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Natura Impact Statement of a Proposed Development at Carrowphadeen, Lecarrow, Co. Roscommon

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1 INTRODUCTION

1.1 REQUIREMENT FOR AN APPROPRIATE ASSESSMENT

In December 2025, Whitehill Environmental was appointed by Martina Conway to provide the necessary information to allow the competent authority (in this case Roscommon County Council) to conduct an Article 6 (3) Appropriate Assessment for a proposed small scale tourism development at a site in Carrowphadeen, Lecarrow, Co. Roscommon. This information is being submitted as a Natura Impact Statement (NIS). This NIS followed on from an NIS request that was issued by Roscommon County Council with regards this proposed development (Planning File Reference: 25/60424).

The purpose of this NIS is to determine the appropriateness of the proposed project, in the context of the conservation status of the site or sites. In Ireland, an Appropriate Assessment takes the form of a Natura Impact Statement (NIS), which is a statement of the likely impacts of the plan or project on a Natura 2000 site. The NIS comprises an assessment of the plan or project and it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans or projects on one or more Natura 2000 sites in view of the sites' conservation objectives.

1.2 THE AIM OF THE REPORT

This Natura Impact Statement (NIS) has been prepared in accordance with the current guidance (DoEHLG, 2009, Revised February 2010). An NIS should provide the information required in order to establish whether or not a proposed development is likely to have a significant impact on certain Natura sites in the context of their conservation objectives and specifically on the habitats and species for which the Natura 2000 conservation sites have been designated.

Accordingly, a comprehensive assessment of the potential significant effects of this application on Natura 2000 sites was carried out in December 2025 by Noreen McLoughlin, MSc, MCIEEM of Whitehill Environmental. This assessment allowed areas of potential ecological value and potential ecological constraints associated with this proposed development to be identified and it also enabled potential ecological impacts associated with the proposed development to be assessed and mitigated for.

1.3 REGULATORY CONTEXT

RELEVANT LEGISLATION

The Birds Directive (Council Directive2009/147/EC) recognises that certain species of birds should be subject to special conservation measures concerning their habitats. The Directive requires that Member States take measures to classify the most suitable areas as Special Protection Areas (SPAs) for the conservation of bird species listed in Annex 1 of the Directive. SPAs are selected for bird species (listed in Annex I of the Birds Directive), that are regularly occurring populations of migratory bird species and the SPA areas are of international importance for these migratory birds.

The EU Habitats Directive (92/43/EEC) requires that Member States designate and ensure that particular protection is given to sites (Special Areas of Conservation) which are made up of or support particular habitats and species listed in annexes to this Directive.

Articles 6(3) and 6(4) of this Directive also call for the undertaking of an Appropriate Assessment for plans and projects not directly connected with or necessary to the management of, but which are likely to have a significant effect on any European designated sites (i.e. SACs and SPAs).

The Water Framework Directive (WFD) (2000/60/EC), which came into force in December 2000, establishes a framework for community action in the field of water policy. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The WFD rationalises and updates existing legislation and provides for water management on the basis of River Basin Districts (RBDs). RBDs are essentially administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD. The aim of the WFD is to ensure that waters achieve at least good status by 2027 and that status does not deteriorate in any waters.

Appropriate Assessment and the Habitats Directive

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as

Natura 2000. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC).

Articles 6(3) and 6(4) of the Habitats Directive sets out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

Article 6(4) deals with the steps that should be taken when it is determined, as a result of appropriate assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

The Appropriate Assessment Process

The aim of Appropriate Assessment is to assess the implications of a proposal in respect of a designated site's conservation objectives.

The 'Appropriate Assessment' itself is an assessment which must be carried out by the competent authority which confirms whether the plan or project in combination with other plans and projects will have an adverse impact on the integrity of a European site.

Screening for Appropriate Assessment shall be carried out by the competent authority as set out in Section 177U(1) and (2) of the Planning and Development Act 2000 (as amended) as follows:

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

(2) A competent authority shall carry out a screening for appropriate assessment under subsection (1) before—

(a) a Land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made, or

(b) consent for a proposed development is given.'

The competent authority shall determine that an Appropriate Assessment is not required if it can be excluded, that the proposed development, individually or in combination with other plans or project will have a significant effect on a European site.

Where the competent authority cannot exclude the potential for a significant effect on a European site, an Appropriate Assessment shall be deemed required.

Where an Appropriate Assessment is required, the conclusions of the Appropriate Assessment Report (Natura Impact Statement (NIS)) should enable the competent authority to ascertain whether the plan or proposed development would adversely affect the integrity of the European site. If adverse impacts on the integrity of a European site cannot be avoided, then mitigation measures should be applied during the appropriate assessment process to the point where no adverse impacts on the site remain. Under the terms of the

Habitats Directive consent can only be granted for a project if, as a result of the appropriate assessment either (a) it is concluded that the integrity of any European sites will not be adversely affected, or (b) after mitigation, where adverse impacts cannot be excluded, there is shown to be an absence of alternative solutions, and there exists imperative reasons of overriding public interest for the project should go ahead.

Section 177(V) of the Planning and Development Act 2000 (as amended) outlines that the competent authority shall carry out the Appropriate Assessment, taking into account the Natura Impact Statement (amongst any other additional or supplemental information). A determination shall then be made by the competent authority in line with the requirements of Article 6(3) of the Habitats Directive as to whether the plan or proposed development would adversely affect the integrity of a European site, prior to consent being given.

2 METHODOLOGY

2.1 APPROPRIATE ASSESSMENT

This Natura Impact Statement has been prepared with reference to the following:

- European Commission (2018). Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- European Commission (2021). 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 Commission (2006). Nature and Biodiversity Cases: Ruling of the European Court of Justice.
- European Commission (2007). Clarification of the Concepts of: Alternative Solution, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.
- Department of Environment, Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.
- The AA has also been undertaken in consideration of the European Union (CJEU) judgment on Case C323/17 (People over Wind, Peter Sweetman v Coillte Teoranta), which concluded that "it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects [mitigation] of the plan or project on that site.". Other caselaw relevant to Screening are Waddenzee (C127/02), Holohan and Others v An Bord Pleanála (C461/17) and Court of Appeal case C1/2009/0041/QBACF Citation No [2009] EWCA Civ. 1061.
- Most recent and pertinent case law pertaining to AA screening comes from *Eco Advocacy v. An Bord Pleanála* Case C-721/21. This case recently determined that "standard design measures" can be included at design stage if they are an inherent part of the plan, namely a measure: *'incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site'.*

The EC Guidance sets out a number of principles as to how to approach decision making during the process. The primary one is 'the precautionary principle' which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty.

When considering the precautionary principle, the emphasis for assessment should be on objectively demonstrating with supporting evidence that:

- There will be no significant effects on a Natura 2000 site;
- There will be no adverse effects on the integrity of a Natura 2000 site;

- There is an absence of alternatives to the project or plan that is likely to have an adverse effect to the integrity of a Natura 2000 site; and
- There are compensation measures that maintain or enhance the overall coherence of Natura 2000.

This translates into a four stage process to assess the impacts, on a designated site or species, of a policy or proposal.

The EC Guidance states that "each stage determines whether a further stage in the process is required". Consequently, the Council may not need to proceed through all four stages in undertaking the Appropriate Assessment.

The four-stage process is:

Stage 1: Screening – The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant;

Stage 2: Appropriate Assessment – The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

Stage 3: Assessment of Alternative Solutions – The process which examines alternative ways of achieving objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;

Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain – An assessment of the compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

In complying with the obligations set out in Articles 6(3) and following the guidelines described above, this screening statement has been structured as a stage by stage approach as follows:

- Description of the proposed project;
- Identification of the Natura 2000 sites close to the proposed development;
- Identification and description of any individual and cumulative impacts on the Natura 2000 sites likely to result from the project;
- Assessment of the significance of the impacts identified above on site integrity. Exclusion of sites where it can be objectively concluded that there will be no significant effects.
- Description of mitigation measures.

2.2 STATEMENT OF COMPETENCY

The site survey and NIS was carried out by Noreen McLoughlin. Noreen is the owner and senior ecologist at Whitehill Environmental. Noreen holds a BA (Hons) in Natural Science (Mod) Zoology and an MSc in Freshwater Ecology (TCD). She has been a full member of the CIEEM (Chartered Institute of Ecology and Environmental Management) for over 20 years. Noreen has over 22 years' experience as a professional ecologist in Ireland and she has undertaken an extensive number of Ecological Impact Assessments and Appropriate Assessments for various types of developments in recent years. Noreen has recently been awarded an Advanced Diploma in Environmental and Planning Law from Kings Inns, Dublin (2024).

2.3 FIELD BASED STUDY

A visit to the site of the proposed development site in Carrowphadeen, Lecarrow conducted on December 12th 2025, when relevant field notes, species lists and photographs were taken. The site was surveyed in accordance with the Heritage Council's Habitat Survey Guidelines (Smith et al., 2010) and the Institute of Environmental Assessment's Guidelines for Baselines Ecological Assessment (IEA, 1995). Habitats within the application site were classified in accordance with Level 3 of A Guide to Habitats in Ireland (Fossit, 2000). These habitats are denoted in the text along with their habitat code. Any bird and mammal activity was also noted.

2.4 DESK STUDIES & CONSULTATION

Information on the site and the area of the proposed development was studied prior to the completion of this statement. The following data sources were accessed in order to complete a thorough examination of potential impacts:

- National Parks and Wildlife Service - Aerial photographs and maps of designated sites, information on habitats and species within these sites and information on protected

plant or animal species, conservation objectives, site synopses and standard data forms for relevant designated sites.

- Environmental Protection Agency (EPA)- Information pertaining to water quality, geology and licensed facilities within the area;
- Myplan.ie – Mapped based information;
- National Biodiversity Data Centre (NBDC) – Information pertaining to protected plant and animal species within the study area;
- Bing maps & Google Street View – High quality aerials and street images;
- Cunninham Design and Planning – Plans and Information Pertaining to the Development
- Roscommon County Council – Information on planning history in the area for the assessment of cumulative impacts.

2.5 ASSESSMENT METHODOLOGY

The proposed development was assessed to identify its potential ecological impacts and from this, the Zone of Influence (ZoI) of the proposed development was defined. Based on the potential impacts and their ZoI, the Natura 2000 sites potentially at risk from direct, indirect or in-combination impacts were identified. The assessment considered all potential impact sources and pathways connecting the proposed development to Natura 2000 sites, in view of the conservation objectives supporting the favourable conservation condition of the site's Qualifying Interests (QIs) or Special Conservation Interests (SCIs).

