roosting opportunities. The guidance of a suitably qualified Bat ecologist will be sought in the selection of bat box type and placement; to avoid disturbance from lighting generated by the Proposed Development and maximise the likelihood of their uptake by local bats. Bat boxes will be placed over 4m high (if possible) onto retained mature trees, the trees in which they are placed will not be illuminated.

Bat Friendly Lighting Measures

Subject to grant of permission, the construction stage lighting plan will be prepared by the main contractor when they are appointed, and this will be reviewed by a bat ecologist to ensure that no night-time light spill on to the boundary treelines at the Site occur as result of night-time security lighting at the construction site (if such lighting is required). Every effort will be made to ensure that there will be no night-time construction lighting within or directed into vegetated areas and treelines. To ensure there is no light spill into these areas, the following luminaire specifications, taken from latest guidance (ILP, 2018), will be adhered to during the Construction Phase:

- A bat ecologist (with lighting expertise) will assess the lighting report for the area containing trees which are identified as roosts e.g., the area containing trees T916 to T924 to ensure no lighting disturbance to roosts, or potential bat roost trees. They will advise further lighting mitigation as required.
- Retained treelines will not incur an increase in the current lux level due to the new development.
- All luminaires used will lack UV/IR elements to reduce impact.
- LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum).
- Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights will be carefully considered to minimise light spill. The shortest column height allowed will be used where possible.
- Only luminaires with an upward light ratio of 0% and with good optical control will be used.
- Luminaires will be mounted on the horizontal, i.e., no upward tilt.
- Any external security lighting will be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres will be used to reduce light spill and direct it only to where it is needed.

The landscape plan also includes the provision of new tree and hedgerow planting within the proposed parkland that runs along the esker in the centre of the Masterplan area. This parkland area will be maintained with zero to minimal night-time lighting and will act as a dark corridor for bats to forage and commute through the Site during the lifetime of the Proposed Development.

8.5.1.8 Reduction of Noise Related Impacts

Short-term increases in disturbance levels as a direct result of human activity and through increased generation of noise during the Construction Phase can have a range of impacts depending upon the sensitivity of the ecological receptor, the nature and duration of the disturbance and its timing.

Noise generated during the Construction Phase of the Proposed Development could cause temporary disturbance to a number of faunal species in the vicinity of the Site of

the Proposed Development. To mitigate this disturbance, the following measures will be implemented:

- Selection of plant with low inherent potential for generating noise.
- Siting of plant as far away from sensitive receptors as permitted by Site constraints.
- Avoidance of unnecessary revving of engines and switch off plant items when not required.
- Keep plant machinery and vehicles adequately maintained and serviced.
- Proper balancing of plant items with rotating parts.
- Keep internal routes well maintained and avoid steep gradients.
- Minimise drop heights for materials or ensure a resilient material underlies.
- Use of alternative reversing alarm systems on plant machinery.
- Limiting the hours during which site activities likely to create high levels of noise are permitted.
- Appointing a Site representative responsible for matters relating to noise.
- Monitoring typical levels of noise during critical periods and at sensitive locations.

These measures will ensure that any noise disturbance to nesting birds or any other fauna species in the vicinity of the Proposed Development will be reduced to a minimum.

8.5.1.9 Reduction of Dust Related Impacts

The following general dust control measures will be followed for the duration of the Construction Phase of the Proposed Development. These measures will ensure no significant dust related impacts occur to nearby sensitive receptors including local faunal species.

- In situations where the source of dust is within 25m of sensitive receptors screens (permeable or semi-permeable) will be erected.
- Haulage vehicles transporting gravel and other similar materials to site will be covered by a tarpaulin or similar.
- Access and exit of vehicles will be restricted to certain access/exit points.
- Vehicle speed restrictions of 20km/hr will be in place.
- Bowers will be available during periods of dry weather throughout the construction period.
- Stockpiles will be stored in sheltered areas of the Site, covered, and watered regularly or as needed if exposed during dry weather.
- Gravel or hardstand will be used at Site exit points to remove caked-on dirt from tyre tracks.
- Hard surfaced roads will be wet swept to remove any deposited materials.
- Unsurfaced roads will be restricted to essential traffic only.
- If practical/required, wheel-washing facilities will be located at all exits from the construction Site.
- Dust production as a result of Site activity will be minimised by regular cleaning of the Site access roads using vacuum road sweepers and washers. Access roads will be cleaned at least 0.5km on either side of the approach roads to the access points.
- Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum daily, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
- The frequency of cleaning will be determined by the Site agent and is weather and activity dependent.
- The height of stockpiles will be kept to a minimum and slopes will be gentle to avoid windblown soil dust.
- The following will be dampened during dry weather.

- Unpaved areas subject to traffic and wind.
- Stockpiles.
- Areas where there will be loading and unloading of dust-generating materials.
- Under no circumstances will wastewater from equipment, wheel or surface cleaning enter the surface water drainage network.

8.5.2 Operational Phase Mitigation

8.5.2.1 Protection and Enhancement of Habitats

New hedgerows proposed in the landscape design will be managed in a way so as to mitigate the loss of the existing hedgerows as much as is possible. In this way the ecological value of new hedgerows will be maximised, with habitat connectivity ensured along the margins of the Proposed Development; connecting it in with the wider field boundary network in the area. This connectivity is vital for wildlife such as birds, bats, mammals and insect pollinators in a human landscape such as that which will be provided by the Proposed Development. Additionally, by managing hedgerows and treelines in a more natural way, they will provide more in terms of biodiversity; through increased plant diversity, increase provision of food resources and higher quality shelter to wildlife inhabiting and commuting through the area.

The above low intervention approach may not be suitable for hedges included within the more landscaped areas of the Site, which may need to be maintained to a higher degree for health and safety or aesthetic reasons. However, native species will be used wherever possible in these locations to maximise the biodiversity value of these internal landscaped parts of the Site.

For the hedgerows and treelines running along the outer margins of the Site, the following management approach is proposed to maximise their biodiversity value and offset the loss of existing hedgerows at the Site. Should planning be granted, a **Hedgerow Management Plan** will be prepared by a suitably qualified ecologist for the hedgerows that are proposed for the Site's outer boundaries. This management plan will include the following, with a focus on maintaining these hedges in as natural a state as possible to maximise their ecological value:

- Hedgerows will be maintained with a natural meadow strip of 1-2m at their base wherever possible. Hedges with plenty of naturally occurring flowers and grasses at the base will provide higher quality habitat for local wildlife using the hedges.
- The 1-2m strip at the base of the hedgerow will be cut on a reduced mowing regime to encourage wildflower growth and maximise the value of the hedgerow for pollinators. A two-cut management approach is ideal for suppressing coarse grasses and encouraging wildflowers. Cut the hedgerow basal strip once during February and March (this is before most verge plants flower and it will not disturb ground-nesting birds). Cut the verge once again during September and October (this slightly later cutting date allows plants that were cut earlier in the year time to grow and set seed).
- N.B. Raising the cutter bar on the back cut will lower the risk to amphibians, reptiles and small mammals.
- Hedgerows, where possible, will be allowed to reach at least 2.5m in height, and should be trimmed in an A-shape; maintaining a wider base to compliment the natural meadow strip at their base.
- Where hedgerow trimming needs to occur delay trimming as late as possible – until January and February as the surviving berry crop will provide valuable food for wildlife. The earlier this is cut; the less food will be available to help birds and other

wildlife survive through the winter. Any hedgerow cutting should be done outside of the nesting season and due consideration of the Wildlife Act 1976 (as amended) needs to be taken.

- Where possible, cut these outer boundary hedgerows on a minimum 3-year cycle (cutting annually stops the hedgerow flowering and fruiting), and cut in rotation rather than all at once - this will ensure some areas of hedgerow will always flower (Blackthorn in March, Hawthorn in May).
- Where they occur naturally, Bramble and Ivy should be allowed grow in hedgerows, as they provide key nectar and pollen sources for pollinators in summer and autumn.

Methods to Avoid

- **Hedgerows will not be over-managed.** Tightly cut hedges mean there are fewer flowers and berries, thus reducing available habitats, feeding sources and suitable nesting sites.
- **Hedgerows will not be cut between March 1st and August 31st inclusive.** It is both prohibited (except under certain exemptions) and very damaging for birds as this is the period they will have vulnerable nests containing eggs and young birds.
- **DO NOT use pesticide/ herbicide sprays or fertilisers near hedgerows or areas of wildflower planting** as they can have an extremely negative effect on the variety of plants and animals that live there.

8.5.2.2 Bat Friendly Lighting

To preserve the commuting potential of the treelines/hedgerows within the Site and along the Site boundaries and to minimise disturbance to bats in the immediate vicinity of the Site, the lighting and layout of the Proposed Development has been designed to minimise light spill. This will be achieved by ensuring that the design of lighting accords with guidelines presented in the Bat Conservation Trust & Institute of Lighting Engineers 'Bats and Lighting in the UK - Bats and Built Environment Series', the Bat Conservation Trust 'Artificial Lighting and Wildlife Interim Guidance' and the Bat Conservation Trust 'Statement on the impact and design of artificial light on bats'.

Bat-friendly lighting measures are incorporated into the project design and associated lighting plan. Dark buffer zones have been effectively used to separate important habitats or features from lighting by forming a dark perimeter around them (ILP, 2018). Buffer zones rely on ensuring light levels within a certain distance of features do not exceed certain defined limits. The buffer zone can be further subdivided into zones of increasing illuminance limit radiating away from the feature. Examples of this application can be seen in Figure Error! No text of specified style in document.-34

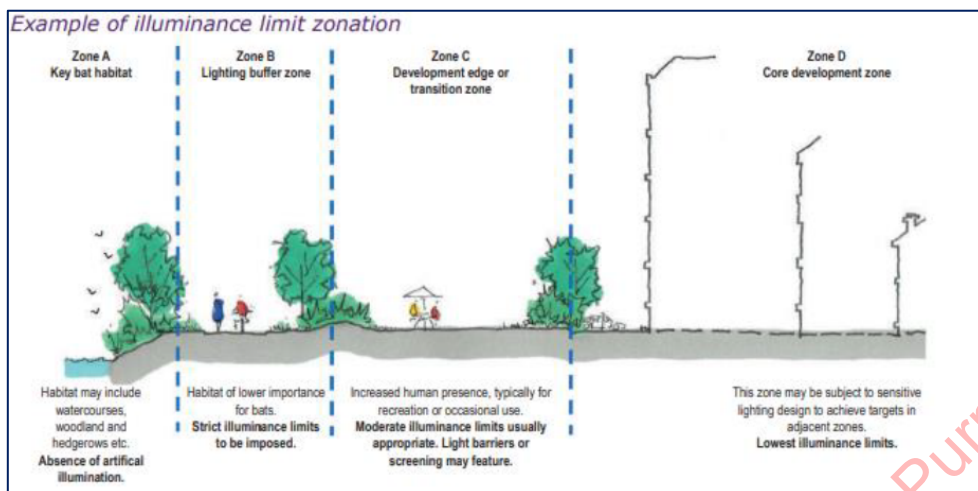


Figure Error! No text of specified style in document.-34: External Lighting Zonation Diagram Adapted from ILP (2018).

Night-time lighting across the Site will be kept to a minimum (once satisfying health and safety requirements), through the reduction of light spill from the buildings via windows/entrances, and the reduction of spill/glare from outdoor lighting in place on the building exterior and through the Proposed Development grounds.

Incorporation of appropriate luminaire specifications will have a considerable input in mitigating the potential impact of night-time lighting on local bats. Based on the above guidance documents, the lighting scheme has incorporated the following measures:

- Luminaires will have zero upward light ratio, to minimise light pollution, energy waste and impact on wildlife.
- Lighting will be directional on to the roadways and footways only with minimal spillage of light onto adjoining habitats. To reduce light spillage from luminaries, lights will not emit at angles greater than 70° from the vertical plane.
- Lighting design software will be utilised to predict where light spill will occur.
- LED luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- Narrow spectrum bulbs will be used to lower the range of species affected by lighting. Light sources that emit minimal ultra-violet light and avoid the white and blue wavelengths of the light spectrum will be utilised to avoid attracting lots of insects. Lighting regimes that attract lots of insects result in a reduction of insects in other areas like parks and gardens that bats may utilise for foraging.
- Maintain dark zones of 10m in width for foraging bats in areas where lighting is not necessary e.g., along the vegetated boundaries of the Site. However, where lighting is required, this lighting will be placed at a minimum height using the lowest lux value permitted for public health and safety.
- Motion sensor and timer activated lighting will be in place at the Site to ensure minimal light spill occurs during the hours of darkness.
- Where possible, luminaires will be recessed where installed in proximity to windows to reduce glare and light spill (Figure Error! No text of specified style in document.-35).
- The colour rendering of the selected light fittings will be 3000k making the LED fittings a warmer light, helping to further minimize the impact on the local wildlife.
- Retained treelines will not incur an increase in current lux levels due to the Proposed Development.
- Planting will provide areas of darkness suitable for bats to feed and commute.
- Reflective surfaces will not be placed under lights.

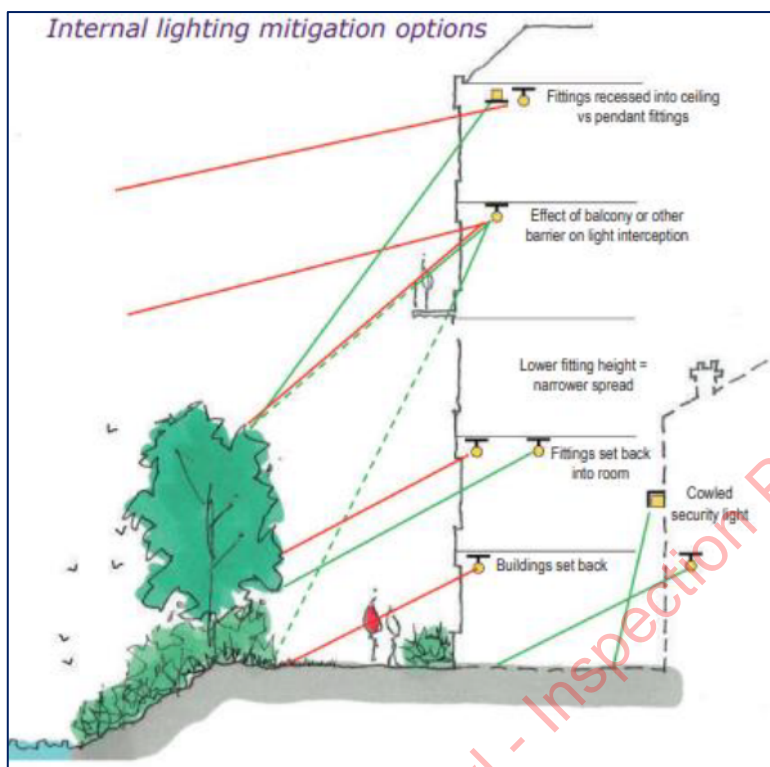


Figure Error! No text of specified style in document.-35: Internal Lighting Guidance Diagram Adapted from ILP (2018).

8.5.3 Monitoring

8.5.3.1 Surface Water Protection

Regular monitoring will be carried out by the contractor to ensure water quality protection measures (e.g., drain blocks), silt fences are working throughout the entire Construction Phase. All containment and treatment facilities will be maintained and inspected regularly based on Site and weather conditions for any signs of contamination of excessive silt deposits and records of these checks will be maintained for inspection.

8.5.3.2 Badger

Construction Phase

A suitably qualified badger specialist will be employed prior to the commencement of works on Site to survey the Site for badger activity and assess the status of the existing setts. The specialist will be employed for the duration of the Construction Phase and will supervise all works in the vicinity of the existing setts and the artificial sett once constructed. The construction of the artificial sett will also be carried out under the supervision of this specialist in consultation with the NPWS.

The specialist will ensure no harm comes to badgers during the Construction Phase of the Proposed Development e.g., exclusion fencing to prevent access to the construction Site as required. A schedule of checks will be drawn up by the specialist to cover the duration of the Construction Phase; to ensure that badger protection measures are in place and working effectively.

Operational Phase

A post-construction monitoring programme is proposed for the Site to assess the success (or not) of the mitigation measures relating to badgers. The post construction monitoring

will entail the assessment of badger activity at the Site post construction, and the assessment of the success of the artificial sett.

On completion of all works, an inspection of the artificial sett will be carried out to ensure it is accessible and in good repair. Inspections will be carried out six months and one year after the date of this initial inspection, using camera traps to determine whether the sett is being used and proposing any further remedial measures if relevant. All inspections, monitoring and licence applications will be conducted by suitably qualified badger specialist.

8.5.3.3 Bats

Construction Phase

As good practice, all trees on Site to be felled should be left in situ for 24 hours once felled or section felled. Trees identified as holding Moderate bat roost potential will be subject to a pre-felling survey by a qualified bat ecologist, the evening/dawn before felling; to confirm the presence or absence of bats. Felling of Moderate roost potential trees will be by 'soft-felling'.

To avoid injury/death of bats, a dedicated bat survey of tree T915 is required to assess if there is bat usage, inspection at height may also be required. A Bat Derogation Licence from the NPWS is required for tree T914. If this is granted, conditions for felling will be stated within. Tree T914 will also need a dedicate bat survey to assess level of bat usage for the license application. Inspection at height may also be required.

8.6 Residual Impacts

Residual impacts are impacts that remain once mitigation has been implemented or impacts that cannot be mitigated. They are the remaining 'environmental cost' of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse impacts. Table Error! No text of specified style in document.-17 provides a summary of the impact assessment for the identified KERs and details the nature of the impacts identified, mitigation proposed and the classification of any residual impacts.

All mitigation measures detailed in this Chapter and the accompanying NIS will be implemented in full and will remain effective throughout the lifetime of the Proposed Development. Therefore, no significant negative residual impacts on the local ecology or on any designated nature conservation sites are expected from the Proposed Development. However, in terms of the residual impact to badgers, the loss of an active sett will result in an unavoidable significant residual impact. The Proposed Development will result in the loss of a main sett and annex sett and the disruption of available foraging area for badger. It is proposed that the artificial sett will provide an alternative to the main sett if adopted by the badgers and that the impact of the impact of the Proposed Development will be mitigated to a *significant, short-term* impact. Opportunities for continued foraging within the Site and to the north and west will persist and the loss of foraging habitat on Site will not be significant and will not affect the conservation status of badgers. Badgers will be disrupted by the construction and occupancy of housing but with adequate mitigation implementation, badgers should be free to forage and commute in the surrounding area and through the Site.

Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Scale	Duration	Significance		
Lough Ree SAC and Lough Ree SPA	International Importance	Surface water run-off containing silt / pollutants reaching the Kippinstown and Garrynafela stream during the Construction Phase	Negative	n/a	Short-term	Moderate	Surface water protection measures outlined in section 8.5.1.1 and the NIS accompanying this application.	Imperceptible
Lough Ree PNHA	National Importance							
WL1 / WL2 – Hedgerows, Treelines BL1 – Stone walls and other stonework. WS1 – Scrub GS2 – Wet Grassland	Local Importance (higher value)	Loss and/or damage to some sections of habitat during the Construction Phase. Trampling and damage to trees identified for retention during the Construction Phase. The landscape design includes extensive planting and provides for pollinator friendly native species and wildlife planting areas.	Negative Negative Positive	Local	Permanent Short-term Long-term	Moderate	No further mitigation proposed for loss of habitat. With time, the maturing planted trees and hedgerows will neutralise the effects of habitat loss. Tree Protection measures as outlined in 8.5.1.2	Imperceptible
FW4 – Drainage Ditches and FW2 - Depositing/Lowland River	Local importance (higher value)	Loss of sections of drainage ditches on Site as a result of Proposed Development. Surface water	Negative	Local	Permanent Short-term	Slight Moderate	No further mitigation proposed. Retention of drainage ditches along Site boundaries	Negative, Permanent, Slight

Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Scale	Duration	Significance		
		discharges from the Site during the Construction Phase leading to a deterioration in water quality.					where possible. Specific surface water mitigation measures as outlined in section 8.5.1.1.	
Small mammals e.g., Eurasian pygmy shrew, stoat and hedgehog	Local importance (higher value)	Risk of injury and/or death as a result of vegetation clearance works. Noise, dust and light disturbance during the Construction Phase. Light disturbance during the Operational Phase	Negative	Local	Short-term Short-term Long-term	Significant Slight Slight	Clearing of vegetation (i.e. hedgerows, scrub) and stone walls outside of hibernation period (Outside period November - March). Range of best practice construction and operational noise and dust control measures. Wildlife friendly lighting plan to ensure dark buffer zones.	Negative, short-term, slight.
Badger	Local importance (higher value)	Loss of a main and annex sett. Sett removal while active (if active during construction).	Negative	Local	Permanent Permanent	Significant Significant	Additional badger activity survey and assessment of status of setts. Construction	Loss of an active sett and annex sett = negative, significant, short-term.

Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Scale	Duration	Significance		
		<p>Construction noise disturbance.</p> <p>Loss of foraging habitat.</p> <p>Operational noise and human/dog disturbance.</p>			<p>Short-term</p> <p>Permanent</p> <p>Permanent</p>	<p>Moderate</p> <p>Slight</p> <p>Moderate</p>	<p>Phase badger management plan to be prepared by a badger expert and approved by the NPWS.</p> <p>Vegetation clearance of highlighted areas to be supervised by suitably qualified ecologist.</p> <p>Mitigation measures described in section 8.5.1.6 to be followed under the supervision of badger expert when excluding badgers from and destroying setts.</p> <p>Provision of an artificial <u>sett</u> on Site as compensation, with protective screening vegetation to provide shelter and foraging vegetation for badgers.</p>	<p>Noise disturbance= negative, slight, short-term.</p> <p>Mortality/ injury during sett destruction = no impact.</p> <p>Loss of foraging habitat = negative, slight, permanent.</p> <p>Operational phase disturbance = negative, slight, permanent.</p>

Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Scale	Duration	Significance		
							<p>Suite of noise control measures as outlined in section 8.5.1.6.</p> <p>Operational Phase human disturbance will be minimised through the protection of the new sett through landscaping (fencing, planting) and adequate signage with regards dogs.</p>	
Bird assemblage	Local importance (higher value)	<p>Mortality during construction Phase due to vegetation removal</p> <p>Disturbance due to noise and dust generated during Construction Phase.</p> <p>Loss of nesting/foraging habitat (hedgerows, grassland, scrub).</p>	Negative	Local	<p>Short-term</p> <p>Short-term</p> <p>Permanent</p>	<p>Significant</p> <p>Not significant</p> <p>Moderate</p>	<p>No removal of vegetation to be carried out during nesting season.</p> <p>Construction related noise and dust control/minimisation measures to be implemented.</p> <p>Increase in tree cover and diverse planting as a result of the proposed</p>	Imperceptible

Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Scale	Duration	Significance		
							landscaping plan. A series of 10+ bird boxes to be erected on suitable trees along the Site boundaries and vegetated areas.	
Bat assemblage	Local importance (higher value)	Mortality during construction Phase due to felling of trees containing bats. Loss/damage of some stretches of potential commuting, foraging and roosting habitat. Light disturbance during the Construction Phase. Light disturbance during the Operational Phase	Negative	Local	Short-term Permanent Short term Permanent	Significant Moderate Moderate Significant	Felling of all trees to take place between Sept-Nov unless fully checked by bat specialist. Pre-felling survey of Moderate roost potential trees by a bat ecologist the night/dawn before felling. NPWS derogation licence is required if bats present. NPWS licence required for confirmed bat roosts. Soft felling procedure for Moderate bat roost potential trees as per	Negative, permanent, moderate impact at local scale.

Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Scale	Duration	Significance		
							section 8.5.1.7 Bat friendly lighting measures to be implemented during Construction and in the Operational Design of the Proposed Development. Operational Phase lighting to be checked by a Bat ecologist once fully operational. Series of 10+ bat boxes to be erected on suitable trees along the Sites outer boundaries. This will be under the guidance of a Bat ecologist.	
Amphibians and Reptiles	Local importance (higher value)	Physical disturbance and/or displacement during Construction Phase due to the removal of drainage ditches, wet grassland, stone walls and	Negative	Local	Long-term Long-term	Moderate Significant	Pre-construction survey to determine if breeding amphibians are present at the Site prior to works within	Imperceptible

Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Scale	Duration	Significance		
		scrub. Injury/death of lizards if present in stone wall during clearance. Loss of habitat (e.g., stone walls for lizards)			Short-term	Significant	wet grassland and drainage ditches and NPWS consultation if found. Specific methodology for protection of lizards to be followed when clearing stone wall habitats (section 8.5.1.5). Provision of compensatory habitat in the form of piles of stones/logs in out-of-the-way parts of the Site. Surface water mitigation measures to protect the Kippinstown and Garrynafela stream (section 8.5.1.1).	
Aquatic and semi-aquatic fauna downstream of the Site within Lough Ree	Local importance (higher value)	Deterioration in water quality of the Garrynafela stream and downstream Lough Ree, causing disturbance and/or displacement of	Negative	Local	Short-term	Moderate	Mitigation measures to protect surface waters as outlined in section 8.5.1.1.	Imperceptible

Key Ecological Receptor	Level of Significance	Potential Impact	Impact Without Mitigation				Proposed Mitigation	Residual Impact
			Quality	Scale	Duration	Significance		
(otter, fish assemblage)		fish and reduction in prey for otter.					Drainage ditches along the Site boundary will be retained where possible and have been incorporated into the project design.	

Table Error! No text of specified style in document.-17: Summary of potential impacts on KER(s), mitigation measures/mitigating factors and residual impacts

8.7 Significant Interactions

This chapter pertaining to the ecological and biodiversity aspects of the Proposed Development, has the potential to interact with the aspects of the following chapters of this EIAR:

- Chapter 6: Land, Soils, Geology and Hydrogeology
- Chapter 7: Hydrology
- Chapter 9: Air Quality and Climate
- Chapter 10: Noise and Vibration
- Chapter 11: Landscape and Visual Impact

8.7.1 Land, Soils, Geology and Hydrogeology

An assessment of the potential impact of the Proposed Development on the existing land, soils and geological environment; with emphasis on the impact of the Proposed Development on the receiving soils underlying the Site during the Operational Phases of the Proposed Development, is described in Chapter 6 - ‘Land, Soils, Geology and

Hydrogeology’ of this report. These impacts are considered to be relevant to the ecological sensitivities associated with the Site of the Proposed Development discussed in this Chapter; and mitigation measures addressing these potential impacts are described in full in Chapter 6. The bulk removal of soils at the Site can have implications for biodiversity. Natural regeneration of native and local seeds is the preferred option for re-vegetating areas to be retained for biodiversity

8.7.2 Hydrology

The key environmental interaction with biodiversity is water. An assessment of the potential impact of the Proposed Development on the hydrological and hydrogeological environment is described in Chapter - ‘Hydrology’ of this report as well as in this Chapter, to ensure the quality (pollution and sedimentation) and quantity (surface water run-off) of water is of appropriate standard. Interactions between hydrology and biodiversity can occur through impacts to water quality, arising, for example from an accidental pollution event during the construction and operational phase. This interaction has the potential to result in impacts on habitats and fauna that are hydrologically linked to the Site.

8.7.3 Air Quality and Climate Change

An assessment of the potential impact of the Proposed Development on air quality and climate is included in Chapter 9 of this EIAR. Dust emissions arising from the Construction Phase of the Proposed Development were identified as having potential impacts on local biodiversity. Once dust minimisation measures are implemented, impacts to biodiversity are not predicted to be significant

8.7.4 Noise and Vibration

An assessment of the potential impact of the Proposed Development in the form of excess noise and vibrations associated with the Proposed Works are laid out in Chapter 10- ‘Noise and Vibrations’. These impacts are considered to be relevant to the ecological sensitivities associated with the Site of the Proposed Development discussed in this Chapter; and mitigation measures addressing these potential impacts are both referenced in this Chapter and described in full in Chapter 10. There is potential for interactions between noise and sensitive fauna, e.g., birds, that occur in adjacent habitats from increased noise levels during the Construction Phase. However, as described, noise related impacts are not deemed to be significant

8.7.5 Landscape and Visual Impact

An assessment of the potential impacts of the Proposed Development on the surrounding landscape character is outlined in Chapter 11 – Landscape and Visual. These impacts are considered to be relevant to the ecological sensitivities associated with the Site of the Proposed Development discussed in this Chapter; and mitigation measures addressing these potential impacts are both referenced in this Chapter and described in full in Chapter 11. Landscaping at a development site can have significant implications for biodiversity. The landscape plan for the Proposed Development includes an area to be retained for biodiversity. The lighting plan for the Site has also been sensitively designed to protect bats from light pollution. Significant negative effects are not predicted.

8.8 References

- Bang, P. and Dahlstrom, P. (2001).** Animal Tracks and Signs, Oxford University Press, Oxford.
- Bat Conservation Ireland. (2014).** Bats in Buildings, Guidance Notes for: Planners, engineers, architects, and developers.
- Blamey, M., Fitter, R. and Fitter, A. (2003).** Wild Flowers of Britain and Ireland. London: A & C Black.

Beebee, T.J.C. (2002). *The Natterjack Toad Bufo camanita in Ireland: current status and conservation requirements.* Irish Wildlife Manuals, No. 10.

British Hedgehog Preservation Society [ONLINE]. Available at: <https://www.britishhedgehogs.org.uk/>. [Accessed November 2022].

Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1.

Cook, A. S. & Frazer, J. F. D. (1976). Characteristics of newt breeding sites. *J. Zool.* (Lond. 178: 223-236.

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

Department of the Environment, Heritage and Local Government. (2010). *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.* DEHLG, Dublin. (Rev. Feb 2010).

Devlin, Z. (2021). *The Wildflowers of Ireland. A Field Guide. (2nd Edition).* Gill Books. Dublin.

Environmental Protection Agency. (2022). Environmental Protection Agency Online Mapping [ONLINE] Available at: <http://www.epa.ie/> [Accessed November 2022].

Environmental Protection Agency. (2022). Guidelines on the information to be contained in Environmental Impact Assessment Reports. Published by the Environmental Protection Agency, Ireland.

European Commission. (2000). *Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.* European Communities, Luxembourg.

European Communities. (2002). *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.* European Communities, Luxembourg.

Fossitt, J. (2000). *A Guide to Habitats in Ireland.* The Heritage Council, Kilkenny.

Gauthreaux, S. A., and Belser, C. G. (2006). Effects of artificial night lighting on migrating birds. Pages 67–93 in C. Rich and T. Longcore, editors. *Ecological consequences of artificial night lighting.* Island Press, Washington, D.C., USA.

Geological Survey Ireland. (2022). Geological Survey of Ireland website [ONLINE] Available at: <http://www.gsi.ie/> [Accessed November 2022].

Gilbert, G., Stanbury, A. and Lewis, L. (2021). Birds of Conservation Concern in Ireland 4: 2020–2026. *Irish Birds* 43: 1–22

Inland Fisheries Ireland. (2016). *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters.* Available at: <https://www.fisheriesireland.ie/documents/624-guidelines-on-protection-of-fisheries-during-construction-works-in-and-adjacent-to-waters/file.html>

Inns, H. (2009). *Britain's Reptiles and Amphibians.* Wildguides, Hampshire.

Institute of Lighting Professionals (ILP). (2018). *Guidance note 08/18: Bats and artificial lighting in the UK. Bats and the Built Environment Series.* [Online] Available at: <https://cdn.bats.org.uk/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?mtime=20181113114229>

Irish Wildlife Trust (2005). *Common Lizard (Lacerta vivipara) Information Sheet.* (www.iwt.ie/lizards2.php)

Marnell, F. Kelleher, C., and Mullen, E. (2022). *Bat Mitigation Guidelines for Ireland – v2.* Irish Wildlife Manuals, No. 134. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Dublin, Ireland.

Kelly, J., O' Flynn, C. and Maguire, C. (2013). Risk analysis and prioritisation for invasive and non-native species in Ireland and Northern Ireland. The Northern Ireland Environmental Agency and the National Parks and Wildlife Service.

King, J.L., Marnell, F., Kingston, N., Rosell, R., Boylan, P., Caffrey, J.M., FitzPatrick, Ú., Gargan, P.G., Kelly, F.L., O'Grady, M.F., Poole, R., Roche, W.K. & Cassidy, D. (2011). Ireland Red List No. 5: Amphibians, Reptiles & Freshwater Fish. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Lawton, C., Hanniffy, R., Molloy, V., Guilfoyle, C., Stinson, M. & Reilly, E. (2020). All Ireland Squirrel and Pine Marten Survey 2019. Irish Wildlife Manuals, No. 121. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

Lockhart, N., Hodgetts, N. & Holyoak, D. (2012) Ireland Red List No.8: Bryophytes. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N. (2011). Landscape conservation for Irish bats and species specific roosting characteristics. Bat Conservation Ireland.

NBDC. (2015). Pollinator Friendly Planting Code. All-Ireland Pollinator Plan 2015-2020. www.pollinators.ie. [Online] Available at: <https://pollinators.ie/gardens/> [Accessed November 2022].

NBDC. (2022). National Biodiversity Data Centre online mapping [ONLINE]. Available at: <http://maps.biodiversity.ie/Map.aspx>. [Accessed November 2022].

NPWS. (2009). Proposed Natural Heritage Area Site Synopses Portfolio.

NPWS. (2010). Circular NPW 1/10 & PSSP 2/10. Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Department of Environment, Heritage and Local Government.

NPWS. (2013a). The Status of Protected EU Habitats and Species in Ireland. Overview Volume 1. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland. Editor: Deirdre Lynn

NRA (Keeley, B (Undated)) *Guidelines For The Treatment Of Bats During The Construction Of National Road Schemes.* National Roads Authority (Ireland)

NRA (2005a). Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes. National Roads Authority, Dublin.

NRA (2005b). Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes. Dublin: National Roads Authority (Ireland).

NRA. (2008). Guidelines for the treatment of Otters prior to the construction of National Road Schemes. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

NRA. (2009a). Environmental Assessment and Construction Guidelines. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

NRA. (2009b). Guidelines for Assessment of Ecological Impacts of National Road Schemes. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

NRA. (2010). Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads(now Transport Infrastructure Ireland), Dublin.

O'Neill, K., Jennings, S., Forsyth, L., Carey, R., Portig, A., Preston, J., Langton, T. & McDonald, R. (2004). *The distribution and status of smooth newts in Northern Ireland.* Environment & Heritage Services, Belfast (Unpublished).

Russ, J. (2012). British Bat Calls – A guide to species identification. Pelagic Publishing. Exeter, United Kingdom,

Smith, G.F., O'Donoghue, P., O'Hora, K. and Delaney, E. (2011). Best practice guidance for habitat survey and mapping. The Heritage Council, Kilkenny.

The Herpetological Society of Ireland. [ONLINE]. Available at: <https://thehsi.org/publications-and-resources/publications/>. [Accessed November 2022].

Wildlife act 1976 and Wildlife [Amendment] Act 2000. Government of Ireland.

Wyse Jackson, M., FitzPatrick, Ú., Cole, E., Jebb, M., McFerran, D., Sheehy Skeffington, M. & Wright, M. (2016) Ireland Red List No. 10: Vascular Plants. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin, Ireland.

Westmeath County Council Planning Authority - Inspection Purposes Only

9 AIR QUALITY AND CLIMATE

9.1 Introduction

Enviroguide Consulting was commissioned by Marina Quarter Limited to prepare an Air Quality and Climate Chapter for a Proposed Development at Cornamaddy, Athlone, Co. Westmeath. This Chapter of the Environmental Impact Assessment Report (EIAR) will describe and assess the potential impacts on air quality and climate associated with the Proposed Development.

Considering Ambient Air Quality Standards, the baseline air quality will be examined along with the potential for release of emissions to the atmosphere and associated effects prior to and following mitigation measures. This Chapter will also describe and assess the potential impacts on micro and macro-climate as a result of the Proposed Development. Attention will be focused on Ireland's obligations under the Kyoto Protocol and the Paris Agreement in the context of the overall climatic impact of the presence and absence of the Proposed Development.

9.1.1 Author Information and Competency

This Chapter was prepared by Laura Griffin, Environmental Consultant, Enviroguide Consulting. Laura has a Master of Science (Hons) in Climate Change from Maynooth University and a Bachelor of Arts (Hons) in English and Geography from Maynooth University. Laura has worked as an Environmental Consultant with Enviroguide since 2021 and has experience preparing Environmental Impact Assessment (EIA) Screening Reports, Air Quality and Climate, Noise and Vibration, and Archaeology and Cultural Heritage Chapters of EIARs.

9.1.2 Ambient Air Quality Standards

For the protection of health and ecosystems, EU directives apply air quality standards in Ireland and other EU member states for a range of pollutants. These rules include requirements for monitoring, assessment and management of ambient air quality. The first major instrument in tackling air pollution was the Air Quality Framework Directive 96/62/EC and its four daughter Directives. Each of these instruments was repealed with the introduction of Directive 2008/50/EC on ambient air quality and cleaner air for Europe in 2008 (as amended by Decision 2011/850/EU and Directive 2015/1480/EC) (the CAFE Directive), save for the "Fourth Daughter Directive" (Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air).

The CAFE Directive lays down measures aimed at:

- 1) defining and establishing objectives for ambient air quality designed to avoid, prevent or reduce harmful effects on human health and the environment as a whole;
- 2) assessing the ambient air quality in Member States on the basis of common methods and criteria and, in particular, assessing concentrations in ambient air of certain pollutants;
- 3) providing information on ambient air quality in order to help combat pollution and nuisance and to monitor long-term trends and improvements resulting from national and Community measures;
- 4) ensuring that such information on ambient air quality is made available to the public;
- 5) maintaining air quality where it is good and improve it in other cases;
- 6) promoting increased cooperation between the Member States in reducing air pollution.

Ambient air quality monitoring and assessment in Ireland is carried out in accordance with the requirements of the CAFE Directive. The CAFE Directive has been transposed into Irish legislation by the Air Quality Standards Regulations (S.I. No. 180 of 2011). The CAFE Directive requires EU member states to designate ‘Zones’ reflective of population density for the purpose of managing air quality. Four zones were defined in the Air Quality Standards Regulations (2011) and subsequently amended in 2013 to account for 2011 census population counts and to align with coal restricted areas in the Air Pollution Act (Marketing, Sale, Distribution and Burning of Specified Fuels) Regulations 2012. (S.I. No. 326 of 2012) (the 2012 Regulations).

The main areas defined in each zone are:

- ❖ **Zone A:** Dublin Conurbation
- ❖ **Zone B:** Cork Conurbation
- ❖ **Zone C:** Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise.
- ❖ **Zone D:** Rural Ireland, i.e., the remainder of the State excluding Zones A, B and C.

The site of the Proposed Development is located in Cornamaddy, Athlone, Co. Westmeath and falls under the ‘Zone C’ category based on the EPA CAFE Directive.

The CAFE Directive outlines certain limit or target values specified by the five published directives that apply limits to specific air pollutants. These limits, outlined in Table 9-1, will be referred to as part of the Proposed Development assessment with respect to air quality.

POLLUTANT	LIMIT VALUE OBJECTIVE	AVERAGING PERIOD	LIMIT VALUE $\mu\text{g}/\text{m}^3$	LIMIT VALUE ppb	BASIS OF APPLICATION OF THE LIMIT VALUE	LIMIT VALUE ATTAINMENT DATE
SO ₂	Protection of human health	1 hour	350	132	Not to be exceeded more than 24 times in a calendar year	1 Jan 2005
SO ₂		24 hours	125	47	Not to be exceeded more than 3 times in a calendar year	1 Jan 2005
SO ₂	Protection of vegetation	Calendar year	20	7.5	Annual mean	19 July 2001
SO ₂		1 Oct to 31 Mar	20	7.5	Winter mean	19 July 2001
NO ₂	Protection of human health	1 hour	200	105	Not to be exceeded more than 18 times in a calendar year	1 Jan 2010
NO ₂		Calendar year	40	21	Annual mean	1 Jan 2010

NO + NO ₂	Protection of ecosystems	Calendar year	30	16	Annual mean	19 Jul 2001
PM10	Protection of human health	24 hours	50	-	Not to be exceeded more than 35 times in a calendar year	1 Jan 2005
PM10		Calendar year	40	-	Annual mean	1 Jan 2005
PM2.5 – Stage 1		Calendar year	25	-	Annual mean	1 Jan 2015
PM2.5 – Stage 2		Calendar year	20	-	Annual mean	1 Jan 2020
Lead		Calendar year	0.5	-	Annual mean	1 Jan 2005
Carbon Monoxide		24 hours	10,000	8,620	Not to be exceeded	1 Jan 2005
Benezene		Calendar year	5	1.5	Annual mean	1 Jan 2010

Table Error! No text of specified style in document.-18: Terminology used to assess the quality, significance and duration of potential impacts & effects

The EPA is the competent authority for the purpose of the CAFE Directive and is required to send an annual report to the Minister for Environment and the European Commission. The regulations further provide for the distribution of public information. This includes information on any exceedances of target values, the reasons for exceedances, the area(s) in which they occurred, and the relevant information regarding effects on human health and environmental impacts.

9.1.3 Climate Agreements

Climate change is recognised as one of the most serious global environmental problems and arguably the greatest challenge facing humanity today. While natural variations in climate over time are normal, anthropogenic activities have interfered greatly with the global atmospheric system by emitting substantial amounts of greenhouse gases (GHGs). This has caused a discernible effect on our global climate system, with continued change expected due to current and predicted trends of GHG emissions. In Ireland this is demonstrated by rising sea levels, changes in the ecosystem, and extreme weather events.

In March 1994, the United Nations Framework Convention on Climate Change (UNFCCC) was established as an intergovernmental effort to tackle the challenges posed by climate change. The Convention membership is almost universal, with 197 countries having ratified. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices. This information is then utilised to launch national strategies and international agreements to address GHG emissions. Following the formation of the UNFCCC, two major international climate change agreements were adopted: The Kyoto Protocol, and the Paris Agreement.

In April 1994, Ireland ratified the United Nations Framework Convention on Climate Change (UNFCCC) and subsequently signed the Kyoto Protocol in 1997. The Kyoto Protocol is an international agreement linked to the UNFCCC which commits its parties to

legally binding emission reduction targets. In order to ensure compliance with the protocol, the Intergovernmental Panel on Climate Change (IPCC) has outlined detailed guidelines on compiling National Greenhouse Gas Inventories. These are designed to estimate and report on national inventories of anthropogenic GHG emissions and removals. Under Article 4 of the Kyoto Protocol, Ireland agreed to limit the net anthropogenic growth of the six named GHGs to 13% above the 1990 level, spanning the period 2008 to 2012.

The second commitment period of the Kyoto Protocol was established by the Doha amendment which was adopted in extremis on the 8th of December 2012, to impose quantified emission limitation and reduction commitments (QELRCs) to Annex I (developed country) Parties during a commitment period from 2013 to 2020. 38 developed countries, inclusive of the EU and its 28 member states, are participating. Under the Doha amendment, participating countries have committed to an 18% reduction in emissions from 1990 levels. The EU has committed to reducing emissions in this period to 20% below 1990 levels. Ireland's QELRCs for the period 2013 to 2020 is 80% of its base year emissions. Ireland's compliance with the Doha amendment will be assessed based on the GHG inventory submission in 2022 for 1990-2020 data. As of October 2020, the Doha Amendment has received the required number of ratifications to enter into force. Once in force, the emission reduction commitments of participating developed countries and economies in transition (EITs) become legally binding.

In December 2015, the Paris Climate Change Conference (COP21) took place and was an important milestone in terms of international climate change agreements. The Paris Agreement sets out a global action plan to put the world on track to mitigate dangerous climate change by setting a global warming limit not to exceed 2°C above pre-industrial levels, with efforts to limit this to 1.5°C. As a contribution to the objectives of the agreement, countries have submitted comprehensive national climate action plans (nationally determined contributions, NDCs). Under this agreement, governments agreed to come together every 5 years to assess the collective progress towards the long-term goals and inform Parties in updating and enhancing their nationally determined contributions. Ireland will contribute to the Agreement through the NDC tabled by the EU on behalf of Member States in 2020, which commits to a 55% reduction in EU-wide emissions by 2030 compared to 1990. This is considered to be the current NDC maintained by the EU and its Member States under Article 4 of the Paris Agreement.

The EU has set itself targets for reducing its GHG emissions progressively up to 2050, these are outlined in the 2020 climate and energy package and the 2030 climate and energy policy framework. These targets are defined to assist the EU in transitioning to a low-carbon economy, as detailed in the 2050 low carbon roadmap. The 2020 package is a set of binding legislation to ensure that the EU meets its climate and energy targets for the year 2020. There are three key targets outlined in the package which were set by the EU in 2007 and enacted in legislation in 2009:

- 20% reduction in GHG emissions from 1990 levels;
- 20% of EU energy to be from renewable sources;
- 20% improvement in energy efficiency.

The 2030 climate and energy framework builds on the 2020 climate energy package and was adopted by EU leaders in October 2014. The framework sets three key targets for the year 2030:

- At least 40% cuts in GHG emissions from 1990 levels;
- At least 32% share for renewable energy;
- At least 32.5% improvement in energy efficiency.

The EU has acted in several areas in order to meet these targets, including the introduction of the Emissions Trading System (ETS). The ETS is the key tool used by the EU in cutting GHG emissions from large-scale facilities in the power, industrial, and aviation sectors. Around 45% of the EU's GHG emissions are covered by the ETS.

As part of the European Green Deal, the Commission proposed in September 2020 to raise the 2030 greenhouse gas emission reduction target, including emissions and removals, to at least 55% compared to 1990. The European Climate Law came into force in July 2021 and writes into law the goal set out in the European Green Deal for Europe's economy and society to become climate-neutral by 2050. The law also sets the intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels.

9.1.3.1 National Policy Position and Greenhouse Gas Emissions in Ireland

National climate policy in Ireland recognises the threat of climate change to humanity and supports mobilisation of a comprehensive international response to climate change, and global transition to a low-carbon future. A fundamental national objective aims to achieve transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050.

The Climate Action and Low Carbon Development (Amendment) Act 2021 was adopted in 2021 and sets Ireland on a legally binding path to net-zero emissions no later than 2050, and to a 51% reduction in emissions by the end of this decade. The Act provides the framework for Ireland to meet its international and EU climate commitments and to become a leader in addressing climate change.

The Irish Government published its Climate Action Plan (2021) and the accompanying Annex of Actions which provides a detailed plan for taking decisive action to achieve a 51% reduction in overall greenhouse gas emissions by 2030 (compared to 2018) levels which is in line with the EU ambitions, and a longer-term goal to achieving net-zero emissions no later than 2050. The plan lists actions needed to deliver on our climate targets (and had set indicative ranges of emissions reductions for each sector of the economy, before the Sectoral Emissions Ceilings had been finalised). It will be updated annually to ensure alignment with Ireland's legally binding economy-wide Carbon Budgets and Sectoral Emissions Ceilings. The next Climate Action Plan is due to be published by the end of 2022.

Ireland's latest greenhouse gas (GHG) emissions 1990-2021 are provisional figures based on the SEAI's final energy balance released in June 2022 (EPA, 2022). In 2021, Ireland's GHG emissions are estimated to be 61.53 million tonnes carbon dioxide equivalent (Mt CO₂eq), which is 4.7% higher (or 2.76 Mt CO₂eq) than emissions in 2020 (58.77 Mt CO₂eq). There was a decrease of 3.4% in emissions reported for 2020 compared to 2019. Emissions are over 1% higher than pre-pandemic 2019 figures.

In 2021, national total emissions excluding Land Use, Land Use Change and Forestry (LULUCF) increased by 4.7%, emissions in the stationary ETS sector increased by 15.2% and emissions under the ESR (Effort Sharing Regulation) increased by 1.6%. When LULUCF is included, total national emissions increased by 5.5%. The energy industries, transport and agriculture sectors accounted for 71.9% of total GHG emissions. Agriculture is the single largest contributor to the overall emissions, at 37.5%. Transport, energy industries and the residential sector are the next largest contributors, at 17.7%, 16.7% and 11.4%, respectively (EPA, 2022).

