Technical Appendix 2: Ecological Impact Assessment

Ballydonagh Solar Farm Amendment Application

05/12/2025

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EXECUTIVE SUMMARY

2.1. An Ecological Impact Assessment("EcIA") has been undertaken for a proposed amendment to the consented Ballydonagh solar farm (Planning Reference: 2361049 (the "Proposed Amendment") in the townlands of Ballydonagh, Cloonineen, Skecoor, Kiltormer East and Graveshill, Co. Galway (the "Application Site") to assess the potential impacts from the Amended Development on local ecology. Baseline information within the ecological assessment comprises of an initial desk-based assessment and a Fossitt habitat survey, which was extended to identify the presence or likely absence of protected species, which have been outlined within the relevant sections of this report.

2.2. The main impacts during the construction phase include the direct loss of habitat under the Proposed Amendment footprint and indirect loss of habitat due to disturbance and pollution. The majority of habitat lost as a result of the Amended development will be improved agricultural grassland which is considered to be of negligible importance to nature conservation within the local area.

2.3. Within the 15km zone of influence (ZOI) surrounding the Application Site there are seven European Designated Sites. These consist of three Special Protection Areas ("SPAs"); Middle Shannon Callows SPA, River Little Brosna Callows SPA, and River Suck Callows SPA and four Special Areas of Conservation ("SACs"); River Shannon Callows SAC, Glenloughaun Esker SAC, Redwood Bog SAC, and Ardgraigue Bog SAC.

2.4. It has been concluded that there is ecological connectivity between the Application Site and the River Shannon Callows SAC. Due to the proximity of the River Suck Callows SPA, River Little Brosna Callows SPA and Middle Shannon Callows SPA to the Application Site, potential for ornithological connectivity has been closely considered.

2.5. In order to fully assess the ornithological connectivity of the three SPA's a wintering bird survey was conducted at the Ballydonagh site during the winter of 2022/23, following this a Wintering Bird Survey report was produced (for further detail see Appendix B of the accompanying Natura Impact Statement report in Volume 1 of the PES). The survey indicates that the site has the potential to support wader species such as Lapwing i.e. Lapwing were found using wet grassland habitat within ESA. With the implementation of habitat enhancement measures it is considered that the Proposed Amendment is unlikely to have a negative effect on local bird species' populations. As the development will improve habitats for local bird species, there will likely be a positive effect on these as a result of the development.

2.6. These designated sites have been outlined and fully assessed within the supporting Natura Impact Statement (NIS) report. The findings of the NIS conclude that with the implementation of integral design measures, mitigation and best practice construction methods, there will be no likely significant effects for all European designated sites within the ZOI.

2.7. From the current survey findings and impact assessment conducted, it is considered that the Amended Development is unlikely to have any significant effects for local wildlife. However, as a

precaution, several measures have been outlined within this report to reduce any potential impacts for local ecology.

2.8. Furthermore, a Biodiversity Management Plan (BMP) has been produced which encompasses enhancement and compensatory measures to ensure the amended solar farm will have a net beneficial effect for local wildlife (see Appendix 2D of this report).

INTRODUCTION

Background

2.9. Neo Environmental Ltd has been appointed by Renewable Energy Systems (RES) Ltd on behalf of Ballydonagh Solar Limited (the "Applicant") to undertake an Ecological Impact Assessment ("EcIA") for an amendment application to a consented solar farm development ((c. 81.9ha) (the "Proposed Amendment") within the townlands of Ballydonagh, Cloonineen, Skecoor, Kiltormer East and Graveshill, Co. Galway (the "Application Site").

2.10. Please refer to Figure 203, for the layout of the Proposed Amendment.

2.11. A **Natura Impact Statement** (NIS) and **Biodiversity Management Plan** (BMP) have also been undertaken for the Proposed Development and should be read in conjunction with this Ecological Impact Assessment.