The conservation objectives relating to each Natura 2000 site and its QIs/SCIs are cited generally for SACs as "to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or Annex II species for which the SAC has been selected", and for SPAs "to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA".

As defined in the Habitat's Directive, the favourable conservation status of a habitat is achieved when:

- Its natural range and area it covers within that range is stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future;

The favourable conservation status of a species is achieved when:

- The population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;

- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future;
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Where site-specific conservation objectives (SSCOs) have been prepared for a European site, these include a series of specific attributes and targets against which effects on conservation condition, or integrity, can be measured. Where potential significant effects are identified, then these SSCOs should be considered in detail.

3 DESCRIPTION OF THE PROPOSED DEVELOPMENT

3.1 PLANNING DESCRIPTION

In September 2025, Martina Conway applied to Roscommon County Council for planning permission for a development on lands at Carrowphadeen, Lecarrow, Co. Roscommon. Planning permission is being sought here for the following development:

The construction of 3 no. one-bedroom self-catering glamping units for tourism accommodation, together with the connection to and enlargement of the previously permitted on-site wastewater treatment system and percolation area granted under planning reference number 24/60066, the change of use of the existing stone buildings to the front and rear of the derelict cottage (to be renovated and extended) to provide storage for 8 bicycle spaces and an electric passenger golf cart and a service building to the front building providing laundry facilities and storage for supplies, along with all associated site works.

An extract from the planning drawings can be seen in Figures 1a and b.

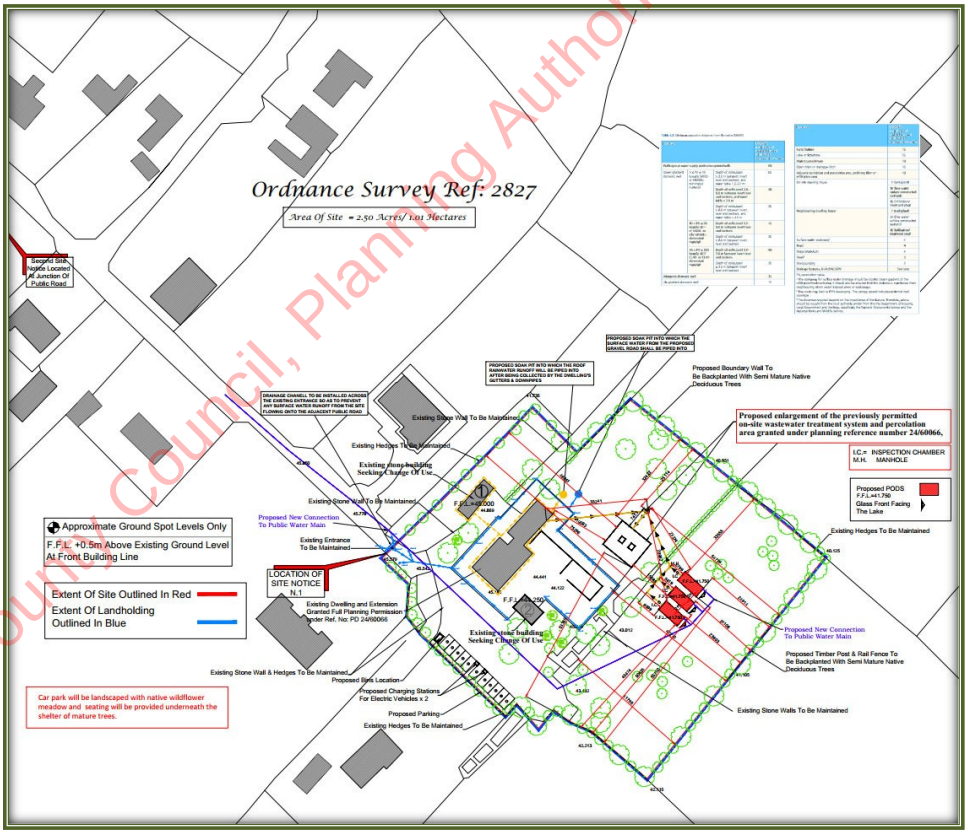


Figure 1a – Extract from Planning Drawing (as prepared by Cunninham Design and Planning)

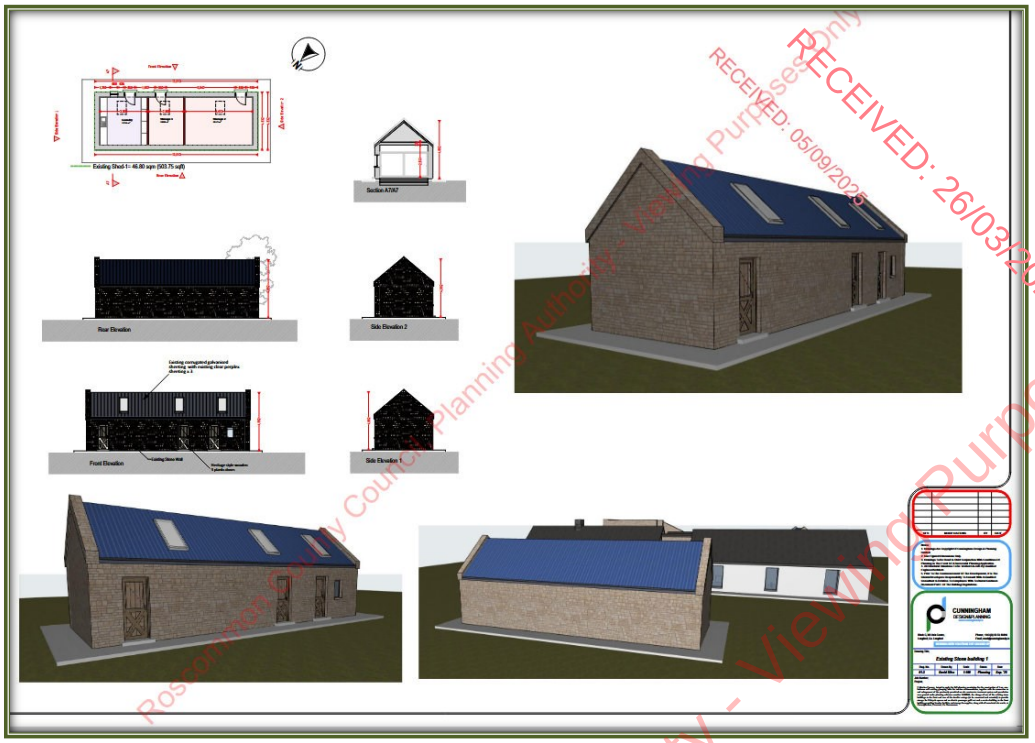


Figure 1b – Proposed Changes to Existing Stone Building

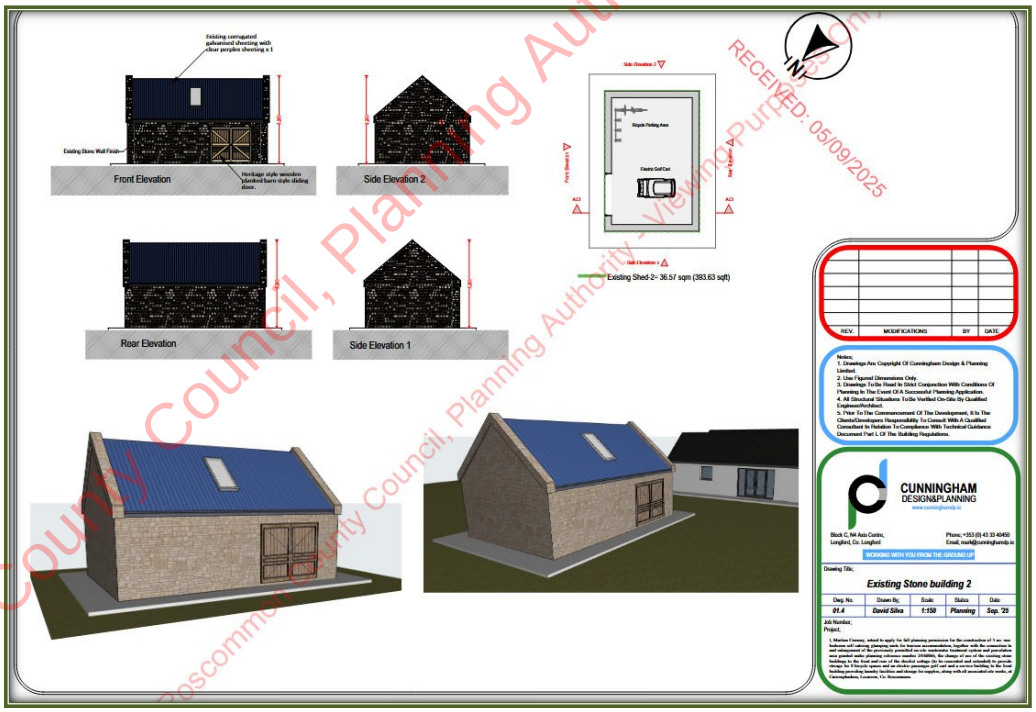


Figure 1c – Proposed Changes to Existing Stone Building

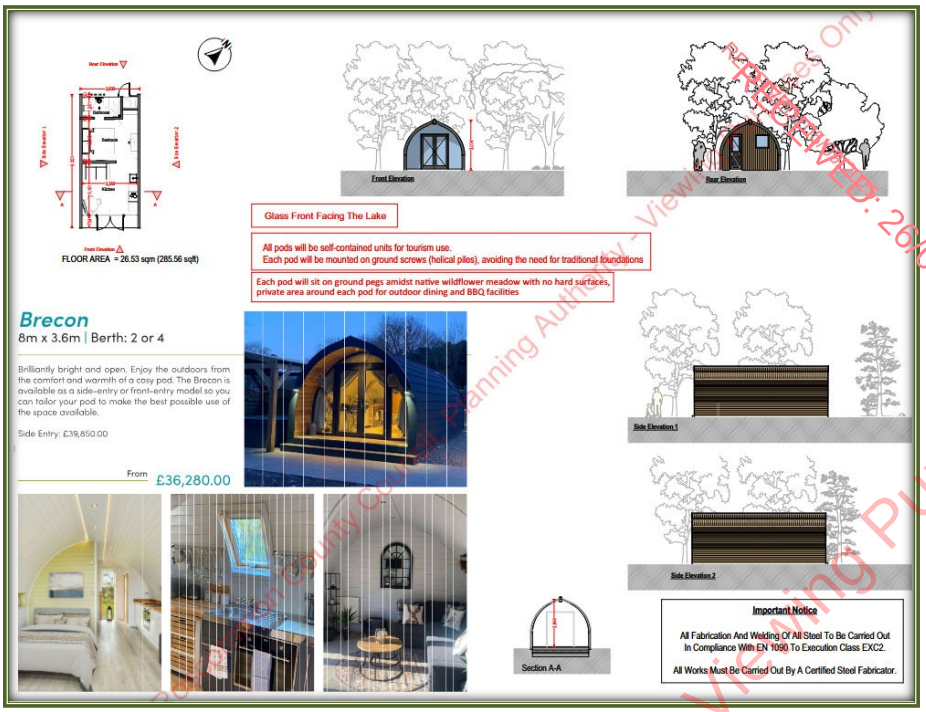


Figure 1d – Proposed Pod Design

Surface Water Treatment

Surface water run-off from the site will be directed to a soakpit.