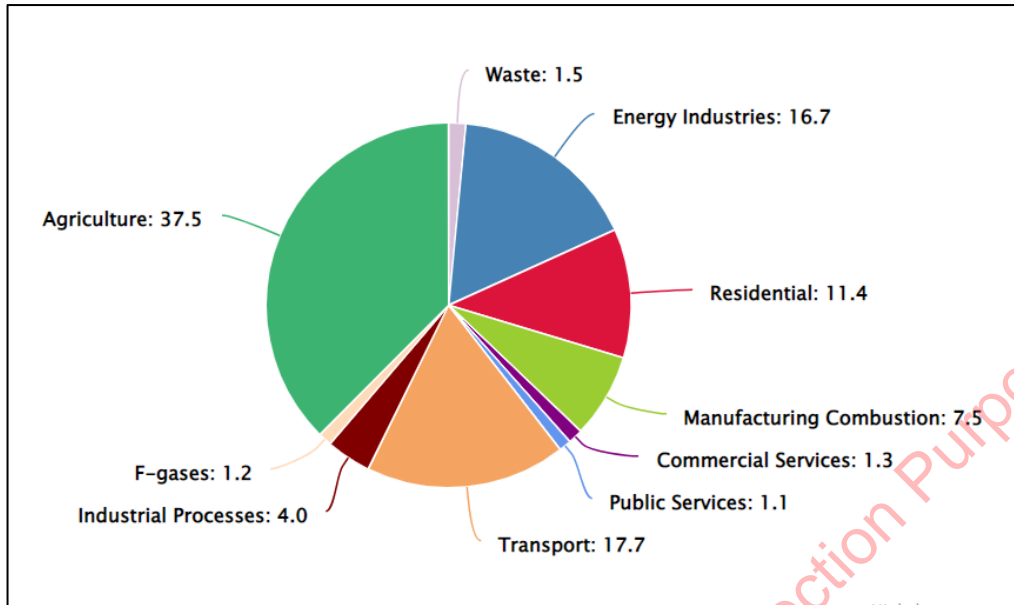


Figure 9.1: Ireland's Greenhouse Gas Emissions by Sector 2021 (Source: EPA, 2022)

9.2 Study Methodology

Taking into account Ambient Air Quality Standards, the baseline air quality of the Site will be examined using EPA monitoring data. Air quality impacts from the Proposed Development will then be determined by a qualitative assessment of the nature and scale of dust generating activities associated with the construction phase of the project in accordance with relevant guidance (Transport Infrastructure Ireland (TII) 2011 Appendix 8; Institute of Air Quality Management (IAQM) 2014).

Impacts from the Construction Phase traffic has been assessed using information from the Traffic Chapter and following the relevant guidance (TII, 2011; HA, 2007; EPA; UK DEFRA; IAQM).

Operational Phase traffic impact assessment will involve air dispersion modelling using the UK Design Manual for Roads and Bridges Screening Model (DMRB, UK Highways Agency 2007) (Version 1.03c), the NO_x to NO₂ Conversion Spreadsheet (UK Department for Environment, Food and Rural Affairs, 2017), and following all relevant guidance (TII, 2011; HA, 2007; EPA; UK DEFRA; IAQM).

A desktop study involving various national and international documents on climate change and analysis of synoptic meteorological data from the nearest Met Eireann station was also carried out in order to compile this chapter. Attention will be focused on Ireland's obligations under the Kyoto Protocol (including the Doha Amendment) and the Paris Agreement in the context of the overall climatic impact of the presence and absence of the Proposed Development.

9.3 The Existing and Receiving Environment (Baseline Situation)

The Site of the Proposed Development comprises undeveloped lands within the jurisdiction of Westmeath County Council. The Proposed Development Site forms part of the "Cornamaddy Action Area Plan – 2005". The site of the Proposed Development is located on lands which have been allocated Zoning Objectives of "Residential (Low – Medium Density)" and "Open Space".

9.3.1 Air Quality

According to the 2012 Regulations (S.I. No. 326 of 2012) the proposed Site falls into ‘Zone C’ of Ireland which is described by the EPA as ‘Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise’. It is expected that existing ambient air quality in the vicinity of the Site is characteristic of a suburban location with the primary source of air emissions such as particulate matter, NO₂, and hydrocarbons likely to be of traffic and domestic fuel burning.

In conjunction with individual local authorities, the EPA undertakes ambient air quality monitoring at specific locations throughout the country in the urban and rural environment; an Air Quality Report based on data from monitoring stations and a number of mobile air quality units is developed on an annual basis. The EPA’s most recent publication ‘Air Quality in Ireland, 2021’ reports the quality of the air in Ireland based on the data from the National Ambient Air Quality Monitoring Network throughout the year 2021.

When assessing air quality, the EPA focuses on two main pollutants: particulate matter and nitrogen oxides. Measured concentrations of NO₂ for the years 2020 and 2021 are presented in Table 9-2 for Zone C monitoring stations. These results show that current levels of NO₂ are well below the annual mean and 1-hour maximum limit values. In the year 2020, annual mean concentrations of NO₂ ranged from 4 - 19 µg/m³ across all Zone C stations, with no exceedance of the maximum hourly limit (EPA, 2021). In the year 2021, annual mean concentrations of NO₂ ranged from 4.2 - 21.9 µg/m³ across all Zone C stations, with no exceedance of the maximum hourly limit (EPA, 2022).

During 2020, the restriction of movement in Ireland due to the COVID-19 Pandemic had an impact on air quality nationally with a large-scale reduction in vehicular traffic. It is noted that the decrease in NO₂ levels during that year is a direct result of the restrictions placed on movements and construction due to COVID-19.

Based on the EPA data, a conservative estimate of the current background NO₂ concentration in the region of the Proposed Development is 12 µg/m³.

STATION	OBJECTIVE	CONCENTRATION		LIMIT OR THRESHOLD VALUE
		2020	2021	
Meath Navan	Annual Mean NO ₂	19	21.9	40 µg/m ³
	Days > 200 µg/m ³	0	0	35 Days
Waterford Brownes Road	Annual Mean NO ₂	7	6.6	40 µg/m ³
	Days > 200 µg/m ³	0	0	35 Days
Sligo	Annual Mean NO ₂	17	16.6	40 µg/m ³
	Days > 200 µg/m ³	0	0	35 Days

Limerick People's Park	Annual Mean NO ₂	10	9.8	40 µg/m ³
	Days > 200 µg/m ³	0	0	35 Days
Limerick Henry Street	Annual Mean NO ₂	-	14	40 µg/m ³
	Days > 200 µg/m ³	-	0	35 Days
Kilkenny Seville Lodge	Annual Mean NO ₂	4	4.2	40 µg/m ³
	Days > 200 µg/m ³	0	0	35 Days
Portlaoise	Annual Mean NO ₂	11	7.9	40 µg/m ³
	Days > 200 µg/m ³	0	0	35 Days
Dundalk	Annual Mean NO ₂	10	10.733341	40 µg/m ³
	Days > 200 µg/m ³	1	0	35 Days

Table Error! No text of specified style in document.-19: Mean Concentrations of No₂ at Zone C Monitoring Stations

Measured concentrations of PM₁₀ for the years 2020 and 2021 are presented in Table 9-3 for Zone C monitoring stations. As is evident from these results, current levels of PM₁₀ are well below the annual mean limit value. In the year 2020, annual mean concentrations of PM₁₀ ranged from 11 – 20 µg/m³ across all Zone C stations, with no exceedance of short-term limit values (EPA, 2021). In the year 2021, annual mean concentrations of PM₁₀ ranged from 10.4 – 19 µg/m³ across all Zone C stations, with no exceedance of short-term limit values (EPA, 2022).

The nearest air monitoring station which measures PM₁₀ is Athlone monitoring station (ca. 2.2km southwest of the site) and therefore is broadly representative of background concentrations in the vicinity of the Proposed Development. Concentrations of PM₁₀ at Athlone monitoring station are well below their respective limit values in 2020 and 2021, with an annual mean of 16 µg/m³ and 17.1 µg/m³, respectively, and with no exceedances of the PM₁₀ daily limit for the protection of human health (EPA, 2021; EPA, 2022).

STATION	OBJECTIVE	CONCENTRATION		LIMIT OR THRESHOLD VALUE
		2020	2021	
Portlaoise	Annual Mean PM ₁₀	12	11.4	40 µg/m ³
	Days > 50 µg/m ³	0	1	35 Days
Ennis	Annual Mean PM ₁₀	20	19	40 µg/m ³

	Days > 50 µg/m ³	19	17	35 Days
Sligo	Annual Mean PM ₁₀	16	18.3	40 µg/m ³
	Days > 50 µg/m ³	2	20	35 Days
Galway Rahoon	Annual Mean PM ₁₀	13	11.4	40 µg/m ³
	Days > 50 µg/m ³	1	1	35 Days
Clonmel	Annual Mean PM ₁₀	12	10.6	40 µg/m ³
	Days > 50 µg/m ³	1	0	35 Days
Dundalk	Annual Mean PM ₁₀	13	11.7	40 µg/m ³
	Days > 50 µg/m ³	2	0	35 Days
Carlow Town	Annual Mean PM ₁₀	11	10.4	40 µg/m ³
	Days > 50 µg/m ³	1	0	35 Days
Waterford Browne's Road	Annual Mean PM ₁₀	14	13.7	40 µg/m ³
	Days > 50 µg/m ³	3	2	35 Days
Navan	Annual Mean PM ₁₀	14	13.5	40 µg/m ³
	Days > 50 µg/m ³	0	9	35 Days
Kilkenny Seville Lodge	Annual Mean PM ₁₀	19	16.7	40 µg/m ³
	Days > 50 µg/m ³	1	2	35 Days
Letterkenny	Annual Mean PM ₁₀	15	14.7	40 µg/m ³
	Days > 50 µg/m ³	9	0	35 Days
Wexford Town	Annual Mean PM ₁₀	12	13.5	40 µg/m ³
	Days > 50 µg/m ³	0	2	35 Days
Limerick Henry Street	Annual Mean PM ₁₀	-	11.1	40 µg/m ³
	Days > 50 µg/m ³	-	0	35 Days

Limerick People's Park	Annual Mean PM ₁₀	13	12.6	40 µg/m ³
	Days > 50 µg/m ³	1	2	35 Days
Athlone	Annual Mean PM ₁₀	16	12.1	40 µg/m ³
	Days > 50 µg/m ³	3	2	35 Days
Tralee	Annual Mean PM ₁₀	16	17.1	40 µg/m ³
		7	10	35 Days
Drogheda	Days > 50 µg/m ³	--	10.7	40 µg/m ³
		-	0	35 Days
Naas	Annual Mean PM ₁₀	-	10.5	40 µg/m ³
	Days > 50 µg/m ³	-	0	35 Days
Greystones	Annual Mean PM ₁₀	-	9.7	40 µg/m ³
	Days > 50 µg/m ³	-	0	35 Days

Table Error! No text of specified style in document.-20: Concentrations of PM₁₀ at Zone C Monitoring Stations

9.3.2 Macroclimate

Ireland has a typical maritime climate, largely due to its proximity to the Atlantic Ocean and the presence of the Gulf Stream. Due to the moderating effects of the Gulf Stream, Ireland does not suffer the temperature extremes that are experienced by many other countries at a similar latitude. Mean annual temperatures generally range between 9°C and 10°C. Winters tend to be cool and windy while summers are mostly mild and less windy. The prevailing wind direction is between the south and west with average annual wind speeds ranging between 6 knots in parts of south Leinster to over 15 knots in the extreme north. Rainfall in Ireland occurs throughout the year with reasonable frequency. The highest rainfall occurs in the western half of the country and on high ground, and generally decreases towards the northeast. As the prevailing winds are from the west-southwest, the west of Ireland experiences the largest number of wet days. The area of least precipitation is along the eastern seaboard of the country.

9.3.3 Microclimate

The synoptic meteorological station at Mullingar is located approximately 37.6km northeast of the Proposed Development; and for the purposes of this chapter, weather data collected here may be considered similar to that which is experienced in the area of the subject Site.

The weather in the area of the subject site is generally dominated by cool oceanic air masses, with cool winters, mild humid summers, and a lack of temperature extremes. Based on meteorological data at Mullingar over the last 3 years, the mean January temperature is 4.6°C, while the mean July temperature is 15.8°C. The prevailing wind

direction is from a quadrant centred on the southwest. These are moderately warm winds from the Atlantic and they habitually bring rain. The average annual rainfall in Mullingar is 1050.1mm. Easterly winds are less frequent, weaker, and tend to bring cooler weather from the northeast in spring and warmer weather from the southeast in summer.

9.3.3.1 Rainfall

Rainfall is a key indicator of changes in climate, as measurements of rainfall are fundamental to assessing the effects of climate change on the water cycle and water balance. Table 9-4 illustrates the monthly and annual rainfall data collected over a 3-year period (2019-2021) at Mullingar Weather Station. The annual rates of precipitation ranged from 980.8mm in 2021 to 1090.6mm in 2019 with distribution of the highest monthly rainfall values falling mainly in the autumn and winter months. This is broadly within the expected range of the midlands.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual
2021	126.9	80.3	80.9	25.5	107.4	17.4	74.9	142.1	58.1	97.7	41.6	128.0	980.8
2020	54.4	197.5	61.0	41.9	10.1	96.6	126.3	114.0	68.3	131.8	87.7	89.3	1078.9
2019	41.3	48.8	157.1	58.6	43.2	79.6	78.1	151.9	131.7	90.8	126.7	82.8	1090.6
LTA ¹¹	92.5	70.3	76.6	65.9	69.2	73.8	71.1	86.1	78.3	104.3	88.1	94.7	970.9

Table Error! No text of specified style in document.-21: Monthly Rainfall Values (mm) for Mullingar Weather Station from January 2019 to December 2021 (Source: Met Eireann)

9.3.3.2 Wind

Wind at a particular location can be influenced by a number of factors, such as obstructions by trees or buildings, the nature of the terrain, and deflection by nearby mountains or hills. Wind blows most frequently from the south and west for open sites while winds from the northeast and north occur less often. The analysis of hourly weather data from Mullingar synoptic weather station over a period of 30 years suggests that the predominant wind direction blows from the southwest, with windspeeds of between 7 and 10 knots occurring most frequently.

Figure 9.2 provides a wind speed frequency distribution which represents wind speed classes and the frequency at which they occur (% of time) at Mullingar weather station over a period of 30 years. Wind speeds of 5 knots have the highest frequency, occurring approximately 11% of the time.

¹¹ The 'LTA' is average for the climatological long-term-average (LTA) reference period 1981-2010

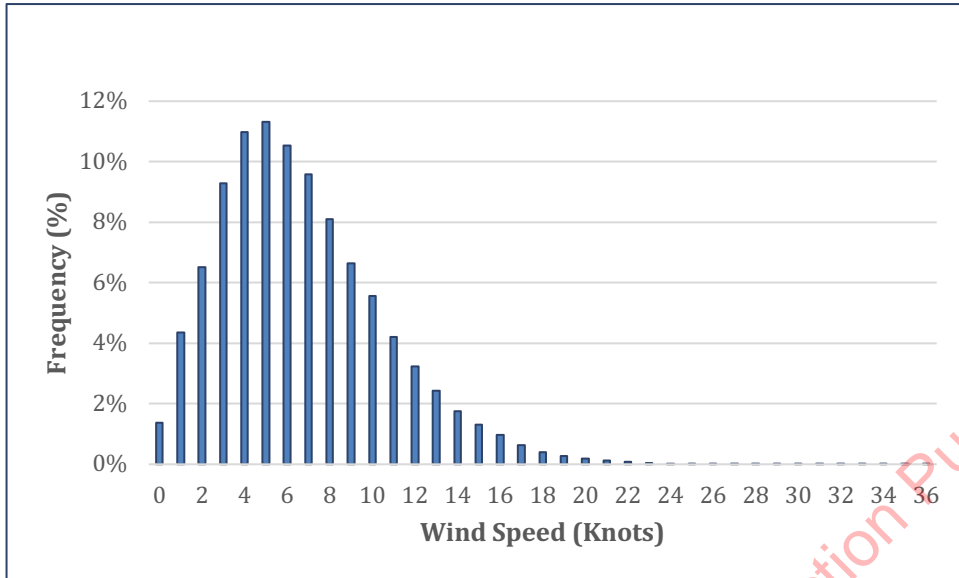


Figure 9.36: Wind Speed Frequency Distribution at Mullingar Synoptic Weather Station over 30 years (1992-2021)

Figure 9.3 provides a wind rose of the predominant wind directions and associated wind speeds at Mullingar Synoptic weather station. As is visible from Figure 9.3, the prevailing wind is from a south-westerly direction with an annual incidence of 28.35% for winds between 200 and 250 degrees. The most frequent wind speed associated with this wind direction is between 7 and 10 knots which is considered a ‘gentle breeze’ in terms of the Beaufort scale, this wind direction and wind speed occurs in combination approximately 9.97% of the time. The overall most common windspeed is also between 4 and 6 knots, occurring in 32.81% of incidences, and wind speeds of between 7 and 10 knots occurring in 29.89% of incidences.

The lowest frequency is for winds blowing from the northern quadrant at approximately 3.84% of the time. Wind speeds of above 11 knots (5.66m/s) occurring in just 15.75% of incidences. This windrose is broadly representative of the prevailing conditions experienced at the subject site.

Westmeath County Council Planning Authority Inspection Purposes Only!

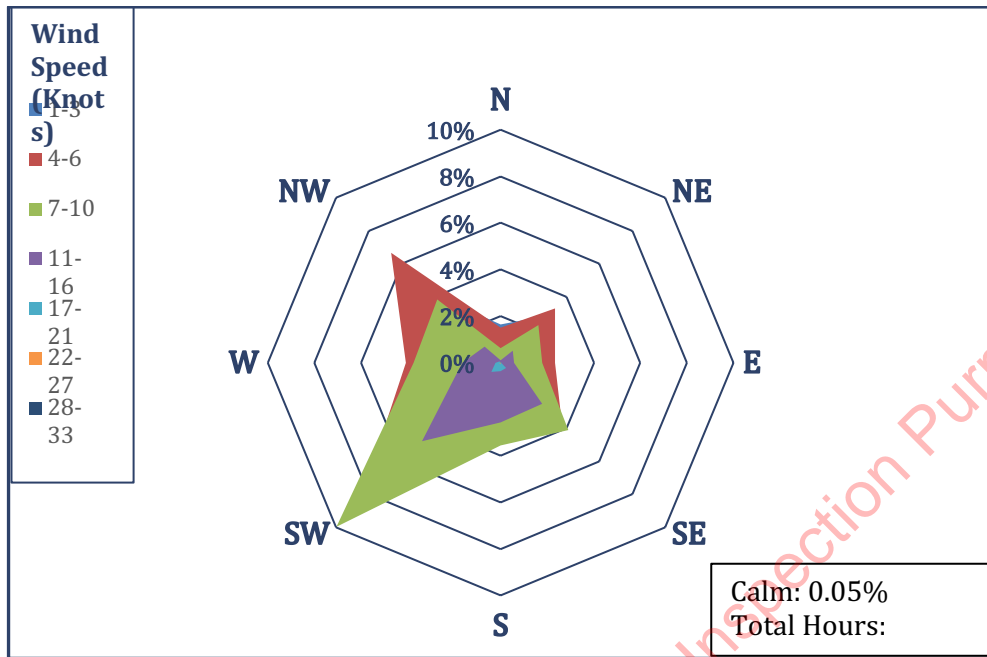


Figure 9.37: Wind Speed Distribution at Mullingar Synoptic Weather Station over 30 years (1992-2021)

9.4 Characteristics of the Proposed Development

The Proposed Development will consist of a residential development and public open space comprising the following:

- Amendments to permitted application WMCC reg Ref. 14/7103/ ABP Ref. PL25.244826 for the removal of 38 no. permitted units (not constructed) to be replaced by: Construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (78 sq.m), 60 no. 3 bed semidetached (96-116 sq.m) and 6 no. 4 bed semidetached houses (147 sq.m) with associated private gardens.
- The creche facility, public open spaces, landscaping, roads layouts, car parking, boundary treatment works, public lighting and all associated site works associated with the 87 no. remaining units retained as permitted under WMCC Reg Ref. 14/7103 ABP Ref. PL25.244826 will remain unchanged.
- All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a sections of the distributor road permitted under WMCC Reg. Refs 14/7103/ ABP Ref. PL25.244826 and 22/253 to the east of the site.
- All associated site development works, services provision, drainage works, public open space (c.1.03ha), landscaping, boundary treatment works, public lighting, associated esb substation cabinets, bin stores, car and bicycle parking provision.
- This development will form part of a larger/future phase of the development.

9.5 Potential Impact of the Proposed Development

9.5.1 Potential Impacts on Air Quality

9.5.1.1 Construction Phase

All construction works will occur in a single phase which is estimated to last 18 months. During the general excavation of the foundations there will be additional (heavy goods vehicle (HGV) movements to and from the Site. All suitable material will be used for construction and fill activities where possible and appropriate. It is envisaged that tower cranes will be erected to hoist materials on Site in the construction of apartments.

For the duration of the proposed infrastructure works it is envisaged that the maximum working hours shall be 07:00 to 18:00 Monday to Friday (excluding bank holidays) and 08:00 to 13:00 Saturdays, subject to the restrictions imposed by the local authorities. No working will be allowed on Sundays and Public Holidays unless express permission is obtained from the Local Authority. There is potential for construction related air emissions to impact on local air quality as a result of the Proposed Development. Potential impacts are expected to be short-term and of a temporary nature. The main air quality impacts that may arise during construction activities are:

- Dust deposition;
- Elevated particulate matter concentrations (PM₁₀ and PM_{2.5}) as a result of dust generating activities on Site; and
- An increase in concentrations of airborne particles, volatile organic compounds, nitrogen oxides, and sulphur oxides due to exhaust emissions from diesel powered vehicles and equipment on Site (non-road mobile machinery) and vehicles accessing the Site.

The greatest potential impact on air quality during this phase is from construction dust emissions and the potential for nuisance dust. The dust emissions from a construction site that may result in air quality impacts generally depend on:

- Site activities and duration;
- The size of the site;
- The meteorological conditions;
- The proximity of receptors to the activities;
- The adequacy of applied mitigation measures; and
- The sensitivity of receptors to dust.

The primary sources of dust identified include soil excavation works, demolition, bulk material transportation, loading and unloading, stockpiling materials, cutting and filling, and vehicular movements (HGVs and on-site machinery).

According to Transport Infrastructure Ireland guidelines (TII, 2011), it is difficult to accurately quantify dust emissions arising from construction activities. Therefore, it is not possible to easily predict changes to dust soiling rates or PM₁₀ concentrations. TII recommend a semi-quantitative approach to determine the likelihood of significant impact in this instance. This should also be combined with an assessment of the proposed mitigation measures. The following table outlines the distance criteria which is recommended for use in assisting a semi-quantitative assessment:

SOURCE		POTENTIAL DISTANCE FOR SIGNIFICANT EFFECTS (DISTANCE FROM SOURCE)		
Scale	Description	Soiling	PM10	Vegetation effects
Major	Large construction sites, with high use of haul routes	100m	25m	25m
Moderate	Moderate sized construction sites, with moderate use of haul routes	50m	15m	15m
Minor	Minor construction sites, with limited use of haul routes	25m	10m	10m

Table Error! No text of specified style in document.-22: Assessment Criteria for the Impact Dust Emissions from Construction Activities, with Standard Mitigation in Place

In order to account for a worst-case scenario, the Proposed Development can be considered moderate in scale due to the size of the site and the duration of construction activities. Therefore, it can be assumed that there is potential for significant dust soiling 50m from the site.

There are a number of high-sensitivity receptors (residential dwellings) located within 50m of the site boundary; these are situated to the south of the Proposed Development site. Therefore, in the absence of mitigation, it is considered that there is potential for dust impacts to occur at these locations. Sensitive receptors within 50m of the Proposed Development are identified in Table 9-6:

NAME	TYPE	COORDINATES		ORIENTATION RELATIVE TO SITE BOUNDARY
		X	Y	
Drumaconn	Residential	53.435951	-7.905503	South
Drumaconn	Residential	53.435623	-7.906059	South
Drumaconn	Residential	53.435188,	-7.906483	South
Drumaconn	Residential	53.435111	-7.906864	South

Table Error! No text of specified style in document.-23: Sensitive Receptors

According to IAQM Guidance (2016), the primary factor influencing the Pathway is the distance between the sensitive receptor and the dust sources. However, other factors can cause a higher or a lower category to be assigned than would be the case based on distance alone. These factors include:

- Orientation of receptors relative to the prevailing wind direction; and
- Topography, terrain and physical features.

Meteorological conditions greatly affect the level of dust emissions and subsequent deposition downwind of the source; the most predominant being rainfall and wind speed. Adverse impacts can occur in any direction from a site; however, they are more likely to occur downwind of the prevailing wind direction and/or close to the site. Relatively high levels of moisture in the surrounding air, soils, and precipitation helps to suppress dust due to the cohesive properties of water between dust particles. The least favourable meteorological conditions for dust generation would typically be warm days with strong winds and low precipitation. Due to the variability of weather, it is impossible to predict the conditions that will occur during the Construction Phase of the development. However, wind direction is most likely to prevail from the southwest.

Table 9-7 **Error! Reference source not found.** outlines the hourly percentage distribution of wind speed and direction at Mullingar synoptic weather station over a 30-year period (1992-2021). This data is consistent with Figure 3 of this chapter and shows that the most frequent wind direction prevails from the southwest (28.35% frequency). The corresponding most frequent wind speed is between 4 and 6 knots which is considered a 'light breeze' in terms of the Beaufort scale; this wind direction and wind speed occurs in combination approximately 8.60% of the time.

WIND SPEED (KNOTS)		<1	1-3	4-6	7-10	11-16	17-21	22-27	28-33	34+	% DRY DAYS
WIND DIRECTION	DEGREES										
North	350-10		1.63	1.50	0.61	0.10	0.00	0.00	0.00	0.00	31%
North-east	20-70		2.78	3.29	2.28	0.73	0.02	0.00	0.00	0.00	
East	80-100		1.54	2.32	1.78	0.58	0.04	0.01	0.00	0.00	
South-east	110-150		2.05	3.72	4.11	2.52	0.33	0.03	0.00	0.00	
South	170-190	0.05	1.48	2.65	3.56	2.57	0.38	0.05	0.00	0.00	
South-west	200-250		4.36	8.60	9.97	4.78	1.65	0.07	0.01	0.00	
West	260-280		1.99	4.07	3.73	1.65	0.23	0.02	0.00	0.00	
North-west	290-340		4.19	6.67	3.83	0.97	0.07	0.01	0.00	0.00	

Table Error! No text of specified style in document.-24: Percentage Distribution of Wind Speeds and Direction at Mullingar Synoptic Weather Station over 30 years (1992-2021)

Dry days with moderate to high windspeeds (above 5m/s (7-10 knots)) are the conditions which are most likely to result in fugitive dust emissions. Sensitive receptors within 50m of the Proposed Development have been identified a series of residential dwellings which are located to the south of the Site.

Receptors located to the south of the site would require prevailing winds from the north to be potentially impacted by fugitive dust emissions. At these receptors, the frequency of winds (>5m/s) occurring from the direction of the dust source on dry days is 0.22%. Therefore, appropriate conditions for fugitive dust emissions at these receptors are highly infrequent and it is expected that adequate mitigation measures, as outlined in Section 9.1.6.1, will prevent nuisance dust from resulting in any adverse impacts.

Appropriate mitigation and monitoring measures have been recommended and will be implemented at the Site in order to minimise the risk of dust emissions arising during the Construction Phase. These mitigation measures have been outlined in the Construction Environmental Management Plan (CEMP) for the Site, and provided such measures are adhered to, it is not considered that significant air quality impacts will occur.

Construction vehicles and machinery during this phase will temporarily and intermittently generate exhaust fumes and consequently potential emissions of volatile organic compounds, nitrogen oxides, sulphur oxides, and particulate matter (dust). Dust emissions associated with vehicular movements are largely due to the resuspension of particulate materials from ground disturbance. According to the IAQM (2014), experience from the assessment of exhaust emissions from on-site machinery and Site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed. Air pollutants may increase marginally due to construction-related traffic and machinery from the Proposed Development. However, any such increase is not considered significant and will be well within relevant ambient air quality standards. According to TII (2011), the significance of impacts due to vehicle emissions during the Construction Phase will be dependent on the number of additional vehicle movements, the proportion of HGVs and the proximity of sensitive receptors to Site access routes. If construction traffic would lead to a significant change (> 10%) in Annual Average Daily Traffic (AADT) flows near to sensitive receptors, then concentrations of nitrogen dioxide, PM₁₀ and PM_{2.5} should be predicted in line with the methodology as outlined within TII guidance. Construction traffic is not expected to result in a significant change (> 10%) in AADT flows near to sensitive receptors.

9.5.1.2 Operational Phase

The greatest potential effect on air quality during the Operational Phase of the Proposed Development is from traffic-related air emissions.

Operational traffic will use regional and local roads to access the facility with potential increases of traffic flow on some roads and subsequent associated emissions of VOCs, nitrogen oxides, sulphur dioxides and increased particulate matter concentrations.

In terms of associated impacts on air quality, Table 9-8 outlines the criteria that are prerequisite for an air quality assessment. According to IAQM guidance (2017), if none of the criteria are met, then there should be no requirement to carry out an air quality assessment for the impact of the development on the local area, and the impacts can be considered as having an insignificant effect.

POTENTIAL CHANGE RESULTING FROM PROPOSED DEVELOPMENT	INDICATIVE CRITERIA TO PROCEED TO AN AIR QUALITY ASSESSMENT
<i>Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors</i>	<i>A change of LDV flows of more than 1000 Annual Average Daily Traffic (AADT)</i>
<i>Cause a significant change in Heavy Duty Vehicle (HGV) flows on local roads with relevant receptors</i>	<i>A change of HGV flows of more than 100 Annual Average Daily Traffic (AADT)</i>
<i>Cause a change in Daily Average Speed (DAS)</i>	<i>Where the change is 5m or more</i>

Cause a change in peak hour speed	Where the peak hour speed will change by 20km/h or more.
-----------------------------------	--

Table Error! No text of specified style in document.-25: Indicative Criteria for Requiring an Air Quality Assessment (Source: IAQM, 2017)

As per the Traffic Impact Assessment which has been prepared by Roadplan Consulting and is included in Appendix 9.1, the criteria presented in Table 8-8 have not been met by the Proposed Development; it is therefore considered unlikely for significant air quality impacts to occur as a result of increased traffic flow, and an associated air quality assessment is not required.

9.5.2 Potential Impacts on Climate

9.5.2.1 Construction Phase

There is the potential for combustion emissions from onsite machinery and traffic derived pollutants of CO₂ and N₂O to be emitted during the construction phase of the development. However, due to the size and duration of the construction phase, and the mitigation measures proposed, the effect on national GHG emissions will be insignificant in terms of Ireland’s obligations under the Kyoto Protocol and therefore will have no considerable impact on climate. Overall, climatic impacts are considered to be short-term and imperceptible.

9.5.2.2 Operational Phase

Flood Risk

There is growing scientific consensus that the warming of the climate is expected to increase the risk of floods. Rising sea levels and more frequent and sever coastal storms will increase the risk of coastal and estuarial flooding as well as coastal erosion. According to the Planning System and Flood Risk Management (DECLG & OPW, 2009), where the floodplain or coastal plain is well defined, climate change is expected to change the probability of flooding and the depth for a particular event with little change in spatial extent. Only where extensive areas of land rise gently from the river or the sea is climate change expected to significantly increase the area affected by flooding.

There is a great deal of uncertainty in relation to the potential effects of climate change; therefore, a precautionary approach should be adopted, where necessary, to reflect uncertainties in flooding datasets and the ability to predict the future climate. Development should be designed with careful consideration to possible future changes in flood risk, including the effects of climate change so that future occupants are not subject to unacceptable risk (OPW, 2009).

A Flood Risk Assessment (FRA) was undertaken by Paul McGrail Consulting Engineers on behalf of the Client for the Proposed Development and has been included in this EIAR as Appendix 9.2. This assessment concluded that the Proposed Development is considered to be adequately protected in consideration of future scenario of flood event in the area. The site of the Proposed Development is within Zone C and is appropriate for the Proposed Development from a flood risk perspective

Energy Statement

An Energy Statement has been prepared for the Operational Phase of the Proposed Development by Morley Walsh Consulting Engineers (November 2022) and has been included in this EIAR as Appendix 9.3. The report outlines a number of methodologies in Energy Efficiency, Conservation and Renewable Technologies that will be employed in part or in combination with each other for the Proposed Development. These techniques will be employed to achieve compliance with the building regulations Part L and NZEB standards currently in public consultation.

Building energy has been long understood as contributing a major component of GHG emissions which was acknowledged within the 2030 Communication published by the European Commission (2014) which stated that “the majority of the energy-saving potential (for the EU) is in the building sector. The EU Energy Performance of Buildings Directive set out the target that all new developments should be Nearly Zero-Energy Buildings (NZEB) by the end of 2020.

In developing the energy strategy for the Proposed Development, the incorporation of energy efficient strategies into the project deliverables will encourage the commitment to sustainable design at a very early stage and ensure that the Proposed Development will meet the principles of the Government’s ‘National Climate Change Policy’ and the NZEB criteria as set out in the Part L Regulations 2021 and will maximise the reduction in Carbon Dioxide (CO₂) emissions thus demonstrating the commitment to Climate Change.

GHG Emissions – Traffic

Increased LDV and HGV traffic flow as a result of the Proposed Development is likely to contribute to increases in GHG emissions such as CO₂ and N₂O. However, these contributions are likely to be marginal in terms of overall national GHG emission estimates and Ireland’s obligations under the Kyoto Protocol and the Paris Agreement, and therefore unlikely to have an adverse effect on climate. Furthermore, it is widely anticipated that CO₂ emissions for the passenger car fleet will reduce substantially in future years due to the increasing prevalence of electric or hybrid vehicle use.

9.5.3 Potential Cumulative Impacts

Cumulative Impacts can be defined as “*impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project*”. Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor. Such effects are not caused or controlled by the project developer.

Cumulative air quality impacts have the potential to arise locally when construction activities associated with the Proposed Development take place at the same time as other developments in a specific location.

A review of other off-site developments and proposed developments was completed as part of this assessment within a radius of approximately 2km. The following projects were reviewed and considered for possible cumulative effects with the Proposed Development.

PLANNING NO.	REF	APPLICANT NAME	SUMMARY OF DEVELOPMENT
WMCC Ref. 22/253		Marina Quarter Ltd	The development will consist of the following: • Construction of 75 no. residential units comprising: 51 no. 2 storey semi-detached and terraced houses (consisting 4 no. 2 bed houses and 47 no. 3 bed houses, ranging in size from c.78 sq.m – 120 sq.m each), and 24 no. 3 storey apartment/duplex units (consisting 12 no. 2 bed apartments and 12 no. 3 bed duplexes, ranging in size from 84sq.m to 121 sq.m each), with associated private gardens and

		<p>east/west facing terraces; • All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a section of the distributor road permitted under WMCC Reg. Ref. 14/7103/ ABP Ref. PL25.244826 to the south east of the site. • All associated site development works, services provision, drainage works, residential open space (c.0.28ha) and public open space (c.0.82ha), landscaping, boundary treatment works, public lighting, 1 no. esb substation cabinets, bin stores, car and bicycle parking provision; • Provision of a new detention basin on the eastern portion of the site designed to cater for the proposed development, in lieu of the drainage works permitted under WMCC Reg. Ref. 14/7103 / ABP Ref. PL 25.244826; • This development will form part of a larger/future phase of the development; • No changes to the existing pumping station located outside the northern site boundary; A Natura Impact Statement has been prepared in respect of this application.</p> <p>Status: Decision Made</p> <p>Date: 26/10/2022</p>
<p>WMCC Ref. 22/340</p>	<p>Marina Quarter Ltd</p>	<p>To consist of the following: 1) Construction of a two Storey childcare facility, including classrooms, reception, kitchen, associated staff areas and office, toilets, storage, plant rooms, circulation areas and photovoltaic panels at roof level (c.668sqm total gross floor area) 2) The proposed facility includes a secure outdoor play area(c. 595 sqm), 18 no. car parking spaces and 20 no. bicycle parking spaces. 3) Existing vehicular access onto the existing link road and provision of an internal access road, footpaths and 2 no. pedestrian access points. 4) All associated site development works, service provision, drainage works, landscape and boundary treatment works and</p>

		<p>public lighting. 5) This development will form part of a larger/future phase of the development. 6) A Natura Impact Statement has been prepared in respect of this planning application.</p> <p>Status: Further Information</p>
WMCC Ref. 17/224	Parana Properties	<p>The Development of 7 no new dwellings to include 3 no 5 bedroom detached houses and 2 no 4 bedroom detached houses with optional fifth bedroom/study and 2 no 4 bedroom semi detached houses with optional fifth bedroom/study and all associated site development works including road networks, services, landscaping, and boundary treatments. A ten year permission is being sought</p> <p>Status: Application Finalised</p> <p>Decision Date: 09/09/2018</p>

Table Error! No text of specified style in document.-26: Recent applications granted permission in the vicinity of the Proposed Development

The majority of developments granted permission in the area surrounding the Proposed Development have been small-scale, one-off developments consisting of extensions of existing dwellings or farm buildings.

The cumulative effects on the air quality and climate of the current Proposed Development and other permitted or existing developments have been considered, in particular through the generation of air pollutants and GHG emissions. The potential impacts on air quality and climate are assessed in Section 9.5.1 and it is considered that there are no other potential significant cumulative impacts associated with the Proposed Development and considered offsite permitted developments.

In terms of dust, no significant impacts are predicted; good construction practice, which incorporates the implementation of the identified mitigation measures, will be employed at the Proposed Development site. Due to the implementation of good construction practices at the Site of the Proposed Development and these offsite permitted developments, it is not anticipated that significant cumulative impacts will occur.

Assessment of operational stage impacts on air quality involved traffic data which is inclusive of traffic associated with other existing and permitted developments on the road networks surrounding the site both in current and future years. Therefore, cumulative impacts have been assessed in this regard and the impact on ambient air quality has been determined as insignificant.

9.5.4 'Do Nothing' Impact

The Proposed Development Site currently comprises; if to remain undeveloped, the site will continue to exist in the current environment and have no significant impact on the existing ambient air quality or microclimate.

The Do-Nothing impact has been assessed in terms of air quality in this chapter. It has been determined that there is an overall insignificant impact on ambient air quality as a result of the Proposed Development in both the Opening and Design Years when compared to the Do-Nothing scenario.

Greenhouse gas emissions as a result of the Proposed Development are also likely to be marginal in terms of overall national GHG emission estimates and Ireland's obligations under the Kyoto Protocol and the Paris Agreement when compared to a Do-Nothing scenario.

9.6 Avoidance, Remedial & Mitigation Measures

9.6.1 Air Quality

9.6.1.1 Construction Phase

It is not expected that adverse air quality impacts are likely to occur at sensitive receptors as a result of the Proposed Development. However, appropriate mitigation measures, as outlined within the Construction and Environmental Management Plan (CEMP), which has been prepared by Paul McGrail Consulting Engineers Limited, will be employed as necessary to further prevent such impacts occurring:

- The site will be managed in accordance with the CEMP to minimise potential effects on air quality from construction.
- Air monitoring will be undertaken throughout the construction period as deemed necessary.
- Covering waste sips, scaffold netting, use of water to suppress dust, provision of hard stand access for truck and vehicles.
- Handling and storage areas will be sited as far away as is reasonably and practically possible from public/residential areas. Prolonged storage of materials will be avoided where possible. Transportation of materials that may be dusty will be sheeted down to prevent any escape of materials.
- The burning of materials is prohibited.
- Site plant and equipment will be serviced regularly and maintained in good condition in accordance with the manufacturer's specifications. Allowing for economic constraints, the plant will be selected on the basis of which has the least potential for dust and emissions.
- Plant will not be left running when not in use.
- Plant with dust suppression equipment will be used where practical.
- Dampening down the site haul roads during prolonged dry periods.
- Regular cleaning of hard surfaces at the site entrance.
- Ensuring that materials are transported appropriately (sheeting used over dusty materials).
- Confinement of plant and machinery to designated haul routes on site. Haul routes will be outside areas of high groundwater vulnerability.
- Speed restrictions on site will be enforced (15km/h).
- Hoarding to site boundaries where practical which will aid the reduction of windblown dust off-site.

9.6.1.2 Operational Phase

It has been determined that the Operational Phase air quality impact is negligible and therefore no site-specific mitigation measures are proposed.

9.6.2 Climate

As negative climatic impacts associated with the Construction and Operational Phases of the Proposed Development are negligible, no mitigation measures are proposed. Best practice measures will be implemented to minimise exhaust emissions from construction and operational vehicles and machinery by avoidance of engines running unnecessarily, as idle engines shall not be permitted for excessive periods. Furthermore, all proposals for development shall seek to achieve the greatest standards of sustainable construction and design and will have regard to sustainable building design criteria.

9.6.3 'Worst Case' Scenario

Worst case scenario would involve failures of mitigation measures for the Proposed Development. In such events, it is not considered that dust nuisances will occur.

A worst-case scenario has been applied to the Construction Phase air quality assessment in terms of the scale of the source and potential dust nuisances. It is expected that adequate mitigation measures, as outlined in Section 9.1.6.1.1, will assist in preventing nuisance dust from resulting in any significant effects. In the event of a failure of such measures, it is not considered that significant dust related effects will occur.

9.7 Residual Impacts

Residual Impacts are defined as 'effects that are predicted to remain after all assessments and mitigation measures'. They are the remaining 'environmental costs' of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse impacts. Potential residual impacts from the Proposed Development were considered as part of this environmental assessment.

The Proposed Development is likely to result in a long-term increase in traffic on the roads surrounding the Proposed Development Site; however, this increase in traffic has been determined to have an overall insignificant impact in terms of local air quality. Furthermore, the increase in traffic has been determined as marginal with regard to climatic impacts. Therefore, no adverse residual impacts are anticipated from the proposed scheme in the context of air quality and climate.

9.8 Monitoring

The monitoring of construction dust during the Construction Phase of the Proposed Development is recommended to ensure that impacts are not experienced beyond the Site boundary. Monitoring of dust can be carried out by using the Bergerhoff Method. This involves placing Bergerhoff Dust Deposit Gauges at strategic locations along the Site boundaries for a period of 30 +/- 2 days. The selection of sampling point locations should be carried out in consideration of the requirements of VDI 2119 with respect to the location of the samplers relative to buildings and other obstructions, height above ground, and sample collection and analysis procedures. After the exposure period is complete, the Gauges should be removed from the Site; the dust deposits in each Gauge will then be determined gravimetrically and expressed as a dust deposition rate in mg/m²/day in accordance with the relevant standard.

Due to the negligible impact on air quality and climate from the Operational Phase of the Proposed Development, no specific monitoring is recommended.

9.9 Interactions

Interactions between Air Quality and Climate and other aspects of this Environmental Impact Assessment Report have been considered and are detailed below.

9.9.1 Population and Human Health

Interactions between Air Quality and Population and Human Health have been considered as the Proposed Development has the potential to cause health issues as a result of impacts on air quality from dust nuisances and potential traffic derived pollutants. However, the mitigation measures employed at the Proposed Development will ensure that all impacts are compliant with ambient air quality standards and human health will not be affected. Furthermore, traffic-related pollutants have been assessed and determined as having an overall insignificant impact, therefore air quality impacts from the Proposed Development are not expected to have a significant impact on population and human health.

9.9.2 Traffic

There can be a significant interaction between air quality, climate and traffic. This is due to traffic-related pollutants that may arise. In the current assessment, traffic derived pollutants which may affect Air Quality and Climate have been deemed as insignificant. Therefore, the impact of the interaction between air quality and climate is insignificant.

9.9.3 Biodiversity

Interactions between Air Quality and Biodiversity have been considered as the Construction Phase has the potential to interact with flora and fauna in adjacent habitats and designated sites due to dust emissions arising from the construction works. However, the mitigation measures employed at the Proposed Development will ensure that the impacts to flora and fauna are not significant.

9.10 Difficulties Encountered When Compiling

No difficulties have been encountered while compiling this chapter.

9.11 References

Air Pollution Act 2012 (S.I. No. 326 of 2012) Irish Statute Book.

Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011) Irish Statute Book.

Air Quality, Clean Air for Europe Directive (2008/50/EC) EUR-Lex.

Department of Communications, Climate Action and Environment (DCCA) (2017) National Mitigation Plan

Department of Communications, Climate Action and Environment (DCCA) (2018) National Adaptation Framework

Department of the Environment, Transport and the Regions, 1995. The Environmental Effects of Dust from Surface Mineral Workings- Volume 2. Technical Report.

Environmental Protection Agency (2018) Ireland's Final Greenhouse Gas Emissions 1990-2016.

Environmental Protection Agency (2019) Ireland's Final Greenhouse Gas Emissions 1990-2017.

Environmental Protection Agency (2019) Ireland's National Inventory Report: Greenhouse Gas Emissions 1990-2017.

Environmental Protection Agency (2019) Ireland's Provisional Greenhouse Gas Emissions 1990-2018.

Environmental Protection Agency (2020) Air Dispersion Modelling from Industrial Installations Guidance Note (AG4).

Environmental Protection Agency (2020) Air Quality in Ireland 2019 Annual Report on Air Quality in Ireland from the Environmental Protection Agency.

Environmental Protection Agency (2021) Air Quality in Ireland 2020 Annual Report on Air Quality in Ireland from the Environmental Protection Agency.

Environmental Protection Agency (2022) Air Quality in Ireland 2021 Annual Report on Air Quality in Ireland from the Environmental Protection Agency.

Environmental Protection Agency (2021) Latest Emissions Data.

European Commission (2007) 2020 Climate & Energy Package.

European Commission (2011) A Roadmap for Moving to a Competitive Low Carbon Economy in 2050.

European Commission (2014) 2030 Climate & Energy Framework.

German VDI (2002) Technical Guidelines on Air Quality Control – TA Luft.

Government of Ireland (2021) Climate Action and Low Carbon Development (Amendment) Act 2021.

Government of Ireland (2021) Climate Action Plan 2021.

Institute of Air Quality Management (2014) Guidance on the Assessment of Dust from Demolition and Construction.

Institute of Air Quality Management (2016) Guidance on the Assessment of Mineral Dust Impacts for Planning.

Institute of Air Quality Management (2017) Land-Use Planning & Development Control: Planning for Air Quality.

Intergovernmental Panel on Climate Change (2006) IPCC Guidelines for National Greenhouse Gas Inventories.

Intergovernmental Panel on Climate Change (2019) Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

Met Eireann (2022) Daily Meteorological Data for Mullingar Synoptic Weather Station.

Met Eireann (2022) Hourly Meteorological Data for Mullingar Synoptic Weather Station.

Met Eireann (2022) Monthly Meteorological Data for Mullingar ASynoptic Weather Station.

Transport Infrastructure Ireland (2011) Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes.

UK Department for Environment, Food and Rural Affairs (2008) Analysis of the relationship between annual mean nitrogen dioxide concentration and exceedances of the 1-hour mean AQS Objective.

UK Department for Environment, Food and Rural Affairs (2020) NO_x to NO₂ Conversion Spreadsheet (Version 8.1).

UK Highways Agency (2019) UK Design Manual for Roads and Bridges (DMRB), Volume 11, Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1 LA 105 Air Quality.

United Nations Framework Convention on Climate Change (1998) Kyoto Protocol to the UNFCCC.

United Nations Framework Convention on Climate Change (2012) The Doha Amendment to the Kyoto Protocol.

United Nations Framework Convention on Climate Change (2015) The Paris Agreement.

10 NOISE AND VIBRATION

10.1 Introduction

This report assesses the potential noise impact and the acoustic design for Construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (78 sq.m), 60 no. 3 bed semidetached (96-116 sq.m) and 6 no. 4 bed semidetached houses (147 sq.m) with associated private gardens.

The noise and vibration impact during both the construction and operational phases of the development is identified and assessed. The construction phase will likely result in increased levels for a relatively short period whereas a small increase in traffic volumes associated with the development is likely to be the only impact source once operational.

The acoustic design considers the external noise levels for day and night periods and the effectiveness of the building's design to meet the required internal noise criteria. This assessment was prepared in accordance with the EIA Directive 2014/52/EC, current EPA guidelines and best practice.

10.2 Guidelines and Methodology

This assessment has been prepared in accordance with guidance documents:

- BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Part 1 – Noise.
- BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Part 2 -Vibration.
- BS 7385-2:1993 Guide for measurement of vibrations and evaluation of their effects on buildings.
- BS 4142: 2014: Methods for Rating and Assessing Industrial and Commercial Sound.
- BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.
- BS 6472-1 (2008) Guide to evaluation of Human Exposure to Vibration in Buildings - Vibration sources other than Blasting.
- BS 7385-1 (1990) Evaluation and Measurement for Vibration in Buildings - Guide for Measurement of Vibration and evaluation of their effects on buildings.
- BS 7385-2 (1993) Evaluation and Measurement for Vibration in Buildings - Guide to damage levels from Ground borne Vibration.
- World Health Organisation (WHO) Environmental Noise Guidelines for the European Region (2018).
- ISO 1996: 2017: Acoustics - Description, Measurement and Assessment of Environmental Noise.
- ProPG: Professional Practice Guidance on Planning & Noise. New Residential Development. May 2017.
- EPA Advice Notes for Preparing Environmental Impact Statements, (Draft, September 2015)
- EPA Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)

The study has been undertaken using the following methodology:

- Baseline Noise monitoring and an Environmental Noise Survey has been undertaken across the development area to quantify the range of noise levels.

- A review of the most applicable standards and guidelines has been conducted to set a range of acceptable noise and vibration criteria for the construction and operational phases of the proposed development.
- Predictive calculations have been performed to estimate the likely noise and vibration emissions during the construction phase of the project at the nearest sensitive locations (NSLs) to the site.
- Predictive calculations have been performed to assess the potential impacts associated with the operation of the development at the most sensitive locations surrounding the development site.
- A schedule of mitigation measures has been proposed, where relevant, to control the noise and vibration emissions associated with both the construction and operational phases of the proposed development.
- An Acoustic Design Statement has been prepared setting out the required acoustic performance of the building façades.