Development Description

2.12. The Proposed Amendment will consist of several minor amendments to the previously consented development under Planning Reference 2361049. The amendments comprise the following; realignment of the main entrance and access gate; realignment and widening of internal access tracks; alteration of the boundary fence at the main entrance and at the northeast corner of the site; removal of the consented 38kV substation and associated grid connection (the 110kV substation and grid connection will form part of a Strategic Infrastructure Development); combined central inverters and MV transformers are replaced by separate string inverters and central MV transformers; reduction in the size of related hardstanding areas; updated table layout to accommodate the 110kV substation and grid cable including a reduction in PV table numbers from 3209 to 3120; new overhead line separation areas to reflect that a section of the existing 110kV overhead line will be removed to facilitate the substation grid connection; inclusion of an additional badger sett buffer and extension the operational lifetime of the solar farm from 35 years to 40 years.

2.13. These alternations are considered minor in nature and do not alter the overall design intent or scale of the consented solar development.

Site Description

2.14. The Application Site is located in a rural setting, approximately 9.5km south of Ballinasloe, 33km east of Athenry and 21km northeast of Loughrea. The area of the amended Development lies at an elevation of approximately 71 – 96m AOD and covers a total area of c. 81.9 hectares. It is centred at approximate Irish Grid Reference (ITM) X 583549 Y 720440 and is located c. 7km northeast of the N65 and 8.4km south of the M6.

2.15. Comprising of 26 agricultural fields (31 were surveyed in total, however fields 1, 5, 9, 10 and 11 have since been removed from the amended development boundary), the site is currently being used for pastoral farming. The fields are bound by a mixture of trees, hedgerows and post-and-wire fencing.

2.16. Access to both parcels of land is gained from existing access points off the L4301 which dissects the site.

Scope of the Assessment

2.17. An Ecological Impact Assessment has been completed for the Application Site to inform the submission of a planning application to Galway Council for a proposed solar farm amendment. The aims of this report are to:

- Determine the main habitat types within and immediately adjacent to the Application Site in relation to the Proposed Development footprint;
- Identify any actual or potential habitat or species constraints pertinent to the development of the Application Site and to identify how the Proposed Development can avoid, mitigate and, if necessary, compensate for impacts on these actual or potential constraints;
- Assess the potential impacts of the Proposed Development during the construction, operation and decommissioning phases;
- Provide mitigation to reduce the impacts of the activities undertaken during the various phases of the Proposed Development, and
- Identify potential opportunities for the Proposed Development to enhance and add to the biodiversity resource within the site.

Statement of Authority

2.18. The assessment has been conducted by qualified ecologists. All work has been carried out in line with the relevant professional guidance: Chartered Institute of Ecology and Environmental Management's ("CIEEM") Guidelines for Ecological Impact Assessment ("EcIA") in the UK and Ireland[1].

2.19. Louis Maloney, is a former Principal Ecologists at Neo Environmental. He has circa seven years of professional ecological experience. This includes terrestrial and marine surveys covering a wide range of fauna and flora such as bird (2 years' of surveying), mammal and vegetative surveys. In addition, Louis has been involved in the management of large variety of projects involving: Environmental Impact Assessment ("EIA"), Natura Impact Statement ("NIS"), Ecological Impact

[1] CIEEM (2022) Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Version 1.2.

Assessment ("EcIA"), Biodiversity Management Plan ("BMP") and Net Gain Assessment ("NGA") reports. He holds a BSc in Marine Science from the National University of Ireland, and an MSc in Conservation Behaviour – Marine and Terrestrial Science. Louis is in the process of applying for a Full level membership with CIEEM.

2.20. Thomas Hill is one of three Principal Ecologists at Neo Environmental. He has five years of experience as an ecologist in a mixture of field and office-based work. Thomas has experience in many surveys and assessments including Phase 1 and UK habitat surveys, bat, badger, otter and water vole alongside other protected species surveys. He has worked on projects of varying scales, from simple residential extension developments up to national scale transport infrastructure projects. Thomas is currently working towards CIEEM membership and is our lead Biodiversity Net Gain Assessment expert.

2.21. Rhona Coghlan is an Assistant Ecologist with over 1 year experience in the ecology and conservation industry. Rhona has been awarded a 1:1 BSc in Environmental Science from the National University of Galway and is a Qualifying Member of the Chartered Institute for Ecology and Environmental Management. Rhona has conducted Fossitt Habitat surveys, Breeding and Wintering Bird surveys, Bat surveys, Otter surveys, and aquatic invertebrate surveys. Rhona has authored Natura Impact Statements, Ecological Impact Assessment, Biodiversity Management Plans, Q-value reports, Wintering Bird reports and more. Rhona is appointed ECoW for two wind farm development and has experience with client-facing consultations and survey reports. Rhona has taken part in several training events organised by CIEEM, The British Trust for Ornithology and Birdwatch Ireland.