Wastewater Treatment

The application site is located within a regionally important aquifer (Rk) with high groundwater vulnerability. It has an R2[1] groundwater protection response, which means that the proposed risk is acceptable under normal good practice and subject to additional conditions being met. The site characterisation form pertaining to this development (as prepared by Coyle Environmental for a previous development) concluded that a tertiary treatment system and infiltration / treatment area is suitable for this site. Proposals have now been revised to accommodate the additional loadings for the tourism development and a Molloy Environmental System's 41 PE Chieftain SBR wastewater treatment system has been recommended, along with 2 Chieftain CoCo filters for tertiary treatment.

3.2 SITE LOCATION AND SURROUNDING ENVIRONMENT

The site in question is circa 0.8ha and it is located in a rural area within the townland of Carrowphadeen. Access to the site will be via Kilmore Ave, which is a cul-de-sac road that services a number of private dwellings and that leads to Kilmore Bay. The site is 4.6km south-east of Lecarrow and 10km north of Athlone. It is located on lands to the west of Lough Ree, near Kilmore Point.

The land-use surrounding the site is predominantly agricultural and the dominant habitat locally is improved agricultural grassland and this habitat largely surrounds the site. Other habitats close to the application site include wet and semi-improved grasslands, coniferous and mixed forestry habitats, treelines, hedgerows and watercourses. Lough Ree and its riparian habitats (including wetlands, woodland, reed beds) is 167m north-east of the site at its closest point. Site location maps are shown in Figures 2 and 3, whilst an aerial photograph of the site and its surrounding habitats are shown in Figure 4.

Figure 2 – Site Location Map (Site Pinned)

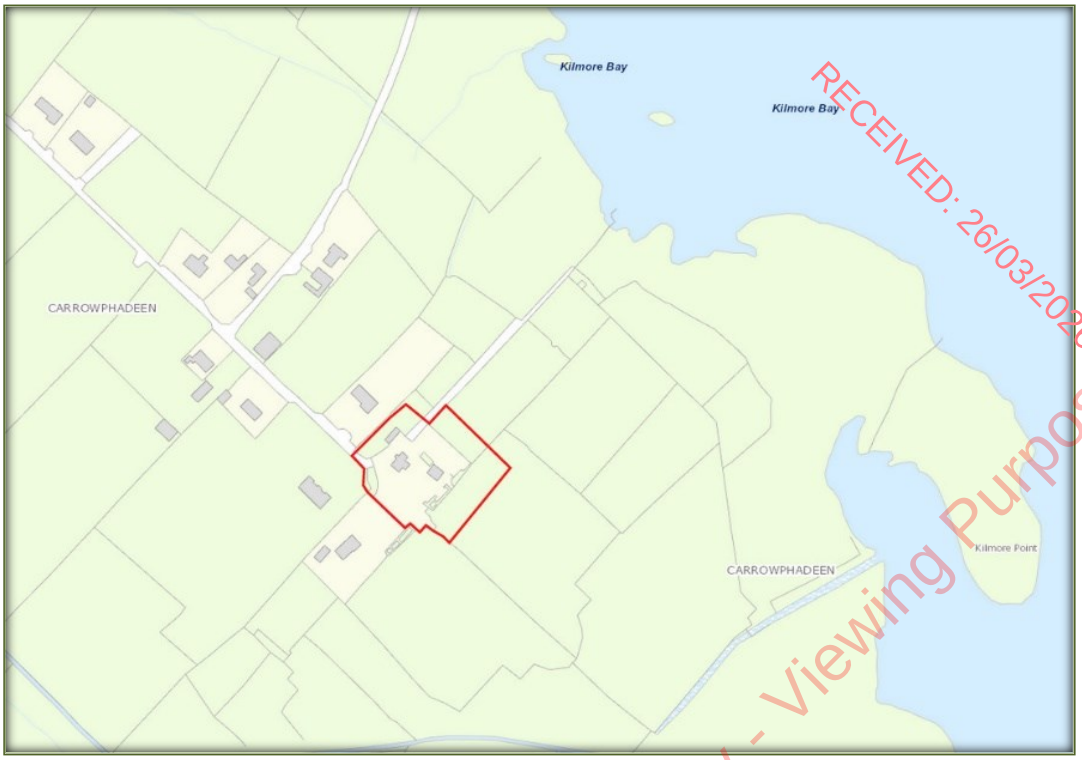


Figure 3 – Site Location Map. Application Site Outlined in Red.

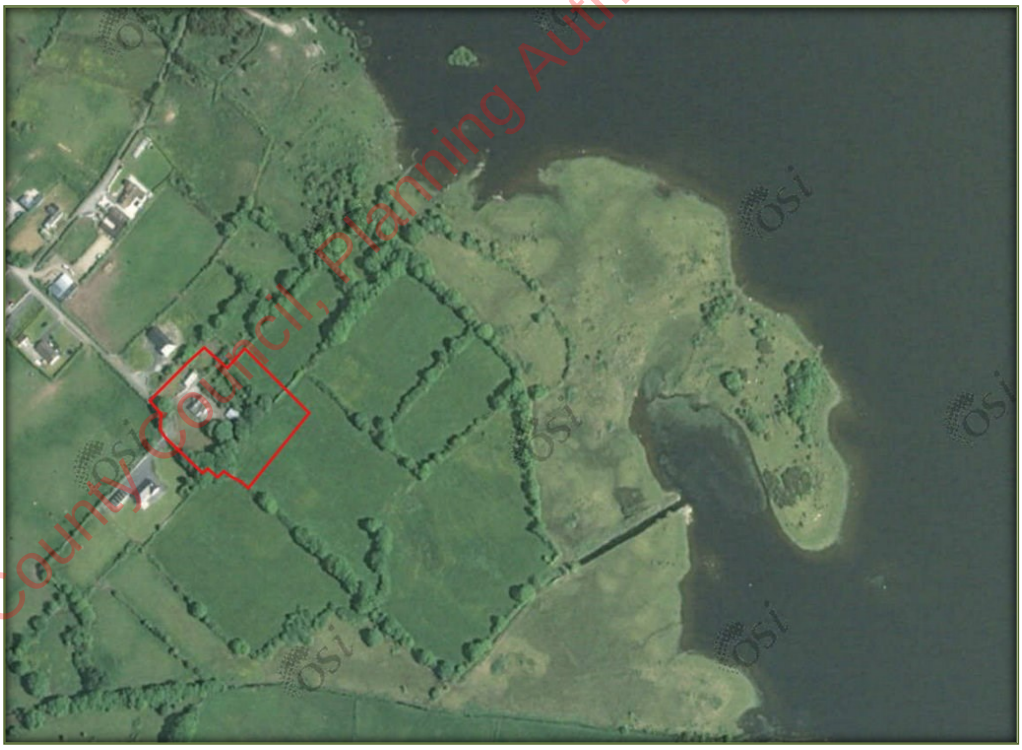


Figure 4 – Aerial Photograph of the Site (Outlined in Red) and its Surrounding Habitats

HABITATS WITHIN THE SITE

The application site encompasses an existing derelict dwelling house, along with a farmyard and a number of disused outbuildings and sheds. There are remnants of old stone buildings on the site that were once part Kilmore Castle. The site also includes an area of agricultural land where the proposed new pods will be constructed. The dominant habitats in the site include Buildings and Artificial Surfaces (BL3) (the existing house, sheds, yard), Improved Agricultural Grassland (GA1), Dry Meadows and Grassy Verges (GS2) and Hedgerows (WL1).

Building and Artificial Surfaces (BL1)

The existing derelict house, sheds, outbuildings and yards all fall into this habitat category. There is little botanical ecological value in this habitat, although the old sheds, high stone walls and the house may provide valuable nesting habitats for birds, or roosting habitats for bats.

Improved Agricultural Grassland (GA1)

There are two separate areas of Improved Agricultural Grassland within the application site, one in the north of the site and the other in the south-east. Grasses are the dominant plants within the sward, and species such as meadow grass *Poa* spp. and rye grasses *Lolium* spp. were noted as dominant. The broadleaved species noted in the sward were very limited and included buttercup *Ranunculus* sp. and mouse-ear *Cerastium* sp. The fields are well drained, and there were no wetland indicator species present, such as rushes *Juncus* sp. or meadowsweet *Filipendula ulmaria*.

Dry Meadows and Grassy Verges (GS2)

This habitat occurs in various locations throughout the site, including in the old paddock to the front of the site in the north-west, in the small paddock in the west, in the grassy lane that leads from the main yard down towards the lake and in the old orchard to the rear of the large stone wall and storage shed. These grassland habitats are largely unmanaged and species noted included meadow grasses, couch grass *Elymus repens*, spear thistle *Cirsium vulgare*, bramble *Rubus fruticosus* agg., common hogweed *Heracleum sphondylium*, Rosebay willowherb *Chamerion angustifolium*, ragwort *Jacobaea vulgaris*, nettle *Urtica dioica*, dock *Rumex* sp. and celandine *Ficaria verna*. The orchard area also contains a small number of apple trees *Malus domestica*.

Hedgerows (WL1)

There are a number of hedgerow boundaries within the outer and inner perimeters of the site. The dominant species include sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, ivy *Hedera helix*, ash *Fraxinus excelsior*, bramble and

willow *Salix* sp. Many of the hedgerow boundaries have developed along old stone walls (BL1). There are mature trees occurring occasionally along these hedgerow boundaries, mostly sycamore with an occasional ash *Fraxinus excelsior*.

Group of Trees

There is a small group of trees in the western corner of the site. These trees are closely associated with the ruins of Kilmore Castle. The dominant species in the group included sycamore with an understorey of blackthorn and bramble.

A habitat map of the site is included in Figure 5.