10.3 Construction Phase Assessment Criteria (Noise)

There is no published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project.

To set appropriate construction noise limits for the development site, reference has been made to BS 5228 - 1:2009 +A1 2014 Code of practice for noise and vibration control on construction and open sites - Noise. This provides basic information on the prediction and measurement of noise from construction sites and operations such as mines and quarries. It also includes a large database of source noise levels for commonly used equipment and activities on construction sites.

The standard provides guidance on the 'threshold of significant effect' in respect of noise impact at dwellings. One suggested method for determining threshold noise levels is known as the 'ABC method'. This involves measuring existing ambient noise levels at noise sensitive locations and categorising them A, B or C accordingly, with the relevant threshold level derived from the category as set out in *Table 27*. **Error! Reference source not found.**

ASSESSMENT CATEGORY AND THRESHOLD VALUE PERIOD (L_{Aeq})	THRESHOLD VALUE, IN DECIBELS (DB)		
	Category A ^{A)}	Category B ^{B)}	Category C ^{C)}
Night-time (23.00–07.00)	45	50	55
Evenings and weekends ^{D)}	55	60	65
Daytime (07.00–19.00) and Saturdays (07.00–13.00)	65	70	75
<p>NOTE 1 A significant effect has been deemed to occur if the total L_{Aeq} noise level, including construction, exceeds the threshold level for the Category appropriate to the ambient noise level.</p> <p>NOTE 2 If the ambient noise level exceeds the threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a significant effect is deemed to occur if the total L_{Aeq} noise level for the period increases by more than 3 dB due to construction activity.</p> <p>NOTE 3 Applied to residential receptors only.</p>			
^{A)}	Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.		
^{B)}	Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.		

c)	Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.
d)	Category D: 19.00–23.00 weekdays, 13.00–23.00 Saturdays and 07.00–23.00 Sundays.

Table 270.1. BS 5228 – Example of significant effect at dwellings

In general, the noise impact due to the construction phase will be from the specific items of plant used, the duration and phasing of the construction methods, the time of day that each plant will be used and their location.

At this stage of the planning for the proposed development however, a definitive construction plan is not yet formalised. Typically, a worse-case scenario is adopted whereby the plant associated for each phase e.g., site perpetrations, demolition, piling, general construction etc, is assumed to operate simultaneously. This can then inform the construction management plan and be refined as required.

10.4 Construction Phase Assessment Criteria (Vibration)

BS 5228-2:2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites: - Part 2: Vibration, outlines several calculation methods for predicting vibration from construction works on open sites.

The standard references other guidance to set acceptable levels for:

Disturbance:

BS 6472-1 (2008) Guide to evaluation of Human Exposure to Vibration in Buildings, and;

Damage

BS 7385-2 (1993) Evaluation and Measurement for Vibration in Buildings.

10.4.1 Disturbance

BS 6472 requires that the estimated vibration dose value (eVDV) parameter be determined for the 16-hour daytime and 8-hour night-time periods. For vibration associated with construction sites however it is considered more appropriate to provide guidance in terms of the PPV, since this parameter is likely to be more routinely measured based upon the more usual concern over potential building damage. Furthermore, since many of the empirical vibration predictors yield a result in terms of PPV, it is necessary to understand what the consequences might be of any predicted levels in terms of human perception and disturbance. Some guidance is given in Table 10.2

VIBRATION LEVEL	EFFECT
0.14 mm/s	<i>Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.</i>
0.3 mm/s	<i>Vibration might be just perceptible in residential environments.</i>
1.0 mm/s	<i>It is likely that vibration of this level in residential environments will cause complaint but can be tolerated if prior warning and explanation has been given to residents.</i>
10 mm/s	<i>Vibration is likely to be intolerable for any more than a very brief exposure to this level.</i>

Table 10.28. Guidance on effects of vibration levels

10.4.2 Building Damage

The response of a building to ground-borne vibration is affected by the type of foundation, underlying ground conditions, the building construction, and the state of repair of the building.

BS 7385 provides guidance on vibration measurement, data analysis and reporting as well as building classification and guide values for building damage.

Limits for transient vibration, above which cosmetic damage could occur, are given in

TYPE OF BUILDING	PEAK COMPONENT PARTICLE VELOCITY IN FREQUENCY RANGE OF PREDOMINANT PULSE	
	4 Hz to 15 Hz	15 Hz and above
Reinforced or framed structures. Industrial and heavy commercial buildings	50 mm/s at 4Hz and above	50 mm/s at 4Hz and above
Unreinforced or light framed Structures Residential or light commercial buildings	15 mm/s at 4Hz ¹ increasing to 20 mm/s at 15Hz	20 mm/s at 15Hz increasing to 50 mm/s at 40Hz and above
<p>NOTE 1 Values referred to are at the base of the building. ¹ At frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) is not to be exceeded</p>		

Table 10.3. Transient vibration guide values for cosmetic damage.

Minor structural damage may occur at levels around twice the above limits and major damage can occur at levels around four times the above limits.

Both standards note that important buildings that are difficult to repair might require special consideration on a case-by-case basis but building of historical importance should not (unless it is structurally unsound) be assumed to be more sensitive. If a building is in a very unstable state, then it will tend to be more vulnerable to the possibility of damage arising from vibration or any other ground borne disturbance.

It should be noted that there is a major difference between the sensitivity of people in feeling vibration and the onset of vibration which caused building damage. Vibration in relation to construction sites therefore may result in short-term disturbance but rarely cause even cosmetic damage. For some construction sites e.g., during piling or rock-braking and with dwellings nearby, vibration monitoring at these locations may be prudent.

10.5 Operational Phase – Noise Assessment Criteria

The operational phase of the development has been assessed with regard to County Westmeath Noise Action Plan 2018-2023.

The Action Plan is aimed at managing environmental noise and excludes noise from domestic activities, noise created by neighbours, noise at workplaces or construction noise.

10.5.1 Traffic

Traffic has been identified as the only likely source of noise during the operational phase of the scheme. The most appropriate criteria for assessing disturbance or annoyance from noise arising from the site would be related to the significance of perceived changes in noise levels.

The Institute of Environmental Management and Assessment's (IEMA) 'Guidelines for Noise Impact Assessment' gives appropriate impacts which have been summarised with relevant guidance in Table 10.4.

CHANGE IN NOISE LEVEL (DB)	SUBJECTIVE REACTION	MAGNITUDE OF IMPACT	EPA GLOSSARY OF EFFECTS ¹²
0	No change	None	Imperceptible
0.1 to 2.9	Barely perceptible	Minor	Slight
3.0 to 4.9	Noticeable	Moderate	Moderate
5.0 to 9.9	Up to a doubling of loudness	Substantial	Significant
10+	More than a doubling of loudness	Major	Profound

Table 10.29. Summary of appropriate impact for changes in traffic noise levels.

A change in traffic noise of less than 2dBA is generally not noticeable to the human ear whilst a change of 3dBA is generally considered to be just perceptible. Changes in noise levels of 3 to 5 dBA would however be noticeable and, depending on the final noise level, there may be a slight or moderate noise impact. Changes in noise level in excess of 6dBA would be clearly noticeable, and depending on the final noise level, the impact may be moderate or significant.

The UK Design Manual for Roads and Bridges (DMRB, Volume 11, Section 3, Part 7) states that a change in noise level of 1dB LA_{10,18h} is equivalent to a 25% increase or a 20% decrease in traffic flow, assuming other factors remain unchanged and a change in noise level of 3dB LA_{10,18h} is equivalent to a 100% increase or a 50% decrease in traffic flow.

10.5.2 WHO Guidelines

The World Health Organisation (WHO) in their 2018 publication entitled Environmental Noise Guidelines for the European Region has proposed new guidelines for community noise. In this guidance, a Lden threshold daytime noise limit of 53dB is suggested to protect against adverse health effects. Lnight Levels of 45dB or less are proposed at night-time to protect against adverse effects on sleep.

10.5.3 Inward Noise Impact

The UK's Professional Practice Guidance on Planning and Noise (ProPG) 2017 has been produced to provide practitioners with guidance on a recommended approach to the management of noise within the planning system. It was developed by the Associate of Noise Consultants for use in England but offers guidance which is relied upon outside of its intended jurisdiction.

¹² EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports, (Draft August 2017)

It focuses on the adoption of Good Acoustic Design for dwellings when required as a result of high external noise levels. The primary goal of ProPG is to assist the delivery of sustainable development by promoting good health and wellbeing through the effective management of noise. It seeks to do that through encouraging a good acoustic design process in and around proposed new residential development having regard to national policy on planning and noise.

ProPG advocates a systematic, proportionate, risk based, 2-stage, approach. The approach encourages early consideration of noise issues, facilitates straightforward accelerated decision making for lower risk sites, and assists proper consideration of noise issues where the acoustic environment is challenging.

Stage 1 - Comprises a high-level initial noise risk assessment of the proposed site considering either measured and or predicted noise levels; and

Stage 2 - Involves a full detailed appraisal of the proposed development covering four 'key elements' that include:

- Element 1 - Good Acoustic Design Process.
- Element 2 - Noise Level Guidelines.
- Element 3 - External Amenity Area Noise Assessment; and
- Element 4 - Other Relevant Issues.

The initial noise risk assessment is intended to provide an early indication of any acoustic issues that may be encountered. It calls for the categorisation of the Site as a negligible, low, medium or high risk based on the pre-existing noise environment.

Figure 10.1 presents the acoustic risk assessment criteria for a range of continuous noise levels either measured and / or predicted onsite.

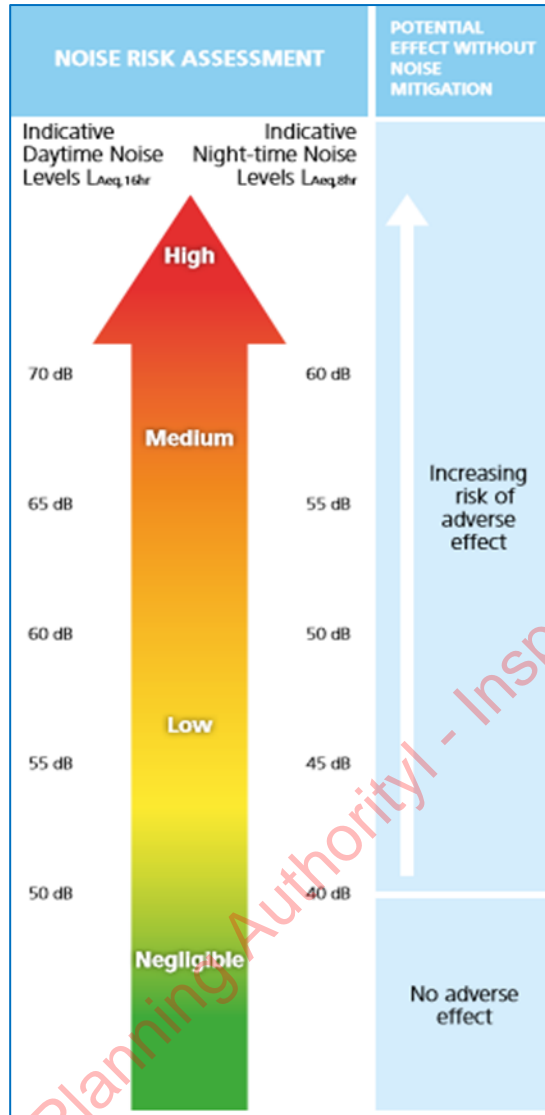


Figure 10.38 - ProPG - Initial risk assessment criteria.

ProPG refers to the guidance within BS 8233:2014 Guidance on sound insulation and noise reduction for buildings which is used during the second stage of the assessment to assess the noise ingress into the dwellings.

Good Acoustic Design recommends levels for indoor ambient noise in residential dwellings as summarised in Table 10.5.

ACTIVITY	LOCATION	07:00 – 23:00 HOURS	23:00 – 07:00 HOURS
Resting	Living room	$L_{Aeq,16hr}$ 35dB	-
Dining	Dining room/area	$L_{Aeq,16hr}$ 40dB	-
Sleeping (daytime resting)	Bedroom	$L_{Aeq,16hr}$ 35dB	$L_{Aeq,8hr}$ 30dB $L_{AFMax,8hr}$ 45dB

Table 10.30. BS 8233:2014 Recommended internal noise limits.

ProPG also provides guidance on flexibility of these internal noise level targets. For instance, in cases where the development is considered necessary or desirable, then a relaxation of the internal LAeq values by up to 5dB can still provide reasonable internal conditions.

It also provides guidance regarding external noise levels for amenity areas in the development:

“The acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50-55dB LAeq,16hr.”

There is also some flexibility to the amenity noise targets if residents have access to a quite recreational environment.

10.6 Receiving Environment

10.6.1 Development Description

The development will consist of a residential development and public open space comprising the following:

- Amendments to permitted application WMCC reg Ref. 14/7103/ ABP Ref. PL25.244826 for the removal of 38 no. permitted units (not constructed) to be replaced by: Construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (78 sq.m), 60 no. 3 bed semidetached (96-116 sq.m) and 6 no. 4 bed semidetached houses (147 sq.m) with associated private gardens.
- The creche facility, public open spaces, landscaping, roads layouts, car parking, boundary treatment works, public lighting and all associated site works associated with the 87 no. remaining units retained as permitted under WMCC Reg Ref. 14/7103 ABP Ref. PL25.244826 will remain unchanged.
- All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a section of the distributor road permitted under WMCC Reg. Refs 14/7103/ ABP Ref. PL25.244826 and 22/253 to the east of the site.
- All associated site development works, services provision, drainage works, public open space (c.1.03ha), landscaping, boundary treatment works, public lighting, associated esb substation cabinets, bin stores, car and bicycle parking provision.
- This development will form part of a larger/future phase of the development.

The layout for this phase of the development is presented in Figure 10.2:

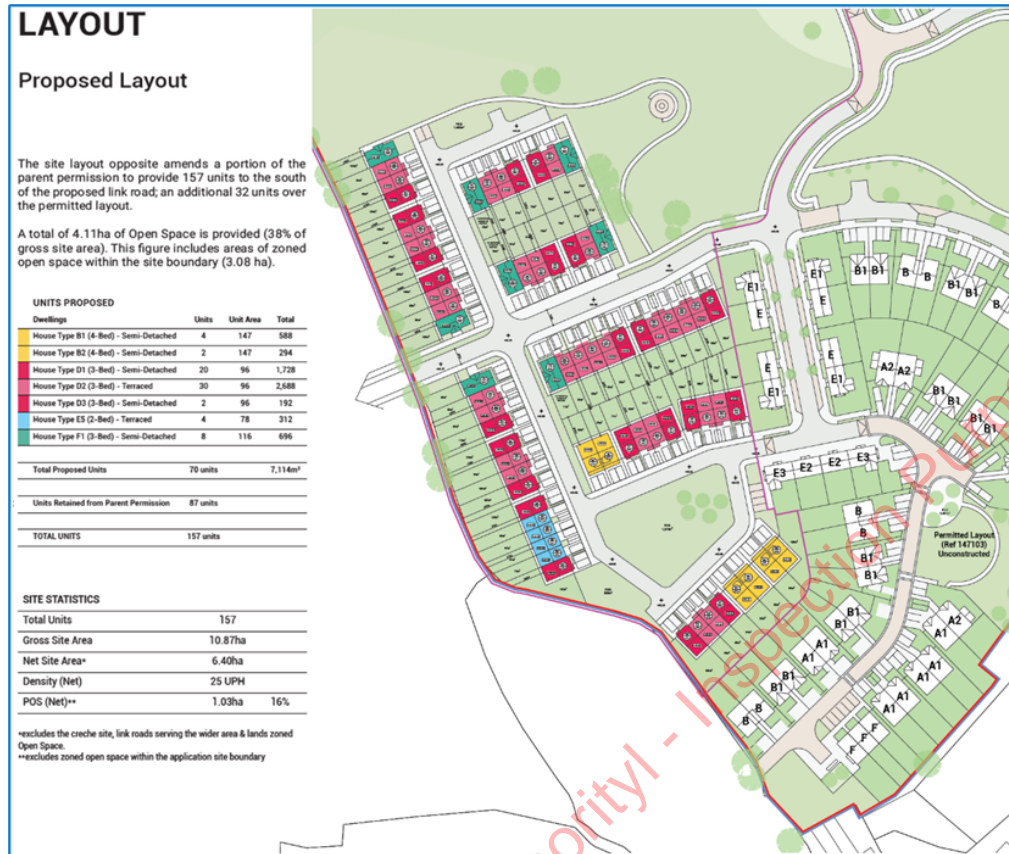


Figure 10.39 - Layout of the proposed development.

10.6.2 Background Noise Survey – locations

A baseline noise survey has been conducted at the site in order to quantify the existing noise environment. The survey was conducted in general accordance with ISO 1996: 2017: Acoustics - Description, Measurement and Assessment of Environmental Noise and followed the methodology contained in EPA NG4. Specific details are set out below.

The measurement locations were selected as shown in Figure 10.3 below and described below.

- Noise Monitoring Location (NML) North
- Noise Monitoring Location (NML) South



Figure 10.40 – Noise monitoring Locations

The noise monitors were set to continuously log noise levels at 15-minute intervals between Oct 13-15, 2021. The weather conditions were dry and calm throughout.

The Sound Level Meters (SLMs) used were class 1 Bruel & Kjaer Type 2250s. Each SLM was calibrated prior to measurements and the sensitivity checked afterwards for any significant drift; none was found.

10.6.3 Measurement Parameters

The noise survey results are presented in terms of the following parameters¹³:

A-weighting	Frequency weighting scale to account for non-linear response of the human ear. Used so that the measured noise corresponds roughly to the overall level of noise that is discerned by the average human. Denoted by suffix A in parameters such as $L_{Aeq,T}$, L_{AF90} , etc.
$L_{Aeq,T}$	Equivalent continuous A-weighted sound pressure level. The value of the sound pressure level in decibels of continuous steady sound that, within a specified time interval, $T = t_2 - t_1$, has the same mean-squared sound pressure as a sound that varies with time. Often described as the ‘average’ noise level.
L_{AF90}	The noise level exceeded for 90% of the measurement period, A-weighted and calculated by Statistical Analysis. Often used as a

¹³ A full glossary of acoustic terminology can be found at: <https://www.acoustic-glossary.co.uk/definitions-1.htm>

	measure of background noise as it ‘filters’ the impact of individual noise events like passing vehicles.
--	--

The noise data was subsequently compiled into average values for Daytime (07:00 – 23:00) and Night-time (23:00 – 07:00) periods for the purposes of comparison with the design criteria.

10.6.4 Measurement Parameters

The results of the noise survey are given in Table 10.6.

LOCATION	L _{AEQ} (DB)	L _{A90} (DB)	PERIOD	DOMINANT NOISE SOURCE(S)
NML North	46	42	Daytime	Road Traffic Noise from the N55.
	39	32	Night-time	
NML South	45	41	Daytime	
	39	34	Night-time	
dB re. 2x10⁻⁵Pa				

Table 10.31. Summary of noise monitoring results.

The noise parameters above are used to assess the impact of various aspects of the development in line with the appropriate guidelines as follows:

- Operational noise: Minimum LA90 i.e. 32dB
- Operation traffic: Average LAeq for AM and PM Peak periods
- Construction noise: Average LAeq i.e.45.5dB
- Noise ingress: Maximum LAeq i.e. 46dB (day), 39dB (night)

10.7 Impact Assessment

The potential noise and vibration impacts associated with the construction and operational phases of the proposed development are discussed in the following sections.

10.7.1 Construction phase

10.7.1.1 Noise Limits

The expected operational times of the construction site are: 08:00 – 19:00 Mon-Fri. Following a review of the baseline noise survey results in Table 10.6 and the criteria detailed in Table 10.1 the appropriate noise limit at NSLs for construction noise are given in Table 10.7.

AMBIENT NOISE LEVEL ROUNDED TO NEAREST 5DB (L _{AEQ,T})	BS 5228-1 CATEGORY	CONSTRUCTION NOISE THRESHOLD VALUE (L _{AEQ,T})
50dB	A	65dB
50dB	A	65dB

Table 10.32. Defined Construction Noise Thresholds

10.7.1.2 Construction Plan & Site Noise Limits

In the absence of specific construction information regarding the construction schedule, construction noise impacts cannot be fully quantified at this point. However, as a working hypothesis the assessment will assume phases of typical construction operations and associated plant.

BS 5228 provides details of plant items and their associated noise levels that are anticipated for various phases of a typical construction programme. Noise levels are generally given at a distance of 10m from the item of plant.

A Construction Environmental Management Plan (CEMP) has yet to be drafted but as a working hypothesis the impact of assumed typical construction phases of work has been assessed.

Not all plant will operate simultaneously, and further guidance in BS 5228 provides for the calculation of Activity LAeq¹⁴ which has been calculated as: -26dB for this site.

Table 10.8 outlines the assumed plant items and associated noise levels and compares these to the criteria from Table 10.7.

ACTIVITY	ITEM OF PLANT (BS5228 REF)	TOTAL NOISE LEVEL @10M (DB)
Site Preparation (Phase 1)	Wheeled loader - 52kW (D3.3)	74
	Tracked loader o 56kW (D3.17)	85
	Dozer - 239kW (D3.27)	81
	Grader - 168kW (D3.75)	84
	Tipper Lorry - 75kW (D3.112)	85
	Activity Correction:	-26
Total:		64
65dB Limit exceeded?		No
General Construction (Phase 2)	Dump Truck -29t (C2.30)	79
	Tracked excavator 22t (C2.21)	71
	Compressor (D7.08)	70
	Telescopic Handler -4t (C4.54)	79
	Diesel Generator (C4.76)	61
	Activity Correction:	-26

¹⁴ F.2.2 Method for activity LAeq

Total:		57
65dB Limit exceeded?		No
Roadworks / Landscaping (Phase 3)	Asphalt Paver & Tipping Lorry 112 Kw (C5.30)	75
	Electric Water Pump - 15kW (C5.40)	68
	Vibratory Roller -89kW (C5.20)	75
	Activity Correction:	-26
Total:		52
65dB Limit exceeded?		No
dB re. 2x10⁻⁵Pa		

Table 10.33. Predicted noise levels at 10m from construction plant

The calculated total noise levels above assume all sources operate simultaneously. In reality this will likely not be the case with a subsequent reduction in the noise levels expected.

The assessment indicates that the criteria will be met at almost all of the nearby existing residential locations. However, the criterion may not be met for short periods of time during the site preparation phase at the few dwellings immediately adjacent to the site. When the CEMP is drafted it will set the appropriate noise criteria above and include guidance from BS 5228 to manage and control the noise sources so that the criteria is satisfied. Section **Error! Reference source not found.** below sets out appropriate mitigation measures that may be included in the CEMP.

The construction phase noise impact is therefore expected to be **negative, moderate** and **short-term**.

10.7.1.3 Construction Phase – Vibration

BS 5228-2:2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration provides empirical vibration levels from various activities. Without a detailed construction plan it is prudent to assess the likely vibration levels at the nearby dwellings from this most severe test as all other sources of vibration will be below this level.

The vibration limits are set out in Table 2 for Disturbance and Table 3 for Cosmetic Damage are 0.14mm/s (“just perceptible in the most sensitive situations”) and 15mm/s respectively.

A review of the predicted vibration levels from the typical construction programme set out above, indicates that the resultant vibration levels at noise sensitive locations are expected to be well below a level that would cause disturbance to building occupants and there is also no risk of building damage.

The construction phase vibration impact is therefore expected to be **neutral** and **imperceptible**.

10.7.1.4 Construction Phase – Traffic Noise

Consideration should also be given to the addition of construction traffic along the site access routes. Access to the development site for construction traffic will be via the N55 and the Drumacronn Distributor Road. The lowest existing LAeq noise level here is 47dB.

It is possible to calculate the noise levels associated with passing vehicles using the following formula:

$$L_{Aeq,T} = L_{AX} + 10\log_{10}(N) - 10\log_{10}(T) + 10\log_{10}(r1/r2) \text{dB}$$

Where:

$L_{Aeq,T}$ is the equivalent continuous sound level over the time period T seconds.

L_{AX} is the "A-weighted" Sound Exposure Level of the event considered (dB).

N is the number of events over the course of time period T.

r1 is the distance at which LAX is expressed.

r2 is the distance to the assessment location

The mean value of L_{AX} for truck moving at low to moderate speeds (i.e., 15 to 45km/hr) is of the order of 82dB at a distance of 5 metres from the vehicle. The distance from the façade of the nearest dwelling in the Drumacronn development is 50m.

It has been calculated that a maximum of 12 trucks per hour will result in a noise level at or below the existing level which will result in an imperceptible increase in noise levels at the dwelling.

The existing daytime noise environment is dominated by road traffic and the noise generated by construction traffic is not expected to change the character of the existing noise environment significantly.

Therefore, any impact is therefore expected to be **neutral** and **imperceptible**.

10.7.1.5 Ameliorative, Remedial or Reductive Measures

The impact assessment conducted for the construction activity during the construction phase has highlighted that the predicted construction noise levels are within the adopted criterion for almost all NSLs. However, the following mitigation measures may be considered during certain construction activities in order to further reduce the noise and vibration impact to nearby noise sensitive areas.

As part of these mitigation measures it is recommended that the Contractor should compile a Noise and Vibration Management Plan (NVMP) which will deal specifically with management processes and strategic mitigation measures to remove or reduce significant noise and vibration impacts, and cumulative noise and vibration impacts from the construction works. The Plan will also define noise and vibration monitoring and reporting. The NVMP will also include method statements for each phase of the works, the associated specific measures to minimise noise and vibration in so far as is reasonably practicable for the specific works covered by each plan and a detailed appraisal of the resultant construction noise and vibration generated.

The contractor will provide proactive community relations and will notify the public and vibration sensitive premises before the commencement of any works forecast to generate appreciable levels of noise or vibration, explaining the nature and duration of the works.

The contractor will distribute information circulars informing people of the progress of works and any likely periods of significant noise and vibration.

With regard to potential mitigation measures during construction activities, the standard planning condition typically issued by The Westmeath Noise Action Plan states:

“In the case of other planning applications, a general requirement may be added such as ‘Noise is kept to a minimum, in so far as is practical’ during the construction phase of the development.”

BS5228 includes guidance on several aspects of construction site mitigation measures, including, but not limited to:

- selection of quiet plant;
- control of noise sources;
- screening;
- hours of work;
- liaison with the public, and;
- monitoring.

Noise control measures that will be considered include the selection of quiet plant, enclosures, and screens around noise sources, limiting the hours of work and carrying out noise/vibration monitoring as required.

A suitable site hoarding would protect the residents immediately adjacent to the construction site.

10.8 Operational Phase

The operational phase of the development has been assessed with regard to Westmeath County Council in their role as designated Action Planning Authority under Article 7 of the Environmental Noise Regulations 2006.

The Action Plan is aimed at managing environmental noise and excludes noise from domestic activities, noise created by neighbours, noise at workplaces or construction noise as these can be dealt with under existing legislation such as the Environmental Protection Agency Act 1992 and Health & Safety legislation.

10.8.1 Noise Sources

It is important to consider the noise sources associated with the operation of the development. In this case there are no external mechanical plant servicing the development but there will be some increase to associated traffic.

Note: No significant sources of vibration associated with the operational phase are expected.

10.8.2 Associated Traffic Noise

It is appropriate to consider the increase in traffic noise level that may arise as a result of vehicular movements related to the development.

The trip rates which have been set out in the traffic impact assessment are used to predict the corresponding increase in noise levels. Trip rates are given in terms of AM peak (08:00 – 09:00) and PM peak (17:00 – 18:00) and the corresponding measured LAeq levels for these periods are 47.1dB and 42.7dB respectively.

The resultants increase in noise level associated with the 70 no. dwellings and the creche facility is give in Table 10.9.

PERIOD	EXISTING TRAFFIC FLOWS	DEVELOPMENT TRIP RATE	% INCREASE	EXISTING L_{AEQ} NOISE LEVEL	TRAFFIC NOISE INCREASE
AM peak	1594	248	15.5	47.1dB	0.6dB
PM peak	1664	254	15.2	42.7dB	0.6dB

Table 10.34. Summary of traffic related noise increase

The predicted noise level increase of 0.6dB is imperceptible. The Peak periods represent periods of maximum traffic flows therefore the impact outside of these periods will be less.

The traffic noise impact is therefore expected to be **slight** and **long-term**.

10.9 Building Envelope Specification

As part of a robust planning application, the acoustic design of the building envelope should consider the external noise levels with a view to achieving the internal design goals.

The façade of the building includes several critical elements including glazing, walls, ventilation and where appropriate the roof/ceiling. By calculating the combined effect of these it's possible to predict the internal noise level based on the known external levels for a given building design.

The acoustic performance of the individual building element is usually rated in terms of the Weighted Sound Reduction Index (R_w) which is a number used to rate the effectiveness of a soundproofing system or material. Increasing the R_w by one translated to a reduction of approximately 1 decibel in transmitted noise level. Therefore, the higher the R_w number, the better the sound insulation.

The R_{w+Ctr} parameter is a variation which should be used when the incident noise on the building is primarily from road traffic. It is therefore appropriate to use it here.

10.9.1 Acoustic Design Statement

By applying the guidelines in ProPG and BS8223, an Acoustic Design Statement (ADS) will provide the predicted interior noise levels based on the proposed construction and inform the building design. It will also present options to achieve the attenuation required should the predicted internal noise level exceed the required criteria.

The ADS does not consider the sound attenuation of internal elements such as walls and floor/ceiling or other acoustic topics; these are covered by Building Regulations, Technical Guidance Document, Part E.

10.9.1.1 Windows Open

Opening a window will compromise the acoustic performance of the façade but it is a desirable feature or necessary to provide purge ventilation. Following the ProPG/BS5228 guidelines, the performance of the façade with windows open should be considered initially.

The World Health Organisation (WHO) Environmental Noise Guidelines for European Region [1] document describes the typical reduction of an open window as being 15dB.

Assuming a bedroom façade is exposed to the measured external noise level of Lnight 39dB (given in **Table 10.31**), this would result an internal night-time noise level of 24dB, achieving the target criteria of 30dB set out in **Table 10.30** above.

10.9.1.2 Glazing Specification

Notwithstanding that the measured noise levels set the scheme within the negligible risk category of the ProPG guidelines (see Figure 1), the noise ingress levels were estimated using the acoustic performance specification of various elements. It was found that the internal Daytime noise limit of Lday 35dB from **Table 10.30** is the most stringent.

The most critical dwellings are the houses at the southern end of the scheme, closest to the N55 road. The assessment here is therefore worse case and the applied glazing specification will also be suitable for the other dwellings across the site or may be relaxed as appropriate.

The facades facing the road of the houses in question are a mixture of living rooms and bedrooms which have different criteria as set out in Table 5. The calculations below assume on a room volume 45m³, a window size of 2.4m² and a reverberation time within the room of 0.8s.

10.9.1.3 Daytime

The minimum combined glazing performance to achieve the criteria for daytime in Living Rooms and Bedrooms is presented in Table 10.10

EXTERNAL NOISE LEVEL (DBA)	CRITERIA LIMIT (DBA)	MINIMUM R_{W+CTR} (DB) REQUIRED
46	35	15

Table 10.10 Minimum glazing R_{W+ctr} (dB) required for living rooms.

This specification should be easily achieved using standard double-glazed units.

10.9.1.4 Night-Time

The minimum glazing performance to achieve the criteria for night-time in Bedrooms is presented in Table 10.11

EXTERNAL NOISE LEVEL (DBA)	CRITERIA LIMIT (DBA)	MINIMUM R_{W+CTR} (DB) REQUIRED
39	30	15

Table 10.11 Minimum glazing R_{W+ctr} (dB) required for bedrooms.

This specification should be easily achieved using standard double-glazed units.

10.9.1.5 Ventilation

Standard un-treated trickle ventilators should be avoided for facades having more than R_w 20dB requirement. It is understood however that a mechanical ventilation/heat recovery system is being employed which will provide the necessary ventilation without compromising the façade's acoustic performance.

10.9.1.6 Amenity Areas

The amenity areas consist of outdoor spaces within the development. As the Lday -value is 47dB, the maximum criterial of 55dB set out in ProPG will therefore be met.

10.9 Conclusion

Construction noise and vibration can be kept below the criteria by implementation of the Construction Environmental Management plan referencing the criteria and mitigation measures outlined in the BS 5228 standard.

The relatively small amount of additional traffic associated with the development's operational phase will not give rise to a perceived increase in noise levels.

Following the principles of Good Acoustic Design set out in ProPG, acceptable internal noise levels can be achieved by providing suitable glazing. The noise level within amenity areas will be below the ProPG criteria.

Westmeath County Council Planning Authority - Inspection Purposes Only

11 LANDSCAPE VISUAL IMPACT ASSESSMENT

11.1 Introduction

This Landscape and Visual Impact Assessment (LVIA) describes the landscape at the location of the proposed development in Cornamaddy, Athlone, Co. Westmeath, and assesses the likely impacts of the proposed development on landscape and visual amenity. It was informed by a desktop study and site survey carried out in November 2022.

This chapter of the EIAR has been prepared by Declan O’Leary and Prithvi Gowda of Cunnane Stratton Reynolds Ltd (CSR), landscape architects and town planners.

Declan O’Leary holds B.Agr Sc. Land. Hort., Dip LA., CLI, MILI., Declan has over 30 years’ experience in the design and analysis of landscape and the impacts of change, including the preparation of landscape and visual impact assessments for Environmental Impact Assessment Reports.

Prithvi Gowda holds B.Arch., MScUD&P. Prithvi Gowda has over 5 years experience working in a multi-disciplinary role within landscape and planning teams and has been involved in the preparation of numerous landscape and visual impact assessments over that period.

11.2 Methodology

11.2.1 Definition of Landscape

Ireland is a signatory to the European Landscape Convention (ELC). The ELC defines landscape as ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors’. This definition is important in that it expands beyond the idea that landscape is only a matter of aesthetics and visual amenity. It encourages a focus on landscape as a resource in its own right - a shared resource providing a complex range of cultural, environmental and economic benefits to individuals and society.

As a cultural resource, the landscape functions as the setting for our day-to-day lives, also providing opportunities for recreation and aesthetic enjoyment and inspiration. It contributes to the sense of place experienced by individuals and communities and provides a link to the past as a record of historic socio-economic and environmental conditions.

As an environmental resource, the landscape provides habitat for fauna and flora. It receives, stores, conveys and cleans water; and vegetation in the landscape stores carbon and produces oxygen. As an economic resource, the landscape provides the raw materials and space for the production of food, materials (e.g. timber, aggregates) and energy (e.g. carbon-based fuels, wind, solar), living space and for recreation and tourism activities.

11.2.2 Forces for Landscape Change

Landscape is not unchanging. Many different pressures have progressively altered familiar landscapes over time and will continue to do so in the future, creating new landscapes. For example, within the receiving environment, the environs of the proposed development have altered over the last thousand years, from wilderness to agriculture and settlement or townscape.

Many of the drivers of change arise from the requirement for development to meet the needs of a growing population and economy. The concept of sustainable development recognises that change must and will occur to meet the needs of the present, but that it should not compromise the ability of future generations to meet their needs. This involves finding an appropriate balance between economic, social and environmental forces and values.

The reversibility of change is an important consideration. If change must occur to meet a current need, can it be reversed to return the resource (in this case, the landscape) to its previous state to allow for development or management for future needs.

Climate change is one of the major factors likely to bring about future change in the landscape, and it is accepted to be the most serious long-term threat to the natural environment, as well as economic activity (particularly primary production) and society. The need for climate change mitigation and adaptation, including the management of water and more extreme weather and rainfall patterns, is part of this.

11.2.3 Guidance

LVIA is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity.

The methodology for assessment of the landscape and visual effects is informed by the following key guidance documents, namely:

- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition 2013, published by the UK Landscape Institute and the Institute of Environmental Management and Assessment (hereafter referred to as the 'GLVIA');
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, 2022, published by the Environmental Protection Agency (hereafter referred to as the 'EPA guidelines');
- Westmeath County Development Plan 2021-2027;
- Athlone Town Development Plan 2014-2020; and
- Cornamaddy Action Area Plan, 2004.

The GLVIA (3rd Edition) outlines the assessment process, which combines judgements on the sensitivity of the resource and the magnitude of the change which it will undergo as a result of the proposed development. These are then combined to reach an assessment of the importance (or significance) of the effect. This guidance is authored by the Landscape Institute in the UK and the IEMA which contains a network of members in UK and Ireland and internationally. The guidance was prepared within the parameters of relevant EU directives at the time and is updated where necessary by Landscape Institute bulletins online. The GLVIA 3rd edition is used internationally and is the industry standard for LVIA in Ireland.

The EPA guidance (2022) refers to the use of topic specific guidance and specifically references the GLVIA 3 in relation to professional judgement. 3.7.2 Documenting the Process recognises that:

"Some uncertainty is unavoidable in EIA, especially about matters that involve an element of judgement, such as assigning a level of significance to an effect. Such judgements should be explicit and substantiated rather than presented as objective fact. This is best done using agreed referable approaches, e.g. the Guidelines on Landscape and Visual Impacts Assessment provide guidance on what constitutes a severe visual effect".

11.2.4 Key Principles of the GLVIA

The GLVIA advises that the terms 'impact' and 'effect' should be clearly distinguished and consistently used in the preparation of an LVIA. 'Impact' is defined as the action being taken. In the case of the proposed development, the impact would include the construction of the buildings and associated boundaries and external areas. 'Effect' is defined as the change or changes resulting from those actions, e.g. a change in landscape character, or changes to the composition, character and quality of views in the receiving environment. This report focusses on these effects.

11.2.5 Assessment of both ‘Landscape’ and ‘Visual’ Effects

Another key distinction to make in a LVIA is that between landscape effects and the visual effects of development.

‘Landscape’ results from the interplay between the physical, natural and cultural components of our surroundings. Different combinations of these elements and their spatial distribution create distinctive character of landscape in different places. ‘Landscape character assessment’ is the method used in LVIA to describe landscape, and by which to understand the potential effects of a development on the landscape as ‘a resource’. Character is not just about the physical elements and features that make up a landscape, but also embraces the aesthetic, perceptual and experiential aspects of landscape that make a place distinctive.

‘Views’ and ‘visual amenity’ refer to the interrelationship between people and the landscape. The GLVIA prescribes that effects on views and visual amenity should be assessed separately from landscape, although the two topics are inherently linked. Visual assessment is concerned with changes that arise in the composition of available views, the response of people to these changes and the overall effects on the area’s visual amenity.

11.2.6 Methodology for Landscape Assessment

In Section 11.8 of this Chapter, the landscape effects of the proposed development are assessed. The nature and scale of changes to the landscape elements and characteristics are identified, and the consequential effect on landscape character and value are discussed. Trends of change in the landscape are taken into account. The assessment of significance of the effects takes account of the sensitivity of the landscape resource and the magnitude of change to the landscape which resulted from the development.

Definitions and descriptions of sensitivity, magnitude of change and quality and longevity of effects are derived from the GLVIA. The GLVIA does not set out specific definitions of descriptions used but contains key widely used principles and case studies / examples that are intended to inform a professional methodology, supported by their experience and judgements in relation to landscape and landscape change. These descriptions expand and complement the EPA guidelines as intended in relation to topic specific guidance.

11.2.6.1 Sensitivity of Landscape Resource

Landscape values can be identified by the presence of landscape designations or policies which indicate particular values, either on a national or local level. In addition, a number of criteria are used to assess the value of a landscape.

Landscape susceptibility is defined in the GLVIA as the ability of the landscape receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline scenario and/or the achievement of landscape planning policies and strategies. Susceptibility also relates to the type of development – a landscape may be highly susceptible to certain types of development but have a low susceptibility to other types of development.

Sensitivity is therefore a combination of Landscape Value and Susceptibility.

The sensitivity of the landscape is a function of its land use, landscape patterns and scale, visual enclosure and the distribution of visual receptors, and the value placed on the landscape. The nature and scale of the development in question is also taken into account. For the purpose of assessment, five categories are used to classify the landscape sensitivity of the receiving environment.

Sensitivity	Description
Very High	Areas where the landscape exhibits a very strong, positive character with valued elements, features and characteristics that combine to give an experience of unity, richness and harmony. The character of the landscape is such that its capacity for accommodating change in the form of development is very low. These attributes are recognised in landscape policy or designations as being of national or international value and the principle management objective for the area is protection of the existing character from change.
High	Areas where the landscape exhibits strong, positive character with valued elements, features and characteristics. The character of the landscape is such that it has limited/low capacity for accommodating change in the form of development. These attributes are recognised in landscape policy or designations as being of national, regional or county value and the principle management objective for the area is conservation of the existing character.
Medium	Areas where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong or has evidence of alteration to / degradation / erosion of elements and characteristics. The character of the landscape is such that there is some capacity for change in the form of development. These areas may be recognised in landscape policy at local or county level and the principle management objective may be to consolidate landscape character or facilitate appropriate, necessary change.
Low	Areas where the landscape has few valued elements, features or characteristics and the character is weak. The character of the landscape is such that it has capacity for change; where development would make no significant change or would make a positive change. Such landscapes are generally unrecognised in policy and where the principle management objective is to facilitate change through development, repair, restoration or enhancement.
Negligible	Areas where the landscape exhibits negative character, with no valued elements, features or characteristics. The character of the landscape is such that its capacity for accommodating change is high; where development would make no significant change or would make a positive change. Such landscapes include derelict industrial lands or extraction sites, as well as sites or areas that are designated for a particular type of development. The principle management objective for the area is to facilitate change in the landscape through development, repair or restoration.

Table 11.37: Categories of Landscape Change

11.2.6.2 Magnitude of Landscape Change

The magnitude of change is a function of the scale, extent and degree of change imposed on the landscape with reference to its key elements, features and characteristics (also known as ‘landscape receptors’). Five categories are used to classify magnitude of landscape change.

Magnitude of Change	Description
Very High	Change that is large in extent, resulting in the loss of or major alteration to key elements, features or characteristics of the landscape and/or introduction of large elements considered totally uncharacteristic in the context. Such development results in fundamental change in the character of the landscape.
High	Change that is moderate to large in extent, resulting in major alteration to key elements features or characteristics of the landscape and/or introduction of large elements considered uncharacteristic in the context. Such development results in change to the character of the landscape.
Medium	Change that is moderate in extent, resulting in partial loss or alteration to key elements features or characteristics of the landscape, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape.
Low	Change that is moderate or limited in scale, resulting in minor alteration to key elements features or characteristics of the landscape, and/or introduction of elements that are not uncharacteristic in the context. Such development results in minor change to the character of the landscape.
Negligible	Change that is limited in scale, resulting in no alteration to key elements features or characteristics of the landscape key elements features or characteristics of the landscape, and/or introduction of elements that are characteristic of the context. Such development results in no change to the landscape character.

Table 11.38: Categories of Landscape Change

11.2.6.3 Significance of Effects

In order to classify the significance of effects (both landscape and visual), the predicted magnitude of change is measured against the sensitivity of the landscape/viewpoint, using the following guide. There are seven classifications of significance provided in the EPA guidelines, namely: (1) imperceptible, (2) not significant, (3) slight, (4) moderate, (5) significant, (6) very significant, (7) profound (refer to Table 1.4 in Chapter 1 (Introduction)).

The matrix in Table 11.3, below, is used as a guide only. Table 11.3 expands the number of classifications to a total of 25 classifications providing for more accuracy in describing the significance of effects and their relative or comparative value. The assessor also uses professional judgement informed by their expertise, experience and common sense, to arrive at a classification of significance that is reasonable and justifiable.

Landscape effects are also classified as beneficial (positive), neutral or adverse (negative) (see definitions in Section 11.2.8.1). Development has the potential to improve the environment as well as damage it. In certain situations, there might be policy encouraging a type of change in the landscape, and if a development achieves the objective of the

policy the resulting effect might be positive, even if the landscape character is profoundly changed.

		Sensitivity of the Landscape or Visual Resource				
		Very High	High	Medium	Low	Negligible
Magnitude of Change	Very High	Profound	Profound - Very Significant	Very Significant - Significant	Moderate	Slight
	High	Profound - Very Significant	Very Significant	Significant	Moderate - Slight	Slight - Not Significant
	Medium	Very Significant - Significant	Significant	Moderate	Slight	Not Significant
	Low	Moderate	Moderate - Slight	Slight	Not significant	Imperceptible
	Negligible	Slight	Slight-Not Significant	Not significant	Imperceptible	Imperceptible

Table 11.39: Guide to Classification of Significance of Landscape and Visual Effects

The matrix above is used as a guide only. The assessor also uses professional judgement informed by their expertise, experience and common sense to arrive at a classification of significance that is reasonable and justifiable.

11.2.6.4 The Nature of Landscape Effects

Landscape effects are also classified as positive, neutral or negative/adverse. Development has the potential to improve the environment as well as damage it. In certain situations, there might be policy encouraging a type of change in the landscape, and if a development achieves the objective of the policy the resulting effect might be positive, even if the landscape character is profoundly changed.

11.2.7 Methodology for Visual Assessment

In Section 11.8.3 of this report, the visual effects of the proposed development are assessed. Visual assessment considers the changes to the composition of views, the character of the views, and the visual amenity experienced by visual receptors. The assessment is made for a number of viewpoints selected to represent the range of visual receptors in the receiving environment. The significance of the visual effects experienced at these locations is assessed by measuring the viewpoint sensitivity against the magnitude of change to the view resulting from the proposed development.

Definitions and descriptions of sensitivity, magnitude of change and quality and longevity of effects are derived from the GLVIA. The GLVIA does not set out specific definitions of descriptions used but contains key widely used principles and case studies / examples that are intended to inform a professionals methodology, supported by their experience and judgements in relation to visual effects and landscape change. These descriptions expand and complement the EPA guidelines as intended in relation to topic specific guidance.

Sensitivity	Description
Very High	Viewers at iconic viewpoints - towards or from a landscape feature or area - that are recognised in policy or otherwise designated as being of high value or national value. This may also include residential viewers who are focussed to a large extent on the view.
High	Viewers at viewpoints that are recognised in policy or otherwise designated as being of value, or viewpoints that are highly valued by people that experience them regularly (such as views from houses or outdoor recreation features) and views which are highly valued by the local community. This may also include tourist attractions, and heritage features of regional or county value, and viewers travelling on scenic routes.
Medium	Viewers considered of medium susceptibility, such as locations where viewers are travelling at slow or moderate speeds through or past the affected landscape in cars or on public transport, where they are partly but not entirely focused on the landscape, or where the landscape has some valued views. The views are generally not designated, but which include panoramic views or views judged to be of some scenic quality, which demonstrate some sense of naturalness, tranquillity or some rare element in the view.
Low	Viewers at viewpoints reflecting people involved in activities not focused on the landscape e.g. people at their place of work or engaged in similar activities such as shopping, etc. The view may present an attractive backdrop to these activities but there is no evidence that the view is valued, and not regarded as an important element of these activities. Viewers travelling at high speeds (e.g. motorways) may also be generally considered of low susceptibility.
Negligible	Viewpoints reflecting people involved in activities not focused on the landscape e.g. people at their place of work or engaged in similar activities such as shopping where the view has no relevance or is of poor quality and not valued.

Table 11.40: Categories of Viewpoint Sensitivity

11.2.7.1 Magnitude of Change to the View

Classification of the magnitude of change takes into account the size or scale of the intrusion of development into the view (relative to the other elements and features in the composition, i.e. its relative visual dominance), the degree to which it contrasts or integrates with the other elements and the general character of the view, and the way in which the change will be experienced (e.g. in full view, partial or peripheral, or glimpses). It also takes into account the geographical extent of the change, the duration and the reversibility of the visual effects. Five categories are used to classify magnitude of change to a view are described in Table 11.5 below;

Magnitude of Change	Description
Very High	Full or extensive intrusion of the development in the view, or partial intrusion that obstructs valued features or characteristics, or

	introduction of elements that are completely out of character in the context, to the extent that the development becomes the dominant the composition and defines the character of the view and the visual amenity.
High	Extensive intrusion of the development in the view, or partial intrusion that obstructs valued features, or introduction of elements that may be considered uncharacteristic in the context, to the extent that the development becomes co-dominant with other elements in the composition and affects the character of the view and the visual amenity.
Medium	Partial intrusion of the development in the view, or introduction of elements that may be prominent but not necessarily uncharacteristic in the context, resulting in change to the composition but not necessarily the character of the view or the visual amenity.
Low	Minor intrusion of the development into the view, or introduction of elements that are not uncharacteristic in the context, resulting in minor alteration to the composition and character of the view but no change to visual amenity.
Negligible	Barely discernible intrusion of the development into the view, or introduction of elements that are characteristic in the context, resulting in slight change to the composition of the view and no change in visual amenity.

Table 11.41: Categories of Visual Change

11.2.7.2 Significance of Visual Effects

In order to classify the significance of visual effects, the magnitude of change to the view is measured against the sensitivity of the viewpoint, using the guide in Table 11.3.