LEGISLATION AND PLANNING POLICY CONTEXT

International Legislation

2.22. International legislation relevant to the Proposed Development is outlined within **Table 2-1** below.

Table 2--1: Relevant International Legislation

Directive	Main Provisions
Bern Convention	The Bern Convention[2] came into force in 1982, with the principal aims to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix III.
Bonn Convention	The Bonn Convention[3] came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix I of the Convention), concluding multilateral Agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix II), and by undertaking cooperative research activities.
Ramsar Convention	The Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)[4] came into force in 1975. It is an international treaty for the conservation and wise use of wetlands.

National Legislation

2.23. The principal national legislation governing the protection of wildlife and natural resources in Ireland is:

- The Wildlife Act 1976 (amended 2000)[5]- this is the principal legislation for the protection of wildlife in Ireland and outlines strict protection for species that have significant conservation value. The Act also provides a mechanism to give statutory protection to Natural Heritage Areas ("NHAs"). The amendment in 2000 broadens the scope of the Wildlife Acts to include most species, including the majority of fish and

[2] Available at: https://www.coe.int/en/web/bern-convention
[3] Available at: https://www.cms.int/en/convention-text
[4] Available at: https://www.ramsar.org/about-the-convention-on-wetlands-0
[5] Office of the Attorney General (1976) Wildlife Act 1976 (amended 2000), available at www.irishstatutebook.ie

aquatic invertebrate species which were excluded from the 1976 Act.

- EC (Birds and Natural Habitats) Regulations 2011 (amended 2015)[6] - transposes the EU directives into law. It protects species and priority habitats considered to be of European interest.
- Flora Protection Order 2015[7] - this Order makes it illegal to cut, uproot or damage a listed species in any way. It is illegal to alter, damage or interfere in any way with their habitats. This protection applies wherever the plants are found.
- The EC (Water Policy) Regulations 2003[8] – transposes the Water Framework Directive into national law.

2.24. The regulations contained within the above referenced legislation have all been taken into account during the production of this ecological report.

Planning and Development Act, 2000 (as amended)[9]

2.25. Relevant sections regarding ecology within the Planning and Development Act, 2000 (amended 2006) are as follows:

First Schedule, Part IV Environment and Amenities

"5. (a) Preserving and protecting flora, fauna and ecological diversity.

(b) Preserving and protecting trees, shrubs, plants and flowers.

6. Protecting and preserving (either in situ or by record) places, caves, sites, features and other objects of archaeological, geological, historical, scientific or ecological interest."

Fifth Schedule

"19. Any condition relating to the protection of features of the landscape which are of major importance for wild fauna and flora.

20. Any condition relating to the preservation and protection of trees, shrubs, plants and flowers.

[6] Office of the Attorney General (2011) European Communities (Birds and Natural Habitats Regulations 2011 (amended 2015), available at www.irishstatutebook.ie

[7] Office of the Attorney General (2015) Flora Protection Order 2015, available at www.irishstatutebook.ie

[8] Office of the Attorney General (2003) European Communities (Water Policy) Regulations 2003, available at www.irishstatute book.ie

[9] Office of the Attorney General (2000) Planning and Development Act 2000, available at www.irishstatutebook.ie

21. Any condition relating to the preservation (either in situ or by record) of places, caves, sites, features or other objects of archaeological, geological, historical, scientific or ecological interest.

22. Any condition relating to the conservation and preservation of—

(a) one or more specific—

(i) (I) natural habitat types in Annex I of the Habitats Directive, or (II) species in Annex II of the Habitats Directive which the site hosts, contained in a European site selected by the Minister for Arts, Heritage, Gaeltacht and the Islands in accordance with Annex III (Stage 1) of that Directive.

(ii) species of bird or their habitat or other habitat contained in a European site specified in Article 4 of the Birds Directive, which formed the basis of the classification of that site

or

(b) any other area prescribed for the purpose of section 10(2)(c)."