Overall Evaluation of Habitats within the Site

The habitats within the application site range from low to moderate biodiversity value on the local level. Not including the potential of the existing buildings to host bats, these buildings and artificial surfaces are of no ecological value. The improved agricultural grassland habitat where the new pods will be built is also of low ecological value. The hedgerows, trees and stone walls on the perimeters of the site are of moderate ecological value on a local level. They form part of the remaining ecological corridors that surround Lough Ree. These hedgerows also provide an important linear habitat for birds and small mammals, including bats.

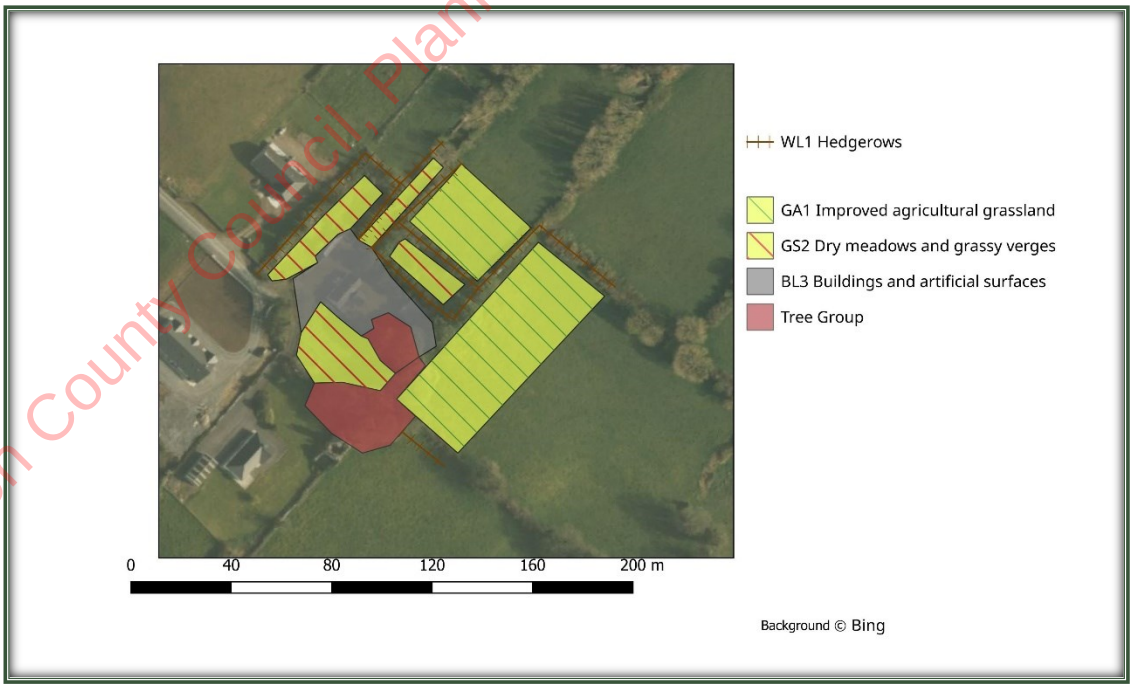


Figure 5 – Aerial Photograph of the Application Site

WATER FEATURES AND QUALITY

The application site lies within the Upper Shannon Hydrometric Area (26) and Catchment (26E), the Knockcroghery Sub-Catchment (010) and the Carrowphadeen Sub-Basin (010). There are no watercourses within or adjacent to the application site. The site is approximately 138m north of the Carrowphadeen Stream. This stream rises in lands to the north-west of the site. If flows in a south-easterly direction until it meets Lough Ree at a point approximately 390m south-east of the site. The site is also 167m south-west of Lough Ree at its closest point.

The EPA have classified the ecological status of the Carrowphadeen Stream as moderate status. Lough Ree is now also classed as moderate status, which is a reduction from its previous good status. Under the requirements of the Water Framework Directive, this is unsatisfactory and all waterbodies are obliged to meet good ecological status within the current cycle (3rd by 2027).

The application site is within the Funshinagh Groundwater Body and the overall status of this waterbody is currently noted as good. This waterbody is considered to be *Not at Risk* and it is likely to maintain this good status within the current cycle (3rd) of the WFD. Within the site itself, groundwater vulnerability is noted to be high.

3.3 NATURA 2000 SITES IDENTIFIED

In accordance with the guidelines issued by the Department of the Environment and Local Government, a list of Natura 2000 sites within 15km of the proposed development have been identified and described according to their site synopses, qualifying interests and conservation objectives. In addition, any other sites further than this, but potentially within its zone of interest were also considered. The zone of impact may be determined by an assessment of the connectivity between the application site and the designated areas by virtue of hydrological connectivity, atmospheric emissions, flight paths, ecological corridors etc.

For significant effects to arise, there must be a potential impact facilitated by having a *source*, i.e., the proposed development and activities arising out of its construction or operation, a *receptor*, i.e., the European site and its qualifying interests and a subsequent *pathway* or *connectivity* between the source and receptor, e.g., a water course. The likelihood for significant effects on the European site will largely depend on the characteristics of the source (e.g., nature and scale of the construction works), the characteristics of the existing pathway and the characteristics of the receptor, e.g., the sensitivities of the Qualifying Interests (habitats or species) to changes in water quality.

There are fourteen Natura 2000 designated sites within 15km of the application site. These designated areas and their closest points to the proposed development site are summarised in Table 1 and a map and aerial photograph showing their locations relative to the application site are shown in Figures 6 and 7. A full description of these sites can be read on the website of the National Parks and Wildlife Service (npws.ie).

Natura 2000 Site	Distance	Qualifying Interests	Screened In / Out
Lough Ree SAC 000440	68m north	• Otter (*Lutra lutra*) • Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation • Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) • Active raised bogs • Degraded raised bogs still capable of natural regeneration • Alkaline fens • Limestone pavements • Bog woodland • Alluvial forests with *Alnus*	*Screened In – Having regards to the proximity of this SAC to the application site potential significant effects arising from the construction and operation of the proposed development cannot be ruled out and will be considered further.*

		glutinosa and *Fraxinus* excelsior (Alno-Padion, *Alnion incanae*, *Salicion albae*)	
Lough Ree SPA *004064*	120m north	• Whooper Swan (*Cygnus Cygnus)* • Wigeon *(Anas penelope*) • Teal (*Anas crecca*) • Mallard (*Anas platyrhynchos*) • Shoveler (*Anas clypeata*) • Tufted Duck (*Aythya fuligula*) • Common Scoter (*Melanitta nigra)* • Goldeneye (*Bucephala clangula)* • Little Grebe (*Tachybaptus ruficollis)* • Coot (*Fulica atra)* • Golden Plover (*Pluvialis apricaria)* • Lapwing (*Vanellus vanellus)* • Common Tern (*Sterna hirundo)* • Wetlands	*Screened In – Having regards to the proximity of this SPA to the application site potential significant effects arising from the construction and operation of the proposed development cannot be ruled out and will be considered further.*
Lough Funshinagh SAC 000611	5.1km west	• Turloughs • Rivers with muddy banks with Chenopodion 22enelo p.p. and Bidention p.p. vegetation	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*
Ballynamona Bog and Corkip Lough SAC 002339	9.1km south-west	• Turloughs • Active raised bogs • Degraded raised bogs still capable of natural regeneration • Depressions on peat substrates of the Rhynchosporion • Bog woodland	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*
Castlesampson Esker SAC 001625	9.1km south-west	• Turloughs • Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*
Lough Croan Turlough SPA 004139	10.3km west	• Shoveler (*Anas clypeata*) • Golden Plover (*Pluvialis apricaria*) • Greenland White-fronted Goose(*Anser albifrons flavirostris)* • Wetlands and waterbirds	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SPA, therefore significant effects upon this site arising from emissions to water during*

			construction and operation can be ruled out.
Lough Croan Turlough SAC 000610	10.3km west	• Turloughs	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*
River Shannon Callows SAC 000216	10.8km south	• Otter (*Lutra lutra*) • Molinia meadows on calcareous, peaty or clavey-silt-laden soils (*Molinion caeruleae*) • Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) • Limestone pavements • Alluvial forests with *Alnus glutinosa* and *Fraxinus* excelsior (Alno-Padion, *Alnion incanae*, *Salicion albae*)	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*
Middle Shannon Callows SPA 004096	10.8km south	• Whooper Swan (*Cygnus cygnus)* • Wigeon (*Anas penelope*) • Corncrake (*Crex crex*) • Golden Plover (*Pluvialis apricaria*) • Lapwing (*Vanellus vanellus*) • Black-tailed godwit *(Limosa limosa)* • Black-headed gull (*Chroicocephalus ridibundus*) • Common Tern (*Sterna hirundo)* • Wetlands & Waterbirds	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SPA, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*
Fortwilliam Turlough SAC 000448	11.7km north	• Turloughs	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*
Crosswood Bog SAC 002337	13.2km south-east	• Active raised bogs • Degraded raised bogs still capable of natural regeneration	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*

Carn Park Bog SAC 002336	14km south-east	• Active raised bogs • Degraded raised bogs still capable of natural regeneration	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*
Four Roads Turlough SAC 001637	14.4km west	• Turloughs	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*
Four Roads Turlough SPA 004140	14.4km west	• Golden plover *(Pluvialis apricaria)* • Greenland white-fronted goose (*Anser albifrons flavirostris*) • Wetlands & Waterbirds	*Screened Out - There is no hydrological or ecological connectivity between the application site and this SAC, therefore significant effects upon this site arising from emissions to water during construction and operation can be ruled out.*