11.2.8 Quality and Timescale

11.2.8.1 Quality

The predicted impacts are also classified as beneficial (positive), neutral or adverse (negative). This is not an absolute exercise. In particular, visual receptors' attitudes to development, and thus their response to the impact of a development, will vary. However, the methodology applied is designed to provide robust justification for the conclusions drawn. These qualitative impacts/effects are defined as follows:

- **Adverse (Negative):** Scheme at variance with landform, scale, pattern. Would degrade, diminish or destroy the integrity of valued features, elements or their setting or cause the quality of the landscape (townscape) / view to be diminished;
- **Neutral:** Scheme complements the scale, landform and pattern of the landscape (townscape) / view and maintains landscape quality;
- **Beneficial (Positive):** Scheme improves landscape (townscape) / view quality and character, fits with the scale, landform and pattern and enables the restoration of valued characteristic features or repairs / removes damage caused by existing land uses.

11.2.8.2 Timescale

Impacts / effects are also categorised according to their longevity or timescale:

Definition of duration of effects		
	Duration	Description
CONSTRUCTION STAGE*	Temporary	Effects lasting one year or less
	Early Short Term	Effects lasting one to two years
	Mid Short Term	Effects lasting three to four years
OPERATIONAL STAGE	Later Short Term	Effects lasting five to seven years
	Medium Term	Effects lasting seven to fifteen years
	Long Term	Effects lasting fifteen to sixty years
	Permanent	Effects lasting over sixty years

Table 11.42: Duration of Effects

*Estimated Construction stage length for this project.

The construction phase is forecast to last several years, however works will be taking place in different parts of the site at different times, some parts may be complete and in Operational Stage whilst Construction is ongoing elsewhere. Some views may experience a short construction period and move to operational stage whilst construction is commencing or continuing in other views. The interpretation of this is dealt with in the site specific descriptive text for the assessment where appropriate.

11.3 Characteristics of Proposed Development

11.3.1 Cornamaddy Lands/ EIA Assessment Area

The EIA assessment area is the entirety of the masterplan area outlined in Figure 11.1 below. The development of the landholding has two no. extant planning permissions (WMCC Ref: 14107102 and Ref:177724) and the remainder of the landholding is spilt into a number of phases. The extant permission are partly development on site. Phase 1 has been granted planning permission under WMCC Ref:22253. Phase 2 is undergoing the planning process under WMCC Ref: 22340. Phase 3 is the application site. Pre-planning meeting was held for Phase 4 lands and will be subject to a full planning application in the future.

11.3.2 Proposed Development Site

The proposed site is Phase 3 of the Cornamaddy Lands / Client’s landholding development. The proposal is for a residential development with open space provision and associated site works. A part of the subject site was subject to a previous planning permission, granted under WMCC Ref:147103. The proposed development replaces 38 no. granted under Ref: 147103 as part of this subject application.



Figure 11.41: Phase 3 Application site and Applicant's landholding

11.3.2.1 Proposed Development Site

The development will consist of a residential development and public open space comprising the following:

- Amendments to permitted application WMCC reg Ref. 14/7103/ ABP Ref. PL25.244826 for the removal of 38 no. permitted units (not constructed) to be replaced by: Construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (78 sq.m), 60 no. 3 bed semidetached (96-116 sq.m) and 6 no. 4 bed semidetached houses (147 sq.m) with associated private gardens.
- The creche facility, public open spaces, landscaping, roads layouts, car parking, boundary treatment works, public lighting and all associated site works associated with the 87 no. remaining units retained as permitted under WMCC Reg Ref. 14/7103 ABP Ref. PL25.244826 will remain unchanged.
- All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a sections of the distributor road permitted under WMCC Reg. Refs 14/7103/ ABP Ref. PL25.244826 and 22/253 to the east of the site.
- All associated site development works, services provision, drainage works, public open space (c.1.03ha), landscaping, boundary treatment works, public lighting, associated esb substation cabinets, bin stores, car and bicycle parking provision.
- This development will form part of a larger/future phase of the development.

11.3.2.2 Aspects Relevant to this Assessment

Key elements of the proposed development most relevant to this assessment of landscape and visual effects are the following:

- The change from the existing semi-rural landscape in transition to a new built form, townscape and sub-urb.
- Layout and scale of new buildings and form, and their potential impact locally as well as on the wider sensitive visual receptors.
- Impacts / Loss of trees and vegetation locally on the site.
- Creation of a new urban Place or Neighborhood in accordance with local policy and good practice.
- Interfaces with existing established residential areas and the wider sub-urban area.
- Significant new landscape structure, features and amenities / habitats including tree cover.

11.4 Receiving Environment

This section sets out a review of landscape related Planning Policy as set out in the Westmeath County Development Plan and associated documents, and a description of the study area informed by desktop assessment.

The local planning and other policy in the Westmeath County Development Plan are reviewed which identify development objectives and trends and also constraints on development in terms of protections and sensitivities. Precedent planning decisions may be described if appropriate.

The receiving environment is described in terms of its character, physical characteristics and the various elements that make up the landscape, including cultural, recreational, residential and other amenity values.

Cumulatively this analysis informs a description of the landscape in terms of values that support its protection and conservation and/or its enhancement or change. This reflects best practice guidance under the GLVIA.

11.4.1 Relevant Planning Policy

11.4.1.1 Westmeath County Development Plan 2021-2027

Chapter 12 of the Development Plan Covers Natural Heritage and Green Infrastructure.

Natural Heritage

The Plan sets out to contribute towards the protection of designated ecological sites including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), Ramsar Sites, Flora Protection Order Sites, Wildlife Sites (including Nature Reserves), certain entries to the Water Framework Directive Register of Protected Areas, Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs), Wildfowl Sanctuaries (see S.I. 192 of 1979) and Tree Preservation Orders (TPOs).

Lough Ree is about 1km north of the proposed site. Lough Ree is designated as a SAC, SPA and pNHA.

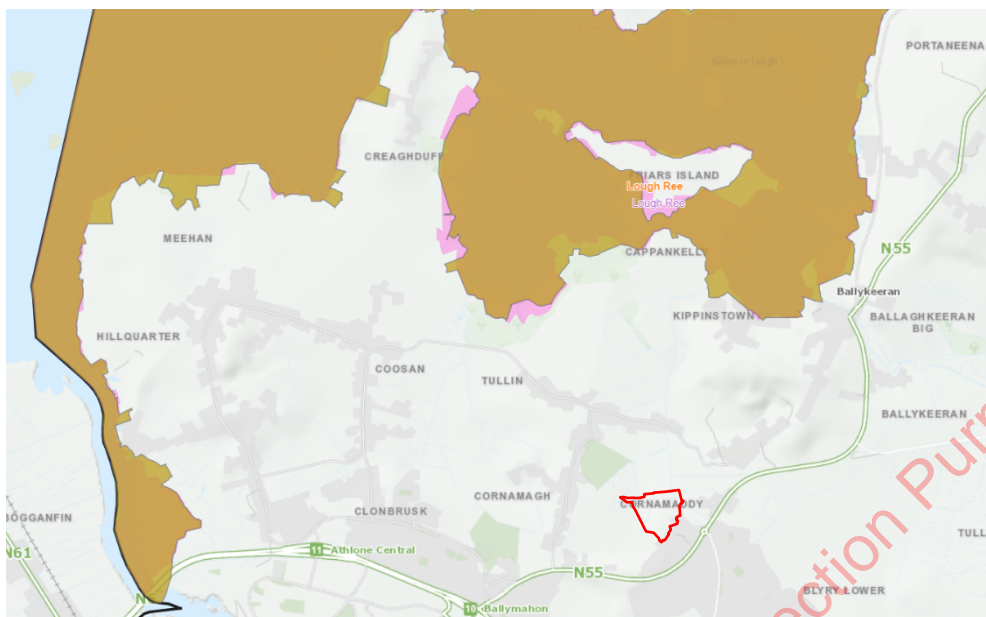


Figure 11.42: Lough Ree SAC, SPA and pNHA.

Relevant policies;

- CPO 12.4 Protect and conserve Special Areas of Conservation, candidate Special Areas of Conservation, Special Protection Areas and candidate Special Protection Areas, designated under the EU Birds and Habitats Directives respectively.
- CPO 12.5 Ensure that no plans, programmes, etc. or projects giving rise to significant cumulative, direct, indirect or secondary impacts on European Sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan (either individually or in combination with other plans, programmes, etc. or projects).
- CPO 12.7 Assess any plan or project in accordance with Article 6 of the Habitats Directive to determine whether the plan or project is likely to have a significant effect on the site either individually or cumulatively upon the integrity, conservation objectives and qualifying interest of any Natura 2000 Site.
- CPO 12.8 Require an ecological appraisal for development not directly connected with or necessary to the management of Natura Sites, or a proposed Natura Site and which are likely to have significant effects on that site either individually or cumulatively.
- CPO 12.13 Protect, manage and enhance the natural heritage, biodiversity, landscape and environment of County Westmeath, in recognition of its importance as both a nonrenewable resource and a natural asset.
- CPO 12.14 Require all new developments in the early pre-planning stage of the planning process to identify, protect and enhance ecological features by making provision for local biodiversity (e.g. through provision of swift boxes, bat roost sites, green roofs, etc.) and provide links to the wider Green Infrastructure network as an essential part of the design process.

Sites of Biodiversity Value and Non-designated Sites

There are many important wildlife habitats; rivers and river banks, ponds, small woods and hedgerows which are essential to the migration, dispersal and genetic exchange of wild species. It is policy to encourage the management of features of the landscape which are of major importance for wild flora and fauna. Relevant objectives;

- CPO 12.23 Seek to create and enhance ecological linkages and buffer zones from development.
- CPO 12.24 Protect and where possible enhance biodiversity and ecological connectivity, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, geological and geo-morphological systems, other landscape features, natural lighting conditions, and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive. Appropriate mitigation and/or compensation to conserve biodiversity, landscape character and green infrastructure networks will be required where habitats are at risk or lost as part of a development.
- CPO 12.25 Recognise that nature conservation is not just confined to designated sites and acknowledge the need to protect non-designated habitats and landscapes and to conserve the biological diversity.
- CPO 12.26 Investigate a protocol in relation to the application of an ecosystem services scoring approach to inform the assessment of planning applications.

Trees, Woodlands and Hedgerows

Trees, woodlands and hedgerows are an important natural and landscape asset. There are no Tree Preservation Orders. Many of the historical field boundaries have been retained on-site, however substantially altered in the immediate surroundings by urban developments. There are no townlands boundaries within the site. Policy Objectives;

- CPO 12.37 Preserve and enhance the amenity and biodiversity value of the County, by promoting the protection of trees, groups of trees and ancient woodlands, of significant amenity value, especially native and broadleaf species.
- CPO 12.38 Protect trees subject to Tree Preservation Orders and seek to designate additional Tree Preservation Orders, where appropriate.
- CPO 12.39 Discourage the felling of mature trees and hedgerow, particularly species rich roadside and townland boundary hedgerows to facilitate development and seek Tree Management Plans to ensure that trees are adequately protected during development and incorporated into the design of new developments.
- CPO 12.40 Protect and preserve existing hedgerows in new developments, particularly species rich roadside and townland boundary hedgerows, and where their removal is necessary during the course of road works or other works seek their replacement with new hedgerows of native species indigenous to the area.
- CPO 12.43 Encourage the protection of the trees which are considered an important component of demesne landscapes.
- CPO 12.45 Require, where necessary, a Tree Management Plan (with suitable native species) to be submitted as part of new development proposals. Ensure that, where possible, established trees are incorporated into the overall design of new developments and are fully protected during development works in accordance with BS standards.

Green Infrastructure Policy Objectives:

- CPO 12.75 Identify, protect and enhance existing and planned Green Infrastructure assets and to facilitate, in consultation with relevant stakeholders, the development of Green Infrastructure that recognises the benefits that can be achieved with regards to the following:
 - Provision of open space amenities
 - Sustainable management of water
 - Protection and management of biodiversity
 - Protection of cultural heritage
 - Protection of protected landscape sensitivities
- CPO 12.76 Ensure green infrastructure responds to and reflects landscape character including historic landscape character, conserving and enhancing the existing landscapes and townscapes of Westmeath which contribute to a distinctive sense of place.

Chapter 13 Landscape and Lake Management covers Westmeath’s Landscape Character Assessment, Areas of High Amenity and Lake Amenities.

Westmeath Landscape Character Assessment

The proposed site falls within the ‘Lough Ree/Shannon Corridor’ Landscape Character Area (LCA) and relatively in close distance to ‘Western Lowlands’ LCA.

Landscape and Lake Amenities Policy Objectives;

- CPO 13.2 Protect the distinctiveness, value and sensitivity of County Westmeath’s landscapes and lakelands by recognising their capacity to sustainably integrate development.
- CPO 13.3 Support and implement objectives contained in any Regional Landscape Character Assessment.
- CPO 13.4 Conserve and enhance the high nature conservation value of the Landscape Character Areas in order to create/protect ecologically resilient and varied landscapes.
- CPO 13.5 Identify and integrate new green and blue infrastructure networks within the existing landscape character areas in the interests of biodiversity and climate change and in recognition of the tourism potential of these assets.
- CPO 13.6 Require that development is sensitively designed, so as to minimise its visual impact on the landscape, nature conservation, archaeology and groundwater quality.

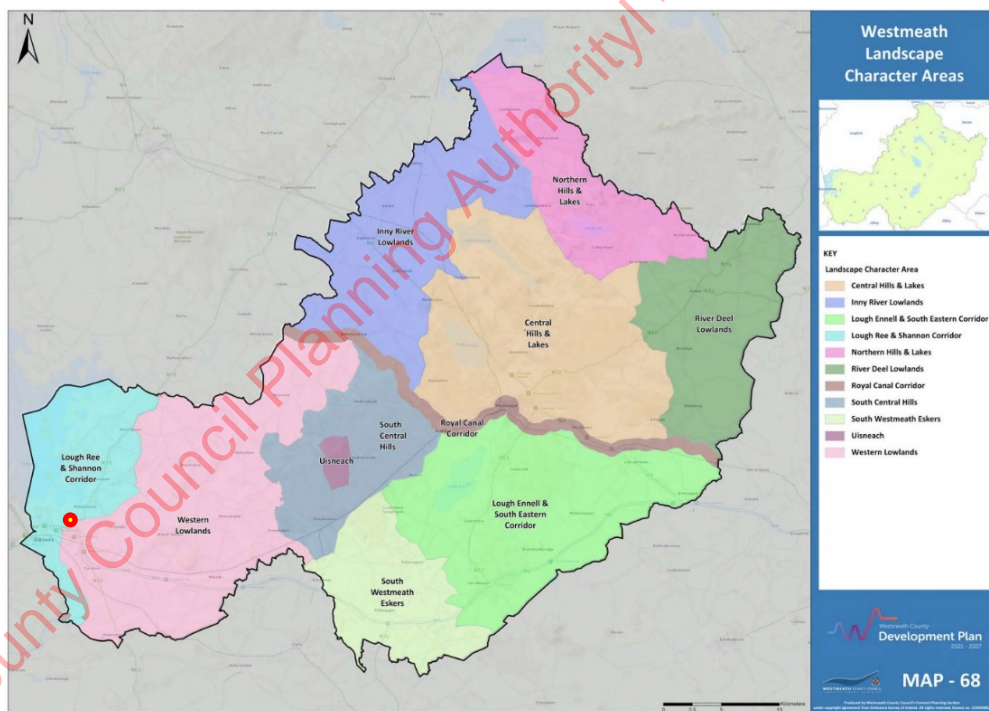


Figure 11.43: Landscape Character Areas

Landscape Character Area 6 Lough Ree/Shannon Corridor, within which the proposed site and masterplan lands lies, is described as (Section 13.12 of the Plan);

“This area includes Lough Ree, the Shannon corridor both north and south of Athlone and associated callows. To the east of the area, Waterstown Lake, Lough Mareegan and the lakeside villages of Ballykeeran, Glasson and Tubberclare are also included. Areas of pastureland are scattered throughout the remainder of the area along with small patches of inland marshes, coniferous forestry and other agricultural uses. A significant area of intact bog remains to the southeast of Athlone and worked out peatland areas are located to the north and south of the Character Area, adjacent to the callows and Lough Ree.

The area has significant conservation status, as SPA, SAC and NHA are all present therein. The Shannon and Lough Ree are important in terms of their recreational and amenity value, as well as their natural heritage importance, thus the quality of these assets must be protected. As development pressure increases around the lakeshore and floodplain, the risk of landscape deterioration also increases.”

Landscape Character Area 7 Western Lowlands, lies south of the N55 and at a distance from the proposed development site, is defined as (Section 13.13 of the Plan);

“The character of this area contains a variety of landscape features including eskers, lakes and bogs. This landscape is generally low-lying but is characterised by a gently undulating topography, particularly around Mount Temple and to the northwest of Moate. Visual containment in the landscape is created by elevated areas and glacial kames, irregular ridges or mounds of gravel deposited by melting glaciers feature at intervals. Low-lying areas, however, are generally contained visually due to high quality, species rich hedges that dominate field boundaries in the area, limiting the extent of views across the landscape. This area includes the settlements of Moyvore, Ballymore, Mount Temple, Moate and Ballinahown and is bounded to the east by the change in topography that characterises the South-Central Hills Character Area at Ballymore and west of Rosemount.”

The proposed development would not physically impact on this LCA. This is noted because of the proximity of the site to this LCA. The Cornamaddy area is not representative of the wider LCA 6 and its sensitivity.

Areas of High Amenity

The proposed site does not fall within an ‘Area of High Amenity’. The Lough Ree Areas of High Amenity lies in close proximity to the site. Relevant Policies;

- CPO 13.20 Protect High Amenity areas from inappropriate development and reinforce their character, distinctiveness and sense of place.
- CPO 13.21 Protect and preserve designated High Amenity Areas from inappropriate urban generated housing development or any other development which would be injurious to or detract from the natural amenity of Areas of High Amenity.
- CPO 13.22 Protect lakeshores from any inappropriate development which would detract from the natural amenity of the area.
- CPO 13.23 Protect and enhance the special landscape character and exceptional landscape value of the Lough Ree Islands, including their significant archaeological, cultural and natural heritage value. Support the preparation for a Plan for the Islands in conjunction with the National Monuments Service and the National Parks and Wildlife Service.

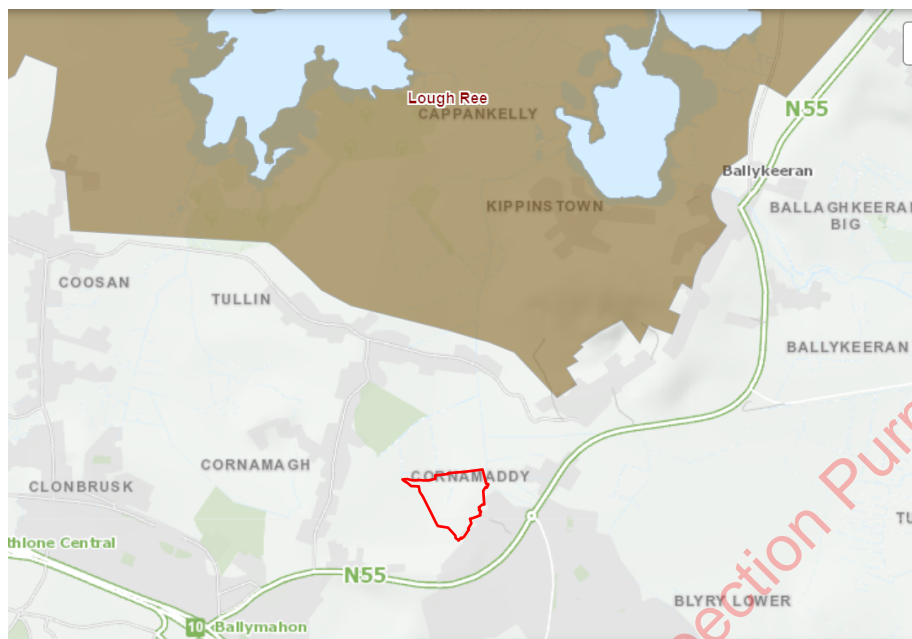


Figure 11.44: Areas of High Amenity

Lakes and Lake Amenities

Lough Ree is about 1km north of the proposed site. The lake itself is not visible from the site. Given the unique landscape it is appropriate to cover the lake amenities.

Lough Ree is one of five most important lakes in Westmeath. All of the five lakes are within designated High Amenity Areas, Special Areas of Conservation, Special Protection Areas and Natural Heritage Areas. Lough Ree is one of the largest lakes in Ireland and is shared between Westmeath and neighbouring counties Roscommon and Longford. Lake Amenities Policy Objectives

- CPO 13.29 Protect the County’s lakes and their shorelines, islands, amenity and biodiversity from inappropriate development.
- CPO 13.30 Protect the scenic quality of lakes from any inappropriate development between public roads and lakeshores that would interrupt a view of the lake or adversely affect its setting or its wildlife habitat. Any development in such instance must be sensitively sited and designed and screened from the lake by existing topography or vegetation.
- CPO 13.35 Promote and enhance the lakes within Westmeath and to develop their natural occurring resources and heritage.
- CPO 13.55 Sustain the established appearance and character of views over the surrounding countryside while facilitating the continued development of uses that sustain the activities that give rise to the appearance and character of the landscape.

Views and Prospects, and Scenic Routes

There are no protected views and prospects in the immediate vicinity of the site.

The Lough Ree Driving Route is a designated scenic route. The route begins at the N6 and N55 junction and follows N55 northbound from N6. The route largely follows the route of N55 and passes in close proximity to proposed site and the larger client landholding.

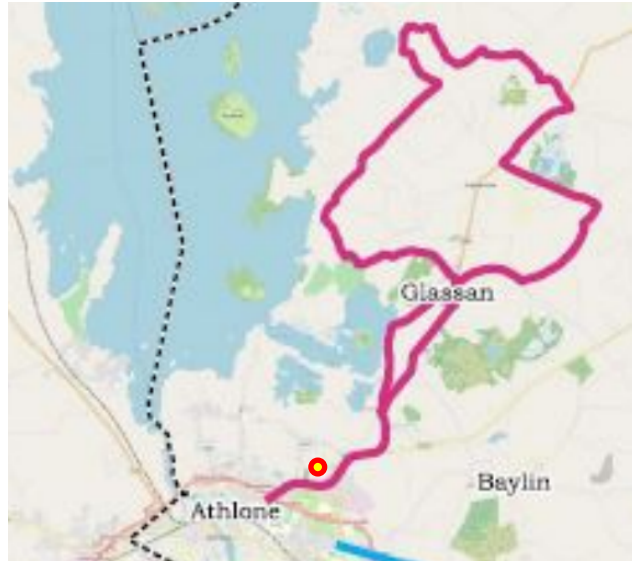


Figure 2.45: Lough Ree Driving Route

Due to existing developments and vegetation the proposed and client landholding is screened from this route. Viewpoints have been identified along this route to assess any visual impact.

Built Heritage

The site does not lie within or close to an Architectural Conservation Area. There are no Protected Structures, Recorded Monuments or Zone of Archaeological Potential within the site or in its immediate vicinity.

Section 2.9 Regional Growth Centre – Athlone

One of the key priority of the development plan, is the preparation and adoption of a Joint Urban Area Plan for Athlone by Westmeath County Council and Roscommon County Council in collaboration with EMRA and NWRA. Core Strategy Policy;

- CPO 2.3 Prepare a joint statutory Joint Urban Area Plan (UAP) for Athlone with Roscommon County Council in collaboration with EMRA and NWRA.

11.4.1.2 Athlone Town Development Plan 2014-2020

The Athlone Town Development Plan 2014-2020 (Town Plan) is expected to be replaced by Athlone Urban Area Plan (UAP), which would be jointly prepared by Westmeath and Roscommon County Council.

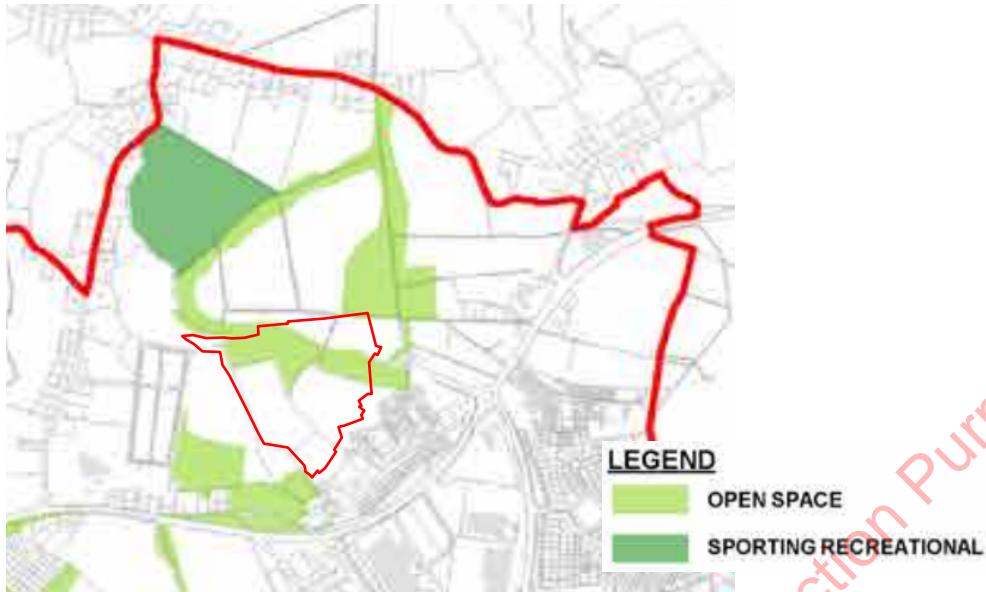


Figure 11.46: Open Space and Recreation zoning

10.12.2 Provision of Amenity, Open Space & Recreation in Athlone

- P-AOR9 To prohibit development that would significantly prejudice the form, character or setting of any recreational amenity, open space, walk or cycle way, or any other identifiable or scheduled amenity asset.
- P-AOR10 To integrate and link open space amenities within the town and to the surrounding countryside.
- P-AOR11 To seek to ensure the provision of sufficient and appropriate active and passive recreational facilities to meet the needs of the towns population and which are of a scale and quality to attract and retain a critical mass of population in the Gateway Town.
- P-AOR12 To develop and facilitate the provision of public open spaces in accordance with standards prescribed in the Sustainable Residential Development in Urban Areas –Guidelines for Planning Authorities 2009.

11.3 Natural Heritage

- P-NH1 To protect, manage and enhance the natural heritage, biodiversity, landscape and environment of Athlone, in recognition of its importance as a non-renewable resource, unique identifier and as a natural resource asset.
- P-NH4 To ensure as far as possible that development does not adversely impact on wildlife habitats and species.
- P-NH9 To protect and conserve wild bird species and their habitats, especially rare or vulnerable species and regularly occurring migratory species.
- P-NH11 To protect and conserve Natural Heritage Areas and proposed Natural Heritage Areas.
- P-NH14 To apply the precautionary principle in relation to development proposals in areas identified as being of local nature conservation interest by requiring a scientific/ecological risk assessment to ensure that the development will not impact on the integrity and habitat value of the site.
- P-NH17 To promote the provision of green infrastructure in Athlone, in the form of linear parks, nature trails, wildlife corridors and urban woodlands.

Section 11.8 and 11.9 Esker Policy and Objectives

The town Plan has identified an esker system in Cornamaddy area of Athlone.. Site 34A – Cornamaddy Low Hill lies within the proposed site.

- P-ESK1 To protect and conserve the landscape, natural heritage and geodiversity value of esker systems in Athlone.

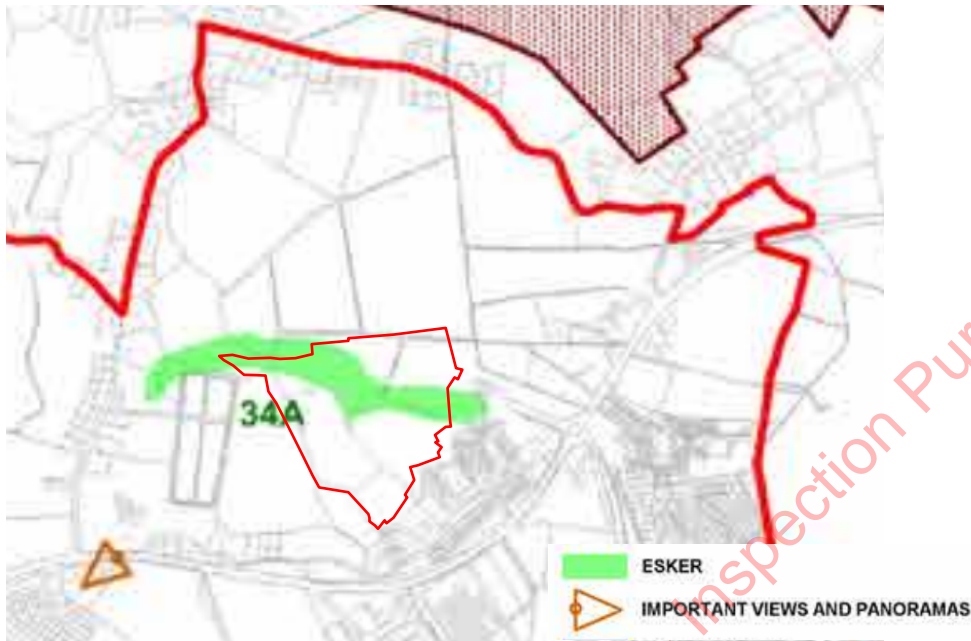


Figure 11.47: Esker sites

A viewpoint has been identified in the Town Plan. This 'Important Views and Panoramas' is oriented towards the town and not towards the site.

Trees, Woodlands and Hedgerows

- P-TWH4 To preserve and enhance the amenity and biodiversity value of the town by preserving as far as possible trees, woodlands and hedgerows.

Chapter 6, Transportation and Movement

- Road Objective: O-TM20 Cornamaddy - Coosan Link Provision of Cornamaddy - Coosan Link passes through the proposed site.



Figure 11.48: Roads objective – distributor road runs along the northern boundary of the proposed site

Land Use Zoning

- The proposed site has split zoning, parts of the site is zoned as 'Proposed Residential' and other as 'Open Space'.

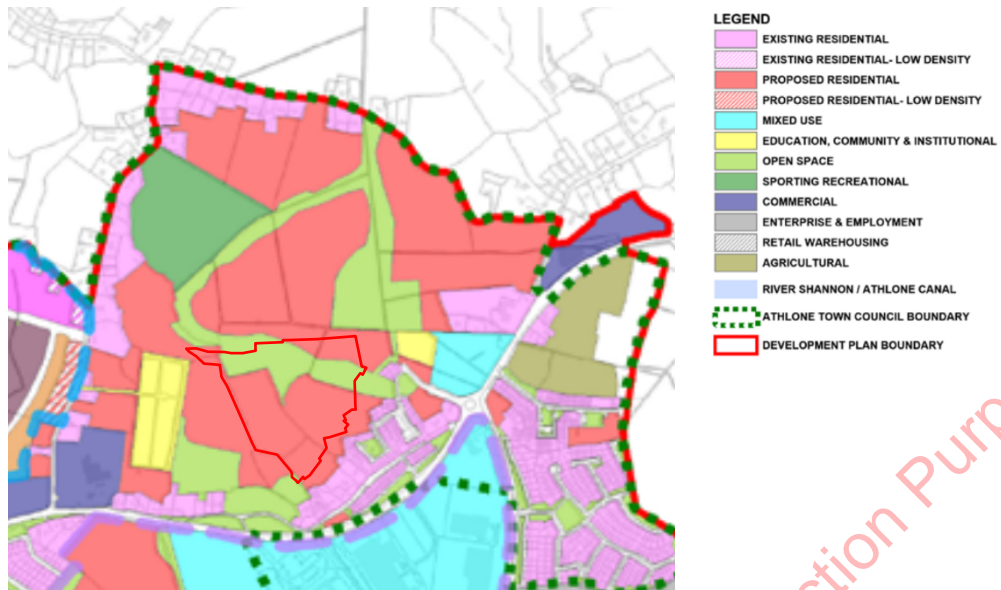


Figure 11.49: Land-use zoning

11.4.1.3 Cornamaddy Action Area Plan 2004

The Cornamaddy Action Area Plan 2004 (AAP) was adopted in 2004. The AAP sets out framework for physical development of Cornamaddy Area in accordance to Athlone and Environs Town Plan 2002-2008.

Although an outdated plan, the AAP sets out development objectives for the application site along with client’s landholding and other land parcels in Cornamaddy.

The Normandy AAP land boundary is aimed to be developed to accommodate;

- Residential development of mixed types and sizes
- Two Neighbourhood Centres
- Childcare facilities
- The existing cemetery
- The plan will consider environmental parameters, access and circulation for all modes of transport, the local context and integration with surrounding land uses.

Regarding Landscape Section 3.7 highlights the approach of the LAP;

“The LAP involves the urbanisation of land that was previously used for agricultural purposes. This will result in a depletion of agricultural land. However, in line with population projections this is deemed to be acceptable as the future population growth needs to be accommodated and the land is zoned and in close proximity to the existing built environment of Athlone town. Those lands and areas that represented the most important ecological habitats and landscape features have been reserved in the interests of biodiversity, visual amenity and public open space. Careful consideration was given to those lands that have the highest contour levels so as to maintain them free from development.”

The Figure 11.10 below shows the Cornmaddy AAP land boundary in red. The indicative alignment of proposed Distributor Road through the Cornamaddy AAP lands are shown in magenta colour.

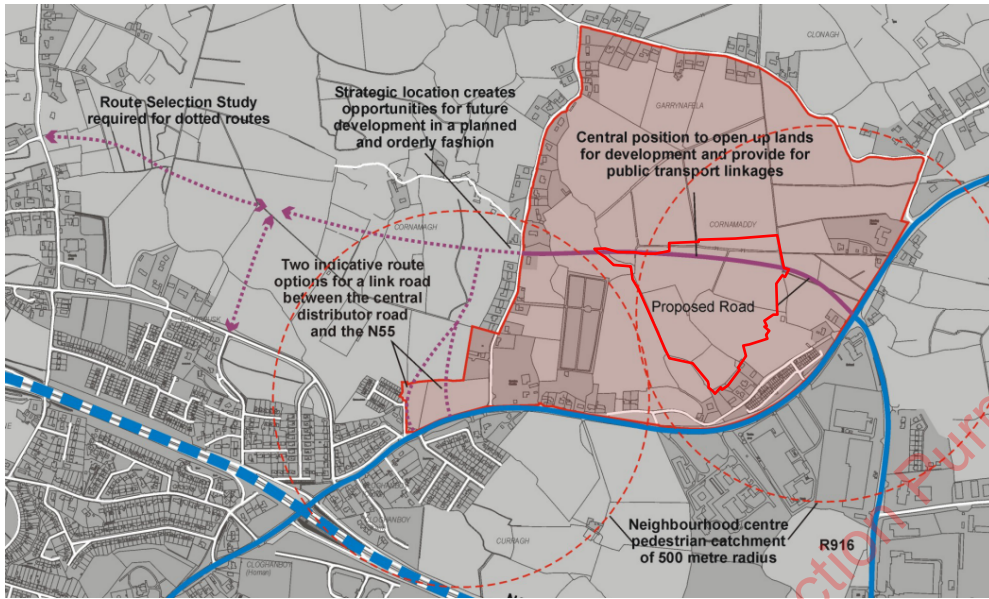


Figure 11.50: Cornamaddy AAP Site Location Map (extract from AAP)

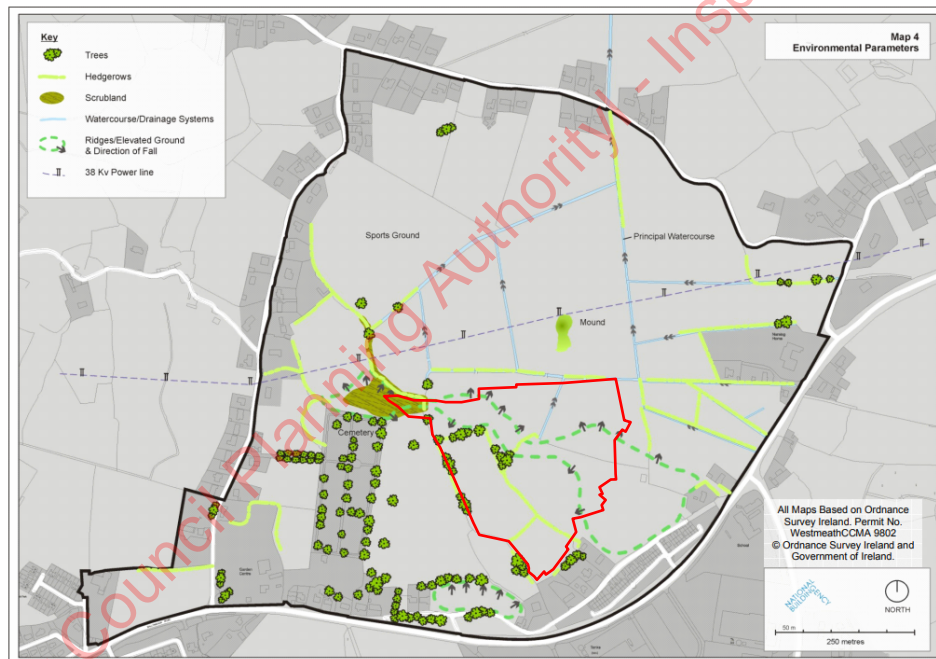


Figure 11.51: Environmental Parameters Map (extract from AAP)

The figure above shows the environmental parameters of the Cornamaddy AAP lands. The parameters shown are trees and hedgerows of value, watercourses/ditches and ridges/elevated lands within the AAP lands.

The figure 11.12 below the residential development and open space framework for the AAP lands.

The site is zoned partly as residential and partly as open space as per AAP. The site lies within Phase 1 of the AAP (Map 10 of the AAP) as per the implementation of the plan.

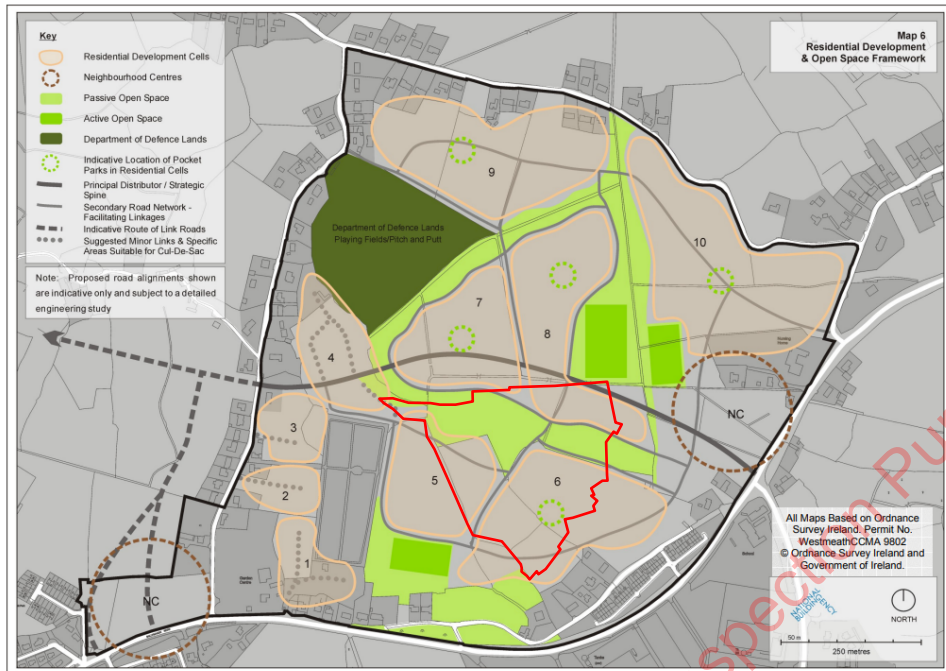


Figure 11.52: Residential Development and Open Space Framework (extract from AAP)

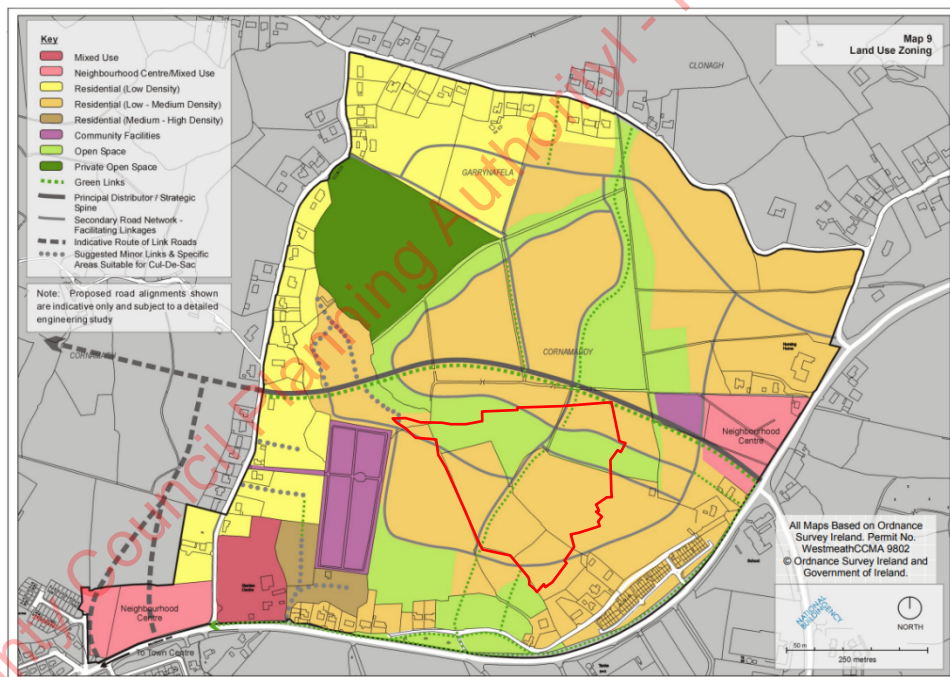


Figure 11.53: Land use Zoning Map (extract from AAP)

The AAP sets out details for residential development, the protection of existing landscape features and outlines strategy for the Cornamaddy AAP lands.

11.4.2 Relevant Planning History

These phases and planning permission are identified in Figure 11.1 above.

Phase / Development	WMCC Ref:	Development	Status

Extant Permission	147103	The construction of 98 no. new dwellings to include 11 no. 4/5 bedroom detached houses, 28 no. 4/5 bed semi-detached houses, 8 no. 3 bedroom detached houses, 34 no. 3 bedroom semi-detached houses, 8 no. 2/3 bedroom terraced houses, 3 no. 2 bedroom houses and 6 no. 2-bedroom bungalow houses. The development to include the provision of all associated site development works including road networks, services, landscaping and boundary treatments. A ten year permission is being sought.	Granted with Conditions
Extant Permission	177224	The Development of 7 no new dwellings to include 3 no 5 bedroom detached houses and 2 no 4 bedroom detached houses with optional fifth bedroom/study and 2 no 4 bedroom semi detached houses with optional fifth bedroom/study and all associated site development works including road networks, services, landscaping, and boundary treatments. A ten year permission is being sought.	Granted with Conditions
Phase 1	22253	The development will consist of the following: • Construction of 75 no. residential units comprising: 51 no. 2 storey semi-detached and terraced houses (consisting 4 no. 2 bed houses and 47 no. 3 bed houses, ranging in size from c.78 sq.m – 120 sq.m each), and 24 no. 3 storey apartment/duplex units (consisting 12 no. 2 bed apartments and 12 no. 3 bed duplexes, ranging in size from 84sq.m to 121 sq.m each), with associated private gardens and east/west facing terraces; • All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a section of the distributor road permitted under WMCC Reg. Ref. 14/7103/ ABP Ref. PL25.244826 to the south east of the site. • All associated site development works, services provision, drainage works, residential open space (c.o.28ha) and public open space (c.o.82ha), landscaping, boundary treatment works, public lighting, 1 no. esb substation cabinets, bin stores, car and bicycle parking provision; • Provision of a new detention basin on the eastern portion of the site designed to cater for the proposed development, in lieu of the drainage works permitted under WMCC Reg. Ref. 14/7103 / ABP Ref. PL 25.244826; • This development will form part of a larger/future phase of the development; • No changes to the existing pumping station located outside the northern site boundary; A Natura Impact Statement has been prepared in respect of this application.	Granted with Conditions

Phase 2	22340	1) Construction of a two Storey childcare facility, including classrooms, reception, kitchen, associated staff areas and office, toilets, storage, plant rooms, circulation areas and photovoltaic panels at roof level (c.668sqm total gross floor area) 2) The proposed facility includes a secure outdoor play area(c. 595 sqm), 18 no. car parking spaces and 20 no. bicycle parking spaces. 3) Existing vehicular access onto the existing link road and provision of an internal access road, footpaths and 2 no. pedestrian access points. 4) All associated site development works, service provision, drainage works, landscape and boundary treatment works and public lighting. 5) This development will form part of a larger/future phase of the development. 6) A Natura Impact Statement has been prepared in respect of this planning application.	Further Information
Phase 4	-	S247 Meeting was held on 06 December 2022. The Council advised on a number of design changes included block sizes, DMURS compliance and linkages etc. The layout is at an early design stage.	Pre-planning Stage

Table 11.43: Relevant Planning History (outlined in Figure 11.1)

Summary of Planning Section and Planning History;

- The proposed site has split zoning of residential and open space.
- The site does not lie within a protected site or ACAs and does not house any protected structures.
- No protected views are orientated towards the site.
- Scenic Route (along N55) passes in close proximity to the subject site.
- There are no tree preservation orders.
- Strategic Road Improvement from Cornamaddy and Coosan Link offers access to the site.
- The site falls within Lough Ree and Shannon Corridor Landscape Character Area 6.
- The lands are subject to Cornamaddy Action Area Plan 2004.
- Planning applications have been lodged for Phase 1 and Phase 2 parcels within the Client landholding. Phase 1 has been granted planning permission. Further Information was requested for Phase 2 planning application.
- The proposed application site is Phase 3. A Pre-planning meeting was held for future development of Phase 4 parcel. There are other approved planning permission in the masterplan area included existing permissions that are not implemented on site.

11.4.3 Description Receiving Environment

11.4.3.1 Cornamaddy Lands and Environs

Context

Cornamaddy is located northeast of Athlone, about 2.4kms from Athlone town centre and within the townland of Cornamaddy. The site is strategically located near N55, a national route linking Cavan in the north and Athlone to the south. The R916 adjoins the N55 and runs southwards connecting with the Athlone Relief Road.

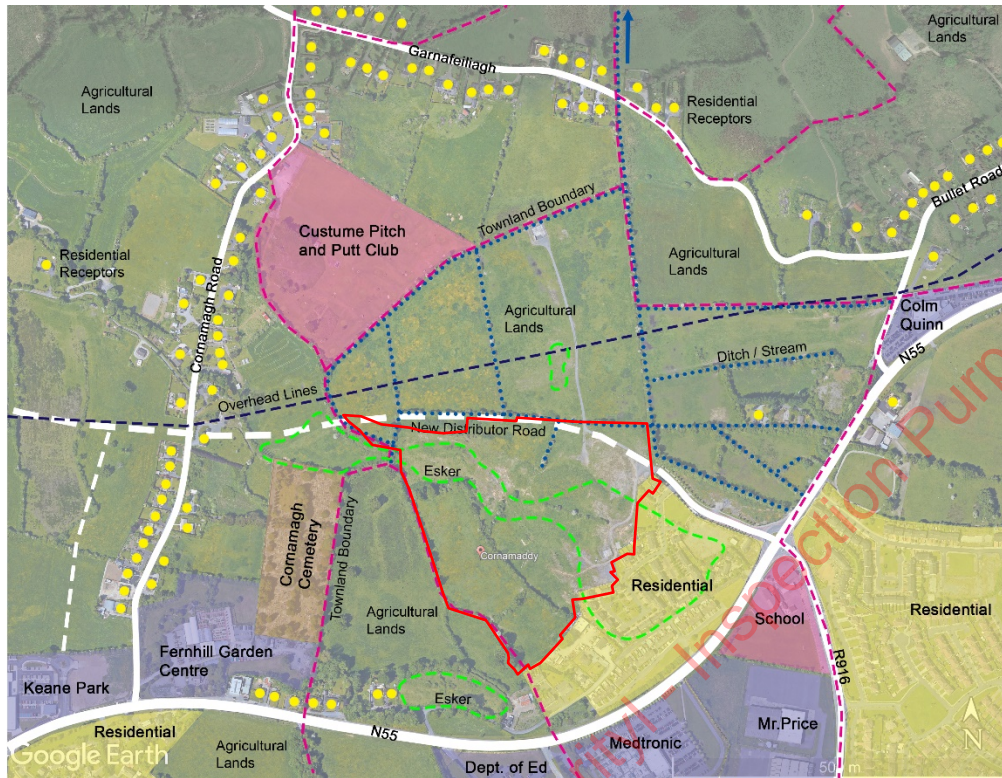


Figure 11.54: Site Context and Area Analysis Map

Land Uses

The land uses vary in the surroundings, from a mix of existing residential, new residential zoned lands, educational and recreational uses, business and employment areas and agricultural lands. Some of these are identified in map 2.14 above.