Part XIV

"212. – (1) A planning authority may develop or secure or facilitate the development of land and, in particular and without prejudice to the generality of the foregoing, may do one or more of the following:

(f) secure the preservation of any view or prospect, any protected structure or other structure, any architectural conservation area or natural physical feature, any trees or woodlands or any site of archaeological, geological, historical;

(g) secure the creation, management, restoration or preservation of any site of scientific or ecological interest, including any Nature Conservation Site."

Planning Policy Statement 2015[10]

2.26. The aim of Planning Policy Statement 2015 is as follows:

"Planning legislation in Ireland seeks to ensure, in the interests of the common good, the proper planning and sustainable development of urban and rural areas."

[10] Environment, Community and Local Government (2015), Planning Policy Statement 2015, available at www.environ.ie

2.27. The Government outlined 10 key principles as a strategic guide in implementing the aim above. Relevant ecological principals outlined within this document include:

> *"4. Planning must support the transition to a low carbon future and adapt to a changing climate taking full account of flood risk and facilitating, as appropriate, the use of renewable resources, particularly the development of alternative indigenous energy resources.*
>
> *Planning will conserve and enhance the rich qualities of natural and cultural heritage of Ireland in a manner appropriate to their significance, from statutorily designated sites to sites of local importance, and including the conservation and management of landscape quality to the maximum extent possible, so that these intrinsic qualities of our country can be enjoyed for their collective contribution to the quality of life of this and future generations.*
>
> *Planning will support the protection and enhancement of environmental quality in a manner consistent with the requirements of relevant national and European standards by guiding development towards optimal locations from the perspective of ensuring high standards of water and air quality, biodiversity and the minimisation of pollution risk*

Galway County Development Plan 2022 - 2028[11]

2.28. The main aim of the Development Plan is to provide direction and focus for development in the county, in accordance with the steps set out in the Planning and Development Acts. Chapter 10 of the plan addressed Natural Heritage, Biodiversity and Blue/Green Infrastructure.

2.29. Relevant County Development Plan Policies include:

NHB 1: Natural Heritage and Biodiversity of Designated Sites, Habitats and Species

> *Protect and where possible enhance the natural heritage sites designated under EU Legislation and National Legislation (Habitats Directive, Birds Directive, European Communities (Birds and Natural Habitats) Regulations 2011 and Wildlife Acts) and extend to any additions or alterations to sites that may occur during the lifetime of this plan. Protect and, where possible, enhance the plant and animal species and their habitats that have been identified under European legislation (Habitats and Birds Directive) and protected under national Legislation (European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011), Wildlife Acts 1976-2010 and the Flora Protection Order (SI 94 of 1999). Support the protection, conservation and enhancement of natural heritage and biodiversity, including the protection of the integrity of European sites, that form part of the Natura 2000 network, the protection of Natural Heritage Areas, proposed Natural Heritage Areas, Ramsar Sites, Nature Reserves, Wild Fowl Sanctuaries (and other designated sites including any future designations) and the promotion of the development of a green/ ecological network.*

[11] Galway County Development Plan 2015-2021. Available at: http://www.galway.ie/en/services/planning/developmentplansandpolicy/galwaycountydevelopmentplan2015- 2021/

NHB 2: European Sites and Appropriate Assessment

To implement Article 6 of the Habitats Directive and to ensure that Appropriate Assessment is carried out in relation to works, plans and projects likely to impact on European sites (SACs and SPAs), whether directly or indirectly or in combination with any other plan(s) or project(s). All assessments must be in compliance with the European Communities (Birds and Natural Habitats) Regulations 2011. All such projects and plans will also be required to comply with statutory Environmental Impact Assessment requirements where relevant.

NHB 3: Protection of European Sites

*No plans, programmes, or projects etc. giving rise to significant cumulative, direct, indirect or secondary impacts on European sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan (either individually or in combination with other plans, programmes, etc. or projects.**

NHB 4: Ecological Appraisal of Biodiversity

Ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites. Where appropriate require an ecological appraisal, for development not directly connected with or necessary to the management of European Sites, or a proposed European Site and which are likely to have significant effects on that site either individually or cumulatively.