Table 1 – Natura 2000 Sites Within 15km of the Proposed Site

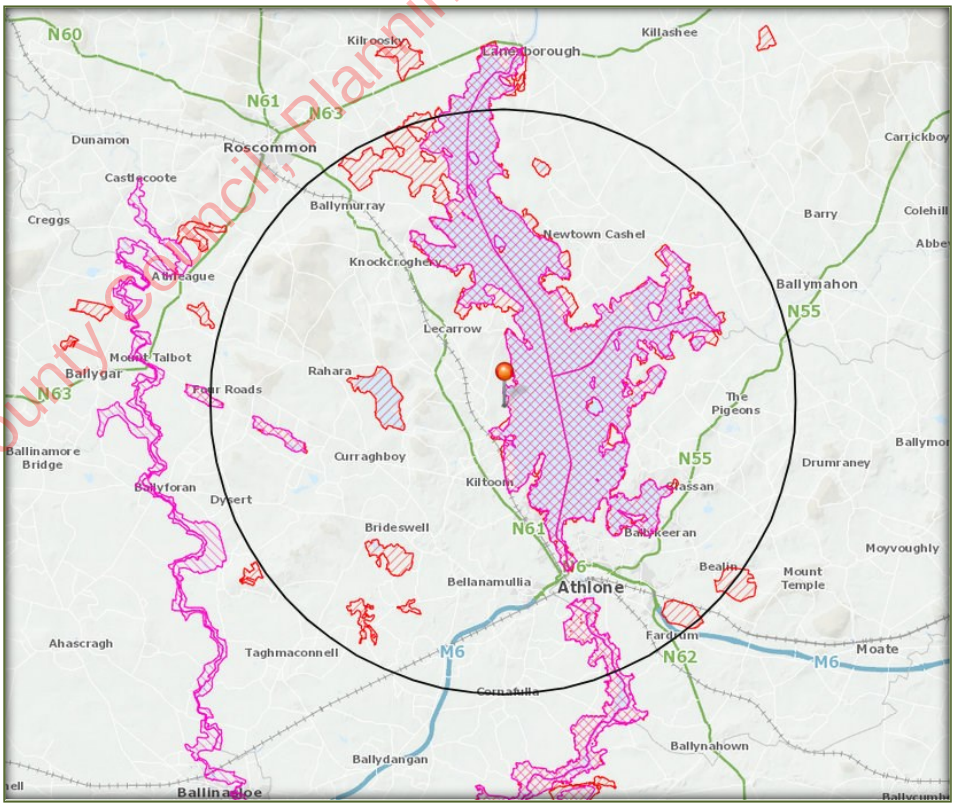


Figure 6 – The Application Site (Pinned) in relation to the Natura 2000 Sites within 15km (SACS – Red Hatching; SPAs – Pink Hatching)

Figure 7 – The Application Site (Outlined in Red) in relation to the Lough Ree SAC / SPA.

3.4 IDENTIFICATION OF POTENTIAL IMPACTS

The proposed small scale residential development at Carrowphadeen will occur on a site that is within close proximity to and potentially hydrologically connected to Lough Ree SAC and SPA. The development is not directly connected with or necessary for the management of the site, therefore significant effects upon these designated sites arising from the construction and operation of this proposed development cannot be ruled out.

Only those features of the development that have the potential to affect the integrity and conservation objectives of the identified Natura sites and protected species have been considered. A number of factors were examined at this stage and dismissed or carried forward for Appropriate Assessment as relevant. The following areas were examined in relation to potential impacts from the proposed development on the Natura 2000 sites identified:

1. Deterioration of Water Quality in Designated Areas Arising from Pollution to Groundwater During the Construction of the Development.
2. Deterioration of Water Quality in Designated Areas Arising from Pollution to Groundwater During the Operation of the Site.
3. Risk to Lough Ree SAC / SPA arising from Flood Events on the site.
4. Habitat Loss or Fragmentation in Designated Areas Arising from Inappropriate Disposal of Construction Waste and Spoil.
5. Cumulative impacts with other proposed/existing developments.

3.5 ASSESSMENT OF SIGNIFICANCE

This section considers the list of sites identified in Section 3.3. It can be considered that all sites, with the exception of the Lough Ree SAC/SPA can be excluded from the remainder of the Appropriate Assessment process. This is based on their distance from the proposed development and the fact that they are outside of its Zone of Influence and that no significant effects are likely to arise. The remaining concerns will therefore focus upon the protected habitats and species of the Lough Ree SAC and SPA.

3.6 SCREENING CONCLUSIONS

The proposed development is not directly connected with or necessary to the nature conservation management of the designated site. Therefore, following consideration of the location of the Lough Ree SAC/SPA in relation to the proposed development at Carrowphadeen, and the potential impacts that may occur, this project must proceed to the next stage of Appropriate Assessment, namely the Natura Impact Assessment.

4 STAGE II – APPROPRIATE ASSESSMENT

4.1 INTRODUCTION

The main objective of this stage (Stage 2, Natura Impact Statement) in the Appropriate Assessment process is to determine whether the development of the proposed planning application at Carrowphadeen (either alone or in combination with other plans, programmes and projects) will result in significant adverse impacts to the integrity of the Natura 2000 sites identified with respect to these site's structures, species, functions and/or conservation objectives. This stage also outlines the mitigation measures that should be taken in order to avoid any negative impacts of this application, should it receive consent.

SITE SPECIFIC CONSERVATION OBJECTIVES

For the two sites that have been screened in, if Site Specific Conservation Objectives were available these were reviewed in light of the proposed development and the potential impacts that might occur. These Site Specific Conservation Objectives (SSCOs) aim to define the favourable conservation condition for the particular habitats or species at that site. They outline certain attributes (e.g., distribution, population structure, water quality) for different species and habitats with targets, which define favourable condition for a habitat or species at a particular site. The maintenance of habitats and species within the Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at national level. Where available, these SSCOs can be downloaded on the NPWS website. Any potential threats to the attributes and targets as defined in these SSCOs were assessed and where necessary, mitigated for. Where SSCOS were not available, then the SSCOs of other Natura 2000 sites with comparable QIs were referred to.

For each Qualifying Interest of the SAC, the specific conservation objective is either to *maintain or restore* the favourable conservation condition of that interest, by defining a list of attributes and targets which are indicative of the conservation status of that interest. For habitats, the main attributes include habitat area; habitat and community distribution; vegetation structure/composition and physical structure. The main target is to ensure that the habitats are stable or increasing in area and that the other attributes are maintained or restored. For the Annex II species of the SAC, the main attributes are population trend and distribution, whilst the targets aim to ensure that the long term population trends of the species are stable or increasing and that there is no significant decrease in the numbers or range of areas used by the species, other than that occurring from natural patterns of variation.

4.2 NATURA 2000 SITES IDENTIFIED

A summary of the two sites screened in is presented below. Full details of these sites are available on the website of the National Parks and Wildlife Service.

LOUGH REE SAC SITE CODE 000440

Lough Ree is a large mesotrophic lake situated in an ice deepened depression in carboniferous limestone on the River Shannon. On average the lake is less than 10m in depth however there are some deep troughs from north to south of depths between 17-33m. Lough Ree has a long and much indented shoreline, which is mostly stony with some gravel and sand. In parts, reed swamp, alkaline fen, bog, freshwater marshes, wet and dry grassland and wet woodland occurs. Numerous islands, some wooded, occur in the lake. Dry broad-leaved woodland of good quality also occurs. Lough Ree is surrounded by agricultural land of moderate to high intensity. Eutrophication may be a problem but at present Lough Ree is less affected than other midland lakes, notably Lough Derg.

Lough Ree is an excellent example of a natural eutrophic system. The old oak woods at the site are considered the best in the midlands. The site also contains very good examples of degraded raised bog much of which retain a typical raised bog flora and which could be improved by restoration works. Bog woodland is also represented though some of this is planted with pine species. A further area of wet woodland on cutover peat is notable for the abundance of alder buckthorn *Frangula alnus*. Good to moderate examples of alkaline fens and calcareous dry grasslands also occur. Limestone pavement with a species-rich woodland occurs at Rathcline. Several Red Data plant species occur; otter *Lutra lutra* is frequent on the site and the fish *Coregonus autumnalis* (pollan) has been recorded. It is an important bird site for wintering and breeding waterfowl and it has a colony of common tern *Sterna hirundo*. It is of particular importance for the breeding population of common scooter *Melanitta nigra*, as it is one of only three sites for the species in Ireland. A full description of this SAC can be read online on the website of the National Parks and Wildlife Service.

In 2016, the NPWS published Site Specific Conservation Objectives (SSCOs) for this SAC. These conservation objectives were also supported by a number of other documents relating to the lake and woodland habitats of this SAC. For the Lough Ree SAC, these SSCOs can be downloaded on the NPWS website. Any potential threats to the attributes and targets as defined in these SSCOs were assessed and where necessary, mitigated for.

LOUGH REE SPA 004064

Lough Ree is one of the most important midland sites for wintering waterfowl, with nationally important populations of Eurasian wigeon *Anas penelope*, Eurasian teal *Anas crecca*, northern pintail *Anas acuta*, northern shoveler *Anas clypeata*, tufted duck *Aythya fuligula* and common goldeneye *Bucephala clangula*. Nationally important populations of golden plover *Pluvialis apricaria* and lapwing *Vanellus vanellus* are also associated with the lake. Regionally important numbers of whooper swan *Cygnus cygnus* and Greenland white-fronted goose *Anser albifrons flavirostris* are also found in the vicinity of the lake. The site supports a nationally important population of common tern *Sterna hirundo*. Black-headed gull *Larus ridibundus* breeds (nationally important) and lesser black-backed gull *Larus fuscus* and common gull *Larus canus* have bred in the past (recent census information is poor). Lough Ree is an important site for breeding duck and grebes, with tufted duck *Aythya fuligula* and great-crested grebe *Podiceps cristatus* having populations of national importance. Of particular note is that it is one of the two main sites in the country for breeding common scooter *Melanitta nigra*, a Red Data Book species. The woodland around the lake is a stronghold for the garden warbler *Sylvia borin* and this scarce species probably occurs on some of the islands within the SPA. A full description of this SPA can be read online on the website of the National Parks and Wildlife Service. The NPWS have not yet published SSCOs for the Lough Ree SPA.

4.3 QUALIFYING INTERESTS OF THE SAC / SPA – SCREENED OUT

The Lough Ree SAC and SPA are large, complex and varying sites. Certain qualifying interests of these sites will not be potentially impacted upon from this proposed development, either due to the distance involved or because they are features that are outside of the Zone of Influence of the site. These features and the reason for their screening out are listed in Table 2. In considering these QI features, the SSCOs of the site were referred to, along with the most recent Article 17 Reports on the status of protected habitats and species in Ireland (NPWS, 2019).