The lands south of the N55 are more developed and urban in nature. The Mr. Price warehouse and store; Medtronic, a pharmaceutical company; and Department of Education and Skills are large developments found south of the N55. The Woodville Grange residential neighbourhood lies south of N55 and east of R916. Further south along R916 lies Blyry Business & Commercial Park.

The lands north of the N55, i.e., Cornamaddy is more mixed in nature. The area is partly developed immediately north of the N55; the Drumaconn residential neighbourhood, Fernhill Garden Centre and Keane Park lies immediately north of the N55. Further north there are large agricultural fields and sparse development in the form of ribbon development along the local roads. The area is mostly rural in nature.

The Cornamagh Cemetery and Custume Pitch and Putt Club are local points in Cornamaddy.

Topography

The masterplan lands and wider landscape to the north of Athlone is characterised by its undulating esker formations, generally as small pasture fields enclosed with mature hedgerows and tree lines. The esker landscape does not give rise to clearly defined valleys and hilltops but rather a somewhat flatter landscape with prominent localised dry hillocks of gravel deposits (otherwise known as eskers) alongside lower depressions that can become wet and boggy in places where water is unable to drain freely.

In broad terms the landscape of this area is relatively consistent and unassuming, but on a site specific scale, these esker hills can form strong and somewhat dominating features that can define the character of a site.

Field Boundaries, Vegetation and Drainage

As described above the esker landscape of western Westmeath (north of Athlone) is defined by its strongly undulating pasture fields enclosed with hedgerows, often mature hedgerows and tree lines. Tree lines and hedgerows are often associated with drainage ditches that were created to improve the quality of pasture in the lower depressions which would otherwise be boggy and wet. Ditches often contain a combination of slowly moving water and native trees and hedgerow species, making these valuable corridors for biodiversity, particularly those that are well established and mature.

11.4.3.2 The Subject Site

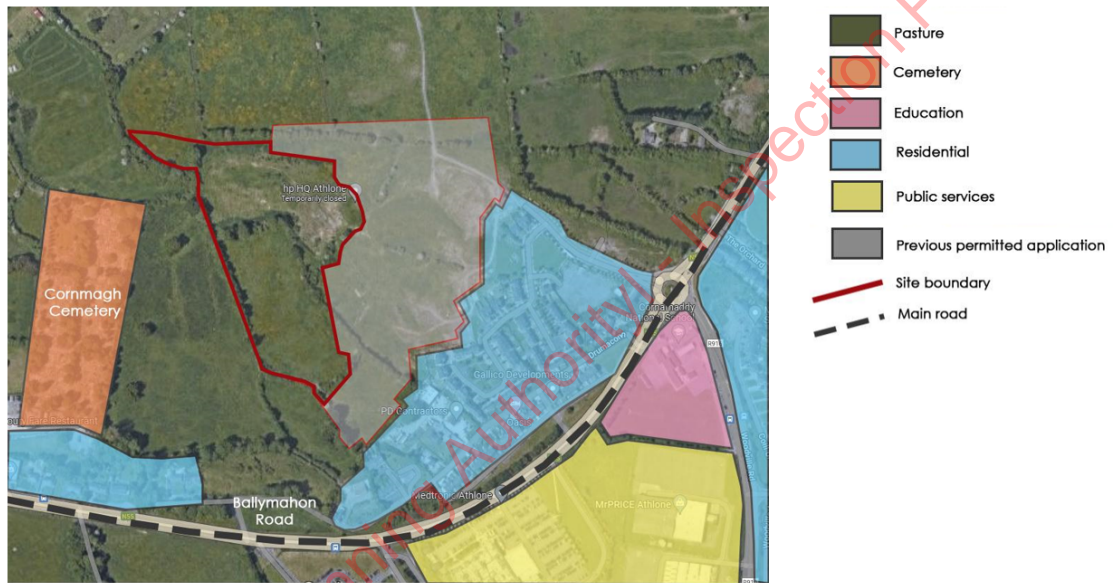


Figure 11.55: Subject Site

Location

The masterplan lands are located within the Cornamaddy townland. The townland of Cornamaddy is adjoined by the townlands of Tullycross (east), Clonagh (north), Cornamagh (west) and Lissywollen (south). Lands at Lissywollen are zoned residential and commercial; Tullycross consists of residentially zoned lands. The townlands to the west and north are unzoned / zoned agriculture and consist of a limited number of residential dwellings.

The masterplan lands are bounded by Custume Pitch and Putt Club and agricultural fields to the north; Comer’s Lands and agricultural fields to the east; Drumaconn residential neighbourhood to the south; and agricultural fields to the west.

The proposed Phase 3 site is within the client’s landholding and forms the south-western part of the masterplan lands. The site comprises one large field (with a prominent esker formation) coupled with smaller parts of two neighbouring fields.

Site Description

The subject site comprises agricultural fields categorised by mature native hedgerows and tree lines, particularly on the western boundary. Currently, the site is under pasture with areas of scrub due to recent lack of grazing.

The fields are characterised by distinctive esker formations, in particular one large formation at the centre of the masterplan area which is to the north of the subject site. These landforms are visually distinctive and characteristic of the wider landscape of Westmeath, offering its own identity and a 'sense of place'.



Plate 1: View from raised esker to the east of subject site, looking west towards phase 3 lands

Access

The site, in private landholding, is currently in agricultural use and access to and from the site from the immediate surroundings is limited. The Masterplan lands can be accessed through the partly developed new distributor road leading from the N55 and R916 roundabout opposite the Cornamaddy National School.

A new distributor road is proposed to connect the roundabout to the Cornamagh Road to the north-west through the masterplan lands. This divides the masterplan lands into two large parcels (north and south).



Plate 2: View eastwards towards the existing site access

Topography

The landscape of the subject site is distinctly undulating and characterised by a single large esker (mounds formed from glacial deposits) to the north. Surrounding these eskers are localized depressions which are drained by ditches that slope gently northwards, although this is generally undetectable when on site.

The esker feature is visually prominent on the site, measuring about 600m in length and of varying width (from 30m to 150m). It dominates the northern portion of the site, at the centre of the masterplan lands.



Plate 3: Topographical undulations visible from an elevated location to the centre of the masterplan lands

Field Boundaries, Vegetation and Drainage

The masterplan lands comprise 8 no. pasture fields enclosed with hedgerows, with those to the south and west being more mature with established trees. The most valuable vegetation on the site is located along the western field boundary and the tree line to the south of the large esker formation.

The fields are mostly covered in long grass as pasture, with areas of scrub vegetation emerging through lack of grazing pressure in recent years. The full length of the western and northern boundaries; and part length of the eastern boundaries are townland boundaries.



Plate 4: Established mature tree lines forming the western boundary (view looking north-west)

The proposed site is made up of 2-3 partial fields. The site partly bound by fields and partly by townland boundary to the north; fields to the east, field boundaries (one of them being townland boundary) to the south and townland / field boundary to the west.

The field boundaries are generally also established drainage features. Water accumulates within the natural depressions between the eskers and drains into these ditches gently making its way northwards. There is a network of established drainage channels across the site. The water eventually joins other principal watercourses to the north and flows into the ‘inner lakes’, Ballaghkeeran Bay, part of the Lough Ree Catchment.



Plate 5: Established trees to the south of the esker formation (view looking north)

Views

Whilst the wider landscape is gently rolling (without notable hills and valleys), the immediate landscape is undulating, with localised elevated areas formed from historic glacial activities. These elevated areas provide locations from where views of the surroundings areas are available. There are longer distance uninterrupted views towards the site and wider masterplan area from these elevated locations to the north-east. Otherwise views of the site are generally fairly restricted, with glimpses available from surrounding elevated locations.



Plate 6: Looking east from site's western boundary

11.4.4 Summary of Landscape Characteristics and Values

The values and characteristics of the site are listed below and can be categorised in two ways – values which should be conserved, and those that provide opportunity for enhancement. These values are summarised below:

Conservation Values

The values to be conserved indicate those aspects of the receiving environment which are valued and sensitive and could be negatively impacted on by the proposed development. These include:

- Landscape resource and elements – esker, matured hedgerows, trees and ditches.
- The interface between existing communities and the site in terms of views, boundary treatments and character.

Enhancement Values

The enhancement values reflect change that is occurring in the landscape and its inherent robustness - The values to be enhanced represents the site's capacity to accommodate change. These include:

- Extensive policy, objectives and actions underway for Cornamaddy area resulting in the lands changing from rural/agricultural to urban.
- Zoning of lands for residential development and open space in the development plan and Athlone Town Development plan.
- The site's location on the edge of an urban area and partially developed urban landscape / area in transition.
- Poor landscape / urban structure and sense of place.
- Objectives to support compact, well-connected, high-quality urban development with a strong sense of place.
- Recent permissions in the environs of the site.
- Roads objective for development to improve public access to open space and unlock access to future residential areas.
- The site and environs is not representative of the wider LCA and its sensitivity.

11.5 Do Nothing Scenario

The 'do-nothing' impact refers to the non-implementation of the proposed development. The primary effect of this would be that the impacts and effects identified above would not directly occur. In this regard, the following issues are relevant.

In the absence of the proposed development, this site would continue to operate as an open network of fields. Its landscape, biodiversity and recreational values would continue to change and it would detract from the evolving urban area. Depreciation and reduced activity could see the increase of antisocial behaviour and fly tipping on the site. The objectives of the Development Plan and Athlone Town Development Plan would not be realised in relation to the site.

11.6 Potential Impacts

Landscape and architectural proposals are part of the design quality of the development i.e. elevations of buildings, materials, tree planting, open space amenity etc are an intrinsic part of the development and its value. They are a requirement for planning (residential amenity / development quality) and Green Infrastructure provision. The overall composition of these elements enhances views or reduces/softens/enhances the landscape / visual impact or effect.

Mitigation is not required in addition to the final design proposals. Therefore potential landscape and visual impacts are the same as the predicted impacts in Section 11.8 below. In this regard mitigation is an integral part of good design (Mitigation by design) but is

not a list of issues to which a specific mitigation solution is proposed but a consequence of many individual design decisions to ensure the development meets residential quality and amenity criteria, greening and local appropriateness, whilst also incorporating environmental protection measures.

11.6.1 Construction Phase

11.6.1.1 Landscape Impact

The potential construction phase landscape impact is the same as the predicted landscape impact and described in Section 11.8 below.

11.6.1.2 Visual Impact

The potential construction phase visual impact is the same as the predicted landscape impact and described in Section 11.8 below.

11.6.2 Operational Phase

11.6.2.1 Landscape Impact

The potential operational phase landscape impact is the same as the predicted landscape impact and described in Section 11.8 below.

11.6.2.2 Visual Impact

The potential operational phase visual impact is the same as the predicted landscape impact and described in Section 11.8 below.

11.6.3 Cumulative Impacts

The potential cumulative landscape and visual impact is the same as the predicted landscape and visual impact and described in Section 11.8 below.

11.7 Mitigation Measures

11.7.1 Incorporated Design Mitigation

The proposed development has been prepared in accordance with best practice national and regional guidelines and policies, including the 'Best Practice Urban Design Manual' (Department of Environment, Heritage and Local Government, 2009) and the 'Design Manual for Urban Roads and Streets' (Department of Transport, Tourism and Sport & Department of Housing, Planning and Local Government, 2013). The proposed overall development with other phases have been laid out to retain and enhance existing landscape features such as tree groups, green infrastructure (water movement) and urban surroundings.

11.7.2 Construction Phase

During construction, there will be a change to the landscape and there will be negative visual impacts for residents and visitors to the areas adjacent to the site associated with construction activity.

The measures proposed revolve around the implementation of appropriate site management procedures – such as the control of site lighting, storage of materials, placement of compounds, delivery of materials, car parking, etc. Visual impact during the construction phase will be mitigated somewhat through appropriate site management measures and work practices to ensure the site is kept tidy, dust is kept to a minimum, and that public areas are kept free from building material and site rubbish.

Site hoarding will be appropriately scaled, finished and maintained for the period of construction of each section of the works as appropriate. To reduce the potential negative impacts during the construction phase, good site management and housekeeping practices will be adhered to. The visual impact of the site compound and scaffolding visible during the construction phase are of a temporary nature only and therefore require no remedial action other than as stated above. It is noted that a Construction Environmental Management Plan (CEMP) has been prepared by Paul McGrail Consulting Engineers, as submitted under separate cover.

Existing trees and woodlands to be retained and are shown in the Landscape Design Report prepared by CSR (included under separate cover as part of this planning application) and Arboricultural Impact Assessment & Method Statement and associated drawings prepared by Charles McCorkell Arboricultural Consultant (included under separate cover as part of this planning application). Existing trees to be retained are particularly sensitive to negative impacts during the construction phase if proper protection measures are not adhered to. With regard to the protection of the retained trees on site during proposed construction works, reference should be made to ‘BS5837: Trees in relation Design, Demolition and Construction – Recommendations’ (BSI, 2012). Tree protection details have been included in the Arboricultural Impact Assessment & Method Statement and associated drawings (included under separate cover as part of this planning application).

Adverse impacts both during construction and operational phases could be mitigated through undertaking appropriate measures listed under Table 13.11, in order to soften and screen views as early on as possible.

Reducing the footprint of all construction works wherever feasible and ensuring the remainder of the land is retained as green field will also limit any adverse effects during the construction phase.

Character of potential impact	Mitigation measure
Visual impact of construction works	Follow appropriate site management procedures, including control of site lighting, storage of materials, placement of compounds, delivery of materials, car parking, etc.
Landscape character	Maintain the character of the site by installing proposed planting in accordance with the proposed landscape plans by CSR Landscape Architects, included separately as part of this planning application.
Existing vegetation	To protect trees to be retained, fell adjacent trees to be removed and grind out stumps in accordance with BS5837:2012.
	Tree / hedgerow protection works to be carried out in accordance with Arboricultural Impact Assessment & Method Statement and associated drawings prepared by Charles McCorkell Arboricultural Consultant (included under separate cover as part of this planning application).

Table 11.44: Mitigation Measures – Construction Stage

11.7.3 Operational Phase

The design of the proposed development incorporates significant consideration in respect of best practice layouts and to successful integration into the receiving environment. The architectural layout aims to address visual impacts by proposing variety

in scale and massing of buildings. Elevations and materiality complement local styles and character.

The retention of hedgerows and trees, where feasible, and the planting of additional trees and shrubs throughout the site and open spaces, where possible, will reduce the visual mass of the buildings, soften and partially screen the development over time from various viewpoints, as identified in the assessment, thereby minimising the visual impacts while creating quality of place and residential amenity.

Landscape works necessary for the creation of a development of quality are proposed with the effect of also avoiding or minimising adverse effects generated due to the proposed development. The planting of substantial numbers of new trees and other planting in the open spaces, the site boundaries and internal roads, both native and ornamental varieties, will enhance the overall appearance of the proposed development and compensate for the removal of hedgerows and trees, where needed, for the construction works, and increase the overall landscape capacity of the site to accommodate development. Native and appropriate planting for biodiversity has been incorporated into the scheme in accordance with the advice of the Project Ecologist (refer to Chapter 8 – Biodiversity).

Public open spaces have been designed as part of an overall design strategy that focuses on creating a ‘sense of place’ and individual character for the development area. The quality of the public realm scheme is of a high standard and the quality of materials proposed is similarly high and robust.

Best practice horticultural methods will be applied to ensure that mitigation measures establish and grow appropriately. Landscape tender drawings and specifications will be produced to ensure that the landscape work is implemented in accordance with best practice. This document will include tree work procedures, soil handling, planting and maintenance.

In conclusion, mitigation is adequately delivered as an integral part of the design of the proposed development, without the need for further mitigation measures to address residual effects.

11.7.4 ‘Worst Case’ Scenario

The ‘worst-case’ scenario would be if the proposed developments failed to safeguard any of the existing valued landscape features or was laid out in a way that failed to respond to surrounding landscape and townscape character, scale, sensitivities and views. Similarly, if the proposed developments are approved but failed to integrate proposed green infrastructure and if the positive attributes of the design and mitigation measures were not carried through in full or enforced by the Local Authority.

11.8 Residual Impact Assessment

The sites enhancement values (as set out in Section 11.4.4, above) reflect a body of policy that is supportive of landscape change at this location (and its environs) as part of general town expansion of Athlone as a growth town, and change that is already underway.

The site’s conservation values (as set out in Section 11.4.4, above) predominantly reflect the core elements of the local landscape designations and the landscape resource.

Overall, the impact of the proposed development is the change of the site from its current agricultural lands (albeit lands that are currently under-utilised) to a high-quality residential neighbourhood.

11.8.1 Landscape Sensitivity

The receiving environment consists of;

- The Subject Site and Cornamaddy Masterplan Lands, and;
- LCA 6 Lough Ree and Shannon Corridor (within which the masterplan lands lie).

The proposed site falls within 'LCA 6 – Lough Ree and Shannon Corridor'. The lakes and lakeshore areas has significant conservation status, as SPA, SAC and NHA. A significant area of the LCA is also recognised as an 'Area of High Amenity'. As such, the landscape sensitivity around the lake, lakeshore and floodplains are 'high' and is of 'high' landscape value.

The value and sensitivity of the LCA in the development plan covers the entirety of the LCA. The LCA as defined in the development plan stresses that the lakes, lakeshores and floodplains are 'highly sensitive', but does not consider urban areas and urban fringe areas of Athlone to be of same sensitivity. The urban fringe areas are zoned for development and is under pressure of development. Therefore the receiving environment is not representative of the wider LCA as described above. The value and sensitivity attached are more reflective of more lakeshore areas rather than the urban area.

The proposed site lies within the Athlone Town Boundary. The proposed site can be characterised as falling within an urban fringe area. The site is zoned for development. The site does not fall within 'designated sites or protected sites' and 'areas of high amenity', and lies about 1km away from the lakeshore. Therefore, the proposed site and immediate environs are not representative of the wider LCA and its sensitivity.

The site's zoning is supportive of development on this site. The immediate surroundings along with the site are zoned for residential and open space uses. Some of the lands in Cornamaddy have already been developed and some with existing planning permission for development. There are other undeveloped land parcels in Cornamaddy that are either under design process or planning process. Therefore, the area is under rapid transition and is reflective of the zoning of the lands.

Therefore, the landscape sensitivity of the receiving environment (reflecting its zoning within the wider LCA) is classified as **'Medium'** - *Areas where the landscape has certain valued elements, features or characteristics but where the character is mixed or not particularly strong... The character of the landscape is such that there is some capacity for change in the form of development. These areas may be recognised in landscape policy at local or county level and the principle management objective may be to consolidate landscape character or facilitate appropriate, necessary change.*

A review of the extent to which the development will affect the views experienced from adjacent landscapes are examined in Section 11.8.3.

11.8.2 Landscape Impacts and Effects

11.8.2.1 Construction Phase

Construction will be programmed and phased over 46 – 48 months (4 years) resulting in ongoing infrastructure, building and related works for that period of time. These are generally visually adverse in nature.

Nonetheless during construction the site and views would be dominated by works and activity.

For the purposes of assessment the Construction Phase Impacts are categorised as Temporary or Early Short Term.

The landscape sensitivity of the receiving environment is described in Section 11.8.1 above i.e. **Medium**.

The magnitude of change during construction phase would be '**Medium**'. This would change the character of the landscape and generate a landscape effect that would be of **Moderate significance**.

Qualitatively, it is expected that all construction works would have an **Adverse** landscape impact. Although valued features would be protected, the works would change the lands until they are re-made into the proposed neighbourhood.

11.8.2.2 Operational Phase

The site's enhancement values (as set out in Section 11.4.4, above) reflect a significant body of policy that is supportive of major landscape change at this location to form a new residential community. Despite its attractive rural qualities, the site is currently surrounded by landscape change and the urbanisation of its setting – it is an area in transition and increasingly an anomaly in this context. Nonetheless, it offers attractive characteristics to contribute to this new environment (reflected in its conservation values, as set out in Section 11.4.4, above).

The impact of the proposed development would be the change of the site from open agricultural landscape to a new residential and sub-urban neighbourhood. Locally, some trees and hedgerows will be affected; however, the proposed development has been laid out to incorporate many of these existing landscape 'green infrastructure' features within its landscape structure of open spaces and networks. The northern most section, where the esker lies is zoned for open space and a large portion of the site is an open space with landscaped areas.

The proposed development has been prepared in accordance with best practice national and regional guidelines and policies, including the Westmeath County Development Plan 2021 – 2027, the 'Best Practice Urban Design Manual' (Department of Environment, Heritage and Local Government, 2009) and the 'Design Manual for Urban Roads and Streets' (Department of Transport, Tourism and Sport & Department of Housing, Planning and Local Government, 2013). The proposed Masterplan development has been laid out to reflect existing landscape features such as topography and urban grain.

The proposed development would impact the full extent of the site (and the wider LCA), resulting in the loss of the agricultural lands. The proposal would introduce residential development into the landscape and associated open space, which, although may be new and prominent, is not uncharacteristic of the area. The proposed development achieves local policy objectives of Westmeath County Council and is in keeping with local land use zoning for residential and open space uses.

The magnitude of change would be **Medium** i.e., *Change that is moderate in extent, resulting in partial loss or alteration to key elements features or characteristics of the landscape, and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic in the context. Such development results in change to the character of the landscape.*

The effect is of **Moderate Significance**.

Qualitatively the landscape effect is **Neutral**, i.e., *Scheme complements the scale, landform and pattern of the landscape(townscape)/view and maintains landscape quality.*

This recognises that, whilst the change in character from open field site in an sub-urban context is complementary to the existing land uses, reflects development potential as set out in statutory plans for the site and has been applied to the site as per the best practice in terms of urban design and Green Infrastructure policy, i.e., retained existing landscape and green infrastructure to form open space network and amenity.

Overtime the new landscape structure will evolve to integrate the new residential area as part of its wider landscape setting and be a ‘Beneficial’ permanent change.

11.8.3 Zone of Influence and Potential Visual Receptors

Based on the assessment of the landscape characteristics, values and sensitivities, 10 representative viewpoints were selected to assess visual impact and effects. These are scheduled and mapped below.

Existing photographs and proposed photomontages are provided by GNET, submitted under separate cover as part of the planning application. The booklet of photomontages should be reviewed in conjunction with this section. The landscape architect’s site survey and verified views were captured in October 2022.

The assessed viewpoints (VP) are shown in Figure 11.16, overleaf, and are listed in Table 11.9, below. A sensitivity rating has been ascribed to each visual receptor based on the definitions provided in Table 11.7. A rationale for the sensitivity rating is provided under the description of each existing view below.

VP	Description of viewpoint	Rationale for selection
1	Cornamaddy National School	<ul style="list-style-type: none"> • Representing road users • Representing school and residential receptors
2	Site Entrance, Drumaconn (Adjacent to Property no. 1)	<ul style="list-style-type: none"> • Representing residential receptors • Representing road users
3a	Looking north-west from Drumaconn open space	<ul style="list-style-type: none"> • Representing residential receptors and open space users
3b	Looking south-east from from Drumaconn open space	<ul style="list-style-type: none"> • Representing residential receptors and open space users
4	Drumaconn (Adjacent to Property no. 64)	<ul style="list-style-type: none"> • Representing residential receptors
5	The Orchard	<ul style="list-style-type: none"> • Representing residential receptors • Representing road users and Scenic Route
6	Blyry Court (Colum Quinn BMW Athlone)	<ul style="list-style-type: none"> • Representing road users
7	Garnafeiliagh (L5479) Field gate entrance	<ul style="list-style-type: none"> • Representing residential receptors • Representing road users
8	Garnafeiliagh (L5479) Field gate entrance	<ul style="list-style-type: none"> • Representing residential receptors • Representing road users

9	Custume Pitch Putt Club Athlone	<ul style="list-style-type: none"> Representing residential receptors and open space users Representing road users
10	Cornamagh (L1475)	<ul style="list-style-type: none"> Representing residential receptors Representing road users
11	Cornamagh Cemetery	<ul style="list-style-type: none"> Representing cemetery users
12	Local Road (Cul-de-sac)	<ul style="list-style-type: none"> Representing elevated views Representing residential receptors
13	The Bullet Road	<ul style="list-style-type: none"> Representing elevated views Representing road users and residential receptors

Table 11.45: List of Viewpoints (EIA assessment area identified with a yellow line)

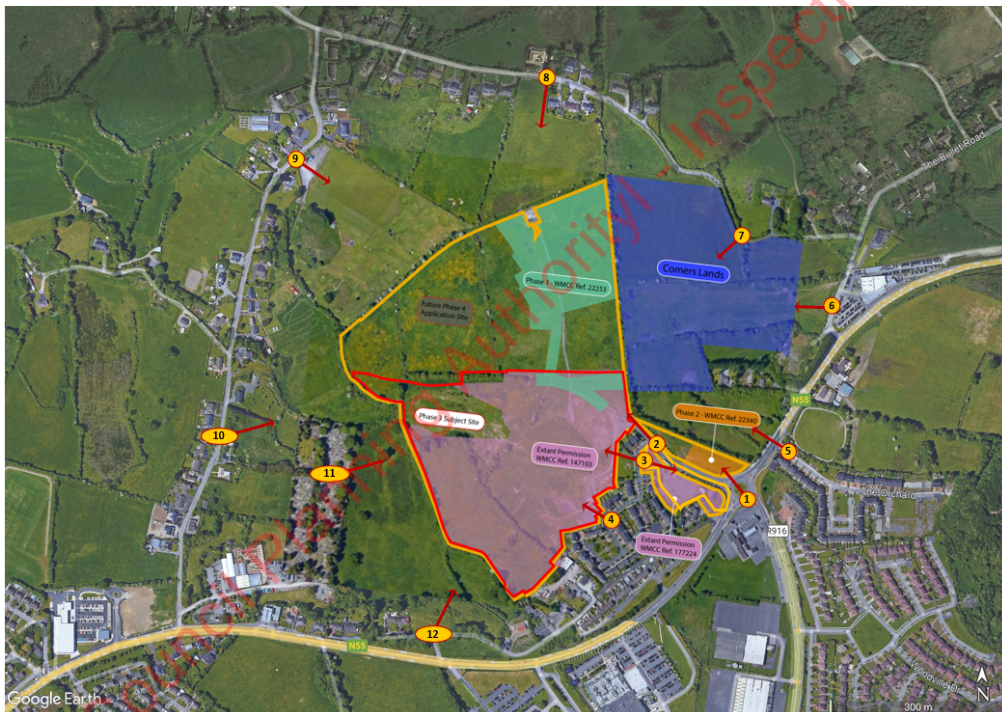


Figure 11.56: Viewpoint Location

11.8.3.1 Photography and Presentation Viewpoints

Each viewpoint is illustrated by a photograph showing the existing view and the photomontage showing the proposed development.

Photomontages have been produced by GNET and are presented in a separate booklet as part of the planning application, with a map of their locations. Verified photographs and photomontages have been taken with a wide angle focal length (FL) and prime lens to allow representation of the development within its context. In all visualisations, the extent of the 50mm FL view has been indicated for reference, which is broadly equivalent to the c.40 degree Horizontal Field of View (HFOV) and is representative of what the human eye perceives and reflects the requirements of the Landscape Institute 'Technical Guidance Note on Visual Representation' (2019).

To correctly view the photomontage at the correct scale, the extents of the 50mm lens or 40 degree angle of view should be extended to A3 in size and viewed at arms length. This can be done by printing a hard copy or, more easily, digitally on screen, allowing reference back to the wider angle to understand the context.

Each viewpoint is described below in its existing condition and the effects of the proposed development. The descriptions, including of the change / effects, focus primarily on the extent of the 50mm image but refer to the context, as appropriate, to inform analysis.

11.8.4 Visual Impacts and Effects

The viewpoints are described below. The impacts and effects during the Construction and the Operational Stage of the development (i.e. post-completion and the use/occupation of the development and the establishment and maturing of landscape works over time) are assessed below.

11.8.4.1 Viewpoint 1: Cornamaddy National School/ N55

Description	<p>The existing view is from the N55 in front of the Cornamaddy National School. The viewpoint is looking north and is located about 400m east of the site boundary. The view is situated on the footpath along the N55 and south side of the N55 and R916 roundabout. The views are representative of views enjoyed by road users (pedestrians and vehicular) and school pupils.</p> <p>In the view, the N55 road corridor and the N55 and R916 roundabout is clearly visible in the foreground and middle ground. In the background, to the left, the roof of a dwelling is visible; in the middle the Distributor Road leading to the site/client landholding is visible; to the right, a stone wall and trees are visible.</p> <p>The view is of a roundabout and road infrastructure and is not particularly distinct.</p> <p>Viewers are considered to be involved in activities and or travelling on the road. This is generally considered of low susceptibility.</p>		
Sensitivity	Medium		
Visual Impacts and Effects			
Construction Phase	Works would not be perceivable.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.2 **Viewpoint 2: Distributor Road, Drumaconn (adjacent to open space)**

Description	<p>The existing view is the junction of Distributor Road and local road leading to Drumaconn residential neighbourhood. The viewpoint is looking north and is located about 300m to the east of the site. The view is situated along the footpath at the junction of Distributor Road and Drumaconn local road, and adjacent to a local open space. The views are representative of views enjoyed by road users (pedestrians and vehicular) and local open space users.</p> <p>In the view, the distributor road and local road junction is visible in the foreground. In the middle ground, a residential dwelling and trees are visible to the left; the distributor road in the middle; and Phase 2 lands and tree row are visible to the right. In the background, a fence and gate leading to the client lands are visible, beyond this is the client lands and further back thick vegetation and tree tops are visible.</p> <p>The view is from a roadside in a residential setting. The view is pleasant with the most attractive landscape features are the trees and vegetation framing the view.</p>		
Sensitivity	Medium		
Visual Impacts and Effects			
Construction Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.3 **Viewpoint 3 Drumaconn Open Space**

Viewpoint 3a: Looking west from Drumaconn open space

Description	<p>The existing view is from the local open space in Drumaconn residential neighbourhood. The view is looking west and is situated about 230 east from the proposed site. The view is representative of views enjoyed by open space users and by local residents.</p> <p>In the foreground, the open space and footpath along the open space is visible. In the middleground, the local road leading to Drumaconn residential neighbourhood is visible. In the background, the lands are slightly elevated and local open space with stone features and associated landscaping (shrubs and trees) and a fence are visible. Behind the fence is the client lands.</p> <p>This is an attractive view from a local open space.</p>
--------------------	---

Sensitivity	High		
Visual Impacts and Effects			
Construction Phase	Limited visibility of cranes or construction activity from this location		
	Magnitude of Change	Negligible	
	Importance of Effect	Quality	Duration
	Slight - Not significant	Neutral	Temporary
Operational Phase	The proposed development is barely visible in the view.		
	Magnitude of Change	Negligible	
	Importance of Effect	Quality	Duration
	Slight - Not significant	Neutral	Permanent

Viewpoint 3b: Looking south-east from Drumaconn open space

Description	<p>The existing view is from the local open space in Drumaconn residential neighbourhood. The view is looking south-east and is situated about 230m east from the proposed site. The view is representative of views enjoyed by open space users and by local residents.</p> <p>In the foreground, the local space and associated landscaping is visible. In the middle ground, to the left the distributor road is visible and in the middle a fenced area of undeveloped client lands (with extant permission ref: 177224) is visible. In the background, a dwelling is visible within the fenced area.</p> <p>To the east of the distributor road is Phase 2 lands, which is screened by existing vegetation. To the right of the view and behind the view, is Drumaconn residential neighbourhood and not visible in the view.</p> <p>This is an attractive view from a local open space.</p>		
Sensitivity	High		
Visual Impacts and Effects			
Construction Phase	The proposed Phase 3 would not be visible from this location..		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

Operational Phase	The proposed Phase 3 is barely visible in the view.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.4 Viewpoint 4: Drumaconn Residential Neighbourhood

Description	<p>The existing view is from the Drumaconn residential neighbourhood. The view is looking north and is located 150m east of the proposed site. The view is located along the footpath within a residential setting. The views are representative of views enjoyed by local residents in a residential setting.</p> <p>In the foreground, the local road is visible. In the middle ground, landscaping (shrubs and tree) to the left; a cul-de-sac road (behind a grass verge) to the middle; and a dwelling to the right are visible. There is a fence in the view, beyond in the background are undeveloped lands within the landholding of the developer (with extant permission ref: 147103) and further in the horizon, hedgerow and tree tops are visible.</p> <p>The view is pleasant and is from a residential setting. However the view will change as permitted development is built with in the open fields in the middle of the view.</p>		
Sensitivity	Medium i.e., <i>Although a residential setting suggests high susceptibility, the outlook is of a landscape in transition.</i>		
Visual Impacts and Effects			
Construction Phase	The proposed Phase 3 would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed Phase 3 would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.5 Viewpoint 5: The Orchard

Description	The existing view is from The Orchard, local residential road leading to a residential neighbourhood and a cul-de-sac . The view is looking
--------------------	---

	<p>north and is about 475m east of the proposed site. The view is located along the footpath within a residential setting. The views are representative of views enjoyed by road users (pedestrians and vehicular) and residential receptors.</p> <p>The view is looking at the local road and footpaths in the foreground. In the middle ground, the N55 National Road and stone wall piers are visible. In the background mature vegetation is visible. The existing vegetation in the view screens long distance views from this location.</p> <p>The outlook of the view is pleasant and is from a residential setting.</p>		
Sensitivity	High		
Visual Impacts and Effects			
Construction Phase	The proposed Phase 3 would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed Phase 3 would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.6 Viewpoint 6: Blyry Court (Colum Quinn BMW Athlone)

Description	<p>The existing view is from the Blyry Court , local road connecting N55 and The Bullet Road. The view is looking west and is located about 600m from the proposed site. The view is located along the footpath of the local road and adjacent to the entrance of Colm Quinn Car dealership complex. The complex itself is behind the viewpoint. The views are representative of views enjoyed by road users and Colum Quinn complex users.</p> <p>In the foreground, the local road and hedge along the road is visible. The overhead electric line runs through the landscape. Agricultural lands zoned for residential development (3rd party owners) is visible in the middle ground along with thick hedgerow field boundaries to the right and woodland planting to the left. In the background, after the first field are the client’s landholding. In the backdrop of the view, there is more vegetation and some of existing dwellings along Cornamagh Road are visible within gaps in the vegetation.</p> <p>The view is a rural setting with some evidence of built environment. The setting offers pleasant views.</p>
--------------------	---

Sensitivity	Medium		
Visual Impacts and Effects			
Construction Phase	The proposed Phase 3 would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed Phase 3 would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.7 Viewpoint 7: Garnafeiliagh (L5479) Field Gate Entrance

Description	<p>The existing view is from a local road (L5479) in the Cornamaddy area. The views is looking south-west and is located 450m from the proposed site. The view is situated along the local road in front of a field entrance where there is gap in the vegetation. The views are representative of views enjoyed by farmers and local road users.</p> <p>In the foreground, the agricultural fields zoned for residential development (3rd party owners) are visible. In the middle ground thick hedgerow field boundaries are visible. In the background, more agricultural fields (client landholding) and field hedgerow boundaries are visible. The lands are undulating and an esker / elevated grounds are also visible in the background. An overhead electric line runs through the landscape.</p> <p>The view is a rural landscape setting with no evidence of built elements.</p>		
Sensitivity	Medium		
Visual Impacts and Effects			
Construction Phase	The proposed Phase 3 would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
	The proposed Phase 3 would not be visible from this location.		

Operational Phase	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.8 Viewpoint 8: Garnafeiliagh (L5479) Field Gate Entrance

Description	<p>The existing view is from a local road (L5479) in the Cornamaddy area. The view is looking south and is located 500m from the proposed site. The view is situated along the local road in front of a field entrance and adjacent to a residential dwelling. The views are representative of views enjoyed by local residences along the local road.</p> <p>In the foreground, the agricultural field zoned for residential development (3rd party owners) is visible. In the middle ground, to the left of the view, a hedge and roof of a residential dwelling are visible; in the middle the agricultural field is visible and to the left thick hedgerow is visible. The lands are noticeably sloping upwards and this limits long distance views. In the background, over the ridge some tree tops are visible.</p> <p>The view is of a rural landscape setting. The view is through a field gate entrance along a local road adjacent to residential receptors.</p>		
Sensitivity	Medium		
Visual Impacts and Effects			
Construction Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.9 Viewpoint 9: Custume Pitch Putt Club Athlone

Description	<p>The existing view is from the Custume Pitch Putt Club. The view is looking east and located 150m from the proposed site. The view is situated in the parking area of the Club. The views are representative if views enjoyed by users of the club.</p> <p>In the foreground, the parking area, low wooden fence and the Custume Pitch and Putt Club sign are visible. In the middle ground, the playing pitch is visible and to the right a tree group is visible. Behind the pitch is a hedgerow field boundary beyond which lies undeveloped lands within the developers landholding.</p> <p>The field boundary along client landholding / the Club filed boundary is a ditch and is lower than the rest of the landscape.</p> <p>In the background the developers landholding is visible, the undulating landscape and presence of an esker is also visible. The existing Drumaconn Residential neighbourhood acts as a backdrop to the view.</p> <p>The view offers scenic views of the area, however the users would be involved in activities and would not be entirely focused on the view.</p>		
Sensitivity	Medium		
Visual Impacts and Effects			
Construction Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.10 Viewpoint 10: Cornmagh Local Road (L1475)

Description	<p>The existing view is from the Cornmagh Local Road. The view is looking east and is located 400m from the site boundary. The view is situated along the local road and adjacent to and in front of residential dwellings. The views are representative of views enjoyed by road users and residential receptors.</p> <p>The existing view is from an elevated position. In the foreground, an empty field with thick hedgerow and vegetation around the field is visible. The lands seems to be subject to tipping and landfill. The lands are at a lower elevation compared to the viewpoint. In the middle ground, thick vegetation covers the area and medium range views are limited or the agricultural fields are partially visible within gaps in the</p>		
--------------------	--	--	--

	<p>vegetation. To the right of the middle ground, the vegetation (mature trees) within the Cornmagh Cemetery are visible.</p> <p>The elevated lands and tree line acts as a backdrop to the view.</p> <p>The overall view is mixed.</p>		
Sensitivity	Medium		
Visual Impacts and Effects			
Construction Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.11 Viewpoint 11: Cornmagh Cemetery

Description	<p>The existing view is from Cornmagh Cemetery lands. The view is looking east towards the site and is located about 150m from the proposed site. The view is representative of views experienced by visitors of the cemetery.</p> <p>In the foreground, the cemetery and gravestones is visible. A stone wall demarks the edge of the cemetery and there is a large tree along the boundary. In the middle ground, an agricultural field is visible with a fence and associated field boundaries with mature vegetation. Further behind the field is the proposed development site. The trees and hedgerow along the western boundary of the site are also visible. Further in the background, the existing Drumaconn residential area can be seen.</p> <p>This is a pleasant outlook from a local cemetery.</p>		
Sensitivity	Medium		
Visual Impacts and Effects			
Construction Phase	The proposed works would be visible in the background of the view.		
	Magnitude of Change	Medium	
	Importance of Effect	Quality	Duration

	Moderate	Adverse	Temporary
Operational Phase	The roofs of the residential dwellings are visible in middle and right of the background of the view. Most of the proposed development is screened by existing developments. The proposed development is not uncharacteristic in the context.		
	Magnitude of Change	Medium	
	Importance of Effect	Quality	Duration
	Moderate	Neutral	Permanent

11.8.4.12 Viewpoint 12: Local Road (cul-de-sac)

Description	<p>The existing view is a local road within Cornamaddy Area. The view is looking north towards the site and is about 150m to the south of the site. The viewpoint is located on higher ground compared to the immediate surroundings. The views are representative of views experienced by local road users and from elevated lands.</p> <p>In the foreground and middle ground, the field and associated field boundaries are visible. In the background of the view, the lands slopes down northwards and there are long distance views available due to elevated viewpoint. There is some evidence of built elements in the view where there are gaps in the vegetation.</p> <p>This is a pleasant view of the landscape.</p>		
Sensitivity	Medium		
Visual Impacts and Effects			
Construction Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.8.4.13 **Viewpoint 13: The Bullet Road**

Description	<p>The existing view is from the Bullet Road, a local road adjacent to residential developments. The view is looking west at the Cornamaddy area and the viewpoint is located about 1km from the proposed site. The view is from an elevated position overlooking the area. The views are representative of view enjoyed by local road users and the local residents.</p> <p>In the view, the Bullet Road, grass verge and fencing is visible. In the middle ground, a local residence is visible to the right of the road with associated trees. In the background, in the middle of the view, trees and layering of hedgerows are visible, screening long distance views and to the right side, the rural landscape setting and houses in the area are visible.</p> <p>This is pleasant view from an elevated location.</p>		
Sensitivity	High		
Visual Impacts and Effects			
Construction Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-
Operational Phase	The proposed development would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.9 **Cumulative Impacts**

A number of permitted and proposed developments in the vicinity of the proposed development site are listed in Chapter 16 of this EIAR and same is highlighted in Section 11.4.2 of this chapter.



Table 11.46: Phases of development and Permitted Development within Cornamaddy Area

This would reflect the change on the lands and the receiving environment (site and immediate settings of Cornamaddy). The Cornamaddy area is already partly developed along the northern section of N55. There are other land parcels either with planning permission for development or in the planning process for permission. Therefore, the transition of the area has already begun. Overall, the Cornamaddy area is transforming to be developed as a sustainable residential neighbourhood.

11.9.1 Landscape Impacts and Effects

The masterplan lands along with other land parcels in the Cornamaddy area are zoned for development. Some of the land parcels have acquired planning permission and others in either in design process or in planning process.

There will be landscape change from existing agricultural lands to a residential neighbourhood.

Therefore, the cumulative landscape change on the receiving environment would be **High** i.e., *Change that is moderate to large in extent, resulting in major alteration to key elements features or characteristics of the landscape... Such development results in change to the character of the landscape.*

The sensitivity of the landscape was identified in Section 11.4.5, i.e., **Medium**. The resulting cumulative effect would be **Moderate – Significant**, depending in the proximity to the change.

Qualitatively the landscape effect is **Neutral** i.e., *Scheme complements the scale, landform and pattern of the landscape(townscape)/view and maintains landscape quality.*

This recognises that, whilst the change in character from agricultural lands to a residential neighbourhood in a sub-urban context is complementary to the existing land uses, reflects development potential as set out in statutory plans for the site and has been applied to the site as per the best practice in terms of urban design, open space development and Green Infrastructure policy.

Overtime the new landscape structure will evolve to integrate the new residential area as part of its wider landscape setting and be a '**Beneficial**' permanent change.

11.9.2 Visual Impacts and Effects

The viewpoints were described in detail and visual sensitivities were identified in Section 11.8.2 above. The cumulative visual impacts and effects are assessed below, that is the cumulative impact of the proposed development with permitted development and proposed developments in the area / client landholding.

11.9.2.1 Viewpoint 1: Cornamaddy National School/ N55

Sensitivity	Low		
Cumulative Visual Impacts	The Phase 2 development within the Client landholding would be visible to the north of the roundabout and at the corner of N55 and Distributor Road. The two blocks visible are in the background of the view and represent the urbanisation of the area. Other phases would not be visible in the view.		
	Magnitude of Change	Medium	
	Importance of Effect	Quality	Duration
	Slight	Neutral	Permanent

11.9.2.2 Viewpoint 2: Distributor Road, Drumaconn (adjacent to open space)

Sensitivity	Medium		
Cumulative Visual Impacts	The change to the view would include the distributor road in the middle beyond the fenceline. Phase 1 development would be visible to the right and background of the view; the roofs of 6 no. duplex units are visible. The extant permission is screened by existing developments. Most of the landscape features of interest are retained.		
	Magnitude of Change	Medium	
	Importance of Effect	Quality	Duration
	Moderate	Neutral	Permanent

11.9.2.3 **Viewpoint 3: Drumaconn Open Space**

Viewpoint 3a: Looking west from Drumaconn open space

Sensitivity	High		
Cumulative Visual Impacts	The cumulative change would include the extant permission visible in the background of the view. The roofs of some residential dwellings will be visible over the ridge. Most of the permitted development will be screened due to topography change and vegetation in this view. Most of the landscape features of interest are retained.		
	Magnitude of Change	Low	
	Importance of Effect	Quality	Duration
	Moderate – Slight	Neutral	Permanent

Viewpoint 3b: Looking south-east from Drumaconn open space

Sensitivity	High		
Cumulative Visual Impacts	The cumulative change would include the Phase 2 development beyond to the east of the distributor road. The duplex block is partially visible in the gap in the vegetation and is not prominent. The view would also include the extant permission ref: 177224 in the foreground behind the fence. Most of the landscape features of interest are retained, i.e., the developments are framed within the landscape.		
	Magnitude of Change	Low	
	Importance of Effect	Quality	Duration
	Moderate - Slight	Neutral	Permanent

11.9.2.4 **Viewpoint 4: Drumaconn Residential Neighbourhood**

Sensitivity	Medium i.e., <i>Although a residential setting suggests high susceptibility, the outlook is of a landscape in transition.</i>		
Cumulative Visual Impacts	The cumulative change would include the extant permission (ref: 147013) in the middle ground behind the fence and the house. A new local road and footpath will be visible in the middle of the view leading to this permitted development area.		
	The view would change to include the already permitted but not yet constructed development. Other phases of development would not be visible from the location or will be screened by existing development or vegetation.		

	Most of the landscape features are retained.		
	Magnitude of Change	High	
	Importance of Effect	Quality	Duration
	Significant	Neutral	Permanent

11.9.2.5 Viewpoint 5: The Orchard

Sensitivity	High		
Cumulative Visual Impacts	<p>The cumulative change would include the Phase 1 development in the background of the view. The roofs of few dwellings of Phase 1 development are partially visible in the gaps in the vegetation. Other phases are not visible.</p> <p>Most of the landscape features are retained.</p>		
	Magnitude of Change	Negligible	
	Importance of Effect	Quality	Duration
	Slight – Not significant	Neutral	Permanent

11.9.2.6 Viewpoint 6: Blyry Court (Colum Quinn BMW Athlone)

Sensitivity	Medium		
Description	<p>The agricultural fields visible in the view are zoned for residential development. The client lands are visible in the middle of the background also zoned for residential and open space development. There is major landscape change expected at this location.</p>		
Cumulative Visual Impacts	<p>The foreground is expected to change from agricultural fields to a residential setting. Overtime, when these lands are developed the views towards the masterplan lands will diminish.</p> <p>Currently, the cumulative change would include the Phase 1 development in the middle of the background. The change will include terraced houses and duplexes in the view. Overtime as landscaping proposals mature within Phase 1, the development will be partially screened.</p> <p>Other phases of development within the client landholding are not visible.</p>		
	Magnitude of Change	Medium	
	Importance of Effect	Quality	Duration

	Moderate	Adverse in short term and Neutral in medium to long term	Permanent
--	-----------------	--	-----------

11.9.2.7 Viewpoint 7: Garnafeiliagh (L5479) Field

Sensitivity	Medium		
Description	The agricultural fields visible in the view are zoned for residential development. The client lands are visible in the middle of the background also zoned for residential and open space development.		
Cumulative Visual Impacts	The foreground is expected to change from agricultural fields to a residential setting. Overtime, when these lands are developed the views towards the client landholding will diminish. Currently, the cumulative change would include partially visibility if the Phase 1 development to the right of the background of the view. Overtime as landscaping proposals mature within Phase 1, this development will be partially screened. Other phases of development within the client landholding are not visible.		
	Magnitude of Change	Medium	
	Importance of Effect	Quality	Duration
	Moderate	Adverse in short term and Neutral in medium – long term	Permanent

11.9.2.8 Viewpoint 8: Garnafeiliagh (L5479) Field

Sensitivity	Medium		
Description	The agricultural field visible in the view is zoned for residential development. The masterplan lands are at a distance is not visible from this location due to elevated lands in the foreground.		
Cumulative Visual Impacts	The foreground is expected to change from agricultural field to a residential setting. Overtime, when these lands are developed the views towards the client landholding will diminish. Currently, the cumulative change would include partial visibility of 2 no. roofs of dwellings within Phase 1 development to the left of the background of the view over the crest. Most of the Phase 2 is screened behind existing developments. Other phases of development within the client landholding are not visible.		
	Magnitude of Change	Negligible	

	Importance of Effect	Quality	Duration
	Not significant	Neutral	Permanent

11.9.2.9 Viewpoint 9: Custume Pitch Putt Club

Sensitivity	Medium		
Cumulative Visual Impacts	<p>The cumulative change would include the extant permission (ref: 147103), distributor road and Phase 1 development will be visible in the cumulative view. Phase 1 residential development (duplexes and houses) are partially visible to the left in the background of the view; the distributor road to the middle of the view; and the extant permission / not yet constructed development (ref: 147103) in front of the existing Drumaconn residential area to the middle and right of the view. Overtime as landscape proposals mature within respective phases / developments, the visibility of the built elements is to reduce.</p> <p>The Phase 4 lands are in front of the Phase 1 development and behind the pitch. The Phase 4 development is at an early design stage and it is expected to be visible to the left hand side.</p> <p>Overtime, landscaping proposals and as existing landscape matures, the visibility of the residential developments is expected to be a backdrop to the activities.</p> <p>Cumulatively, the background of the view is expected to change from agricultural fields to a residential neighbourhood.</p>		
	Magnitude of Change	High	
	Importance of Effect	Quality	Duration
	Significant	Adverse in the short term and Neutral in the Medium - long term	Permanent

11.9.2.10 Viewpoint 10: Cornmagh Local Road (L1475)

Sensitivity	Medium
Description	The lands visible in the foreground are zoned for residential development. The lands are subject to landfill and there is an expected landscape change from rural setting to sub-urban setting.
Cumulative Visual Impacts	The cumulative change would include the Phase 1 development in the middle of the background behind existing vegetation. 2 no. dwelling blocks within the Phase 2 development are partially visible within gaps in the vegetation. Most of the development is screened by existing vegetation. Other phases or development not visible from this location. Over time as landscaping proposals mature the development is mostly screened. Most of the landscape features are retained.