NHB 5: Ecological Connectivity and Corridors

Support the protection and enhancement of biodiversity and ecological connectivity in non-designated sites, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, stonewalls, geological and geo-morphological systems, other landscape features and associated wildlife areas where these form part of the ecological network and/or may be considered as ecological corridors in the context of Article 10 of the Habitats Directive.

NHB 6 Implementation of Plans and Strategies

Support the implementation of any relevant recommendations contained in the National Heritage Plan 2030, the National Biodiversity Plan, the All Ireland Pollinator Plan and the National Peatlands Strategy and any such plans and strategies during the lifetime of this plan.

NHB 7 Mitigation Measures

Require mitigating measures in certain cases where it is evident that biodiversity is likely to be affected. These measures may, in association with other specified requirements, include

establishment of wildlife areas/corridors/parks, hedgerow, tree planting, wildflower meadows/marshes and other areas. With regard to residential development, in certain cases, these measures may be carried out in conjunction with the provision of open space and/or play areas.

NHB 8 Increased Awareness of the County's Biodiversity and Natural Heritage

Facilitate increased awareness of the County's biodiversity and natural heritage through the provision of information to landowners and the community generally, in cooperation with statutory and other partners.

NHB 9 Protection of Bats and Bats

Habitats Seek to protect bats and their roosts, their feeding areas, flight paths and commuting routes. Ensure that development proposals in areas which are potentially important for bats, including areas of woodland, linear features such as hedgerows, stonewalls, watercourses and associated riparian vegetation which may provide migratory/foraging uses shall be subject to suitable assessment for potential impacts on bats. This will include an assessment of the cumulative loss of habitat or the impact on bat populations and activity in the area and may include a specific bat survey. Assessments shall be carried out by a suitably qualified professional and where development is likely to result in significant adverse effects on bat populations or activity in the area, development will be prohibited or require mitigation and/or compensatory measures, as appropriate. The impact of lighting on bats and their roosts and the lighting up of objects of cultural heritage must be adequately assessed in relation to new developments and the upgrading of existing lighting systems.

NHB 10 NPWS & Integrated Management Plans

Article 6(1) of the Habitats Directive requires that Member States establish the necessary conservation measures for European sites involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans. The NPWS's current priority is to identify site specific conservation objectives; management plans may be considered after this is done. Where Integrated Management Plans are being prepared by the NPWS for European sites (or parts thereof), the NPWS shall be engaged with in order to ensure that plans are fully integrated with the Plan and other plans and programmes, with the intention that such plans are practical, achievable and sustainable and have regard to all relevant ecological, cultural, social and economic considerations, including those of local communities.

IS 1: Control of Invasive and Alien Invasive Species

It is a policy objective of the Planning Authority to support measures for the prevention and eradication of invasive species.

IS 2: Invasive Species Management Plan

Ensure that proposals for development do not lead to the spread or introduction of invasive species. If developments are proposed on sites where invasive species are currently or were previously present, an invasive species management plan will be required. A landscaping plan will be required for developments near water bodies and such plans must not include alien invasive species.

PO 1: Delivery of All Ireland Pollinator Plan

To facilitate the delivery of the All Ireland Pollinator Plan where possible. In the interest of preserving and enhancing biodiversity and working in conjunction with the All Ireland Pollinator Plan.

It shall be the policy objective of the Planning Authority to ensure that at least 20% of the green space on all housing estates being built will have to be dedicated, developed and maintained as a pollinator zone. The area dedicated can be confined to one single lot or various lots around the site providing that the total area of the lots meets the minimum requirement of 20%. The pollinator zones should be planted with a mix of pollinator friendly-bulbs, self- seeding annuals and biennials, perennials, shrubs, trees, fruit trees and fruit bushes and the majority of this planting should consist of native plants.