LOUGH REE SAC

Designated Feature & Code	Rationale for Screening Out
Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) Habitat Code – 6210	Map 4 of the SSCO document shows the known locations of this habitat within the SAC. Within this SAC, this habitat is most notable from two areas – on the southern shores of Coosan Lough and on the western shores of Lough Ree near Carrowmurragh. This habitat is not present within or adjacent to the proposed application site. There will be no loss or fragmentation of this habitat within the SAC and significant effects upon it can be ruled out.
Alkaline fens Habitat Code - 7230	The main area of alkaline fen occurs around St John's Wood, on the western shores of Lough Ree, although it is likely to occur in additional pockets around the lake. NPWS Spatial Data (Article 17 Reporting) does not map this habitat on lands close to or downstream of the application site. This habitat is not present within or adjacent to the application site. There are no likely effects on this habitat arising from the proposed development and this QI can be screened out.
Limestone pavements Habitat Code – 8240	This habitat occurs along the mid-eastern shores of Lough Ree (Map 8 SSCO document), although it is likely to occur in other areas too. This habitat is not present within or adjacent to the proposed application site and it does not occur in the Carrowphadeen area or within the Zone of Influence of this application site. There are no likely impacts on this habitat arising from the proposed application and this QI can be screened out.
Active raised bog – 7110 Degraded raised bogs still capable of natural regeneration Habitat Code - 7120	Within this SAC, designated peatland habitat occurs within the bog complexes at Cloonlarge and Clooncraff Bogs. The proposed development will not give rise to any habitat loss or fragmentation of this QI in the SAC. There will be no impacts bog hydrology or vegetation structure in these QIs. Significant effects upon this habitat QI arising from the proposed development will not arise.
Bog woodland Habitat Code – 91D0	This habitat is present in the central part of Clooncraff Bog SAC. The proposed development will not give rise to any habitat loss or fragmentation of this QI in the SAC. There will be no impacts upon vegetation composition or woodland structure. Significant effects upon this habitat QI arising from the proposed development will not arise.
Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnoin incanae, Salicion albae) – 91E0	This is only a recently added QI to this SAC and it is therefore not included in the current SSCO document. This habitat is not present within or adjacent to the proposed application site. There will be no habitat loss or fragmentation within an area of alluvial woodland habitat within this SAC. There will be no changes in water quality which could affect this habitat and there will be alterations to the hydrological regimes which support this habitat within the SAC.

Table 2 – The Qualifying Interests of the Lough Ree SAC (Screened Out)

LOUGH REE SPA

It is considered that for the purposes of this assessment, that all qualifying interests of the Lough Ree SPA are relevant to this NIS. These QIs have all been screened in.

4.4 QUALIFYING INTERESTS OF THE NATURA 2000 SITES – SCREENED IN LOUGH REE SAC

Table 3 describes the qualifying interest of the Lough Ree SAC that have the potential to be impacted upon from the proposed development, i.e., these QIs have been screened in and potential effects have been considered in terms of the SSCOs that have been set.

Designated Feature & Code	Rationale for Inclusion
Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation - 3150	This is the main qualifying interest of the Lough Ree SAC. It is characterised by benthic vegetation which can cover a large area of the lake. Natural eutrophic lakes have nutrient levels that are higher than those of oligotrophic, dystrophic or mesotrophic lakes, resulting in higher natural productivity, and they are typically species-rich. They are associated with lowland, circum-neutral to base-rich lakes in naturally more productive catchments. However, many such lakes have been damaged by over-enrichment with nutrients, resulting in hypertrophic conditions and a reduction in species-richness. The proposed development is within close proximity of this QI in the SAC at Lough Ree. Therefore, significant effects upon this habitat arising from pollution during construction and operation cannot be ruled out in the absence of mitigation.
Otter (*Lutra lutra*) 1355	The otter occurs throughout Lough Ree and along the River Shannon. The presence of this species is positively correlated with good water quality and deterioration of same will lead to impacts upon this species. Otters have two basic requirements – aquatic prey and safe refuges where they can rest. In freshwater areas, the diet of the otter comprises of a variety of fish from sticklebacks to salmon and eels, whilst crayfish and frogs can also be important. Impacts that reduce the availability or quality of, or cause disturbance to, their terrestrial or aquatic habitats are likely to affect otters. The main threats to otters in Ireland are thought to be: (1) habitat destruction, including river drainage and the clearance of bank-side vegetation; (2) pollution, particularly organic pollution resulting in fish kills; (3) disturbance of habitat due to recreational activities, and (4) accidental deaths (NPWS, The Otter Threat Response Plan, 2009). Records exist for this species from the western shores of Lough Ree and during the site survey, a probable otter spraint was noted along the lake shore. It is known that the territory of the otter is quite large. In Ireland, the territory of female otters in mesotrophic rivers is approximately 7.5 +/- 1.5km in length (Ó Néill, L., 2008), whilst the territories of male otters in mesotrophic and oligotrophic rivers is approximately 13.2 +/- 5.3km in length, with a high degree of variability as territorial males respond quickly to social perturbation. Therefore, as it should be assumed that otter does exist from within the Zone of Influence of the application site, mitigation measures will be included as part of this assessment to protect the overall status of the otter within the Lough Ree SAC.

Table 3 – The Qualifying Interests of the Lough Ree SAC (Screened In)

SSCOS OF THE LOUGH REE SAC QI (SCREENED IN)

Natural Eutrophic Lakes with Magnopotamion and Hydrocharition-type Vegetation 3150

The SSCO for this habitat is to *restore* its favourable conservation condition which is generally defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes
Habitat distribution	Occurrence	No decline, subject to natural processes
Typical species	Occurrence	Typical species present, in good condition, and demonstrating typical abundances and distribution
Vegetation composition: characteristic zonation	Occurrence	All characteristic zones should be present, correctly distributed and in good condition
Vegetation distribution: maximum depth	Metres	Restore maximum depth of vegetation, subject to natural processes
Hydrological regime: water level fluctuations	Metres	Maintain appropriate natural hydrological regime necessary to support the habitat
Lake substratum quality	Various	Maintain appropriate substratum type, extent and chemistry to support the vegetation
Water quality: transparency	Metres	Maintain/restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency
Water quality: nutrients	µg/l P; mg/l N	Restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species
Water quality: phytoplankton biomass	µg/l Chlorophyll a	Maintain appropriate water quality to support the habitat, including good chlorophyll a status
Water quality: phytoplankton composition	EPA phytoplankton composition metric	Maintain appropriate water quality to support the habitat, including good phytoplankton composition status
Water quality: attached algal biomass	Algal cover and EPA phytobenthos metric	Maintain trace/ absent attached algal biomass (<5% cover) and good phytobenthos status
Water quality: macrophyte status	EPA macrophyte metric (The Free Index)	Restore good macrophyte status
Acidification status	pH units; mg/l	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes
Water colour	mg/l PtCo	Restore appropriate water colour to support the habitat
Dissolved organic carbon (DOC)	mg/l PtCo	Maintain appropriate organic carbon levels to support the habitat
Turbidity	Nephelometric turbidity units/ mg/l SS/ other appropriate units	Maintain appropriate turbidity to support the habitat
Fringing habitat: area	Hectares	Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of the lake habitat

Table 4 – Natural Eutrophic Lakes with Magnopotamion and Hydrocharition-type Vegetation 3150

Otter (1355)

The SSCO for this species is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% positive survey sites	No Significant Decline
Extent of Terrestrial Habitats	Hectares	No significant decline. Area mapped and calculated as 330.6ha along river banks/lake shoreline/around pools
Extent of Freshwater (River) Habitat	Km	No significant decline. Area mapped and calculated as 22.7km.
Extent of Freshwater (Lake) Habitat	Hectares	No significant decline. Area mapped and calculated as 2097.4ha.
Couching Sites and Holts	Number	No significant decline
Fish Biomass Available	Kg	No significant decline
Barriers to connectivity	Number	No significant increase

Table 5 – SSCOs for Otter

LOUGH REE SPA

These SPA qualifying interests of Lough Ree are summarised in Table 6. The main effects upon these species would arise through disturbance due to noise and visual effects, and habitat loss and eutrophication which could lead to changes in the food webs of the lake, possibly affecting the diets of the birds.

In preparing this NIS, information on bird species as presented by the NPWS in the Article 12 reports was also consulted. Their conservation status as listed in Birds of Conservation Concern in Ireland is also included, where red listed species are of high conservation concern and amber of medium conservation concern.

Species	Description	Conservation Status
Whooper Swan *Cygnus cygnus*	Whooper swans are primarily herbivorous, feeding on aquatic plants, grasses and agricultural plants such as grain and vegetables. A published swan census (Hall *et al*, 2012) indicated that just over 50% of the habitat usage records for Whooper Swans were for dry improved pasture with 37.5% seen on arable land. Whooper Swan in Ireland are part of the Icelandic population which migrate south for the winter to Ireland and the UK.	Amber
Wigeon *Anas penelope*	Wigeon are common and widespread throughout Ireland in the winter where they occur on the coast and in inland wetlands, lakes and rivers. Away from coasts they graze on algae and also regularly feed on grasslands and cereal crops. They are an amber-listed species of conservation concern (Colhoun & Cummins, 2013).	Amber

Teal *Anas crecca*	Wintering teal are widespread in Ireland on wetlands both coastal and inland. They feed predominately on small seeds, with algae (*Ulva* spp.) and molluscs also taken.	Amber
Mallard *Anas platyrhynchos*	Mallard are a widespread wintering species in all wetland habitats, though don't tend to be as numerous as widgon or teal. They have a variable diet including plant material, molluscs and crustaceans, and grain and stubble.	Amber
Shoveler *Anas clypeata*	Shoveler prefer shallow eutrophic waters rich in plankton and are found wintering in a variety of habitats including coastal estuaries, lagoons and inland lakes. They feed mainly on zooplankton and also small molluscs, insects and larvae, seeds and plant material.	Red
Tufted Duck *Aythya fuligula*	Tufted duck feed on animal matter including mussels, crustaceans and insect larvae.	Amber
Common Scoter *Melanitta nigra*	Common Scoter breed throughout the low arctic in Scandinavia and across Siberia. Iceland, Scotland and Ireland support small outlying breeding populations. A survey for breeding Common Scoter was undertaken in 2012 (Hunt *et al*, 2013). Five breeding pairs were recorded on the first visit and four on the second visit. They are found in the northern and mid-sections of Lough Ree around the islands.	Red
Goldeneye *Bucephala clangula*	Goldeneye is a winter visitor that mostly occurs in Ireland between November and April. Populations in Ireland mostly come from the population breeding in Fennoscandia. They are amber-listed in Ireland due to their small breeding population and localised wintering range. Their diet consists of invertebrates, mostly crustaceans, but also molluscs and small fish. Insects, especially caddis-fly and chironomid larvae, dominate the diet of birds occurring on inland waters.	Red
Little Grebe *Tachybaptus ruficollis*	The little grebe is a resident species on ponds and lakes throughout Ireland. They are amber listed in Ireland due to construction in breeding range. Their diet consists of a range of invertebrates, small fish and molluscs.	Amber
Coot *Fulica atra*	Coot are found wintering in a variety of wetland habitats. They are omnivorous and feed on plant shoots, seeds, insects, algae and fish.	Amber
Golden Plover *Pluvialis apricaria*	Golden Plover that winter in Ireland are thought to be mostly the Icelandic breeding population. During winter Golden Plovers feed primarily within agricultural grassland and arable land. Tidal flats are used more as a roosting/resting habitat and the birds tend to favour large open flats. Intertidal feeding is observed to a greater degree during cold weather periods when grassland feeding areas are frozen over.	Red
Lapwing *Vanellus vanellus*	Lapwing breeding in Ireland are partial migrants with some residing overwinter and some migrating south. The wintering population is enhanced by Lapwings coming in from continental Europe and Britain. Lapwings are traditionally inland waders but can be observed across a wide variety of habitats in winter including lowland farmland and freshwater habitats.	Red
Common Tern *Sterna hirundo*	Common tern is a summer visitor to Ireland and is found on the coasts or large inland lakes. It breeds on the coast with larger colonies in Co. Dublin, Co. Wexford and Co. Galway. Its	Amber

	diet comprises mostly of fish. Some of the islands in Lough Ree provided breeding sites for this species.	
Wetlands	The wetlands around Lough Ree SAC/SPA include areas of reed bed, marsh and wet grassland habitats. These habitats are important for listed species and pollution control. The biggest threats to these habitats include direct loss through development and drainage and eutrophication.	N/A

Table 6 – The Qualifying Interest of Lough Ree SPA

Wetlands and waterbirds are also a QI of the Lough Ree SPA. The wetlands around Lough Ree include areas of reed bed, marsh and wet grassland habitats. These habitats are important for listed species and pollution control. The biggest threats to these habitats include direct loss through development and drainage and eutrophication.