	Magnitude of Change	Medium	
	Importance of Effect	Quality	Duration
	Moderate	Neutral	Permanent

11.9.2.11 Viewpoint 11: Cornamagh Cemetery

Sensitivity	Medium		
Description	The field visible adjacent to the Cemetery lands are zoned for development. Overtime the lands visible will change for agricultural fields in a rural landscape setting to sub-urban residential setting.		
Cumulative Visual Impacts	The proposed development / Phase 3 (terraces of the houses) are visible in the middle and right of the background of the view. None of the phases or developments are not visible in the view. The landscape features and characteristics visible are maintained. Therefore, there will be no cumulative impact.		
	Magnitude of Change	Medium	
	Importance of Effect	Quality	Duration
	Moderate	Neutral	Permanent

11.9.2.12 Viewpoint 12: Local Road (cul-de-sac)

Sensitivity	Medium		
Cumulative Visual Impacts	The Phase 1 development would be partially visible in the gap in the vegetation. Due to topography changes, the client landholding is located lower than the viewpoint location. Therefore, most of the phases or development would not be visible in the cumulative view.		
	Magnitude of Change	Negligible	
	Importance of Effect	Quality	Duration
	Slight	Neutral	Permanent

11.9.2.13 Viewpoint 13: The Bullet Road

Sensitivity	Medium		
Cumulative Visual Impacts	The proposed and permitted developments would not be visible from this location.		
	Magnitude of Change	No change	
	Importance of Effect	Quality	Duration
	-	-	-

11.10 Summary

11.10.1 Landscape Impacts and Effects

Phase	Landscape Sensitivity	Magnitude of Change	Significance	Quality	Timescale	Comments
Construction Phase	Medium	Medium	Moderate	Adverse	Temporary / Early Short Term	It is expected that all construction works would have an adverse landscape impact. Although valued features would be protected, the works would change and degrade the lands until they are re-made into the proposed development. The construction works are expected to take up to two years and, therefore, are considered as temporary in duration.
Operational Phase		Medium	Moderate	Neutral in Short Term Beneficial in Long Term	Permanent	The proposed development achieves local policy objectives of WMCC and is in keeping with local land use zoning. Its scale and effect would be transformational along the edge Cornamaddy, Athlone, but important to be so, in order to contribute to local place-making.
Cumulative Effects		High	Moderate - Significant	Neutral in Short Term Beneficial in Long Term	Permanent	A number of permitted and proposed developments in the Cornamaddy Area. The developments achieves local policy objectives of WMCC and is in keeping with local land use zoning. This would reflect the change on client's landholding and other lands in the area. The transition of the area has already begun.

11.10.2 Visual Impacts and Effects

VP	Location	Viewpoint Sensitivity	Construction Phase			Operational Phase			Cumulative Effects		
			Degree of Change	Significance	Quality and Timescale	Degree of Change	Significance	Quality and Timescale	Degree of change	Significance	Quality and Timescale
1	Cornamaddy National School	Medium	No change	-	-	No change	-	-	Medium	Moderate	Neutral and Permanent
2	Site Entrance, Drumaconn (Adjacent to Property no.1)	Medium	No change	-	-	No change	-	-	Medium	Moderate	Neutral and Permanent
3.a	Looking north-west from Drumaconn open space	High	Negligible	Slight – Not Significant	Neutral and Temporary	Negligible	Slight – Not Significant	Low	Moderate - Slight	Neutral and Permanent	
3.b	Looking south-east from Drumaconn open space	High	No change	-	-	No change	-	Low	Moderate - Slight	Neutral and Permanent	
4	Drumaconn (Adjacent to Property no. 64)	Medium	No change	-	-	No change	-	High	Significant	Neutral and Permanent	
5	The Orchard	High	No change	-	-	No change	-	Negligible	Slight – Not Significant	Neutral and Permanent	
6	Bivry Court (Colum Quinn BMW Athlone)	Medium	No change	-	-	No change	-	Medium	Moderate	Adverse in short term and Neutral in long term; and Permanent	
7	Garnafellagh (L5479) Field gate entrance	Medium	No change	-	-	No change	-	Medium	Moderate	Adverse in short term and Neutral in long term; and Permanent	
8	Garnafellagh (L5479) Field gate entrance	Medium	No change	-	-	No change	-	Negligible	Not significant	Neutral and Permanent	
9	Customie Pitch Club Athlone	Medium	No change	-	-	No change	-	High	Significant	Adverse in short term and Neutral in long term; and Permanent	
10	Cornamagh (L1475)	Medium	No change	-	-	No change	-	Medium	Moderate	Neutral and Permanent	
11	Cornamagh Cemetery	Medium	Medium	Moderate	Adverse and Temporary	Medium	Moderate	Medium	Moderate	Neutral and Permanent	
12	Local Road (Cul-de-sac)	Medium	No change	-	-	No change	-	Low	Slight	Neutral and Permanent	
13	The Bullet Road	High	No change	-	-	No change	-	No change	-	-	

11.11 Visual Impacts and Effects

11.11.1 Construction Phase

The contract works will be supervised by a suitably qualified landscape architect.

The planting works will be undertaken in the next available planting season after completion of the main civil engineering and building work.

11.11.2 Operational Phase

This will consist of weed control, replacement planting, pruning etc. All landscape works will be in an establishment phase for the initial three years from planting. The company or public agency responsible for site management of the scheme will be responsible for the ongoing maintenance of the site after this three-year period is complete.

11.11.3 Reinstatement

The proposed landscape development works in the form of tree and shrub planting will be used to re-instate the site, post-construction. These works will be carried out by an appointed landscape contractor and will be supervised by a suitably qualified landscape architect or manager.

11.12 Interactions

The pertinent environmental interactions for landscape and visual are with:

- Chapter 5: Population & Human Health; and
- Chapter 8: Biodiversity;

In this regard, landscape proposals for the scheme have been developed in consultation with the Project Ecologist and the cultural heritage consultants.

For a detailed description of the biodiversity at the site, refer to Chapter 8 (Biodiversity).

In the preparation of Chapter 5 (Population & Human Health), regard has been had to results of the LVIA, as impacts on landscape and visual amenity can in turn negatively affect residential amenity in affected areas.

No significant impacts are predicted in relation to any of the above-listed interactions.

11.13 Difficulties Encountered

There were no specific difficulties encountered during the preparation of the landscape and visual impact assessment.

11.14 References

- Guidelines for Landscape and Visual Impact Assessment, 3rd Edition 2013, published by the UK Landscape Institute and the Institute of Environmental Management and Assessment (hereafter referred to as the GLVIA).
- Guidelines on the Information to be Contained in Environmental Impact Statements, May 2022, published by the Environmental Protection Agency.
- Westmeath County Development Plan 2021-2027.
- Athlone Town Development Plan 2014-2020.
- Cornamaddy Action Area Plan 2004.

12 ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL HERITAGE

12.1 Introduction

This chapter assesses the impacts of the proposed development, as described in Chapter 2, on the known and potential cultural heritage resource. The term ‘Cultural Heritage’ encompasses heritage assets relevant to both the tangible resource (archaeology and architectural heritage); and non-tangible resources (history, folklore, tradition, language, placenames, etc.). The recorded and potential cultural heritage resource within a study area encompassing the proposed development site and the lands extending for 1km from its boundary, was reviewed in order to compile a comprehensive cultural heritage baseline for the assessment.

The chapter was prepared by Tony Cummins of John Cronin and Associates. Mr Cummins holds primary and post-graduate qualifications in Archaeology (B.A. and M.A. University College Cork, 1992/1994) and has accumulated 28 years’ experience in the compilation of archaeological, architectural and cultural heritage impact assessments.

12.2 Methodology

The methodology used for this assessment is based on guidelines presented in the *Guidelines for Information to be Contained in EIAR* (Environmental Protection Agency (EPA) 2022), *Framework and Principles for the Protection of Archaeological Heritage* (Department of Arts, Heritage, Gaeltacht and the Islands 1999), *Architectural Heritage Protection Guidelines for Local Authorities* (Department of Arts, Heritage and the Gaeltacht 2011) and *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties* (International Council on Monuments and Sites (ICOMOS) 2011).

The assessment is based on a programme of desk-based research and a field survey of the proposed development site. These studies were undertaken to identify any known or potential features of archaeological, architectural or cultural heritage significance likely to be impacted by the proposed development.

12.2.1 Desktop Research

A desktop review of the archaeological, architectural heritage and cultural heritage environment within the study area was carried out in order to compile a baseline for the assessment. This information has provided an insight into the development of the study area over time and also assisted in an evaluation of the potential presence of unrecorded cultural heritage sites or features within the proposed development site. The principal sources reviewed for the assessment of the recorded archaeological resource were the Sites and Monuments Record (SMR) and the Record of Monuments and Places (RMP) maintained by the National Monuments Service, Department of Housing, Local Government and Heritage (DHLGH). The current Westmeath County Council’s Record of Protected Structures (RPS) and the National Inventory of Architectural Heritage (NIAH) were consulted to assess the designated architectural heritage resource. Summaries of the legal and planning frameworks designed to protect these elements of the cultural heritage resource are also provided within Section 12.3.2 of this chapter.

Other sources consulted as part of the assessment included the following:

Development Plans: The relevant development plans for the study area are the *Westmeath County Development Plan 2021-2027* and the *Athlone Town Development Plan 2014-2020*. These identify the Protected Structures and Architectural Conservation Areas within the administrative areas and outline the Council’s policies for the protection of the archaeological and architectural heritage resource.

Database of Irish Excavation Reports: The Database of Irish Excavation Reports contains summary accounts of all archaeological excavations carried out in Ireland (North and South) from 1969 to present. Current data was accessed via www.excavations.ie in September 2022.

Literary Sources: Various published literary sources were consulted in order to assess the archaeological, historical, architectural heritage and folklore record of the study area and these are listed in Section 12.7 of this chapter.

Historic Maps: Available cartographic depictions of the study area dating from the 17th century onward were reviewed.

Aerial/Satellite/LiDAR Imagery: A review of available online imagery of the proposed development site was undertaken in order to ascertain if any traces of unrecorded archaeological sites were visible.

Irish Heritage Council Heritage Map Viewer: This online mapping source (www.heritagemaps.ie) collates various cultural heritage datasets sourced from, among others, the National Monuments Service, National Museum of Ireland (find spots), local authorities, the Royal Academy of Ireland and the Office of Public Works.

Irish National Folklore Collection: Transcribed material from the National Folklore Collection archive has been digitised and published online at www.duchas.ie.

Placenames Database of Ireland: This online database (www.logainm.ie) provides a comprehensive management system for data, archival records and place names research conducted by the State.

UNESCO designated World Heritage Sites and Tentative List: There are two world heritage sites in Ireland and a number of other significant sites are included in a Tentative List (2022) that has been put forward by Ireland for inclusion. None of these are located within the environs of the proposed development.

12.2.2 Field Inspection

A systematic field-walking inspection of the proposed development site was carried out in September 2022 to assess whether surface traces of previously undetected archaeological sites or structures of architectural heritage significance were present. A photographic record of the field inspection was compiled, and relevant extracts are presented in Appendix 12.1.

12.2.3 Methodology for Assessment of Impacts

The following provides a summary of the criteria used to assess impacts in order to concisely outline the methodology specifically applied to the cultural heritage resource which has been informed by relevant EPA and ICOMOS guidelines.

Duration of Effects

The duration of effects is assessed based on the following criteria, as defined in the EPA (2022) EIAR Guidelines:

- Momentary Effects: Seconds to Minutes.
- Brief Effects: Less than a day.
- Temporary Effects: Less than a year
- ‘Short-term Effects: Lasting 1 to 7 years
- Medium-term Effects: Lasting 7 to 15 years
- Long-term Effects: Lasting 15 to 60 years
- Permanent Effects: Lasting over 60 years.

Type of Effect

The type of effect on the cultural heritage resource can be any of the following, as per the EPA (2022) EIAR Guidelines.

- Indirect Effects (Secondary or Off-site Effects): Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
- Cumulative Effects: The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects
- ‘Worst case’ Effects: The effect 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
- Reversible Effects: Effects that can be undone by mitigation or remediation
- 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.

Quality of Effect

The quality of an effect on the cultural heritage resource can be positive, neutral or negative:

- Positive Effect: a change which improves the quality of the cultural heritage environment (e.g., increasing amenity value of a site in terms of managed access, signage, presentation etc. or high-quality conservation and re-use of an otherwise vulnerable derelict structure)
- Neutral Effect: no change or effects that are imperceptible, within the normal bounds of variation for the cultural heritage environment
- Negative Effect: a change which reduces the quality of the cultural heritage resource (e.g., visual intrusion on the setting of an asset, physical intrusion on features/setting of a site etc.)

Magnitude of Effect

This is based on the degree of change, incorporating any mitigation measures, on a cultural heritage asset and can be negative or positive. The magnitude is ranked without regard to the value of the asset according to the following scale: High; Medium; Low and Negligible and has been informed by criteria published in the International Council on Monuments and Sites Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (ICOMOS 2011) (Table 12.1).

MAGNITUDE	DESCRIPTION
High	Most or all key archaeological or architectural materials affected such that the resource is totally altered Comprehensive changes to setting Changes to most or all key historic landscape elements, parcels or components; extreme visual effects; fundamental changes to use or access; resulting in total change to historic landscape character Major changes to area that affect Intangible Cultural Heritage activities or associations or visual links and cultural appreciation

MAGNITUDE	DESCRIPTION
<p>Medium</p>	<p>Changes to many key archaeological or historic building materials/elements such that the resource is clearly/significantly modified.</p> <p>Considerable changes to setting that affect the character of the archaeological asset.</p> <p>Changes to the setting of a historic building, such that it is significantly modified.</p> <p>Change to many key historic landscape elements, parcels or components, visual change to many key aspects of the historic landscape, considerable changes to use or access, resulting in moderate changes to historic landscape character.</p> <p>Considerable changes to area that affect the Intangible Cultural Heritage activities or associations or visual links and cultural appreciation.</p>
<p>Low</p>	<p>Changes to key archaeological materials/historic building elements, such that the resource is slightly altered/slightly different.</p> <p>Slight changes to setting of an archaeological monument.</p> <p>Change to setting of a historic building, such that it is noticeably changed.</p> <p>Change to few key historic landscape elements, parcels or components; slight visual changes to few key aspects of historic landscape; slight changes to use or access; resulting in limited change to historic landscape character</p> <p>Changes to area that affect the Intangible Cultural Heritage activities or associations or visual links and cultural appreciation.</p>
<p>Negligible</p>	<p>Very minor changes to key archaeological materials or setting.</p> <p>Slight changes to historic building elements or setting that hardly affect it.</p> <p>Very minor changes to key historic landscape elements, parcels or components; virtually unchanged visual effects; very slight changes to use or access; resulting in very small change to historic landscape character.</p> <p>Very minor changes to area that affect the Intangible Cultural Heritage activities or associations or visual links and cultural appreciation.</p>

Table 12.1: Magnitude of Impact Assessment Indicators for Cultural Heritage Assets

Value Assessment

While various national and local authority legal designations exist for elements of the Irish cultural heritage resource (see Section 12.3.2), there are currently no formal criteria for grading the values of individual elements of this resource. The NIAH does apply a ranking system (Local, Regional and National) to structures included in that inventory and, while these rankings do not confer a graduated level of protection they have been utilised as a value indicator for NIAH-listed structures for the purpose of this assessment.

Given the absence of formal criteria the evaluations used in this assessment have been informed by guidelines presented in the *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties* (ICOMOS 2011). The evaluation of the values of cultural heritage assets is not intended as definitive but rather as an indicator which contributes to a wider judgment based the individual circumstances of each asset. The application of values included a consideration of their legal designations (e.g., National Monuments), condition / preservation; historical significance, group value, rarity, visibility in the landscape, fragility/vulnerability and amenity value on a case-by-case basis. It is noted that

archaeological monuments, whether extant or levelled, have the potential to possess sub-surface attributes, such as artefacts, human burials or other archaeological remains, that may possess values that cannot be discerned without recourse to archaeological excavation but are unlikely to be affected in the absence of direct negative impacts. The value of all known or potential assets that may be impacted by development are ranked according to the following scale as defined by ICOMOS: Very High; High; Medium; Low, Negligible, Unknown (Table 12.2). The values assigned to relevant cultural heritage assets within the area were determined following the completion of the desktop research combined with subsequent site inspections and are outlined in Section 12.3.10.

VALUE	DESCRIPTION
Very High	World Heritage Sites (including Tentative List properties) Sites, buildings or landscapes of acknowledged international importance Intangible associations with individuals or innovations of global significance
High	Nationally designated sites, buildings and landscapes of significant quality, rarity, preservation and importance Undesignated assets of the quality and importance to be designated Assets that can contribute significantly to acknowledged national research objectives Archaeological Landscapes with significant group value Intangible associations with individuals or innovations of national significance
Medium	Designated or undesignated assets that can contribute significantly to regional research objectives, including buildings that can be shown to have exceptional qualities in their fabric or historical associations Conservation Areas and historic townscapes containing buildings that contribute significantly to its historic character Intangible associations with individuals or innovations of regional significance
Low	Assets compromised by poor preservation and/or poor survival of contextual associations Assets of limited value, but with potential to contribute to local research objectives Historic Townscape or built-up areas of limited historic integrity in their buildings and settings Intangible associations with individuals or innovations of local significance
Negligible	Assets with very little or no surviving archaeological interest Landscapes with little or no significant historical interest Buildings or urban areas of no architectural or historical note; buildings of an intrusive character
Unknown	Assets whose importance has not been ascertained Buildings with some hidden (i.e., inaccessible) potential for historic significance

Table 12.2: Indicative Factors for Assessing the Value of Cultural Heritage Assets (after ICOMOS 2011)

Significance of Effects

This is assessed based on a consideration of the Magnitude of the Impact (graded from High to Negligible, based on a consideration of character, duration, probability and consequences) combined with the Value (graded from High to Negligible, based on a consideration of significance/sensitivity) of the cultural heritage asset. The Significance can be described as Profound, Very Significant, Significant, Moderate, Slight, Not Significant or Imperceptible (Table 12.3 and Table 12.4).

SIGNIFICANCE	DESCRIPTION
Imperceptible	An effect capable of measurement but without significant consequences
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences
Slight	An effect which causes noticeable changes in the character of the environment but without affecting its sensitivities
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends
Significant	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment
Profound	An effect which obliterates sensitive characteristics

Table 12.3: Significance of Effects (per EPA EIAR Guidelines 2022)

MAGNITUDE	High	Not Significant/ Slight	Moderate/ Significant	Significant/ Very Significant	Very Significant/ Profound
	Medium	Not Significant	Slight	Moderate/ Significant	Significant/ Very significant
	Low	Not Significant/ Imperceptible	Slight/ Not Significant	Slight	Moderate
	Negligible	Imperceptible	Not Significant/ Imperceptible	Not Significant/ Slight	Slight
		Negligible	Low	Medium	High/Very High
	VALUE OF CULTURAL HERITAGE ASSET				

Table 12.4: Significance of Effects Matrix (after EPA EIAR Guidelines 2022)

12.3 Receiving Environment

12.3.1 Summary Description of Proposed Development Location

The proposed development site is situated within Cornamaddy townland in an area of agricultural land located c.2km outside the archaeological Zone of Notification surrounding the historical core of Athlone town as designated by the National Monuments Service of the Department of Housing, Local Government and Heritage. The majority of the lands within the proposed development site comprise pastureland which is sub-divided into irregularly shaped vacant fields. The soil profiles within the general area consist of a mix of peats and fine loamy drift with limestones, while the underlying

geology is composed of pale-grey massive limestone. Lough Ree is located c. 2km to the north and the River Shannon is c. 3.3km to the west.

12.3.2 Legal and Planning Context

This section presents a concise summary of the legal and planning policy frameworks relevant to this assessment in order to provide a context for the statutory protection assigned to the cultural heritage resource.

The management and protection of cultural heritage in Ireland is achieved through a framework of national laws and policies which are in accordance with the provisions of the Valetta Treaty (1995) (formally the European Convention on the Protection of the Archaeological Heritage, 1992) ratified by Ireland in 1997; the Granada Convention (1985) (formally the European Convention on the Protection of Architectural Heritage), ratified by Ireland in 1997; and the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage, 2003, ratified by Ireland in 2015. The locations of World Heritage Sites (Ireland) and the Tentative List of World Heritage Sites submitted by the Irish State to UNESCO were reviewed and none are located within the environs of the proposed development.

The national legal statutes and guidelines relevant to this assessment include:

- National Monuments Acts 1930, as amended
- Heritage Act 1995, as amended
- National Cultural Institutions Act 1997
- The Architectural Heritage (National Inventory) and Historic Monuments (Misc.) Provisions Act 1999
- Planning and Development Act 2000, as amended
- Department of Arts, Heritage and Gaeltacht 2011 *Architectural Heritage Protection: Guidelines for Planning Authorities*.
- Department of Arts, Heritage, Gaeltacht and the Islands 1999 *Framework and Principles for the Protection of Archaeological Heritage*

Archaeological Legal and Planning Context

The National Monuments Act 1930 and its Amendments, the Heritage Act 1995 and relevant provisions of the National Cultural Institutions Act 1997 are the primary means of ensuring the satisfactory protection of archaeological remains. There are a number of mechanisms under the National Monuments Acts that are applied to secure the protection of archaeological monuments. These include the designation of National Monument status for sites deemed to be of national significance, the Register of Historic Monuments (RHM), the Record of Monuments and Places (RMP), the Sites and Monuments Record (SMR), and the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

Section 2 of the National Monuments Act, 1930 defines a National Monument as a monument or the remains of a monument, the preservation of which is a matter of national importance. The State may acquire or assume guardianship of examples through agreement with landowners or under compulsory orders. Archaeological sites within the ownership of local authorities are also deemed to be National Monuments. The prior written consent of the Minister is required for any works at, or in proximity to, a National Monument or at archaeological sites which are subject to a Preservation Order. There are no National Monuments in State Care or monuments assigned Preservation Orders located within the study area.

The RMP was established under Section 12 (1) of the National Monuments (Amendment) Act, 1994 and was based on the earlier SMR and RHM records. It comprises lists and maps of all known archaeological monuments and places for each county in the State and all

listed archaeological sites receive statutory protection under the National Monuments Act 1994. No works can be undertaken at their locations or within their surrounding designated Zones of Notification without providing two months advance notice to the NMS. There are no recorded archaeological sites located within the proposed development site while there is one example within the surrounding 1km study area. This monument is described in Section 12.3.3 and is mapped on Figure 12.1.

The *Westmeath County Development Plan 2021-2027* includes the following relevant policies and objectives in relation to the protection of the archaeological resource (the *Athlone Town Development Plan 2014-2020* contains similar policies and objectives in relation to archaeological heritage):

CPO 14.5 Seek to ensure the protection and sympathetic enhancement of archaeological heritage, and in this regard applications will be referred to the National Monuments Service, Department of Culture, Heritage & the Gaeltacht for comment.

CPO 14.6 Seek to ensure the protection of archaeological sites and monuments and their settings and archaeological objects that are listed in the Record of Monuments and Places, in the ownership/guardianship of the State, or that are the subject of Preservation Orders or have been registered in the Register of Historic Monuments. Seek to ensure the protection and preservation of archaeological sites, which have been identified subsequent to the publication of the Record of Monuments and Places.

CPO 14.7 Ensure that any development adjacent to an archaeological monument or site shall not be detrimental to the character of the archaeological site, or its setting and shall be sited in a manner which minimises the impact on the monument and its setting. Development which is likely to detract from the setting of such a monument or site will not be permitted

CPO 14.11 Consult with the National Monuments Service in relation to proposed developments adjoining archaeological sites.

CPO 14.12 Ensure that archaeological excavation is carried out according to best practice as outlined by the National Monuments Service, Department of Culture, Heritage, and the Gaeltacht, The National Museum of Ireland and the Institute of Archaeologists of Ireland.

Architectural Heritage Legal and Planning Context

The protection of the architectural heritage resource is provided for through a range of legal instruments that include the Heritage Act 1995, the Architectural Heritage (National Inventory) and National Monuments (Misc. Provisions) Act 1999, and the Planning and Development Act 2000. The Planning and Development Act 2000 requires all Planning Authorities to keep a 'Record of Protected Structures' (RPS) of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. As of the 1st January 2000, all structures listed for protection in current Development Plans, have become 'protected structures'. Since the introduction of this legislation, planning permission is required for any works to a protected structure that would affect its character. A protected structure also includes the land and other structures within its curtilage. While the term 'curtilage' is not defined by legislation, the *Architectural Heritage Protection Guidelines for Local Authorities* (Department of Arts, Heritage and the Gaeltacht 2011), describes it as the parcel of land immediately associated with a structure and which is (or was) in use for the purposes of the structure. In addition, local authorities must provide for the preservation of places, groups of structures and townscapes of architectural heritage significance through designation of Architectural Conservation Areas (ACAs).

The National Inventory of Architectural Heritage (NIAH) was established to record architectural heritage structures within the State and while inclusion in the NIAH does not provide statutory protection it is intended to advise local authorities on compilation of their Record of Protected Structures. The NIAH also includes a Survey of Historic Gardens and Landscapes which comprises a non-statutory, desk-based survey of such features.

The *Westmeath County Development Plan 2021-2027* presents a number of objectives to ensure the protection of the architectural heritage resource within the county and these include:

CPO 14.27 Protect and conserve buildings, structures and sites contained in the Record of Protected Structures and to encourage the sympathetic re-use and long-term viability of such structures without detracting from their special interest and character.

CPO 14.28 Protect the architectural heritage of Westmeath through the identification of Protected Structures, the designation of Architectural Conservation Areas (ACAs), the safeguarding of designed landscapes and historic gardens, and the recognition of structures and elements that contribute positively to the vernacular and industrial heritage of the County.

The *Athlone Town Development Plan 2014-2020* contains similar objects for the built heritage resource and also includes policies and objectives in relation to vernacular and industrial heritage (*Development Plan sections 11.21 and 11.23*).

12.3.3 Archaeological and Historical Context

Relevant datasets in relation to recorded archaeological sites cited within this section of the chapter have been interrogated and retrieved from current state sources and are considered accurate at the time of writing in October 2022. The dating framework used for each period of the archaeological record is based on the framework presented in the *Guidelines for Authors of Reports on Archaeological Excavations* published by the National Monuments Service (2006). The Archaeological Survey of Ireland's inventory description of the archaeological site within the study area, as published on the National Monuments Service's online Historic Environment Viewer (www.archaeology.ie) is also provided.

The following section provides high-level overviews of the general nature of the various archaeological periods in order to present summary contextual information for the general reader. Relevant information sourced from documentary research, including extracts from historical cartographic sources, is also presented in this section. While the study area is located outside the urban area of Athlone town, summary details on the origins and development of the settlement are presented to provide contextual information on the wider environs of the proposed development site, which would have formed part of the agricultural hinterland of the town during the medieval period.

There are no recorded archaeological sites within the boundary of the proposed development and the one example located within the surrounding 1km study area comprises a late prehistoric mound barrow (WM029-041----) located 715m to the north-west of the proposed development (Table 12.5 and Figure 12.1). The proposed development is located c.2km outside the Zone of Archaeological Potential around the historic core of Athlone town as defined in the *Athlone Town Development Plan 2014-2020*.

MONUMENT NO.	CLASS	TOWNLAND	ITM E	ITM N	DISTANCE FROM DEVELOPMENT
WM029-041----	Mound barrow	Garrynafela	605654	743942	715m to north-west

Table 12.5: Recorded archaeological site within 1km of the proposed development

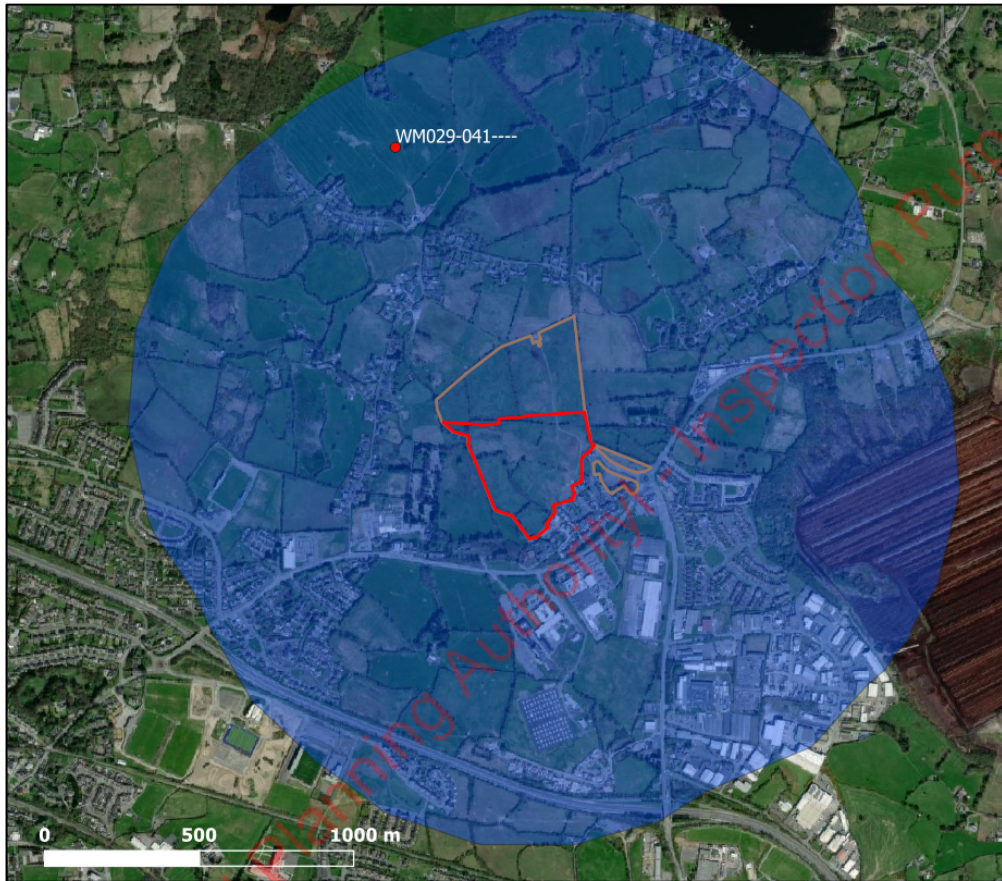


Figure 12.1 – Location of recorded archaeological site within 1km study area (shaded blue)

Prehistoric periods

Until the recent identification of Palaeolithic human butchery marks on animal bones recovered from caves in Counties Cork and Clare, the earliest recorded evidence for human activity in Ireland dated to the Mesolithic period (7000–4000 BC) when groups of hunter-gatherers lived on the heavily wooded island. The archaeological record indicates that these mobile groups favoured coastal, lake and river shores which provided a transport and food resource. They did not construct any settlements or monuments that have left any above ground traces although their presence in an area can often be identified by scatters of worked flints in ploughed fields. The Neolithic period (4000-2400 BC) began with the arrival and establishment of agriculture as the principal form of economic subsistence, which resulted in more permanent settlement patterns in farmlands within areas of cleared forestry. As a consequence of the more settled nature of agrarian life, new site-types, such as substantial rectangular timber houses and various types of megalithic tombs, and artefacts such as pottery begin to appear in the archaeological record during this period.

The advent of the Bronze Age period (c. 2400–500 BC) in Ireland saw the introduction of a new artefactual assemblage and manufacturing techniques to the island, including the use of metal and ceramic objects. This period was also associated with the construction of new monument types such as standing stones, stone rows and circles as well as burnt mounds known as fulachta fia. The development of new burial practices during this period also saw the construction of funerary monuments such as wedge tombs, cairns, barrows, boulder burials and cists. The arrival of iron-working technology in Ireland saw the advent of the Iron Age (600 BC – 400 AD). Relatively little has been known about Iron Age settlement and ritual practices until recent decades when the corpus of evidence has been greatly increased by the discovery of sub-surface remains of sites dating to this period during archaeological investigations associated with development projects.

The one recorded archaeological monument within the 1km study area surrounding the proposed development site comprises a mound barrow (WMO29-041----) in Garrynafera townland (Figure 15.1). This is a site type that comprises broadly circular earth or earth-and-stone mound with no discernible external enclosing features. They are funerary in nature and contain and/or cover burials and excavated examples have been dated to the Bronze and Iron Ages. The example in Garrynafera has been described as follows by the Archaeological Survey of Ireland:

Situated at N end of natural ridge in undulating pasture with good views in all directions. High oval-shaped flat-topped mound (top dims. 7.8m x 6.28m; base diam. c. 31m NE-SW x 24m NW-SE) of earth and stones with no evidence of an enclosing fosse or any other feature associated with the mound. The sides of the mound are quite steep on W, N and E sides. The NE side of the mound has been damaged by quarrying and there are some thorn bushes growing on the monument at this location. Possible mound barrow classification as it would appear to be too small to classify as a small motte (SMR File 06/06/1985). Mound barrow placed on the Register of Historic Monuments on the 18/06/1986.

The National Museum of Ireland's Topographical Files also record the discovery of a wide range of prehistoric archaeological objects within the section of the River Shannon located to the west of the study area, indicating a concentration of activity which was likely concentrated at fording points across the river channel.

Early medieval period (AD 400 – 1169)

The Irish early medieval period (AD 400 – 1169) commenced following the introduction and establishment of Christianity. While this period saw the emergence of the first phases of urbanisation around the Hiberno-Norse ports, the dominant settlement pattern continued to be rural-based and centred around enclosed farmsteads known as ringforts. These are the most common early medieval sites within the Irish landscape this is attested to by the fact that their original Gaelic names (*rath* and *lios*) still form some of the most common place-name elements in the country. Archaeological excavations have demonstrated that the majority comprised enclosed farmsteads containing the foundations of domestic and agricultural buildings. The Vikings were active on the River Shannon in the 9th century and a Viking hoard was found on Hare Island on Lough Ree c. 4.5km north of Athlone. The first documented ford at Athlone was constructed in c. 1000 AD by the Kings of Midhe and Connacht; in part to impede navigation of the Shannon by the fleet of the King of Munster which surrendered at Athlone in 1087. While there are no recorded early medieval sites located within the study area there are numerous examples located within the surrounding region, indicating a strong settlement pattern had been established within the wider landscape during this period.

The late and high medieval periods (AD 1169 – 1550)

There are no recorded late medieval archaeological sites located within the study area and the lands in the area appear to have formed part of the agricultural hinterland of Athlone town during these centuries. The Kingdom of Mide [Meath] was granted to Hugh de Lacy in 1172 and the process of sub-infeudation and settlement began soon afterwards but it is unlikely that any effective inroads were made as far west as Athlone for some time. The original Anglo-Norman grantee of Athlone seems to have been Geoffrey de Costentin who was granted a cantred in Connacht adjoining Athlone in 1200 and was probably responsible for the construction of a possible motte castle (WM020-042099-) at Athlone in the 1190s. The Anglo-Normans established an initial settlement at Athlone by 1200 and had constructed a bridge with a castle on the western bank of the river by the early 13th century. By 1230 the town was described as being on both sides of the river (Murtagh 1994). The construction of a town wall may have been commenced by the middle of the 13th century and a murage grant was made in 1251 (*ibid.*). The eastern side of the town is likely to have developed along a linear street pattern at this time and contemporary references record this area as “the town” (*ibid.*). Between 1218 and 1315 the town was repeatedly attacked by the O’ Connors of Connacht. The bridge was destroyed during a raid in 1272, its replacement was again levelled in 1306 and there is no further mention of a bridge at Athlone until the 16th century. The town was burnt in 1315 and may not have been resettled at that time although the castle as well as the religious houses and parish church in the town evidently continued in use since all underwent rebuilding in the 15th century. The English regained control of the castle in 1537 and a new stone bridge was constructed in 1566-7. This revived Athlone’s role as the focus of east/west routeway and consequently its administrative, strategic and economic importance recovered. Athlone secured a town charter in 1599 and 1606, establishing the area within a radius of a mile and a half of the centre as a borough (*ibid.*).

The post-medieval period and early modern periods

The centuries following 1550 comprise the post-medieval period which continued into the middle of the 19th century and the decades thereafter are often described as early modern. The first century of the post-medieval period was a turbulent time in Ireland history and saw a prolonged period of wars between the 1560s and 1603 with further conflicts arising during the Cromwellian (1649–53) and Jacobite (1690-91) Wars. The post-medieval period saw the extensive dispossession of forfeited Gaelic lands and the final disintegration of the Gaelic order by the end of the 17th century.

By the 17th century a new town wall was built around the eastern area of Athlone town and earthen ramparts around the western town (Murtagh 1994). The approach roads to the town from both east and west were lined with dwellings, indicating the spread of the urban area beyond the town defences. Athlone was the centre of a major attack during the Cromwellian period during the 1640s and was again attacked by Sir Charles Coote for the parliament. Lewis (1837) describes that “... during the fury of the war the town was burned; though restored, it never recovered its former strength or appearance”. The 17th century Down Survey records that the townland of Cornamaddy, which contains the proposed development site, was in the ownership of Daniell Bryan (Catholic) in 1641 and William Hancock (Protestant) in 1670 when it contained 92 plantation acres.

Athlone town figured prominently in the Jacobite war of 1690-91 but the defences were of very little military value (Kerrigan 1995). The eastern side of the town was burnt in 1690 and the west area, including the castle, was reduced to rubble by Williamite artillery in 1691. By 1709 much of the town had been re-built, much of the impetus being provided by the new military barracks of c. 1700. After the turbulent times of the previous century, the 18th century was a time of prosperity for newly established Protestant gentry and landowners in Ireland. The town of Athlone however declined again in the 18th century, falling from being a very prominent Irish town in 1690 to not being recognised as such nationally by 1798. This was largely due to its inland location that precluded it from any

benefit on the 18th century rise in foreign trade. There are no recorded post-medieval archaeological sites located within the study area and as discussed in the below review of cartographic sources, the lands in the area continued to remain as part of the agricultural hinterland of Athlone town into the 20th century.

12.3.4 Database of Irish Excavation Reports

A review of this database revealed that it contains no entries for any licensed archaeological investigations within the townland of Cornamaddy. A programme of archaeological monitoring of ground works carried out as part of a sewerage scheme which extended through townlands within the surrounding 1km study area revealed nothing of archaeological significance (Licence 08E0903¹⁵). A 2006 programme of archaeological test trenching within a proposed development site in Lissywollen townland in the south end of the study area also revealed nothing of archaeological significance (Licence 06E0713¹⁶).

12.3.5 Architectural Heritage

The *Westmeath County Development Plan 2021-2027* and the *Athlone Town Development Plan 2014-2020* list no Protected Structures or Architectural Conservation Areas within the proposed development site or within the surrounding 1km study area. In addition, a review of the NIAH revealed it contains no entries for structures or historic gardens within the study area.

12.3.6 Cartographic Review

The detail on the Down Survey Map of 1655-58 shows the townland of Cornamaddy, which is labelled as 'Cornemadda', within a vacant area to the northeast of Athlone town which is shown as an enclosed settlement on the eastern bank of the river (Figure 12.2). While the Down Survey maps do not depict small residences or structures, they typically do show large settlements, castles, churches, bridges and routeways. There are no structures depicted within Cornamaddy townland boundary suggesting that the concentrated settlement of the area remained centred on the historic core of the riverside town.

¹⁵ <https://excavations.ie/report/2010/Westmeath/0021877/>

¹⁶ <https://excavations.ie/report/2006/Westmeath/0016808/>



Figure 12.2 – Down Survey Map with Cornamaddy townland indicated with arrow

The proposed development site is depicted as agricultural land (likely pastoral) subdivided into irregular shaped and sized fields on the 1st edition 6-inch Ordnance Survey (OS) map which was surveyed in 1836 (Figure 12.3). There are no structures or other features of potential archaeological interest shown within the interior of the site on this map. The townland boundary between Cornamaddy and Garrynafela is shown extending in a curving line in the area to the north of the proposed development boundary while the field boundaries along the west side of the site form the townland division between Cornamaddy and Lissywollen and Cornanagh. A small area of woodland within Lissywollen townland is shown abutting the west side of the townland boundary but does not extend into the proposed development site. The detail on the 25-inch edition OS map (Figure 12.4), which was surveyed in 1912, shows that while the proposed development site remained in use as vacant agricultural lands, the layout of the internal fields was altered at some stage following the publication of the 1836 OS map. A number of the irregular field boundaries have been removed and have been replaced by linear boundaries which form rectangular fields. The 25-inch map also shows a cemetery in Cornamagh townland which is not present on the 6-inch map, indicating that it dates to the second half of the 19th century. This is located at a distance of c.70m to the west of the nearest section of the proposed development site.

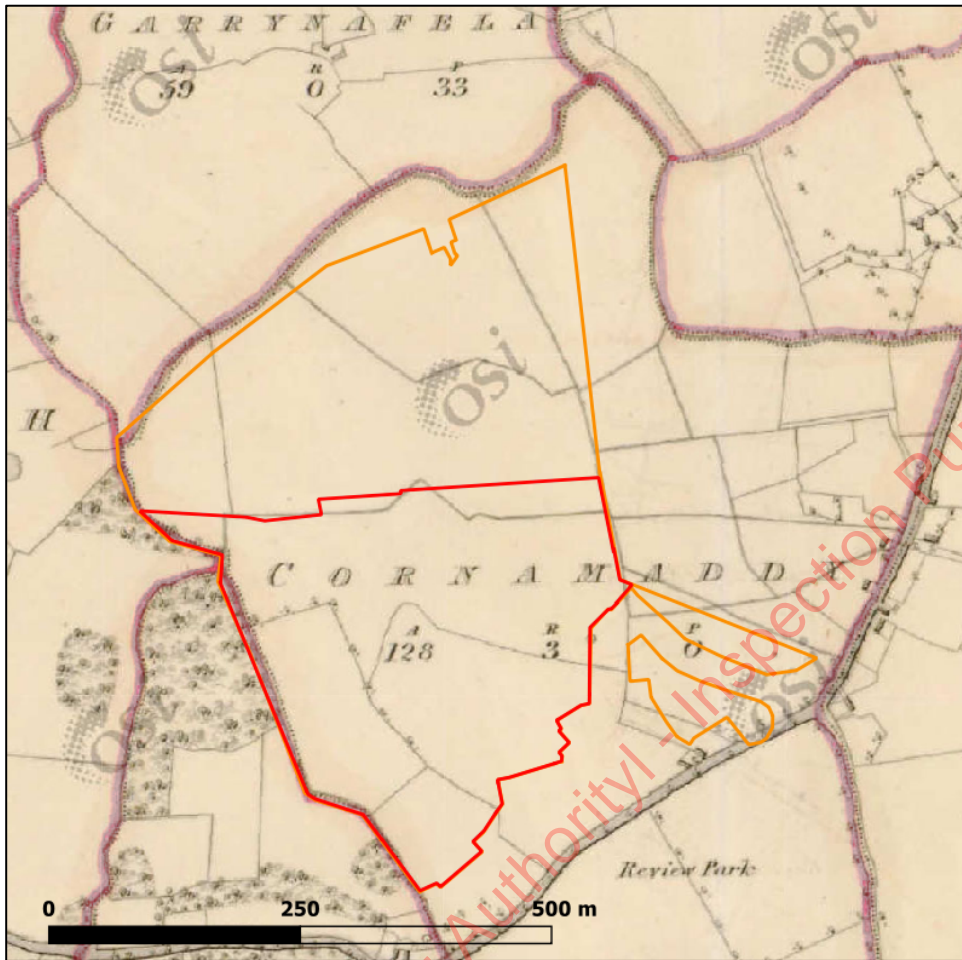


Figure 12.3 – Extract from 6-inch OS map showing boundary of proposed development

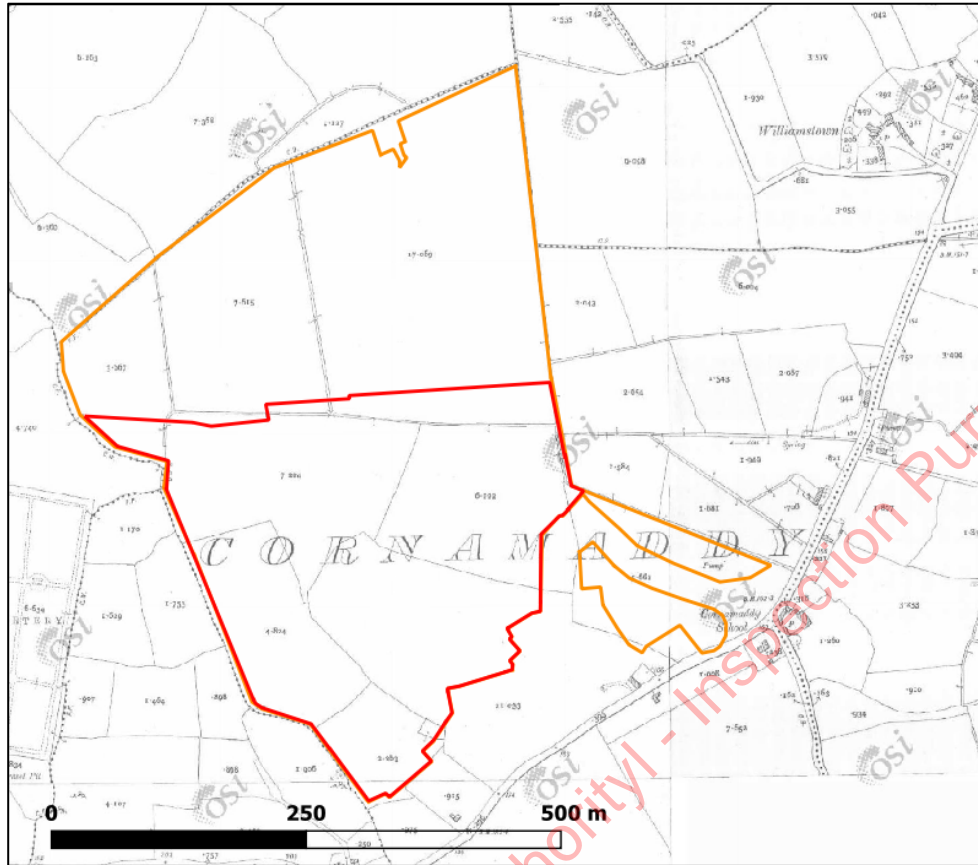


Figure 12.4 – Extract from 25-inch OS map showing boundary of proposed development

12.3.7 Review of Aerial, Satellite and LiDAR imagery

A review of various aerial and satellite imagery published online by Ordnance Survey of Ireland, Google and Bing was undertaken and no identifiable traces of potential unrecorded archaeological sites were observed within the proposed development site. A Google Earth image dating to 2007 shows ground works associated with the construction of a housing development site to the south extending into the proposed development site and grass regrowth is evident within these disturbed areas on later images (Figures 12.5 and 12.6).

A review of LiDAR datasets published on the Open Topographic Data Viewer of the Geological Survey of Ireland (www.gsi.ie) revealed that the proposed development site is located within the coverage area of these datasets. A review of a hillshade model generated from imagery within the relevant data blocks was carried out and no traces of potential unrecorded archaeological sites were noted within the proposed development site (Figure 12.7).