Galway Heritage and Biodiversity Plan 2017 - 2022[12]

2.30. Galway has a rich biodiversity with a great variety of habitats and species including some which are rare in Ireland and the rest of the world such as turloughs, eskers, limestone pavement, river callows and machair grasslands. Flower rich seminatural grassland and raised and blanket bogs and wetlands are common with the latter, attracting over-wintering water birds, and the cuckoo, swallow and corncrake in the summer. The rivers and lakes host a variety of fish species, birds and otters and rare invertebrates such as the white-clawed crayfish and the freshwater pearl mussel. Many of Galway's most important natural and semi- natural habitats are afforded protection under European and national legislation byway of designation as National Heritage Areas (NHAs), Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

2.31. The Galway Heritage and Biodiversity Plan (2017—2022) is based on the National Heritage Plan whose main objective is to:

"ensure the protection of our heritage and to promote its enjoyment for all. The key to achieving this goal is the preparation and adoption of Local Heritage Plans involving local heritage fora, bringing together communities, local authorities and the Government.

[12] Galway County Heritage and Biodiversity Plan 2017-2022 (Draft 5 – 11 May 2017). Available at: https://www.galway.ie/en/media/Galway%20County%20Heritage%20and%20Biodiversity%20Plan%202017%20-2022.pdf

Guidance Documents

BS 42020:2013 Biodiversity[13]

2.32. The British Standards Institute has published BS 42020:2013 Biodiversity Code of practice for planning and development which offers a coherent methodology for biodiversity management. This document seeks to promote transparency and consistency in the quality and appropriateness of ecological information submitted with planning applications and applications for other regulatory approvals.

2.33. BS 42020:2013 cites CIEEM EcIA Guidelines as the acknowledged reference on ecological impact assessment. These guidelines are consistent with the British Standard on Biodiversity, which provides recommendations on topics such as professional practice, proportionality, pre-application discussions, ecological surveys, adequacy of ecological information, reporting and monitoring.

CIEEM Guidelines

2.34. CIEEM have produced guidance on Ecological Impact Assessment[14] and Ecological Report Writing[15].

2.35. EcIAs is a process of identifying, quantifying and evaluating potential effects from activities such as those related to development on habitats, species and ecosystems. This EcIA process follows the steps set out in Table 2-2 below.

Table 2-2: EcIA Process

Task	Description
Scoping	Determining the matters to be addressed in the EcIA, including consultation to ensure the most effective input to defining the scope. Scoping is an ongoing process – the scope of the EcIA may be modified following further ecological survey/research and during impact assessment.
Establishing the baseline	Collecting information and describing the ecological conditions in the absence of the proposed project, to inform the assessment of impacts.
Important ecological features	Identifying important ecological features (habitats, species and ecosystems, including ecosystem function and processes) that may be affected, with reference to a geographical context in which they are considered important.

[13] BS 42020:2013 Biodiversity. Code of practice for planning and development

[14] CIEEM (2022) Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Version 1.2. Available at: ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf (cieem.net)

[15] CIEEM (2017) Guidelines for Ecological Report Writing. Available at: https://cieem.net/wp-content/uploads/2019/02/Ecological-Report-Writing-Dec2017.pdf

Impact assessment	An assessment of whether important ecological features will be subject to impacts and characterisation of these impacts and their effects. Assessment of the significance of the residual ecological effects of the project (those remaining after mitigation), including cumulative effects.
Avoidance, mitigation, compensation and enhancement	Incorporating measures to avoid, reduce and compensate negative ecological impacts and their effects, and the provision of ecological enhancements. Monitoring impacts and their effects. Evaluation of the success of proposed mitigation, compensation and enhancement measures.

2.36. The aims of their EcIA guidelines are to:

- promote good practice;
- promote a scientifically rigorous and transparent approach to EcIA;
- provide a common framework to EcIA in order to promote better communication and closer cooperation between ecologists involved in EcIA; and
- provide decision-makers with relevant information about the likely ecological effects of a project.

METHODOLOGY

Zone of Influence

2.37. The ZOI is the area encompassing all predicated negative ecological effects from a proposed scheme and is informed by the habitats present within the site and the nature of the proposals. Due to the scale and nature of the proposal, it is considered that the following ZOI, outlined in **Table 2-3** below, from the amended solar farm was appropriate for the gathering of information for the desk study.