SSCOS OF THE LOUGH REE SPA

Site Specific Conservation Objectives

Site specific conservation objectives for this site were prepared in April 2025[1]. These are outlined in Table 7.

Qualifying Interest	SSCO	Attribute – Measure - Target
Little Grebe *Tachybaptus ruficollis* [A004]	To *maintain* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.
Whooper Swan *Cygnus cygnus* [A038]	To *restore* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites

[1] *NPWS (2025) Conservation Objectives: Lough Ree SPA 004064. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.*

		outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target. • Supporting habitat: area and quality - Hectares and quality - Sufficient area of utilisable habitat available in ecologically important sites outside the SPA.
Wigeon *Anas Penelope* [A050]	To *restore* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target. • Supporting habitat: area and quality - Hectares and quality - Sufficient area of utilisable habitat available in ecologically important sites outside the SPA.
Teal *Anas crecca* [A052]	To *restore* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target. • Supporting habitat: area and quality - Hectares and quality - Sufficient area of utilisable habitat available in ecologically important sites outside the SPA.
Mallard *Anas platyrhynchos* [A053]	To *restore* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering

		population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target. • Supporting habitat: area and quality - Hectares and quality - Sufficient area of utilisable habitat available in ecologically important sites outside the SPA.
Shoveler *Anas clypeata* [A056]	To *maintain* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.
Tufted duck *Aythyna fuligula [A061]*	To *maintain* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.
Common Scoter *Melanitta nigra* [A065]	To *restore* the favourable conservation condition of this species in the Lough Ree SPA	• Breeding population trend - Percentage change in number of potential breeding pairs - Long term trend is stable or increasing. • Productivity rate - Number of young fledged per potential breeding pair Sufficient productivity to maintain the population trend as stable or increasing. • Distribution of nesting habitat - Spatial distribution - No significant loss of distribution in the long term, other than that occurring due to natural patterns of variation. • Extent and condition of nesting habitat - Hectares of high quality nesting habitat - Sufficient area of high quality habitat to support the population target. • Disturbance at breeding site - Intensity, frequency, timing and duration - Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and distribution. • Barriers to connectivity and site use - Number, location, shape and hectares - Barriers do not significantly impact the breeding population's

		access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat, and available forage biomass to support the population target.
Goldeneye *Bucephala clangula* [A067]	To *restore* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.
Coot *Fulica atra* [A125]	To *maintain* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target.
Golden Plover *Pluvialis apricaria* [A140]	To *restore* the favourable conservation condition of this species in the Lough Ree SPA	• Winter Population Trend – Percentage Change in Number of individuals – Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target. • Supporting habitat: area and quality - Hectares and quality - Sufficient area of utilisable habitat available in ecologically important sites outside the SPA.
Lapwing	To *restore* the	• Winter Population Trend – Percentage Change in Number of individuals

Vanellus Vanellus [A142]	favourable conservation condition of this species in the Lough Ree SPA	– Long term winter population trend is stable or increasing. • Winter Spatial Distribution – Hectares, time and intensity of use – Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target. • Disturbance at Wintering Site – Intensity, frequency, timing and duration – Disturbance occurs at levels that do not significantly impact the achievement of targets for the population trend and spatial distribution. • Barriers to Connectivity and Site Use – Number, location, shape and hectares – Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA. • Forage spatial distribution, extent and abundance - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Roost spatial distribution and extent - Location and hectares of roosting habitat - Sufficient number of locations, area and availability of suitable roosting habitat to support the population target. • Supporting habitat: area and quality - Hectares and quality - Sufficient area of utilisable habitat available in ecologically important sites outside the SPA.
Common Tern *Sterna Hirundo* [A193]	To *restore* the favourable conservation condition of this species in the Lough Ree SPA	• Breeding population trend – Number of Apparently Occupied Nests - Long term trend is stable or increasing. • Productivity rate - Number of young fledged per potential breeding pair - Sufficient productivity to maintain the population trend as stable or increasing. • Distribution: extent of available nesting options within the SPA - Numbers and spatial distribution - Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population. • Forage spatial distribution, extent, abundance and availability - Location, hectares, and forage biomass - Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target. • Disturbance at the breeding site - Intensity, frequency, timing and duration - Disturbance occurs at levels that do not significantly impact on birds at the breeding site. • Disturbance at areas ecologically connected to the colony - Intensity, frequency, timing and duration - Disturbance occurs at levels that do not significantly impact on breeding population. • Barriers to connectivity - Number, location, shape, and area (ha)- Barriers do not significantly impact the population's access to the SPA or other ecologically important sites outside the SPA.
Wetlands [A999]	To *maintain* the favourable conservation condition of the wetland habitats in the Lough Ree SPA as a resource for the regularly occurring migratory waterbirds that utilise these areas.	• Wetland Habitat Area – Hectares – No significant loss to the wetland habitat within the SPA, other than that occurring from natural patterns of variation. • Wetland Habitat Quality and Functioning – Quality and function of the wetland habitat – No significant impact on the quality or functioning of the wetland habitat within the SPA, other than that occurring from natural variation.

Table 7 – Conservation Objectives for SPAs

4.5 ASSESSMENT OF SIGNIFICANCE OF EFFECTS

INTRODUCTION

The identification of potential effects and the assessment of their significance typically requires the identification of the type and magnitude of the impacts. For example, will the impacts be short term or long term, direct, indirect or cumulative and will they occur during construction or operation. This section will establish whether the impacts of the proposed development at the Carrowphadeen that were identified in the previous section, are likely to occur and whether or not they are significant. These potential impacts will be examined with respect to the conservation objectives of the Natura 2000 site identified.

In the screening section of this report, the following possible future impacts on the Lough Ree SAC / SPA, were listed. These concerns are again listed below and they will be dealt with in more detail in this section.

1. Deterioration of Water Quality in Designated Areas Arising from Pollution to Groundwater During the Construction of the Development.
2. Deterioration of Water Quality in Designated Areas Arising from Pollution to Groundwater During the Operation of the Site.
3. Risk to Lough Ree SAC / SPA arising from Flood Events on the site.
4. Habitat Loss or Fragmentation in Designated Areas Arising from Inappropriate Disposal of Construction Waste and Spoil.
5. Cumulative impacts with other proposed/existing developments.

DETERIORATION OF WATER QUALITY IN DESIGNATED AREAS ARISING FROM POLLUTION TO GROUNDWATER DURING THE CONSTRUCTION OF THE DEVELOPMENT

No surface watercourses occur within the site boundary and no streams, drains or ditches are located in close proximity to the proposed construction works area. As such, there is no direct surface water pathway connecting the construction footprint to Lough Ree and associated designated sites.

Notwithstanding the absence of direct surface water connectivity, the site is located within an area of high groundwater vulnerability, where soils are generally thin and overlie permeable subsoils and bedrock. In such settings, contaminants arising from construction activities, including hydrocarbons, cement, suspended solids or accidental spillages, have an increased potential to infiltrate to groundwater.

Groundwater within the wider area is considered to contribute to the baseflow to Lough Ree, along with supporting the groundwater-dependent habitats associated with the lake

margins, wetlands and hydrologically connected terrestrial habitats within the Lough Ree SAC and SPA. Consequently, deterioration in groundwater quality arising from construction-phase pollution could indirectly affect surface water quality within the lake, including nutrient status, turbidity and chemical composition, with the potential to adversely affect the Qualifying Interests of the designated sites.

In particular, groundwater-mediated pathways may facilitate the transport of contaminants to the lake over time, resulting in subtle but ecologically relevant changes to water quality that could affect aquatic habitats, aquatic vegetation and species reliant on high water quality conditions. Such effects would be of concern in the context of the conservation objectives of Lough Ree SAC and SPA, which include the maintenance of favourable conservation condition of habitats and species dependent on clean, well-oxygenated waters.

In the absence of appropriate mitigation, pollution of groundwater during the construction phase therefore represents a potential impact pathway to designated sites, despite the lack of direct surface water connections.

DETERIORATION OF WATER QUALITY IN DESIGNATED AREAS ARISING FROM POLLUTION TO GROUNDWATER DURING THE OPERATION OF THE SITE

The proposed development includes the installation and long-term operation of a wastewater treatment system that will discharge treated effluent to ground in an area classified as having high groundwater vulnerability. The site lies within the Zone of Influence of Lough Ree SAC and SPA, such that groundwater beneath the site may be hydraulically connected to the lake and associated groundwater-dependent habitats.

During the operational phase, any deterioration in the quality of groundwater resulting from inadequate treatment performance, system malfunction or insufficient maintenance could result in the gradual mobilisation of nutrients, organic matter or other contaminants within the groundwater system. Given the potential for groundwater to contribute to baseflow and diffuse inflows to Lough Ree, such contamination could, over time, influence surface water quality within the lake and the ecological integrity of habitats and species for which the designated sites are selected.

In the absence of appropriate design, siting and long-term management of the wastewater treatment system, the operational phase of the development could therefore give rise to indirect, persistent adverse effects on the Qualifying Interests of Lough Ree SAC and SPA.