Figure 12.5 – Google Earth 2007 image showing extent of ground works within site during construction of housing development to the south (see Section 12.3.9 for field number cross-references)



Figure 12.6 – Google Earth 2021 image showing extent of grass regrowth within disturbed areas of the site

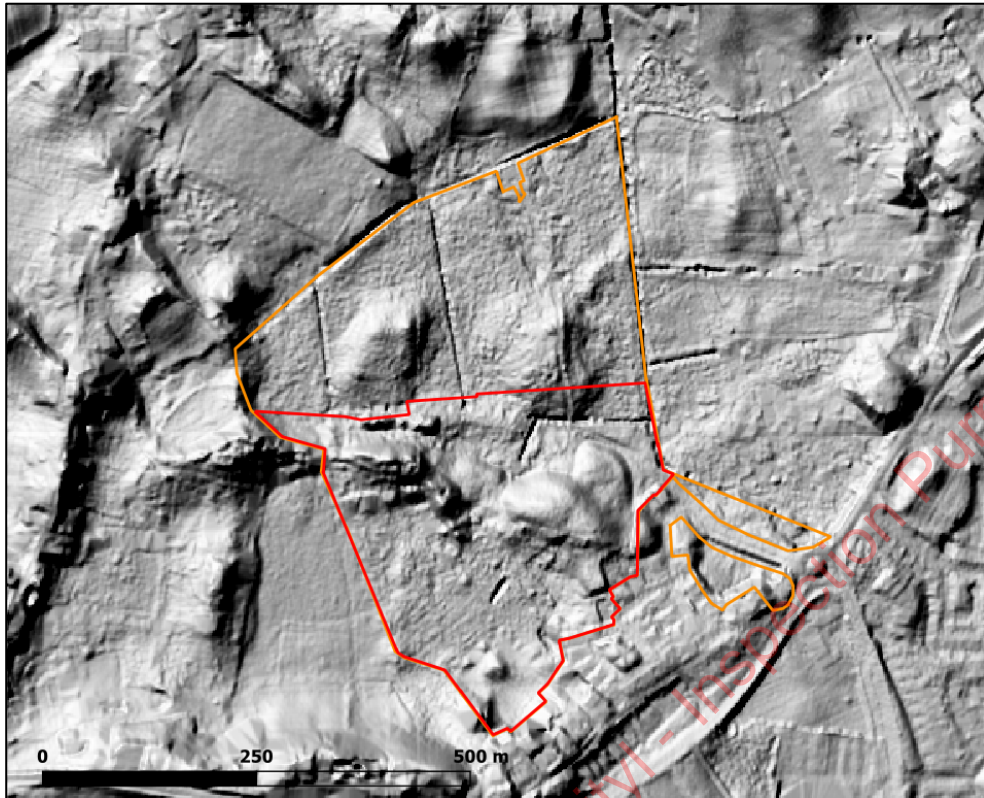


Figure 12.7 – LiDAR image of proposed development site (source: Geological Survey of Ireland www.gsi.ie)

12.3.8 Undesignated Cultural Heritage Assets

While encompassing the archaeological and designated architectural heritage resource, cultural heritage also includes various undesignated assets such as historical settlements, demesne landscapes, vernacular structures, townland boundaries, folklore, placenames and historical events. There are no extant vernacular buildings, or structures of any date, located within the proposed development site and it does not form part of a historic demesne landscape. A review of the National Folklore Collection UCD Digitization Project website (www.duchas.ie) revealed that it does not contain any entries for Cornamaddy townland that describe the potential presence of unrecorded archaeological sites or historical events associated with the area.

Townlands are the smallest unit of land division in the Irish landscape and many preserve early Gaelic territorial boundaries that pre-date the Anglo-Norman conquest. The layout and nomenclature of Irish townlands was recorded and standardised by the work of the Ordnance Survey in the 19th century. The Irish translations of the townlands names often refer to natural topographical features, but name elements may also give an indication of the presence of past human activity within the townland, e.g., dun, lios or rath indicate the presence of a ringfort while temple, saggart, termon or kill record an association with a church site. The Irish origins and translations for the townlands within the study area were sought from the Placenames Database (www.logainm.ie). The proposed development site is contained within the townland of Cornamaddy, an anglicisation of *Corr na Madadh*, which translates the ‘hill of the dogs’ (www.logainm.ie). As noted in the above cartographic review (Section 12.3.6), the proposed development is bound by field boundaries on the north and west sides which form townland divisions between Cornamaddy and Garrynafela (to the north) and Lissywollen and Cornanagh (to the west).

12.3.9 Field Inspection

The field inspection of the proposed development site was carried out in dry and clear weather conditions in September 2022 and no access issues were encountered. The site is bound to the north, east and west by a combination of recreational and agricultural land, while a modern residential development is located to the south. The lands within the site range from areas of level, overgrown, rough grassland and undulating areas of natural esker formations (from the Gaelic *Eiscir*) which form part of a wider system of these geological features within the wider environs of Athlone town. While not archaeological in origin it is noted that these systems of naturally raised glacial features may have been the focus of past human activity such as forming elements of routeways above wetlands, settlement or ritual locations on prominences with wide landscape vistas, and as sources of sand and gravels used for building activity. The location and extent of the eskers are clearly visible on the LiDAR imagery of the proposed development site (Figure 12.7 above).

There is evidence of field clearance activity as part of land improvement works within the proposed development site indicated by the presence of large boulders which form elements of a number of the field boundaries. The edges a number of the fields are also lined with overgrown and silted-in drainage ditches, which also indicate attempts at improving the land quality. The majority of these drains flank the linear field boundaries shown on the 25-inch OS map (surveyed in 1912) and likely date to the second half of the 19th century (Figure 12.4 above). The majority of the fields appear not to have been in recent agricultural use as indicated by the widespread overgrowth of brambles and reeds in most areas. An inspection of the fields shown to have been subject to extensive ground disturbance on the 2007 Google Earth image (Figure 12.5 above) revealed that grass and bramble regrowth has occurred within these areas. No potential unrecorded archaeological sites or structures of architectural heritage interest were identified during the field-walking inspection of the proposed development site. Descriptions of the existing fields within the site are presented in Table 12.6 and extracts from the photographic record are provided in Appendix 12.1.

FIELD NUMBER	DESCRIPTION
1	Shown as a vacant green field on the historic OS maps, this plot has been disturbed by ground works associated with the adjacent housing development in recent decades. The boundary of the proposed development encompasses a yard area on the south side of an existing access road and an area of disturbed ground with grass regrowth on the north side.
2	This field contains areas of level, overgrown grassland around the north and east sides of an esker ridge. A modern access track extends though the eastern half of the field and grass regrowth has occurred within the extensive areas of disturbed ground within the east half of the field visible on the 2007 Google Earth image (Figure 12.5). The south end of the field is bound by a modern housing development while overgrown drainage ditches delimit the north, east and west sides.
3	The north end of this field contains a level area improved pasture, with some overgrowth of brambles and reeds in the northeast quadrant, with an esker dominating the southern half. ESB poles run in an east-west direction across the field and a modern access track extends northwards through the eastern end. Drains bound the field on all sides and large stone boulders are included in the southern boundary, likely sourced from field clearance activity.
4	The south end field is dominated by an esker slope while the remainder is occupied by level, rough grassland colonised with a thick overgrowth of brambles. The ESB lines run directly over the top of the esker in an east-west

FIELD NUMBER	DESCRIPTION
	direction. Overgrown drainage ditches lined with trees and shrubs bound the field on all sides.
5	The field contains an area of overgrown, rough grassland that rises gradually towards the west side. Overgrown drainage ditches flank the south and east sides of the field, while the north and west sides, the latter of which forms the townland boundary with Cornamagh to the west, are lined with trees and shrubs.
6	This field is dominated by an esker ridge which slopes sharply downwards towards the north. Grass regrowth has occurred within the areas of disturbed ground evident in field on the 2007 Google Earth image (Figure 12.5). The field boundaries are formed by drainage ditches lined with trees and shrubs on all sides although a section of the east boundary appears to have been disturbed during the mid-2000s ground works.
7	This level, overgrown pasture field was poorly drained, particularly within the central and northern areas. There is only one drainage ditch along the boundary which was on the western side and this forms the townland boundary with Lissywollen to the west. Mature trees bound the field on the northern end while it is bound by shrubs on other sides.
8	This north end of this overgrown pasture field contains two raised areas which are of likely glacial origin. The field boundaries are lined with trees and shrubs apart from a concrete wall in the southwest corner which divides the field from a row of terraced modern houses.
9	The majority this field is shown as disturbed ground on the 2007 Google Earth image (Figure 12.5) and this appears to have included a construction compound, soil storage areas and haul tracks. Grass and bramble regrowth has occurred within the disturbed areas. The field is bound by modern housing to the south and the remaining boundaries are formed with lines of trees and shrubs.

Table 12.6: Description of fields within proposed development site

12.3.10 Summary

There are no recorded archaeological sites within the proposed development site and the only example (mound barrow WM029-041---) within the surrounding 1km study area is located within farmland at a distance of 715m to the north-west. This archaeological site, which is not listed as a National Monument and is not accessible to the public, is likely of medium to high value. It comprises a feature with a low surface expression and is not visible from the proposed development. In addition, the proposed development is located c.2km outside the Zone of Archaeological Potential around the historic core of Athlone town as defined in the *Athlone Town Development Plan 2014-2020*. While no evidence for potential unrecorded archaeological sites within the proposed development boundary was identified during the desktop study and field surveys undertaken as part of this assessment, the potential for the presence of unrecorded, sub-surface archaeological sites within green field lands cannot be discounted.

There are no Protected Structures, Architectural Conservation Areas or NIAH-listed buildings located within the proposed development site or within the surrounding 1km study area.

The only features of cultural heritage interest identified within the proposed development site are sections of tree-lined field boundaries along the outer west end of the landholding which form townland boundaries between Cornamaddy and Lissywollen and Cornamagh to the west. While the linear field boundaries along the north end of the

proposed development site now form the boundary with Garrynafela to the north, these boundaries were created during the late 19th century when the earlier curvilinear townland boundary outside the north end of the site was removed or levelled. Townland boundaries are found throughout the Irish landscape and comprise undesignated features of local (low) cultural heritage value. None of the townland boundaries in the area extend into the interior of the proposed development site.

12.4 Impact Assessment

12.4.1 Do Nothing Scenario

A 'Do Nothing Scenario' will see the continued preservation of recorded and potential cultural heritage features within the study area.

12.4.2 Construction Phase Impacts

There are no recorded archaeological sites within the proposed development site or within 715m of its boundary. The construction phase of the proposed development will, therefore, have no predicted impact on the known archaeological resource. While there was no evidence for any unrecorded archaeological sites within the proposed development site identified during the desktop study and field inspection, the potential for the survival of unrecorded, sub-surface archaeological features and artefacts within its boundary cannot be discounted. As the existence, nature and extent of any unrecorded archaeological features or artefacts within the site are unknown; the significance of potential construction phase impacts cannot be quantified but ground excavation works will have the potential to result in permanent, direct, negative effects on any such remains and this will require mitigation.

There are no designated architectural heritage structures located within the proposed development lands or within the surrounding 1km study area and it contains no undesignated structures of architectural heritage interest. In addition, the proposed development site is not located within, or in the close environs of, an Architectural Conservation Area. The construction phase of the proposed development will, therefore, result in no predicted impacts on the architectural heritage resource.

There are no undesignated vernacular structures, demesne lands, or historic settlements located within the proposed development site and no intangible attributes, such as historical or folklore associations, were noted during the assessment. While sections of the field boundaries along the outer edge of the proposed development form townland boundaries, none extend into the interior of the site and they will be retained *in situ*. The construction phase of the proposed development will result in an indirect, permanent, negligible, negative impact on these elements of the undesignated cultural heritage resource and no mitigation is required.

12.4.2 Operational Phase Impacts

Given the absence of any recorded archaeological sites or architectural heritage structures within the proposed development site or its close environs, the operational phase of the proposed development will, therefore, result in no predicted impacts on these elements of the cultural heritage resource. Following the successful implementation of archaeological mitigation measures presented in Section 12.5, it is predicted that no impacts will arise in relation to any potential unrecorded, sub-surface archaeological remains within the proposed development site during the operational phase.

12.4.2 Cumulative Impacts

There are no recorded archaeological sites or designated architectural heritage structures located within the proposed development site or within its close environs. There is only one recorded archaeological site located within 1km of the proposed development and this comprises an extant mound barrow (WM029-041---) located 715m to the north-west. There are no designated architectural heritage structures or conservation areas located within the 1km study area and no undesignated examples exist within the proposed development site. In addition, a review of the locations of other modern residential developments within the surrounding area revealed that their construction did not result in the removal of any recorded archaeological sites or designated architectural heritage structures. Given these baseline conditions and following the application of the mitigation measures presented in Section 12.5 of this chapter, it is concluded that the proposed development will not act in combination with other proposed or completed developments to result in significant cumulative impacts on the cultural heritage resource of the area.

12.5 Mitigation

12.5.1 Construction Phase

Given the scale and extent of the proposed development within a green field location, a programme of archaeological test trenching, under licence by the National Monuments Service, will be carried within the proposed development site in advance of the construction phase. In the event that any sub-surface archaeological deposits, features or artefacts are identified during these site investigations, their locations will be recorded and securely cordoned off while the National Monuments Service are notified of the discovery and consulted to determine further mitigation measures, which may entail preservation *in situ* by avoidance or preservation by record through a systematic archaeological excavation.

There are no structures of architectural heritage interest located within the proposed development site or its close environs and no mitigation measures for this element of the cultural heritage resource are required.

12.5.2 Operational Phase

All required mitigation measures will be enacted prior to and during the construction phase and, therefore, no cultural heritage mitigation measures during the operational phase of the proposed development will be required.

12.5.1 Monitoring

There are a number of obligatory processes to be undertaken as part of applications to the National Monuments Service for licences to carry out archaeological test trench excavations and these will allow for monitoring of the successful implementation of mitigation measures. A detailed method statement stating the proposed strategy for the site investigations will accompany the submitted licence application which will clearly detail the extent of the archaeological works and outline the processes to be enacted in the event that any archaeological features are encountered. Reports on the archaeological site investigations will then be submitted to the National Monuments Service, the National Museum of Ireland and the Planning Authority which will clearly describe the results of all archaeological works in written, mapped and photographic formats.

12.6 Residual Impacts

The proposed development site and its close environs do not contain any extant recorded archaeological sites or designated architectural heritage structures and no residual impacts on these elements of the cultural heritage resource are predicted. The mitigation measures presented in Section 12.5 will provide for either the preservation in situ of any currently unknown archaeological features within the proposed development site or the proper and adequate recording of this resource by full archaeological excavation. Preservation in situ shall allow for a negligible magnitude of impact resulting in a potential not significant/imperceptible significance of effect in the context of residual impact on the unrecorded archaeological resource. Preservation by record shall allow for a high magnitude of impact, albeit ameliorated by the creation of a full and detailed archaeological record, the results of which shall be publicly disseminated. This shall result in a potential slight/moderate range of significance of effect in the context of residual impacts on the unrecorded archaeological resource.

12.7 References

Published Sources

Bradley, J., Halpin, A and King, H. 1985 *Urban Archaeology Survey of County Westmeath*. Office of Public Works, Dublin.

Cal Carew MSS Calendar of the Carew manuscripts preserved in the archiepiscopal library at Lambeth (6 volumes, London, 1875-73).

Conlan, P. (1980) 'The medieval parish of SS Peter & Paul in Athlone'. In *Ireland Midland Studies*, 73-83.

Department of Arts, Heritage, Gaeltacht and the Islands (1999), *Framework and Principles for the Protection of the Archaeological Heritage*. Dublin.

Department of Arts, Heritage and the Gaeltacht (2011) *Architectural Heritage Protection Guidelines for Local Authorities*

Environmental Protection Agency (2022) *Guidelines for Information to be Contained in EIAR*

International Council on Monuments and Sites (2011) *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*.

Kerrigan, P. 1995 *Castles & Fortifications of Ireland 1485-1945* Cork.

Lewis, A (1837) *A topographical dictionary of Ireland*. London.

Murtagh, H. (1994) *Athlone: No. 6 Irish Historic Towns Atlas*. Royal Irish Academy: Dublin.

National Monuments Service (2006) *Guidelines for Authors of Reports on Archaeological Excavations*.

O'Keeffe, T. 2000 *Medieval Ireland: An Archaeology*. Tempus Publishing Ltd: Gloucestershire.

O'Keeffe, P. & Simmington, T. 1991 *Irish Stone Bridges: History & Heritage*. Dublin.

Thomas, A. (1992) *The Walled Towns of Ireland*, vol. 1. Irish Academic Press: Dublin.

Westmeath County Council (2014) *Athlone Town Development Plan 2014-2020*

Westmeath County Council (2021) *Westmeath County Development Plan 2021-2027*

Websites

<http://gis.teagasc.ie/soils/map.php> (Soils)

<http://map.geohive.ie/mapviewer.html> (Geology)

<http://maps.osi.ie/publicviewer/#V2,591271,743300,1,10> (Historic OS maps)

<http://downsurvey.tcd.ie/down-survey-maps.php> (Down Survey)

http://spatial.dcenr.gov.ie/imf/imf.jsp?site=GSI_Simple (Bedrock)

www.archaeology.ie (SMR and NIAH)

www.duchas.ie (Folklore)

www.excavations.ie (Archaeological investigations)

www.logainm.ie (Placenames)

www.heritagemaps.ie/WebApps/HeritageMaps/index.html (Irish Heritage Council)

<http://landedestates.nuigalway.ie/LandedEstates/jsp/property-show.jsp?id=2025> (Landed Estates Database, National University of Galway)

<https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=b7c4boe763964070ad69bf8c1572c9f5> (Geological Survey Ireland LiDAR data)

13 TRAFFIC AND TRANSPORTATION

13.1 Introduction

Roadplan Consulting were commissioned by Brock McClure Planning and Development Consultants on behalf of Marina Quarter Limited to prepare this Traffic and Transportation Chapter for a proposed residential development at Cornamaddy, Athlone, Co. Westmeath.

In preparing this report, Roadplan Consulting has made reference to:

- The Westmeath County Development Plan 2021 - 2027.
- The Institute of Highways and Transportation Guidelines on the Preparation of Traffic Impact Assessments.
- The TII Transport Assessment Guidelines.
- The TII National Traffic Model.

13.2 Objectives

The objective of this chapter is to examine the traffic implications of the proposed residential development in terms of how it can integrate with existing traffic in the area. The report will determine and quantify the extent of additional trips generated by the development, and the impact of such trips on the operational performance of the local road network and junctions, in particular the existing N55 / R916 / L8048 roundabout.

13.3 Study Methodology

The methodology adopted for this report is summarised as follows:

- A traffic count was undertaken by IDASO on Thursday 30th of September 2021 during a 12-hour period (07:00 to 19:00). Count information was obtained at the existing N55 / R916 / L8048 roundabout.
- Existing Traffic Assessment – A spreadsheet model was created which contains the base year DO-NOTHING traffic count data described above. The traffic count data was used to develop an ARCADY model of the existing N55 / R916 / L8048 roundabout.
- Future Year Assessment – The estimated future year traffic volumes on the study area road network, as a result of the increase in background traffic and the additional development related traffic was used to assess the future operational performance of the junctions both at the year of opening of the development, 5 and 15 years after opening.
- Parking Requirements – Car parking provision for the proposed development was assessed against the parking standards as set out in the Westmeath County Development Plan

13.4 Description of Proposed Development

The proposed development consists of 70 residential housing units as shown in table 13.1 *Development Schedule*.

Item	Unit	Quantity
Houses	No.	70

Table 13.1 Development Schedule

Access to the proposed residential development will be via the existing roundabout onto the N55 national road. A layout of the proposed development and its access point are shown on the Architect’s drawings.

13.5 Existing and Proposed Traffic Conditions

13.5.1 Existing Traffic Flow

A traffic count was undertaken during a 12-hour period (07:00 to 19:00) on Thursday 30th of September 2021. The count data is provided in Appendix 13.1 – Traffic Counts. Count information was obtained at the following junction:

- N55 / R916 / L8048 roundabout

The traffic flows during the AM and PM peak hours were abstracted from the surveyed data and are shown in the following tables:

N55 / R916 / L8048 Roundabout

AM Peak Existing (08:00 – 09:00)

From / To	N55 (north)	R916	N55 (south)	L8048	Totals
N55 (north)	0	274	474	1	749
R916	197	8	179	10	394
N55 (south)	284	113	2	7	406
L8048	7	14	24	0	45
Totals	488	409	679	18	1594

PM Peak Existing (17:00 – 18:00)

From / To	N55 (north)	R916	N55 (south)	L8048	Totals
N55 (north)	1	202	296	1	500
R916	364	5	115	14	498
N55 (south)	511	136	0	9	656
L8048	1	6	3	0	10
Totals	877	349	414	24	1664

A summary of the count data for the peak hour flows is contained in Appendix 13.2 – Traffic Flow Sheets.

13.5.2 Existing Road Network

The N55 travels in a south / north direction and provides a link between Athlone and Cavan town. The N55 / R916 / L8048 roundabout has the following characteristics at the location of the access to the residential development:

- It's a 4-arm roundabout with an ICD of 48m.
- It's a 2-lane circulating carriageway with a carriageway width of approximately 10m.
- Street lighting is provided at the roundabout and on all approaches to the roundabout.
- The speed limit on the N55 is 50km/h.

The L8048 will provide access to the proposed development. The L8048 has the following characteristics:

- It's a single carriageway road that is approximately 7.5m wide.
- There are 1.5m wide on-road cycle lane located on either side of the carriageway.
- There is a 2m wide footpath located on either side of the carriageway.
- Street lighting is provided along the L8048.

13.5.3 Road Collisions

Information on road collisions was taken from the Road Safety Authority website and is provided hereunder in Figure 13.1.

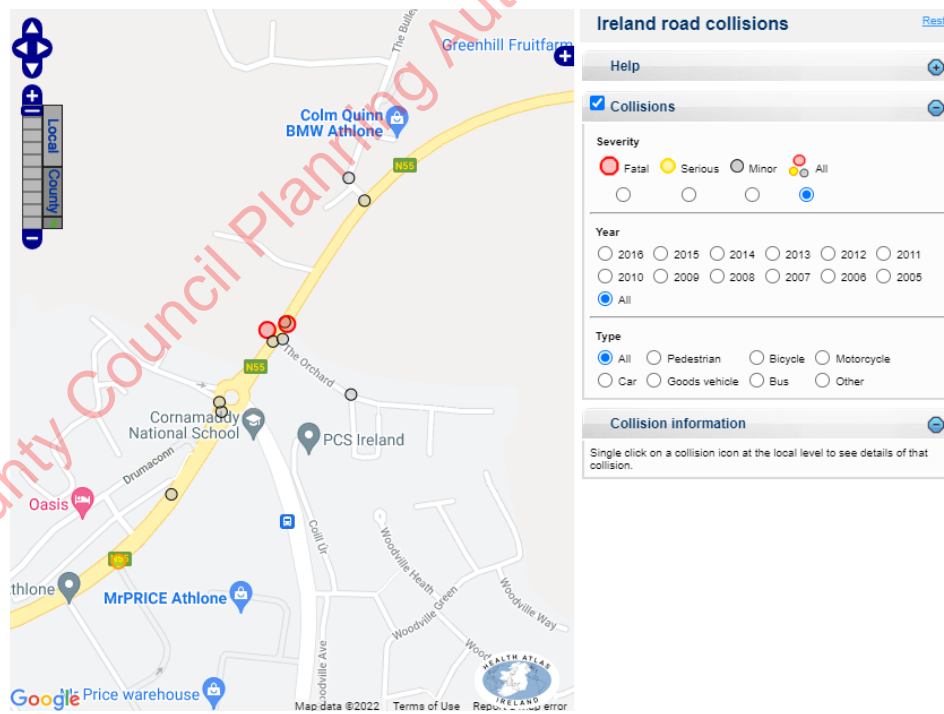


Fig 13.1: Road collisions

There two number collisions recorded at the existing N55 / R916 / L8048 roundabout which provides access to the proposed residential development in the period of twelve years (from 2005 to 2016).

13.6 Traffic Generation and Trip Distribution

13.6.1 Development Trip Generation

The TRICS database has been used to predict the trip generation to and from the proposed residential development for the AM and PM peak periods. Full details of the TRICS information used for the assessments are provided in Appendix 13.3 - TRICS information.

13.6.1.1 House Dwellings

The category of “Residential – Houses Privately Owned” has been assessed as the most appropriate development type category for this part of the development and the trip rates for the AM and PM peak periods are shown below:

Trip rates per number of Units

	Trip rate to development	Trip rate from development
AM Peak	0.168	0.433
PM Peak	0.399	0.241

For the proposed 70 dwellings, this would give the following trips to and from the proposed development:

Trip Generation – 70 Residential Dwellings

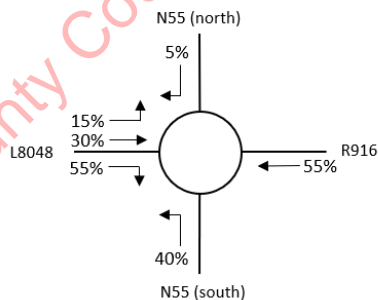
	Trip rate to development	Trip rate from development
AM Peak	12	30
PM Peak	28	17

13.6.1 Trip Generation

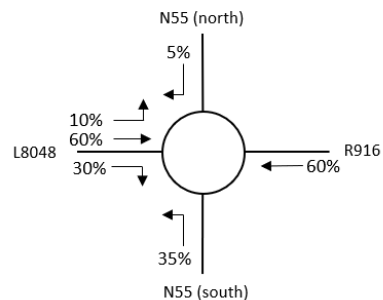
The access to the proposed development will be via the existing N55 / R916 / L8048 roundabout.

The following diagrams show the existing and proposed traffic distribution percentage for the AM and PM peak at the existing N55 / R916 / L8048 roundabout.

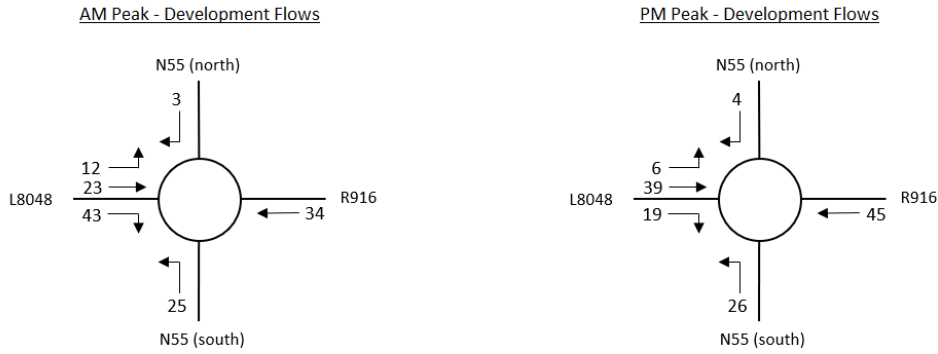
AM Peak - Development Trip Distribution (Percentage)



PM Peak - Development Trip Distribution (Percentage)



Using the proposed directional splits shown above and the trips generated by the proposed development outlined in 4.1, the following diagrams show the turning movements of predicted development traffic at the existing N55 / R916 / L8048 roundabout during the AM and PM peak hours:



13.7 Committed Developments

A planning application for 75 dwellings has recently been granted planning permission (planning ref: 22/253) by Westmeath County Council. Therefore, a capacity assessment has been undertaken to determine the impact that the committed development will have on the existing existing N55 / R916 / L8048 roundabout, when the proposed development and the committed development is fully operational.

The predicted trips to and from the committed development have been extracted from the granted planning application and the proposed trips generated by the development are shown below:

Trip Generation – 75 Residential Dwellings

	Trip rate to development	Trip rate from development
AM Peak	13	33
PM Peak	30	18

The above committed development flows have been added to the year of opening, five year and fifteen-year capacity assessments using the percentage distribution splits outlined in 4.2 above. Full details of the predicted traffic flows are provided in Appendix 13.2– Traffic Flow Sheets.

13.8 Future Developments

There are lands adjacent to the proposed development which form part of the overall masterplan for the proposed development. Access to the future residential development would be via the existing N55 / R916 / L8048 roundabout. For this reason, a capacity assessment has been undertaken to determine the impact that the future developments will have on the existing N55 / R916 / L8048 roundabout, when the development is fully operational.

TRICS database has been used to predict trip generation to and from the proposed development for the AM and PM peak periods. The future residential lands will cater for an additional 280 residential dwellings and a creche.

Residential - Houses Privately Owned has been used as most appropriate category for the future residential developments, and the trip rates for the AM and PM peak periods are shown below:

Trip rates per number of Units

	Trip rate to development	Trip rate from development
AM Peak	0.168	0.433
PM Peak	0.399	0.241

For the proposed 280 dwellings, this would give the following trips to and from the proposed development:

Trip Generation – 280 Residential Dwellings

	Trip rate to development	Trip rate from development
AM Peak	47	121
PM Peak	112	67

4.4.1 Creche

The category of “Education – Creche” has been assessed as the most appropriate development type category for this part of the development and the trip rates for the AM and PM peak periods are shown below:

Trip rates per Sqm

	Trip rate to development	Trip rate from development
AM Peak	6.629	5.181
PM Peak	5.211	5.861

For the proposed creche of 680sqm, this would give the following trips to and from the proposed development:

Trip Generation – 680sqm

	Trip rate to development	Trip rate from development
AM Peak	45	35
PM Peak	35	40

13.8.1 Creche

The category of “Education – Creche” has been assessed as the most appropriate development type category for this part of the development and the trip rates for the AM and PM peak periods are shown below:

Trip rates per Sqm

	Trip rate to development	Trip rate from development
AM Peak	6.629	5.181
PM Peak	5.211	5.861

For the proposed creche (Westmeath County Council Ref. 22/253) this would give the following trips to and from the proposed development:

Trip Generation – 680sqm

	Trip rate to development	Trip rate from development
AM Peak	45	35
PM Peak	35	40

13.8.2 Total Development Trip Generation Summary

To summarise, the trips that are predicted to be generated by the proposed development (residential and creche) are shown in the table below:

Trip Generation – Total Development

	Trip rate to development	Trip rate from development	Total
AM peak	92	156	248
PM peak	147	107	254

13.9 Future Year Traffic Growths

The TII issues a range of forecasts: low growth, medium growth and high growth. The implementation of policies relating to Smarter Travel and to public transport will act as a deterrent to high growth in car-based travel. Low growth factors are however likely to be equally unrealistic at present in the Athlone area, so we have used medium growth factors in our assessment.

The zone in which the site is located is numbered 296 in the TII National Traffic Model. The growth factors are as follows:

Zone	2021 Existing	2024 development completion	2029 5 years after dev. completion	2039 15 years after dev. completion
296	1	3.95%	10.89%	15.79%

These percentages have been used to predict the increase in background traffic that will occur in future years. Full summary tables and predicted future traffic flows for 2024, 2029 and 2039 future years are included in Appendix 13.2 – Traffic Flow Sheets.

13.10 Operational Assessments

13.10.1 Introduction

Traffic generated by the proposed development will have some effect on the local road network surrounding the site. The following junction was assessed:

- the existing N55 / R916 / L8048 roundabout

13.10.2 N55/ R916/ L4048 Roundabout

Capacity assessments have been undertaken using the computer program PICADY for the AM and PM peak hours.

The following table summarises the existing situation and the effects that the proposed development will have on this junction in 2024, 2029 and 2039 using the existing and predicted traffic flows shown in Appendix 13.2 – Traffic Flow Sheets. Full ARCADY printouts are provided in Appendix 13.4 – ARCADY Results.

The parameters shown in the table are defined as follows:

Ratio of Flow to Capacity (RFC) is a factor indicating the flow on a junction arm relative to its capacity. An RFC of 1.0 means the junction has reached its ultimate capacity and an RFC of 0.85 means that the junction has reached its reserve capacity.

Avg. Queue is the average number of vehicles queued over the time period on the junction approach.

Queue delay is the average number of seconds delay to each vehicle in the time period.

N55 / R916 / L8048 Roundabout – Capacity Assessment

Year	Period		Predicted RFC value	Avg Queue (vehicles)	Queue delay (secs./veh.)
2021 Base Flows	AM Peak	N55 (north)	0.54	1	5
		R916	0.38	1	5
		N55 (south)	0.30	0	3
		L8048	0.05	0	4
	PM Peak	N55 (north)	0.36	1	4
		R916	0.43	1	5
		N55 (south)	0.53	1	6
		L8048	0.01	0	5
2024 No Development	AM Peak	N55 (north)	0.57	1	6
		R916	0.40	1	5
		N55 (south)	0.31	1	4
		L8048	0.05	0	4
	PM Peak	N55 (north)	0.38	1	4
		R916	0.45	1	5
		N55 (south)	0.55	1	6
		L8048	0.02	0	5
2024 With Development + Committed Development	AM Peak	N55 (north)	0.58	1	6
		R916	0.42	1	6
		N55 (south)	0.32	1	4
		L8048	0.12	0	4
	PM Peak	N55 (north)	0.38	1	4
		R916	0.48	1	6
		N55 (south)	0.58	1	7
		L8048	0.07	0	5

Year	Period	Approach	Predicted RFC value	Avg Queue (vehicles)	Queue delay (secs./veh.)
2029 No Development	AM Peak	N55 (north)	0.61	2	6
		R916	0.43	1	6
		N55 (south)	0.34	1	4
		L8048	0.06	0	4
	PM Peak	N55 (north)	0.40	1	4
		R916	0.48	1	6
		N55 (south)	0.60	2	7
		L8048	0.02	0	5
2029 With Development + Committed	AM Peak	N55 (north)	0.62	2	7
		R916	0.46	1	6
		N55 (south)	0.35	1	4
		L8048	0.13	0	4
	PM Peak	N55 (north)	0.41	1	4
		R916	0.52	1	6
		N55 (south)	0.63	2	7
		L8048	0.07	0	6
2039 No Development	AM Peak	N55 (north)	0.63	2	7
		R916	0.46	1	6
		N55 (south)	0.35	1	4
		L8048	0.06	0	4

	PM Peak	N55 (north)	0.42	1	4
		R916	0.51	1	6
		N55 (south)	0.63	2	7
		L8048	0.02	0	6
2039 With Development + Committed Development	AM Peak	N55 (north)	0.65	2	7
		R916	0.48	1	7
		N55 (south)	0.36	1	4
		L8048	0.13	0	4
	PM Peak	N55 (north)	0.43	1	4
		R916	0.54	1	6
		N55 (south)	0.66	2	8
		L8048	0.08	0	6
2039 With Development + Committed Development + Future Development	AM Peak	N55 (north)	0.70	2	9
		R916	0.57	1	8
		N55 (south)	0.40	1	4
		L8048	0.31	0	5
	PM Peak	N55 (north)	0.46	1	5
		R916	0.63	2	8
		N55 (south)	0.75	3	12
		L8048	0.26	0	8

The summary predictions shown in the table above indicate that currently the existing N55 / R916 / L8048 roundabout operates within capacity with small queues and delays during the AM and PM peak period.

In 2024, 2029 and 2039 with no residential development in place and an increase in background flows only the roundabout will operate within capacity with small queues and delays with a maximum RFC value of 0.63 during the AM peak hour in 2039.

In 2024, 2029 and 2039 with the residential development operational and an increase in background flows the roundabout will operate within capacity with small queues and delays with a maximum RFC value of 0.67 during the PM peak hour in 2039.

In 2039 with the residential development operational, the future residential developments operational and an increase in background flows the roundabout will operate within capacity with small queues and delays with a maximum RFC value of 0.75 during the AM peak hour in 2039.

13.10.3 Operational Assessment Conclusions

Junction analyses to assess the effects of traffic generated by the proposed development have been undertaken for the existing N55 / R916 / L8048 roundabout. The analysis shows that:

- The existing N55 / R916 / L8048 roundabout currently operates within capacity with small queues and delays during the AM and PM peak hours.
- The existing N55 / R916 / L8048 roundabout will continue to operate within capacity with small queues and delays when the proposed residential development and the committed development is completed in 2024, year of opening, 2029, five years after opening and in 2039, fifteen years after opening.
- The existing N55 / R916 / L8048 roundabout will continue to operate within capacity with small queues and delays when the proposed residential development, the committed development and the future residential developments are complete in 2039, fifteen years after opening.

13.11 Parking

13.11.1 Car Parking Provision

A total of 107 parking spaces will be provided to cater for the proposed residential development as shown on the architect’s drawing contained in Appendix 13.1 – Drawings.

13.11.2 Car Parking Requirements from Development Plan

The ‘Westmeath County Development Plan 2021-2027’ lists standard provision for car parking and the table below sets out those requirements in relation to the proposed development.

Car parking requirements from the Westmeath County Development Plan 2021 – 2027:

Parking Standards for Residential Development – Phase 3			
Land-use	Requirements	Quantity	Parking
Residential Dwellings	1 space per dwellings	70 Dwellings	70 spaces
Visitor Parking for Residential Dwellings	1 space per 3 dwellings	70 Dwellings	23 spaces
Total			93

The Westmeath County Development Plan indicates that the number of parking spaces required for the proposed residential development is 93 parking spaces. The proposed residential development will provide 107 parking spaces.

13.12 Conclusions

The main conclusions of this study are summarised as follows:

- The development flows to and from the proposed development have been predicted using the TRICS database.
- The existing N55 / R916 / L8048 roundabout currently operates within capacity with small queues and delays during the AM and PM peak hours.
- The existing N55 / R916 / L8048 roundabout will continue to operate within capacity with small queues and delays when the proposed residential development and the committed development is completed in 2024, year of opening, 2029, five years after opening and in 2039, fifteen years after opening.
- The existing N55 / R916 / L8048 roundabout will continue to operate within capacity with small queues and delays when the proposed residential development, the committed development and the future residential developments are complete in 2039, fifteen years after opening.
- The development provides adequate car parking spaces as set-out in Chapter 6 above. Facilities for pedestrians are included in the internal layout.

14 WASTE MANAGEMENT

14.1 Introduction

The chapter was written by Nikita Coulter and Laura Griffin. Nikita is a Senior Environmental Consultant with Enviroguide Consulting who specialises in Waste Management. Nikita has 8 years professional experience as an Environmental Compliance Specialist in the Irish waste management industry dealing with municipal and hazardous waste management and energy recovery from waste. Nikita Coulter holds an Honours BSc. from University College Dublin and an MSc. from Trinity College Dublin, a NEBOSH Diploma with Distinction in Environmental Risk Management and a Postgraduate Diploma with Distinction in Environmental Engineering from Trinity College Dublin. Laura Griffin is an Environmental Consultant with Enviroguide Consulting. Laura has a Master of Science (Hons) in Climate Change from Maynooth University and a Bachelor of Arts (Hons) in English and Geography from Maynooth University. Laura has worked as an Environmental Consultant with Enviroguide since 2021 and has experience preparing Environmental Impact Assessment (EIA) Screening Reports, Air Quality and Climate, Noise and Vibration, and Archaeology and Cultural Heritage and Waste Chapters of EIARs.

14.2 Assessment Methodology

Regulations and Guidance

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

- 7) Environmental Protection Agency (EPA) (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR)
- 8) EPA (2021) Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects
- 9) Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) as amended by Directive (EU) 2018/851.
- 10) European Union (Waste Directive) Regulations 2020, S.I. No. 323 of 2020
- 11) Waste Management Acts 1996 (as amended)
- 12) Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021
- 13) Westmeath County Development Plan 2021-2027

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

- Operational Waste Management Plan (Operational Phase)
- Construction Environmental Management Plan (Paul McGrail Consulting Engineers Ltd, October 2022)
- Construction Waste Management Plan (Construction Phase) (Paul McGrail Consulting Engineers Ltd, October 2022)
- <http://mywaste.ie>

Description and Assessment of Potential Impacts

Impacts will vary in quality from negative, to neutral or positive. The effects of impacts will vary in significance on the receiving environment. Effects will also vary in duration. The terminology and methodology used for assessing the 'impact' significance and the corresponding 'effect' throughout this Chapter is described in Table 14-1.

14.3 Description and Assessment of Potential Impacts

Impacts will vary in quality from negative, to neutral or positive. The effects of impacts will vary in significance on the receiving environment. Effects will also vary in duration. The terminology and methodology used for assessing the 'impact' significance and the corresponding 'effect' throughout this Chapter is described in Table 12-1.

QUALITY OF EFFECTS / IMPACTS	DEFINITION
Negative	A change which reduces the quality of the environment
Neutral	No effects or effects that are imperceptible, within the normal bounds of variation or within the margin of forecasting error.
Positive	A change that improves the quality of the environment
SIGNIFICANCE OF EFFECTS / IMPACTS	DEFINITION
Imperceptible	An effect capable of measurement but without significant consequences.
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters a sensitive aspect of the environment.
Profound	An effect which obliterates sensitive characteristics.
DURATION OF EFFECTS / IMPACTS	DEFINITION
Momentary	Effects lasting from seconds to minutes
Brief	Effects lasting less than a day
Temporary	Effects lasting one year or less
Short-term	Effects lasting one to seven years
Medium-term	Effects lasting seven to fifteen years
Long-term	Effects lasting fifteen to sixty years
Permanent	Effects lasting over sixty years

Table 14-1 Terminology used to assess the quality, significance and duration of potential impacts & effects

14.4 Local and National Waste Action Plans

The Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021 provides the structure for the prevention, reduction and management of waste in 12 local authority areas, including Westmeath. Westmeath County Council (WMCC) is the local authority responsible for setting and administering waste management activities in the area of the Proposed Development. The EMR hosts a number of permitted and licensed waste facilities for management of construction and demolition (C&D), and municipal waste. These include soil recovery facilities, material recovery facilities, inert C&D waste facilities, hazardous waste treatment facilities, waste transfer stations, two waste-to-energy facilities and municipal waste landfills.

The EMR Waste Management Plan 2015-2021 has set the following targets for waste management in the region:

- Prevent waste: a reduction of one per cent per annum in the amount of household waste generated over the period of the plan.
- More recycling: increase the recycle rate of domestic and commercial waste from 40 to 50 per cent by 2020.
- Further reduce landfill: eliminate all unprocessed waste going to landfill from 2016.

The Department of Communications, Climate Action and Environment (DCCAE) published 'A Waste Action Plan for a Circular Economy – Ireland's National Waste Policy 2020-2025' in September 2020 (updated in January 2021), which focuses on the prevention of waste disposal by maximising the value of material resources and reducing waste generation. In a circular economy, waste and resource use are minimised; the value of products and materials is maintained for as long as possible through good design, durability and repair; and when a product has reached the end of its life, its parts are used again and again to create further useful products 'A Waste Action Plan for a Circular Economy'.

In order to comply with the targets set out in the EMR Waste Management Plan and to achieve the objectives set out in 'A Waste Action Plan for a Circular Economy', it is imperative that robust resource and waste management plans are developed for and designed into the pre-construction, construction and operational phases of the Proposed Development.

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

Under Article 27 of the European Communities (Waste Directive) Regulations 2011 (SI No. 126 of 2011) as amended (referred to hereafter as Article 27), uncontaminated soil and stone free from anthropogenic contamination which is excavated during the Construction Phase of a development can be considered a by-product and not a waste, if (a) further beneficial use of the material is certain, (b) it can be used directly without any further processing, (c) it is produced as an integral part of the development works and (d) the use is lawful and will not have any adverse environmental or human health impacts (EPA, 2019). For Article 27 to apply, the beneficial use mentioned in point (a) above must be identified for the entirety of the excavated soil from the Proposed Development prior to its production, with that use taking place within a definite timeframe, for it to be regarded as certain.

14.6 The Existing and Receiving Environment (Baseline Situation)

The Site of the Proposed Development comprises undeveloped lands within the jurisdiction of Westmeath County Council. The Proposed Development Site forms part of the "Cornamaddy Action Area Plan – 2005". The site of the Proposed Development is located on lands which have been allocated Zoning Objectives of "Residential (Low – Medium Density)" and "Open Space".

14.7 Description of the Characteristics of the Proposed Development

The Proposed Development will consist of a residential development and public open space comprising the following:

- Amendments to permitted application WMCC reg Ref. 14/7103/ ABP Ref. PL25.244826 for the removal of 38 no. permitted units (not constructed) to be replaced by: Construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (78 sq.m), 60 no. 3 bed semidetached (96-116 sq.m) and 6 no. 4 bed semidetached houses (147 sq.m) with associated private gardens.
- The creche facility, public open spaces, landscaping, roads layouts, car parking, boundary treatment works, public lighting and all associated site works associated with the 87 no. remaining units retained as permitted under WMCC Reg Ref. 14/7103 ABP Ref. PL25.244826 will remain unchanged.
- All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a sections of the distributor road permitted under WMCC Reg. Refs 14/7103/ ABP Ref. PL25.244826 and 22/253 to the east of the site.
- All associated site development works, services provision, drainage works, public open space (c.1.03ha), landscaping, boundary treatment works, public lighting, associated esb substation cabinets, bin stores, car and bicycle parking provision.
- This development will form part of a larger/future phase of the development.

14.8 Characteristics of the Construction and Operation Phases

Construction Phase

The CEMP (Paul Mc Grail Consulting Engineers, October 2021) details the Construction Phase phasing. The phasing included in the CEMP is indicative to allow for flexibility in terms of the development. In terms of the delivery and phasing of the development the following will be the key stages:

- Phase 1a – site set up;
- Setting out of sites and provision of services;
- Construction of commercial utilities.

The following outlines the Construction Phase sequence of works:

- Enabling works;
- Substructure;
- Superstructure;
- Fit out and finishes.

Operational Phase

The Operational Phase of the Proposed Development will consist of the normal day-to-day operations necessary for the management of a residential development and the ongoing maintenance of the dwellings and units.

14.9 Potential Impact of the Proposed Development

Construction Phase

The Construction Phase will give rise to the requirement to remove and bring quantities of various materials to and from the Site of the Proposed Development. Construction and

excavation related wastes will be created during the Construction Phase. This has the potential to impact on the local waste management network.

A Construction Environmental Management Plan (CEMP) (Paul McGrail Consulting Engineers Ltd, October 2022) and a Construction Waste Management Plan (CWMP) (Paul McGrail Consulting Engineers Ltd, October 2022) have been prepared for the Construction Phase of the Proposed Development and will be submitted with the planning application. Site clearance activities will occur in accordance with the CEMP and CWMP.

As the Site of the Proposed Development is a greenfield site it will require preparatory works and site clearance, including the identification of trees that are required to be removed and the removal of these, along with scrub and vegetation, in consultation with the appointed Arborist, as well as the removal of topsoil and subsoils. Predicted volumes of soils and subsoils generated as part of the site clearance works have been quantified in Chapter 6, Land Soils and Geology.

It is intended, where possible, to maximise the reuse of soil within the Proposed Development for back-filling, construction of the site and landscaping to avoid importing raw materials. Excavated soil and stone pending reuse in the Proposed Development will be temporarily stockpiled in designated areas onsite during the Construction Phase.

The preliminary Cut and Fill Analysis outlined in the CWMP (Paul McGrail Consulting Engineers Ltd, October 2022) has indicated that approximately 8,000m³ of topsoil and 18,000m³ of sub-grade material will need to be excavated during construction. Topsoil that is required for the soft landscaping will be measured and this quantity will be retained on site. Offsite removal of surplus clean soil and topsoil will be undertaken in accordance with the CWMP, the CEMP and relevant waste management legislation. The Site management team will keep records of the removal and certification on file on site. The offsite re-use of material will be prioritised to minimise the potential loss of valuable good quality soil and subsoil to landfill as a waste. The re-use of soil offsite will be undertaken in accordance with all statutory requirements and obligations including where appropriate re-use as by-product in accordance with Article 27. Any surplus soil not suitable for re-use as a by-product and other waste materials arising from the Construction Phase will be removed offsite by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste facilities. As only authorised facilities will be used, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.

Waste will be generated during the construction of the dwelling units and the ancillary infrastructure at the site. There will be a surplus of material such as off-cuts of timber, broken concrete blocks, plasterboard, tiles, and packaging waste. The waste materials shall be segregated at source and stored in suitably size receptacles and transferred offsite for appropriate processing, recycling and recovery. Waste materials generated from the construction phase that are unsuitable for reuse or recovery shall be separately collected. Disposal of construction generated wastes will be considered a last resort, once recycling or recovery options have been ruled out. Waste will be collected as appropriate by suitably qualified and permitted nominated waste management contractors.

It is not envisaged that there will be any hazardous waste generated throughout the construction works however if generated, on-site storage of any hazardous wastes produced (i.e., waste fuels/chemicals) will be kept to a minimum, with compliant removal off-site organised on a regular basis. Offsite removal of hazardous waste will be undertaken in accordance with the CWMP and relevant waste management legislation by an authorised contractor and sent to the appropriately authorised (licensed/permitted) receiving waste treatment facilities. As only authorised facilities will be used, the potential impacts at any authorised receiving facility sites will have been adequately assessed and mitigated as part of the statutory consent procedures.

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

The potential impact from the Construction Phase on waste recovery and disposal is likely to be negative, short-term and moderate.

Operational Phase

The Operational Phase of the Proposed Development will result in an increase in the production of municipal waste in the region and will increase demand on waste collectors and treatment facilities. Anticipated wastes arising from the day-to-day operations at the Proposed Development are summarised in Table 14-2.

WASTE DESCRIPTION	LIST OF WASTE CODE
Mixed Municipal Waste	20 03 01
Mixed Dry Recyclables	20 03 01
Biodegradable Kitchen Waste	20 01 08
Glass	20 01 02
Bulky wastes	20 03 07
Waste electrical and electronic equipment*	20 01 35* 21 01 36
Batteries and accumulators*	20 01 33* 20 01 34
Textiles	20 01 11
Fluorescent tubes and other mercury containing waste*	20 01 21
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.)*	20 01 13/19/27-28/29-30
Plastic	20 01 39
Metals	20 01 40
Paper and Cardboard	20 01 01

Table 14-2 Anticipated wastes arising from the Operational Phase of the Proposed Development (*Individual waste type may contain hazardous materials)

Municipal waste is made up of household waste and commercial waste that is compositionally comparable to household waste. It includes residual, recyclables, organic, bulky, and waste electrical and electronic equipment.

The Proposed Development consists of 70 No. residential units, comprised of 4 No. 2 bed houses, 60 No. 3 bed houses and 6 no. 4 bed houses. An Operational Waste Management Plan (OWMP) has been prepared by Paul McGrail (2022) and has been submitted with this planning application.

The OWMP has estimated that 16.802m³ of the main waste types will be generated by the Proposed Development on a weekly basis once full occupancy has been reached. The weekly total of waste that will be generated is made up of 10.05m³ of mixed dry recyclables, 4.19m³ of mixed non recyclables, 1.7m³ of organic waste and 0.83m³ of glass waste.

It is proposed that all duplexes and terraced units will have their own bin stores. Residential units with rear garden access will store their bins to the rear. In all cases where the bin storage is to the front of the residential unit the area shall be well screened and the design shall integrate with the dwelling.

Each residential unit may be provided with three separated bins to provide full segregation and maximum recycling. The bins will provide for management of mixed dry recyclables, mixed non recyclables and organic waste. Waste glass that will be generated by the development will be recycled off-site in local bring bank facilities.

The potential impact from the Operational Phase on municipal waste disposal is likely to be long term, negative and moderate.

14.10 Cumulative Impacts

The cumulative effects of Proposed Development on Material Assets have been assessed taking other planned, existing and permitted developments in the surrounding area into account. All planning permission applications that have been granted and developed have been incorporated into the baseline assessment of this application.

A review of other off-site developments and proposed developments was completed as part of this assessment within a radius of approximately 2km. The following projects were reviewed and considered for possible cumulative effects with the Proposed Development.

PLANNING NO.	REF	APPLICANT NAME	SUMMARY OF DEVELOPMENT
WMCC Ref. 22/253		Marina Quarter Ltd	The development will consist of the following: • Construction of 75 no. residential units comprising: 51 no. 2 storey semi-detached and terraced houses (consisting 4 no. 2 bed houses and 47 no. 3 bed houses, ranging in size from c.78 sq.m – 120 sq.m each), and 24 no. 3 storey apartment/duplex units (consisting 12 no. 2 bed apartments and 12 no. 3 bed duplexes, ranging in size from 84sq.m to 121 sq.m each), with associated private gardens and east/west facing terraces; • All pedestrian and vehicular access roads and footpaths including a section of the planned east/west distributor road connecting to a section of the distributor road permitted under WMCC Reg. Ref. 14/7103/

		<p>ABP Ref. PL25.244826 to the south east of the site. • All associated site development works, services provision, drainage works, residential open space (c.0.28ha) and public open space (c.0.82ha), landscaping, boundary treatment works, public lighting, 1 no. esb substation cabinets, bin stores, car and bicycle parking provision; • Provision of a new detention basin on the eastern portion of the site designed to cater for the proposed development, in lieu of the drainage works permitted under WMCC Reg. Ref. 14/7103 / ABP Ref. PL 25.244826; • This development will form part of a larger/future phase of the development; • No changes to the existing pumping station located outside the northern site boundary; A Natura Impact Statement has been prepared in respect of this application.</p> <p>Status: Decision Made Date: 26/10/2022</p>
<p>WMCC Ref. 22/340</p>	<p>Marina Quarter Ltd</p>	<p>To consist of the following: 1) Construction of a two Storey childcare facility, including classrooms, reception, kitchen, associated staff areas and office, toilets, storage, plant rooms, circulation areas and photovoltaic panels at roof level (c.668sqm total gross floor area) 2) The proposed facility includes a secure outdoor play area(c. 595 sqm), 18 no. car parking spaces and 20 no. bicycle parking spaces. 3) Existing vehicular access onto the existing link road and provision of an internal access road, footpaths and 2 no. pedestrian access points. 4) All associated site development works, service provision, drainage works, landscape and boundary treatment works and public lighting. 5) This development will form part of a larger/future phase of the development. 6) A Natura Impact Statement has been prepared in respect of this planning application.</p>

		<i>Status: Further Information</i>
<i>WMCC Ref. 17/224</i>	<i>Parana Properties</i>	<p><i>The Development of 7 no new dwellings to include 3 no 5 bedroom detached houses and 2 no 4 bedroom detached houses with optional fifth bedroom/study and 2 no 4 bedroom semi detached houses with optional fifth bedroom/study and all associated site development works including road networks, services, landscaping, and boundary treatments. A ten year permission is being sought</i></p> <p><i>Status: Application Finalised</i></p> <p><i>Decision Date: 09/09/2018</i></p>

Table 14-3 Recent applications granted permission in the vicinity of the Proposed Development

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

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

14.11 Ameliorative, Remedial or Reductive Measures

Construction Phase

The following mitigation measures are recommended for the Construction Phase of the Proposed Development regarding Waste Management:

- Waste materials will be separated at source and will follow the Construction & Demolition Waste Management Plan.
- Prior to the commencement of the Construction Phase detailed calculations of the quantities of topsoil, subsoil and green waste will be prepared, and soils will be tested to confirm they are clean, inert or non-hazardous.
- Beneficial use must be identified for the entirety of the excavated soil from the Proposed Development prior to its production for the excavated soil and stone to be considered as a by-product under Article 27 of the European Communities (Waste Directive) Regulations, 2011.
- A suitably competent and fully permitted waste management company will be employed to manage all waste arising for the Construction Phase. The appointed waste contractor must have the relevant authorisations for the collection and

transport of waste materials, issued by the National Waste Collection Permit Office (NWCPO).

- Similarly, all waste materials will be transported to an appropriately authorised facility, which must have the relevant authorisations for the acceptance and treatment of the specific waste streams, i.e., a Certificate of Registration (COR) or a Waste Facility Permit (WFP) as granted by a Local Authority, or a Waste/Industrial Emission Licence as granted by the Environmental Protection Agency.
- All waste quantities and types will be recorded and quantified, and records will be retained onsite for the duration of the Construction Phase.

Operational Phase

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

14.12 Residual Impacts (including Worst Case Scenario)

The CWMP and the OWMP that have been prepared for the Proposed Development provide sufficient guidance to ensure that the Construction and Operational Phases of the Proposed Development will have a neutral, imperceptible to slight impact on the receiving environment in the long term. There will be an increase in waste collection in the area during the Construction and Operational Phases of the Proposed Development, however, as the surrounding area is highly residential in nature, waste collection is commonplace.

When considered in conjunction with other permitted, planned and existing developments in the vicinity of the Site, it is predicted that the likely cumulative impact of the Proposed Development with other developments in the area on waste management during both the Construction and Operational Phases will be neutral and imperceptible to slight in the long term.

Provided that the mitigation measures discussed in section 14.11 are implemented, that the conditions for Article 27 are met for the excavated soil and stone, and a high rate of reuse, recycling and recovery is achieved in both the Construction and Operational Phases, the likely effect of the residual impacts of the Proposed Development on the environment will be neutral and imperceptible to slight in the long term.

A worst-case scenario in relation to waste would be where a previously unclassified hazardous waste stream arose on the site during excavations, which was not identified and segregated appropriately and resulted in the contamination of a non-hazardous waste stream, such as soil and stones, resulting in a large volume of hazardous waste that would require specialist removal and treatment. However, taking account of the avoidance and mitigation measures the worst-case scenario is deemed to be unlikely.

14.13 'Do Nothing' Scenario

In the 'Do Nothing' scenario the Proposed Development does not proceed and there is no additional demand or loading on waste management infrastructure locally or nationally.

14.14 Monitoring

Materials and waste generated during the Construction Phase will be carefully monitored by the Construction Environmental Site Manager, and/or an appointed Waste Officer, to ensure compliance with relevant local authority requirements and effective implementation of the CWMP, including maintenance of waste documentation.

14.15 Difficulties Encountered

No difficulties were encountered in the preparation of this Chapter.

14.16 Bibliography

Department of Communications, Climate Action and Environment (DCCA) (2021) A Waste Action Plan for a Circular Economy – Ireland’s National Waste Policy 2020-2025

Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021

Environmental Protection Agency, 2022, Guidelines on the Information to Be Contained in Environmental Impact Assessment Reports.

Environmental Protection Agency, 2021, Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects

Environmental Protection Agency, 2019, Guidance on Soil and Stone By-products in the context of article 27 of the European Communities (Waste Directive) Regulations 2011, Version 3.

Environmental Protection Agency, 2003, Advice Notes on Current Practice in the preparation of Environmental Impact Statements.

Environmental Protection Agency, 2002, Guidelines on the information to be contained in Environmental Impact Statements.

Waste Framework Directive (Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste) as amended by Directive (EU) 2018/851.

Waste Management Acts 1996-2011 (as amended)

15 MATERIAL ASSETS

15.1 Introduction

This chapter prepared evaluates the potential impacts, from the proposed development of Material Assets as defined in the EPA Guidelines ‘Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022), Advice Notes Draft Advice Notes for preparing Environmental Impact Statements (EPA, 2015), and European Commission Guidance on Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report (2017)’.

As the nature of the potential for impact on material assets is derived from the cumulative impact of both the residential development as a whole, this chapter assesses the potential impacts of development on the site.

This chapter will evaluate the following economic assets of the site and environs:

- Materials Assets of Natural Origin
 - Agriculture
 - Natural resources
- Material Assets of Human Origin
 - Local settlement
 - Property Prices
 - Gas Supply
 - Electricity supply
 - Telecommunications
 - Transport
 - Water supply and sewerage
 - Municipal Waste
 - Tourism

Where relevant several of these assets have been addressed in other chapters within this EIAR and therefore, they are not discussed in detail in this chapter. References are provided to these other chapters where appropriate.

15.2 Material Assets of Natural Origins

15.2.1 Agriculture

The development site has been unused greenfield lands and has not recently been used for any agricultural activities. The land on which the overall proposed development is to be located is appropriately zoned for residential development. It is not considered that the operation of the subject proposal or wider development on the subject lands will have a significant impact on agriculture in the wider environs of the site. Emissions from the development with the potential to impact on local agriculture are addressed in the respective EIA chapters including Chapter 5: Population and Human Health, Chapter 6: Land, Soils, Geology and Hydrogeology, Chapter 7: Hydrology, Chapter 8: Biodiversity, Chapter 9: Air Quality & Climate and Chapter 10: Noise and Vibration.

15.2.2 Planting

Chapter 11 Landscape and Visual Impact report assesses trees on site and provides an analysis of any potential impact on the existing trees and hedgerows. The chapter also provides recommendations for remedial works, preservation and or removal of trees and hedgerows.

15.2.3 Use of Natural Resources

During construction, fuel for construction related machinery will be one of the main resources used. Use of natural resources, especially water, will be kept to a minimum during the construction phase.

During the operational phase, there will be on-going resource requirements which will reflect the residential nature of the development. Refer Chapter 9: Air Quality and Climate for details on potential emissions from the proposed development.

15.3 Material Assets of Human Origins

15.3.1 Local Settlement

Athlone Town is located approximately 2km to the south of the overall development site and is the nearest significant settlement to the proposed development site, further to the immediately adjacent Drumaconn Estate and pepper potted one off dwellings surrounding the site. All immediate surrounding settlements are established and have permanent residents. Further details on the nature of local settlements are presented in Chapter 5: Population and Human Health.

15.3.1.1 Property Prices

The subject development will consist of an amendment to the previously granted permission within the site redline boundary granted under WMCC Reg Ref. 14/7103 for 125 no. units. 38 no. units are being replaced with 70 no. units as per the subject application, meaning that 157 no. units will be provided on the southern portion of the applicants landholding at Cornamaddy. The northern portion of the applicant's landholding also has the benefit of a permission granted under WMCC Ref. 22/253 for 75 no. units in the northeastern portion of the applicants lands. It is envisaged that a further phase of development will be lodged in the future for c.170 units which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units total.

It is anticipated that the overall development on the lands will have no negative impact on property prices in Athlone. The overall proposal will greatly add to the residential supply in Athlone, which increases competitiveness on the housing market as supply is increased to match demand, leading to a potential drop in housing prices in the wider Athlone area.

15.3.3 Electricity Supply

The proposed development will require an electrical connection to the local network. Initial discussions have taken place with ESB regarding existing infrastructure in the locality. It is predicted that the preliminary loading for the subject proposal of 70 no. units is estimated to be in the region of 800KVA. This is subject to change dependant on final renewable considerations etc.

A number of on-site sub stations will be required to cater for the load generated by the subject proposal. Preliminary design estimates indicate that an MV substation and additional sub stations will be required on site.

15.3.5 Transport

Chapter 13: Traffic and Transportation examine the traffic implications associated with the proposed development, in terms of integration with existing traffic in the area. The chapter presents a detailed review of the proposed development on the existing road network and proposed section of distributor road.

It also examines the proposed development's vehicular access arrangements, car parking provision, site layout and facilities for pedestrians and cyclists.

15.3.6 Water Resources

Chapter 7: Hydrology deals with water resources associated with the proposed development.

The proposed network has been designed to comply with Irish Water specification. 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 Irish Water and to facilitate possible future domestic meter installation.

A Pre-Connection Enquiry was made to Irish Water (Ref. CDS20006740) for water and wastewater connections for up to c. 500 units. Irish Water concluded that based on the details provided with the pre connection enquiry and their own desk top analysis of the current available capacity in the Irish Water Network as assessed by Irish Water, it was advised that the proposed connection to the Irish Water Network can be facilitated.

The confirmation of feasibility issued by Irish Water confirming capacity to connect to the existing network confirmed that the existing Water network can cater for up to c.500 new units on the Cornamaddy lands.

15.3.7 Sewerage

Chapter 7: Hydrology deals process and foul effluent associated with the proposed developments.

The foul water from the development will discharge via soil vent pipes within the buildings by gravity flow before connecting into the existing separate foul sewer network within the development. The foul sewerage for each house will have a separate connection to the proposed 225mm and 150mm diameter foul sewer along the road.

A Pre-Connection Enquiry was made to Irish Water (Ref. CDS20006740) for water and wastewater connections for up to c. 500 units. Irish Water concluded that based on the details provided with the pre connection enquiry and their own desk top analysis of the current available capacity in the Irish Water Network as assessed by Irish Water, it was advised that the proposed connection to the Irish Water Network can be facilitated.

The confirmation of feasibility issued by Irish Water confirming capacity to connect to the existing network confirmed that the existing Wastewater network can cater for up to c.500 new units on the Cornamaddy lands.

15.3.8 Municipal Waste

The construction phase of the proposed development works will give rise to the requirement to remove or to bring on to the site significant quantities of construction materials.

Chapter 14: Waste Management addresses various measures which ensure that the waste arising at the development site is effectively managed to maximise recycling of construction waste, and to minimise the environment impact of construction waste.

All these measures are in compliance with the provisions of the Waste Management Act 1996 (as amended), the litter Act of 1997, and the Eastern-Midlands Region (EMR) Waste management Plan 2015-2021, achieving optimum levels of waste reduction, re-use and recycling.

The future development will increase demand on municipal waste services. The potential impact from the operational phase of the future development on municipal waste disposal is likely to be long term and moderate.

15.3.9 Tourism

The proposed overall development lands are located on greenfield lands approximately 2km to the north of Athlone Town. It is considered that the proposed development will have no impact on the tourist trade within Athlone Town, which is primarily focused on the River Shannon that flows through the town centre and immediately adjacent historic sites such as Athlone Castle, as well as the Luan Gallery on the banks of the Shannon. It is considered that the proposed overall development on the lands will have no impact on tourism in Athlone due to its location on the periphery of the town, the moderate volume of tourists visiting Athlone and the lack of tourist sites immediately adjacent to the development lands.

15.4 Mitigation Measures

- Chapter 11: Landscape and Visual Impact analyses that the proposed development will have minimal impact on the existing tree cover on the site. It also suggests that the additional replanting will work in mitigating any loss of trees as a result of the development and will be a net positive to the tree cover in the particular location.
- As outlined mitigation measures in Chapter 12: Archaeological, Architectural and Cultural Heritage is carried out, then there will be no significant negative residual impacts on the archaeological, architectural or cultural heritage resource.
- Chapter 10: Noise & Vibration deals with a schedule of mitigation measures that has been proposed for both the construction and operational phases to reduce, where necessary, the outward noise and vibration from the development.
- Chapter 9: Air Quality and Climate deals with appropriate mitigation measures to prevent fugitive dust emissions which will ensure the prevention of significant emissions during the construction stage. These measures have been incorporated into the overall Construction Environmental Management Plan (CEMP) prepared in respect of the proposed development.

The chapter also incorporates various good practice measures which would ensure the potential impacts to climate during the construction stage are lessened.

There is no mitigation measures required during the operational phase of the proposed development on air quality and climate.

- Chapter 7: Hydrology outlines various mitigation measures which are included during construction to minimize the potential for any accidental releases off site. During operation, the potential for an impact to ground or storm water is negligible and there are design measures incorporated within the proposed development to manage stormwater run-off quality.

15.5 Residual Assessment

The proposed development will not have any significant impact on material assets including, most notably, public utilities and natural resources. The overall predicted impact of the proposed developments can be classed as long term and negligible with respect to material assets. The proposed development has been designed for, and the infrastructure constructed for, a residential development of this nature and scale.

16 CUMULATIVE IMPACTS

16.1 Introduction

This chapter considers the cumulative impact of the proposed development with any future development, as far as is practically possible, on the site and the cumulative impacts with both planned and permitted developments in the immediate surrounding area. The proposed development will consist of the construction of 70 no. residential units comprising: 4 no. 2 bed terraced houses (78 sq.m), 60 no. 3 bed semi-detached (96-116 sq.m) and 6 no. 4 bed semidetached houses (147 sq.m) with associated private gardens. The subject development will consist of an amendment to the previously granted permission within the site redline boundary granted under WMCC Reg Ref. 14/7103 for 125 no. units. 38 no. units are being replaced with 70 no. units as per the subject application, meaning that 157 no. units will be provided on the southern portion of the applicants landholding at Cornamaddy.

The northern portion of the applicant's landholding also has the benefit of a permission granted under WMCC Ref. 22/253 for 75 no. units in the north-eastern portion of the applicants lands. It is envisaged that a further phase of development will be lodged in the future for c.170 units which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units' total.

Cumulative impacts are the impacts that relate to the incremental/ additive impacts of the planned development to historical, present, or foreseeable future actions within reason. Cumulative impacts generally arise through the following:

- Persistent additions or losses of the same material or resource,
- Compounding effects due to the coming together of two or more effects.

16.2 Methodology

Cumulative Impacts as relevant to the subject proposal have been assessed regarding the following relevant guidance, including but not limited to:

- EIA Directive (2011/92EU) as amended by EIA Directive (2014/52EU)
- Planning and Development Regulations 2001 (as amended)
- Guidelines for Planning Authorities and An Bord Pleanala on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018)
- Guidelines on the Information to be included in Environmental Impact Assessment Reports (EPA 2022)
- Guidance on the Preparation of Environmental Impact Assessment Report (European Union 2017).
- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, European Commission, 1999

The EPA Guidelines (2022) define cumulative effects as *'The addition of many minor or insignificant effects, including effects of other projects, to create larger more significant effects.* The guidance clearly outlines that this assessment is required as while a single activity may have a minor impact, the impact may be more significant when combined with impacts from other projects, current or future. It could also be relevant to consider the potential environmental loadings that may arise from the development of lands in the vicinity of the subject project.

This chapter considers the potential for cumulative impacts of the development that may arise from the proposed development with any future development that related to the

application as identified within Chapter 2 Description of Development and permitted development in the vicinity of the development site.

16.3 Receiving Environment

16.3.1 Permitted Development and Existing Local Land Uses

The application lands are to the west of the Ballymahon Road - N55 national road which is the main road closest to the development site.

The eastern site boundary runs parallel to an adjacent greenfield site for approximately 270 metres. It is noted that this area of the Cornamaddy lands whilst currently undeveloped, has the benefit of an extant permission for residential development under WMCC Reg Ref. 147103. The lands immediately adjacent to the subject site to the east are in the control of the applicant. This site boundary currently features no established access or egress point to the development site, with the greenfield Cornamaddy lands extending eastwards from this location. This area is characterised by several low-quality trees and hedgerows located at intervals along this site boundary.

The sites southern boundary runs for approximately 140 metres and is currently characterised by greenfield lands to the south. The lands to the immediate southeast of the development site are in the control of the applicant and have the benefit of a grant of permission under WMCC reg ref. 147103 which is currently unconstructed. The lands to the southwest of the development site are greenfield and feature no extant permissions. This boundary is characterised by light shrubbery and trees located at intervals, creating a boundary between the subject lands and adjacent fields. The applicant notes that there are several large mature oak trees located to the immediate south of the development site. These trees are located outside of the development site boundary and will not be impacted by the subject proposal.

The sites western boundary runs for approximately 340 metres. This site boundary is characterised by a continuous line of existing tree cover and hedgerows running the length of the boundary. An existing ditch runs along the western boundary of the site. The lands to the immediate west of the development site are greenfield and do not feature any live or granted permissions. Cornamagh cemetery is located approximately 70 metres to the west of the development site along this boundary.

The sites northern boundary runs for approximately 260 metres. The lands adjacent to the subject site to the immediate north are currently greenfield and in the control of the applicant. The lands to the immediate northeast of the development site have the benefit of an extant permission, granted under WMCC Reg Ref. 22/253. The site boundary at this location is characterised by an existing line of tree cover and light hedgerow. It is noted that an esker runs along this portion of the site within the site boundary. The applicant and design team have given careful consideration to this ecological feature to ensure that the proposed development does not present any negative environmental impacts.

The area surrounding the subject site is generally similar to the application lands in character and has the benefit of an extant permission for 75 no. units to the north east of the development site, granted under WMCC Reg Ref. 22/253.

The site extends across residential and open space zoned areas listed within the Athlone Town Development Plan 2014-2020 as follows:

- **Residential o-LZ1** – ‘To provide for residential development, associated services and to protect and improve residential amenity’.

- **Open Space o-LZ8** – ‘To provide for, protect and improve the provision, attractiveness, accessibility and amenity value of public open space and amenity areas’.

Permitted developments in the immediate surrounding area which have the potential for cumulative impacts with the proposed development within the immediate vicinity of the site are as follows:

- **WMCC Reg. Ref 22253** - Permission **GRANTED** for the Construction of 75 no. residential units comprising: 51 no. 2 storey semi-detached and terraced houses (consisting 4 no. 2 bed houses and 47 no. 3 bed houses, ranging in size from c.78 sq.m – 120 sq.m each), and 24 no. 3 storey apartment/duplex units (consisting 12 no. 2 bed apartments and 12 no. 3 bed duplexes, ranging in size from 84sq.m to 121 sq.m each).
- **WMCC Reg. Ref. 177224**- Permission **GRANTED** for the construction of 7 no new dwellings to include 3 no 5-bedroom detached houses and 2 no 4 bedroom detached houses with optional fifth bedroom/study and 2 no 4-bedroom semi-detached houses with optional fifth bedroom/study and all associated site development works including road networks, services, landscaping, and boundary treatments.
- **WMCC Reg Ref. 147103** – Permission **GRANTED** for the construction of 125 no. new dwellings to include 59 no. 4/5 bedroom houses, 46 no. 3 bedroom houses, 20 no. 2 bedroom houses and a crèche.

It is noted that the subject application presents an amendment to the previously granted permission under WMCC Reg Ref. 147103 for the removal of 38 no. units total consisting of 28 no. 4 bed houses, 6 no. 3 bed houses and 4 no. 2 bed houses. The proposed development provides 70 no. houses. Of the 70 no. houses to be provided the following unit mix is noted: 60 no. 4 bed houses, 6 no. 3 houses and 4 no. 2 bed houses.

The previous application ref. 147103 was granted for 125 no. units’ total. The proposed development in combination with the retained element of this permission will provide 157 no. units total within the site redline boundary.

As part of this assessment of the cumulative impacts that could arise from the proposal in combination with other projects, account has been taken of relevant developments currently permitted, under construction and currently live within the planning system for the consideration of Westmeath County Council. A map of the permissions currently permitted and unconstructed within the applicant’s landholding at Cornamaddy are shown on figure 16.1 below, with the current development site boundary shown for context purposes:



Figure 16.1 – Extant unconstructed permissions within the applicant's landholding

When reviewing existing and permitted development in the surrounding area it was noted that there was a number of established constructed permissions, permissions for small alterations to single residential dwellings and extensions. As these permissions were relating to established developments surrounding the site, they have been considered to have a not significant impact in relation to the overall development on the Cornamaddy lands.

It is noted that all permitted projects in the vicinity of the site are subject to an appropriate level of environmental assessment or planning conditions which include measures intended to minimise the potential for environmental impacts in the area. Any new development proposed on the lands that follows the subject development should be subject to an appropriate level of environmental assessment that will take into consider the subject development on the lands.

16.3.2 Concurrent Development

The subject development is part of a larger overall development on the Cornamaddy lands. The proposed development in combination with the extant permissions on the lands will present the majority of the planned residential development on the applicants' landholding. It is envisaged that a further phase of development will be lodged in the future for c.170 units which will consolidate the development of the entirety of the lands as a new residential neighbourhood in Athlone, of c. 400 units' total.

It is considered that should the subject application for 70 no. units if granted will be constructed in tandem with the retained element of the previously granted permission

within the application redline under WMCC Ref. 147103 for 125 no. units. 87 no. of these units will be retained as part of the subject proposal.

These 87 no. units in combination with the 70 no. units proposed as part of this application will be completed in tandem, providing 157 no. new units in a phased construction process on the southern portion of the Cornamaddy lands within the applicants' landholding.

It is also considered that there may be construction overlap between the subject proposal of 70 units and 87 no. retained units under application ref. 147103 and other granted permissions on the applicant's landholding.

It is considered likely that the permission for 75 no. units granted to the north of the subject development site will be constructed in tandem, given that this development has been subject to a recent grant of permission as of the 26th of October 2022, and the fact that this development also will deliver a section of the proposed distributor road through the development lands, connecting to the now proposed section of road as per this application.

The granted permission WMCC Ref. 22/253 was lodged by the applicant as the first phase of an overall development on the subject lands. The development subject to this application represents the subsequent phase of residential development lodged by the applicant on the subject lands.

It is submitted that there is a possibility that the development permitted under WMCC application Reg Ref. 17724 for 7 no. houses is also an extant permission on the applicant's landholding. This application was granted a 5-year permission on the 9th of September 2018. Currently this development is unconstructed. Given that the permission is due to expire within the next 10 months and construction has not commenced, it is considered unlikely that this development will be constructed in tandem with the now proposed development given the timeframes involved. It is noted that permission for extension of duration for this application could be sought.

There is an application for a childcare facility within the applicant's landholding currently live with Westmeath County Council at Further Information Stage under WMCC Reg Ref. 22340. It is proposed that this childcare facility will cater for any childcare demand that arises from the overall development on the Cornamaddy lands. Subject to a grant of permission, it is considered that this development will be constructed in tandem with the overall residential development on the lands.

16.3.3 Concurrent Development

As the overall Cornamaddy lands within the applicant's landholding are earmarked for residential development and appropriately zoned to provide such as per the Athlone Town Development Plan 2014- 2020 it is considered that the entirety of the Cornamaddy lands will be developed in the future.

There are extant permissions in the north-eastern and southern portion of the applicant's landholding, and the subject development seeks to aid towards the consolidation of development on the lands, amending the permitted development under WMCC Ref. 147103 to provide development on the southwestern portion of the lands. It is therefore considered that a future application will be lodged on the northwestern portion of the applicant's landholding, which would consolidate development on the overall Cornamaddy lands.

At the time of the lodgement of this application the applicant has submitted a pre planning pack to Westmeath County Council for a for an initial section 247 meeting regarding a Large-Scale Residential Development consisting of c. 170 no. units on the



Figure 16.3 – Indicative future development on adjacent lands to the northeast of the applicant's landholding

It is noted that any future applications on the applicant's lands or adjacent lands close to the subject site of similar characteristics to the subject development will likely be subject to a full Environmental Impact Assessment Report as required. Any Environmental Impact Assessment Report prepared in respect of future development on or surrounding the applicant's landholding should consider the subject proposal as part of any impact assessments.

16.4 Assessment of Potential Cumulative Impacts

16.4.1 Human Health and Population

The proposed development has been carefully designed to ensure that there are no significant effects on human health and population during the construction and operational phases, considering the surrounding land uses in the vicinity of the development site as well as the population in the relevant electoral divisions. It is considered that no significant effects will occur once appropriate mitigation measures are correctly implemented.

It is considered that the proposed development, concurrent developments currently under construction on the lands and future envisioned residential development to the north of the site have and will have a positive short-term impact on the area during the construction phase. Short term employment is created in the area during the construction phase of a large residential development, which can have a short-term positive impact on the local economy.

The development currently being constructed on the site, the proposed development, and any future development on the site will be required to implement mitigation

measures during the construction period such as noise management, traffic management and dust management etc, to ensure that the cumulative impacts of any development will not have a significant impact on human health.

It is considered that development currently being constructed on site, the proposed development, and any future development on the site will have a long-term positive impact on Human Health and Population when operational. Residential development on appropriately zoned lands at Conramaddy both on site and to the north of the site will significantly increase the population at Cornamaddy and will have a positive impact on the local economy and possible job creation and business growth in the area.

It is considered that the impact on Human Health and population in the short term will be short term positive in terms of population and short-term negative in terms of human health. It is considered that the impact on Human Health and population in the long term will be long term positive in terms of human population and long term neutral in terms of environmental factors.

16.4.2 Land, Soils, Geology

It is considered that all excavated soil and bedrock from the proposed development could potentially be directed to the same waste facilities for treatment and disposal as stone and soil excavated from all cumulatively assessed schemes and other schemes within the wider Athlone area. The prepared CWMP notes that all surplus stone from the proposed development site will be removed off site and directed to appropriately licensed waste facilities. It is therefore considered that any cumulative impact on land, soils and geology associated with the proposed development will be neutral, imperceptible, and permanent.

Any future development on the applicants' lands or in the immediate surrounding vicinity of the site in the future should be assessed accordingly and consider the subject application with regards to any cumulative impacts on land, soils and geology that could potentially arise.

16.4.3 Hydrology and Hydrogeology

The cumulative impact of the proposed developments surface runoff to the River Shannon and Lough Ree in combination with all other cumulatively assessed schemes has the potential to impact flood risk upstream and downstream. As proposed discharge rates from the proposed development will be similar to the currently existing runoff rate, and the inclusion of SuDS measures and on-site treatment measures, it is considered that the cumulative impacts on Hydrology and Hydrogeology arising from the subject development will be not significant, long term and imperceptible.

Any future development on the applicants' lands or in the immediate surrounding vicinity of the site should be assessed accordingly and consider the subject application with regard to any cumulative impacts on hydrology or hydrogeology that could potentially arise. All future development should comply with the governing development plan objectives regarding SuDS and ensuring that development does not increase flood risk within the relevant catchment area.

16.4.4 Biodiversity

It is considered that should the proposed development and other planned or future projects impact on the same key environmental receptors that there is a potential for cumulative impacts to arise which could lead to a higher level of significance. This potential impact is relevant to birds and small mammals due to the potential combination of loss of nest or foraging habitat on or in the area surrounding the site, impacts on

badgers due to the potential loss of foraging ground and setts and potential impact on bats due to the potential for loss of foraging and commuting habitat in the locality.

It is considered that given the location of the assessed projects within the applicant's landholding and consideration of any future projects, there is a potential for combined environmental impacts within the vicinity of the subject application site. Impacts on biodiversity could potentially arise from combined noise disturbance, dust and surface water runoff related impacts and loss of habitats on site would largely be expected to be limited to the construction site and its immediate surrounding vicinity. Where there is a potential for significant effects mitigation measures will be put in place to ensure there are no significant in combination effects that arise from the overall development of the Cornamaddy lands.

The project ecologist has cross checked the proposed development against the Westmeath County Development Plan 2021-2027, the Athlone Town Development Plan 2014-2020, the Westmeath Biodiversity Action Plan 2014-2020, and the Westmeath Heritage Plan 2018-2023 for possible in combination effects.

The Westmeath Biodiversity Plan outlines measures to protect and improve biodiversity and it is therefore considered that this will not result in negative in combination effects. The proposed development and any planned or permitted projects follow/ will be required to follow relevant regulatory provisions for the prevention of pollution, nuisance and other environmental factors that could impact biodiversity.

It is noted that the proposed development will contribute towards the general loss of semi natural habitats in the area surrounding Athlone Town, however the proposed development is located on the outskirts of an Urban Area and is bounded to the south and east by residential lands and it is considered that this type of development is in keeping with baseline trends for greenfield lands on the periphery of a growing town. It is considered that given the quantity of analogous agricultural lands around Athlone Town, the proposed development will not result in any significant cumulative impacts in terms of habitat loss involving other developments in the area.

The habitats within the lands in the applicant's landholding are largely ecologically poor grasslands with the exception of associated treelines and hedgerows which are of ecological value. The loss of grassland will not result in a significant loss of habitat, but the overall fragmentation and loss of hedgerows and treelines should be avoided.

The Westmeath County Development Plan 2021-2027 includes a number of protective policies to ensure that hedgerows and treelines are appropriately managed and protected, and the proposed development follows this policy guidance, retaining much of the existing treelines and hedgerows on the site and providing additional green infrastructure through tree and hedgerow planting at various locations within the development site. The policy objectives of the County Development Plan will act to minimise the loss of habitats in the county as a result of development by encouraging developments that are in keeping with development policy goals.

Any effects on biodiversity that are potentially long term will be monitored by environmental protective policies as outlined in the Westmeath County Development Plan 2021-2027.

The predicted impacts associated with the proposed development, the mitigation measures proposed to protect local biodiversity and the receiving environment and the protective polices outlined in the county Development Plan will direct future local development. Significant cumulative negative impacts on biodiversity are not predicted.

We refer to Chapter 8 for a full detailed analysis of the potential for cumulative impacts on Biodiversity.

16.4.5 Air Quality and Climate

The cumulative impacts on the air quality and climate of the current proposed development in combination with other permitted and existing developments have been considered with a particular focus on the on the generation of air pollutants and GHG emissions. It is considered that in terms of dust generation no significant impacts are predicted to arise from the construction of the proposed development through the implementation of proper construction practices on the development site.

It is considered that any surrounding developments permitted or planned in the future should be assessed accordingly and consider the subject development with regards to any cumulative impacts that may arise. Surrounding developments should independently employ best practice methods throughout the construction phase to minimise impacts on air quality and climate.

An assessment of the potential for operation stage cumulative impacts involved an assessment of traffic data that is inclusive of other existing and permitted developments impacts on the road network in both current and future years. It is considered following this assessment that the impact on ambient air quality will be insignificant.

16.4.6 Noise and Vibration

During the construction period of the proposed development, construction work from the site will be the dominant noise source for surrounding sensitive receptors for the duration of the construction period within the site operation hours as conditioned by Westmeath County Council. Any construction that takes place within the vicinity of the subject site during the same construction period will be potentially significant and should be assessed as such. Mitigation measures as described in chapter 10 when implemented will ensure that there should be no significant cumulative impacts with permitted, future, or existing development because of the proposed development.

It is expected that once operational, the noise associated with day-to-day operation is minimal. The residential element of the development is not considered to generate any significant noise levels over and above those which form the general environment surrounding the site in nearby residential areas. It is considered that the traffic noise levels at residential properties are determined to be not significant and do not require any type of noise mitigation measures.

Whilst there is the potential for a short-term negative impact increase in noise levels on the site during the construction phase, it is considered that once operational the noise level increase on the site will be not significant.

Any future developments on the site or in the area surrounding the site will be subject to similar noise mitigation measures as outlined in chapter 10 during the construction phase.

16.4.7 Landscape and Visual Impact

It is considered that additional cumulative impacts could possibly arise from the combined effects of the subject proposal and other surrounding plans and projects.

It is expected that all construction works would have an adverse landscape impact. Although valued features would be protected, the works would change and degrade the lands until they are re-made into the proposed development.

The construction works are expected to take up to four years and, therefore, are considered as temporary in duration.

The proposed development achieves local policy objectives of WMCC and is in keeping with local land use zoning. Its scale and effect would be transformational along the edge Cornamaddy, Athlone, but important to be so, in order to contribute to local place-making.

Several permitted and proposed developments in the Cornamaddy Area. The developments achieve local policy objectives of WMCC and is in keeping with local land use zoning. This would reflect the change on client's landholding and other lands in the area. The transition of the area has already begun.

Any further development within the vicinity of the proposed lands could have the possibility of impacting sensitive receptors as outlined in chapter 11. This could lead to potential impacts of a slightly higher level of significance on the identified receptors when assessed cumulatively. These future developments will have further impact on the named receptors above that cannot, at this stage, be fully quantified. The most likely of these potential impacts will be loss of hedgerow and a slight impact on views to parts of the south-west and west.

Any future application for residential development on the lands to the north of the development site of similar characteristics to the subject proposal will be subject to an LVIA and Environmental Impact Assessment as necessary to consider the potential effects in combination with the subject proposal and any other relevant plans and projects at the time of the application lodgement.

16.4.8 Archaeology and Cultural Heritage

It is noted that any permissions previously granted on the development site and the proposed development have been subject to excavations and monitoring prior to the lodgement of any planning applications. Previously unrecorded archaeological features were discovered on the site as part of this assessment process. A method statement be prepared and undertake any necessary archaeological excavations of these features will be agreed with the National Monuments Service. These excavations will be recorded and preserved by record which will positively contribute to the historical understanding of the subject area. As part of the excavations on the subject site, test trenches were also dug on the lands to the north of the subject site which are envisioned to be developed in the future as a residential development of a similar scale and typology to the subject development. Preliminary archaeological testing on the site to the north has uncovered similar archaeological features to that discovered on the subject lands.

As the features on the site and surrounding lands will be appropriately recorded and excavated, it is considered that there will be a neutral and not significant cumulative impact on Archaeology and Cultural Heritage expected as a result of the construction and operation phase of the subject development and any other surrounding plans and projects as assessed appropriately and individually.

16.4.9 Traffic and Transportation

When evaluating Traffic Impact, future junction performance assessments conducted in respect of the proposed development have included traffic flows to be generated by nearby permitted developments that will likely cause an increase in traffic flow along the N55 to the north, N55 to the south, R916 and L8048 roads.

The predicted impacts as included in chapter 13 Traffic and Transportation therefore also represent the predicted cumulative impacts of the proposed development in relation to increase in traffic flows.

In 2024, 2029 and 2039 with the residential development operational and an increase in background flows the roundabout will operate within capacity with small queues and delays with a maximum RFC value of 0.67 during the PM peak hour in 2039.

In 2039 with the residential development operational, the future residential developments operational and an increase in background flows the roundabout will operate within capacity with small queues and delays with a maximum RFC value of 0.75 during the AM peak hour in 2039.

It is expected that during the operation stage of the proposed development, a slight long term negative impact will be experienced due to the increase in traffic flow resultant of the increase in population arising from the proposed development and other relevant developments.

16.4.10 Material Assets

The proposed development is not considered to have any significant impact on public utilities or natural resources. It is predicted that there will be a minimal use of material assets during the construction phase of the proposed development. Throughout the construction process there will be coordination between the project team and relevant services providers such as Irish Water and ESB to ensure that works are not impacting services in the locality of the development site.

Regarding the permitted developments on site, the development works contractor is obliged to ensure that best practice measures are in place on site to avoid any potential interruptions to services from the existing telecommunications network, watermains, sewers and electrical grid. The proposed development and any future developments on the site will also be subject to best practice measures to ensure that the potential for service interruptions is minimised. Any interruption to services arising from developments on the site or in the vicinity of the site should be planned and communicated with the relevant services provider.

Therefore, the cumulative impact of the proposed development in combination with other permitted and planned projects is considered to be short term and negative during the construction phase if any planned service interruptions are necessary, and long term not significant during the operational phase of the development.

16.4.11 Waste Management

It is considered that the proposed development, in combination with other developments permitted and proposed in the vicinity of the site of the proposed development will give rise to an increase in the demand on existing local waste management services and on regional waste acceptance facilities. It is noted that the capacity of waste collection companies and waste management facilities in the Eastern and Midlands Region have been designed with forward planning and expansion in mind to cater for a growing population.

The waste materials generated during the construction phase of the proposed development should be carefully managed, including segregation of materials at source to ensure proper recycling can be carried out. With a high level of due diligence carried out on site and with the implementation of the proposed mitigation measures, the proposed development's construction phases are not expected to have a significant environmental impact with respect to waste management. Any such environmental

impact shall be limited to the period during which construction works take place on site, presenting a short term neutral impact.

It is essential that all permitted, planned and future developments provide the necessary infrastructure to segregate domestic waste at source, to reduce the generation and disposal of non-recyclable mixed waste. During the operational phase of the development, it will be added to an existing waste collection route. The likely effect will be neutral and not significant on the waste management facilities in the area long term.

It is considered that any other permitted or future plans should be subject to appropriate waste management practices during any construction and operational phases in compliance with national and local legislation polices and plans which will mitigate and minimise the potential for cumulative impacts to arise associated with waste generation and management. Therefore the long term cumulative impacts relating to waste management will be neutral and imperceptible.

Westmeath County Council Planning Authority - Inspection Purposes Only

17 INTERRELATIONSHIPS BETWEEN THE ASPECTS

17.1 Introduction

The chapter has been prepared under the guidance within the EIA Directive, the Planning and Development Act 2000 (as amended), the Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2017) and the EPA Guidance on the Information to be contained in Environmental Impact Assessment Reports (EPA 2022).

In accordance with the guidance not only are the individual significant impacts required to be considered when assessing the impact of a development on the environment, but so must the interrelationships between these factors be identified and assessed.

The majority of the EIA report chapters have already included and described assessments of potential interactions between aspects, considered by the various specialists contributing to this impact assessment. This chapter presents a summary and assessment of the identified interactions.

Section 171A of the Planning and Development Act requires that the interactions between the following be assessed:

- Population and Human Health
- Land, Soil, Water, Air and Climate
- Biodiversity, with particular attention to species and habitats protected under the habitats Directive and the Birds Directive
- Material assets, cultural heritage and the landscape

17.2 Discussion – Positive Impacts

The reasoning behind the interactions that are considered to have a positive effect (i.e., a change which improves the quality of the environment) is outlined in this section.

Population and Human Health

The proposed development will create temporary jobs during the construction phase and increase the population in the Athlone Area which may encourage employers to locate within Athlone and will generate additional revenue as new residents' shop in existing established shops and use services in place. It is considered that this will have a long-term positive and short-term, positive effect on employment in the local area.

Material Assets, Cultural Heritage & Landscape

The proposed energy efficiency options listed below will have long-term positive effect on the population and environment.

- Various heating options are under consideration for the dwelling units with both heat pump and gas boiler systems currently under review. Air source heat pumps utilize low grade heat from external ambient air and transfer heat to heating system pipework.

These systems operate with very high efficiencies (>400%) which provides significant carbon reductions in comparison to a traditional boiler system. Gas heating options would comprise a high efficiency gas boiler for provision of heating and hot water. Photovoltaic panels would be installed in conjunction with the gas boiler option to achieve the Part L renewable energy requirements

- The use of photovoltaics systems could potentially provide energy in the form of heat energy; as means of providing a complementary heating source for the building hot water requirement or, as a renewable electricity source to provide a complementary source to the proposed mains infrastructure to the building.
- All residential houses will be future ready for Electric Vehicle (EV) charging points of supply in terms of consumer distribution board and containment allowances.
- The subject development will provide for parts of the Cornamaddy lands to be accessed as public open space areas. The overall development lands are currently not accessible to the public. The proposal will provide appropriate landscaping and incorporate natural features into the landscaping design of the proposal, such as the esker located in the northern portion of the subject lands where a landscaped looped trail has been provided around its base.

17.3 Discussion – Neutral Impacts

The reasoning behind the interactions that are considered to have a neutral effect (i.e., no effects or effects that are imperceptible, within the normal bounds of variation or within the margin of forecasting error) is outlined in this section.

Material Assets, Cultural Heritage & Landscape

An Archaeological Assessment for the proposed development has identified that there are no recorded archaeological sites within the proposed development site and the only example (mound barrow WM029-041) within the surrounding 1km study area is located within farmland at a distance of 715m to the north-west. Implementation of appropriate archaeological mitigation measures will ensure that a **neutral or no impact** will occur during the operational stage of the development.

Land, Soil, Water, Air & Climate

The air Quality and climate chapter provides various mitigation measures that will be put in place during construction of the proposed development which will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. It is determined that the impact of construction of the proposed development is likely to be **neutral, short-term, localised, and imperceptible** with respect to human health.

According to the IAQM guidance (2014) site traffic, plant and machinery are unlikely to have a significant impact on climate. It is determined threat predicted impact is **neutral, short-term, and imperceptible**.

Biodiversity

It is considered that potential impacts arising from the proposed development are as follows: Habitat loss, accidental pollution events contaminating surface water in the receiving environment during the construction or operational phases, introduction of non-native invasive species causing habitat degradation, reduction in water quality with direct or indirect impacts on otter or other mammals, birds, fish and aquatic invertebrates, and disturbance/mortality impacts to mammal or birds during construction or operation. A comprehensive suite of mitigation measures will be implemented to protect the biodiversity on the site during construction and operation, which when implemented will ensure that no residual impacts on flora or fauna are experienced. It is

determined that the predicted impact on biodiversity is **long term, imperceptible and neutral**.

17.4 Discussion – Negative Impacts

Land, Soil, Water, Air & Climate

The best practice dust mitigation measures that will be put in place during construction of the proposed development will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the proposed development will be **short-term, localised, negative, and imperceptible** with respect to human health.

Potential impacts to air quality and climate during the operational phase of the proposed development are as a result of change in traffic flows and volumes on the local road network. The changes in traffic flows were assessed against the UK Design Manual for Roads and Bridges screening criteria for an air quality and climate assessment. It can be therefore determined that the impact to air quality and climate as a result of altered traffic volumes during the operational phase of the proposed development is **localised, negative, imperceptible and long-term**.

As the National and EU standards for air quality are based on the protection of human and concentrations of pollutants in the operational stage of the proposed development are predicted to be significantly below these standards, the impact to human health is predicted to be **imperceptible, negative, and long term**.

Material Assets, Cultural Heritage & Landscape

An Archaeological Assessment for the proposed development has identified that there are no recorded archaeological sites within the proposed development site and the only example (mound barrow WM029-041----) within the surrounding 1km study area is located within farmland at a distance of 715m to the north-west.

Potential Mitigation strategies for archaeology and cultural heritage are detailed in Chapter 12 Architectural & Cultural Heritage which will ensure the effect is **indirect, permanent, negligible, negative** impact on elements of undesignated cultural heritage resource and no mitigation is required.

The construction stage traffic outlined in Chapter 10 has been scoped out as none of the road links impacted by the proposed development satisfy the DMRB assessment criteria in Section 10.2.2. The construction stage traffic has the potential for a **neutral, imperceptible, and short-term impact** on air quality.

Noise & Vibration

Potential Construction phase impact

The inclusion of a standard 2.4m high hoarding, construction noise levels are reduced to within the significance thresholds at distance where the closest NSLs are positioned. The construction phase activities can operate within and below the construction noise significant thresholds at the closest NSLs within the inclusion of a standard site hoarding. The impact is **negative, moderate, and short-term**.

Based on the planned activity and trip related traffic during the construction phase, the additional traffic introduced onto the local road network due to construction phase of the proposed development is significantly less than 25% along the local road network, hence no significant increase in traffic noise levels will occur. The impact is therefore determined to be **negative, short term and not significant**.

17.5 Conclusion

In accordance with EPA 'Guidelines on the Information to be contained in Environmental Impact Statements' (2022) all environmental factors are inter-related to some extent. A synergistic effect occurs when:

'The resultant effect is of greater significance than the sum of its constituents'

All environmental topics are interlinked to a degree such that interrelationships exist on numerous levels as outlined as per each topic above. In summary, it is concluded that the proposed development will not result in any significant synergistic effects on the environment.

Westmeath County Council Planning Authority - Inspection Purposes Only

	Planning & Alternatives		Population & Human Health		Biodiversity		Noise & Vibration		Land, Soil, Water, Air & Climate		Material Assets, Cultural Heritage & Landscape		Traffic & Transportation	
	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.
Planning & Alternatives			+	+	X	X	X	X	O	-	X	X	X	X
Population & Human Health					-	X	-	-	O	X	O	O	-	O
Biodiversity							-	-	-		O	O	X	X
Noise & Vibration									-	X	X	X	-	-
Land, Soil, Water, Air & Climate											X	X	-	X
Material Assets, Cultural Heritage & Landscape													X	X
Traffic & Transportation														
	X	No Interaction			-	Negative			Con.	Construction				
	+	Positive			O	Neutral			Op.	Operation				

Table 17.1 – Comparison of Interrelationships

Westmeath County Council Planning Authority - Inspection Purposes Only!