RISK TO LOUGH REE SAC / SPA ARISING FROM FLOOD EVENTS ON THE SITE

A Flood Risk Assessment for the site has previously been undertaken by Langan Consulting Engineers. This assessment concluded that there are no historical references to areas "liable to flooding" in the vicinity of the proposed development on available OS mapping. No lands in the vicinity of the proposed development are identified as benefitting from OPW arterial drainage schemes and there is no evidence of alluvial soils within the proposed development lands. OPW PFRA, NIFM and CFRAM mapping does not identify any flood risk to the subject site.

While there is some statutory evidence of fluvial flood history in or in the wider vicinity of the proposed development lands, the significant elevation difference between the highest recorded flood level (+37.10mOD) and the subject site, which has existing ground levels ranging from +40.125mOD to +45.850mOD, indicates that historic flooding has not affected the site. The site is therefore assumed to be entirely within Flood Zone C and the risk of flooding is considered low. Accordingly, the potential for adverse effects on Lough Ree SAC and SPA arising from flood events on the site is also considered to be low.

HABITAT LOSS OR FRAGMENTATION IN DESIGNATED AREAS ARISING FROM INAPPROPRIATE DISPOSAL OF CONSTRUCTION WASTE AND SPOIL

Works within the site may generate excess loads of soil, top soil and other excavated material. Any disposal of material outside of the site boundary or within the Lough Ree SAC and SPA could lead to fragmentation and loss of sensitive habitats in these designated sites.

CUMULATIVE EFFECTS - The proposed development site is situated within the Shannon catchment. Therefore, any national, regional or local land use plans, along with any existing or proposed projects, further upstream in the catchment, or in the same groundwater body, have the potential to affect water quality in the Shannon catchment and therefore also have the potential to act in-combination with the proposed development to affect the above European sites.

Any plan or existing/proposed project that could potentially affect the Natura 2000 sites above in-combination with the proposed development must adhere to the overarching ecological and environmental protective policies and objectives of the relevant land use plan. These policies and objectives will ensure the protection of Natura 2000 sites and will include the requirement for any future project to undergo Screening for Appropriate Assessment and/or Appropriate Assessment.

Future Plans / Other Projects

The Roscommon County planning map tool was used to identify any current or future or projects which may potentially impact on Natura 2000 sites when considered in combination with the proposed development. In the preceding five years, a number of planning applications, the majority of which were small domestic or agricultural developments, have been granted planning permission in the Carrowphadeen / Lecarrow area. With the implementation of the mitigation measures that are included as part of this NIS, the proposed development will not lead to cumulative impacts upon any designated site when considered in combination with other developments that have been properly screened for AA, or where an NIS was submitted.

The applicant has also recently applied for planning permission (Planning Reference: 25/60454) for another development, pertaining to the change of house design from that previously permitted under 24/60066. The initial parent application was accompanied by an NIS prepared by Beo Ecology. A decision on 25/60454 is pending. However, should it be granted, then all mitigation in the NIS that was previously submitted for the initial application will be adhered to. The current proposal will have no cumulative impact upon the Lough Ree SAC / SPA when it is considered in-combination with the development previously permitted on site, provided all mitigation measures in the NISs that have been prepared for both developments are adhered to.

Any future application in the area that has the potential to impact upon these Natura 2000 sites will be subjected to Appropriate Assessment as required under Articles 6(3) of the Habitats Directive. Following mitigation, this current development will have no cumulative impacts upon the SACs / SPAs identified when considered in combination with any other development that has been screened for no impacts themselves (Stage 1) or where potential impacts have been mitigated against (Stage 2 AA / NIS).

5 MITIGATION MEASURES

In order to protect Lough Ree SAC / SPA and to avoid any reductions in water quality in the area surrounding the proposed development site, a number of site-specific mitigation measures have been recommended and these must be implemented and followed. Additional measures have also been suggested that will help to protect the local biodiversity of the surrounding area and to ensure the protection of local wildlife.

The implementation of these measures will ensure the protection of Natura 2000 habitats and species, and the local non-designated ecological receptors. The primary parties responsible for the implementation of these measures include the applicants, the project manager and the construction contractors.

Pre-Construction and Construction

- All works associated with the development must be confined to the proposed development site and must be done in full accordance with the plans and information submitted for approval.
- The work areas must be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out and cordoned off in advance of work commencement.
- Prior to the commencement of developments on site, the site engineer and the contractors should be made aware of the ecological sensitivity of the site and its surrounding habitats. They must be made familiar with the mitigation measures outlined in this NIS and the accompanying EcIA, and if possible, a statement signed by them acknowledging these mitigation measures should be presented to the Local Authority along with the Notice of Commencement.

Protection of Habitats

- In accordance with Policy NH10.13 of Roscommon County Development Plan, it is recommended that all hedgerows, trees and stonewalls in the site are retained and incorporated into the development.
- If hedgerows or trees have to be removed, then it should be done outside of the bird nesting season (March – August).
- All waste associated with the development should be disposed of in an environmentally friendly manner. Registered contractors should only be used. This includes any

excavated soil. There must be no placement of soil or waste outside of the application site or within the Lough Ree SAC and SPA.

Pollution Control

There are no surface watercourse within the application site. However, the following measures should be undertaken to prevent the pollution of groundwater during construction.

- There should be no storage of fuels and lubricants on site.
- Refuelling of vehicles must be undertaken off site.
- Spill kits should be present in all plant machinery.
- Oil booms and oil soakage pads should be kept on site to deal with any accidental spillage.
- Any waste oils or hydraulic fluids should be collected, stored in appropriate containers and disposed of offsite in an appropriate manner.
- All plant and machinery should be regularly maintained and serviced to minimise release of hydrocarbons.
- Wet concrete is corrosive and can cause serious pollution to watercourses. Best practice in bulk-liquid concrete management must be employed addressing pouring and handling, secure shuttering, adequate curing times etc.
- Cement dust must be controlled as it is alkaline and harmful to the surrounding ecology. Activities which result in the creation of cement dust should be controlled by dampening down areas.
- Washwater from cleaning ready-mix concrete wagons and mixers may be contaminated. Wagons and mixers must be washed off site.
- Raw or uncured waste concrete should be disposed of by removal from the site in a location in a manner that shall not impact on any watercourse.
- Stockpile areas for sands and gravel should be kept to a minimum size, well away from the drains and watercourses.

Site Operation and Landscaping

- During operation, only clean surface water should be allowed into any soakaway
- The treatment plant and percolation area must be installed under the supervision of a suitably qualified engineer. It must be operated and maintained in accordance with its design specifications. It should be serviced regularly and emptied annually by a registered contractor.

- Bare soil should be seeded as soon as possible with grass seed. This will minimise erosion into local drains and watercourses.
- The removal of vegetation with herbicides should be avoided.
- Any landscaping plan for the site should include for the planting of native trees and hedgerows around the boundaries of the site. It is noted on the plan that reference is made to a wildflower meadow. No commercial seed mixes should be used in the creation of this wild grass/flower area in any part of the site. The grasslands in the area are naturally calcareous and it is probably that with correct management that a native flora will naturally develop. These areas should not be seeded and no fertilization and spraying should be undertaken. They should be mowed infrequently or once per year, at the end of the summer. The mowed grass should be removed after cutting, as leaving it break down in-situ will return the nutrients to the soil. A wild meadow will be achieved eventually, when nutrient levels become low in the soil. More guidance on the management of wildflower areas is available on the National Pollinator Plan website.

Bats

Prior to the commencement of any works on the site, all buildings must be re-surveyed for bats. If bats are present and remain within the walls, sheds or house, a derogation license will have to be sought in order to safely re-locate these bats.

Lighting

Mammal friendly lighting should be employed on site to reduce impacts upon nocturnal species, including bats. The recommendations outlined in the guidance "Bats and Lighting Guidance Notes for: Planners, Engineers, Architects and Developers" should be followed. See https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf. Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires for any new lighting within the site. This is taken from the most recent BCT Lighting Guidelines (BCT, 2018).

- All luminaires used must lack UV/IR elements to reduce impact.
- LED luminaires should be used due to the fact that they are highly directional, lower intensity, and have good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins) should be used to reduce the blue light component of the LED spectrum).

- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible. For this proposed development scheme bollard lighting could be used.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should be mounted on the horizontal, i.e. no upward tilt.
- As a last resort, accessories such as baffles, hoods or louvres should be used to reduce light spill and direct it only to where it is needed.
- Lights should not be directed towards high stone walls of the mature vegetation that surround the site. Trees should not be lit up

6 APPROPRIATE ASSESSMENT CONCLUSION

This current NIS has been undertaken to evaluate the potential impacts of the proposed development with regard to the effects upon the conservation objectives and qualifying interests (including the habitats and species) of the Lough Ree SAC and SPA. It is considered that following mitigation, that the proposed project does not have the potential to significantly affect the conservation objectives of these aforementioned Natura 2000 sites and the integrity of these sites as a whole will not be adversely impacted.

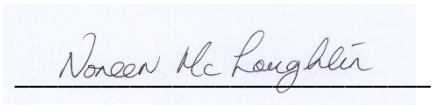
The qualifying interests of the site and their potential to be impacted upon from the potential development were listed in Section 4.2. It is considered that these potential impacts can be successfully mitigated against. With implementation of the mitigation measures there will be no deterioration in water quality or impacts upon any designated habitat or any species dependent on these designated habitats.

In light of the above, it is considered that with the implementation of the mitigation measures, that the proposed works do not have the potential to significantly affect the conservation objectives or qualifying interests of the Lough Ree SAC and SPA. The integrity of these sites will not be adversely affected. Table 8 follows the integrity of the SAC / SPA checklist, which shows that the integrity of the site would not be affected by the proposed development.

Conservation Objective: Does the project have the potential to:	**Yes / No**
Cause delays in progress towards achieving the conservation objectives of the site?	N
Interrupt progress towards achieving the conservation objectives of the site?	N
Disrupt those factors that help to maintain the favourable conditions of the site?	N
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	N
Other Objectives: does the project have the potential to:	
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	N
Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	N
Interfere with predicted or expected natural changes to the site (such as water dynamics	N

or chemical composition)?	
Reduce the area of key habitats?	N
Reduce the population of key species?	N
Change the balance between key species?	N
Reduce diversity of the site?	N
Result in disturbance that could affect population size or density or the balance between key species?	N
Result in fragmentation?	N
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)	N

Table 8 – Integrity of Site Checklist (From NPWS, Information Checklist for AA, Box 6, EC (2002)



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(PI Insurance details available on request)

Appendix I: REFERENCES AND FURTHER READING

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