Table 2-3: Zone of Influence for Ecological Features

ECOLOGICAL FEATURE	Zone of Influence (ZoI)
International statutory designations	15km or extent of hydrological or ornithological influence, whichever is greater
National statutory designations	5km
Non-statutory designations	2km
Protected and Priority species and habitats	2km
Fossitt Habitat and Species Scoping Surveys	50m

Desk Study

2.38. An updated desk-based assessment was undertaken to collate available ecological information for the Application Site and the surrounding area. This included a search of statutory designated sites within a 5km radius of the Amended Development, including: Special Protection Areas ("SPAs"), Special Areas of Conservation ("SACs"), RAMSAR Sites, Nature Reserves ("NRs"), Wildfowl Sanctuaries, Natural Heritage Areas ("NHAs") and proposed Natural Heritage Areas ("pNHAs"). The descriptions of each of these sites was obtained utilising the National Parks and Wildlife Service ("NPWS") website[18].

2.39. A NIS was undertaken to assess all European Designated sites within the ZOI of the Amended Development boundary. The findings of which are contained within **Volume 1: Natura Impact Statement**.

2.40. A data search was conducted though the National Biodiversity Data Centre (NBDC) to obtain information regarding protected/notable species within 2km of the Application Site boundary. The Application Site is located at approximate Irish National Grid Reference (IGR) X (ITM) 583259 Y (ITM) 720372.

2.41. Additional information on the suitability of habitat in the surrounding area for bats was also obtained from the NBDC in the form of a habitat suitability map. The map provided enhanced information on the recorded distribution of bats and broad-scale geographic patterns of occurrence and local roosting habitat requirements for Irish bat species.

Field Survey

Fossitt Habitat Survey

2.42. A Fossitt habitat survey was undertaken from the 10th to the 13th of May 2022 by Louis Maloney BSc (Hons) MSc and updated in October and November 2025 by Rhona Coghlan.

2.43. Survey work was carried out in accordance with Fossitt habitat survey guidance[19] with habitats mapped electronically in the field in order to produce a habitat map.

Species Scoping Survey

2.44. A species scoping survey was carried out to identify the presence of protected species, or the potential of the Application Site to support protected species. The aim of the survey was to provide an overview of the Application Site and to determine whether any further survey work was required.

2.45. No additional protected species surveys were undertaken at this time.

2.46. Table 2-4 below outlines the relevant habitat and field signs that indicate the potential presence of protected or notable species within the Ecological Survey Area (ESA).

Table 2-4: Indicative Habitats and Field Signs of Protected Species

Taxon	Indicative Habitat(s)	Field Signs (In Addition to Sightings)
Badger	Found in most rural and many urban habitats.	Excavations and tracks: sett entrances, latrines, hairs, well-worn paths, prints, scratch marks on trees.
Bats	Roosts – trees, buildings, bridges, caves, etc. Foraging areas – e.g., parkland, water bodies, streams, wetlands, woodland edges and hedgerow. Commuting routes – linear features (e.g.) hedgerows, water courses, tree lines).	In or on potential roost sites: droppings stuck to walls, urine spotting in roof spaces, oil from fur staining round roost entrances, feeding remains (e.g., moth wings under a feeding perch).

Birds	Trees, scrub, hedgerow, field margins, grassland, buildings.	Nests, droppings below nest sites (especially in buildings of trees), tree holes.
Common reptiles	Rough grassland, log and rubble piles.	Sloughed skins.
Otter	Watercourses.	Holts (or dens), prints, spraints (droppings), slide marks into watercourses, feeding signs (e.g. fish bones).

2.47. Weather Conditions **Table 2-5** describes the weather conditions at the time of the habitat survey giving temperature (°C), Wind speed (Beaufort Scale), Cloud-cover (octas) and precipitation.

Table 2-5: Weather conditions at time of survey

Survey date	Temperature (°C)	Wind Speed	Cloud-cover	Precipitation
10/05/2022	10 - 15	2	2	None
11/05/2022	8 - 15	2	4	None
12/05/2022	6 - 14	2	6	Light Precipitation
13/05/2022	11 - 17	2	2	None
20/10/2025	11°C	5m/s	8/8	Light
21/10/2025	11-12°C	3-6m/s	7/8	None
28/10/2025	7-12°C	8-9m/s	2/8	None
29/10/2025	7-11°C	6-7m/s	2/8	None
30/10/2025	3-12°C	12m/s	7/8	Moderate
03/11/2025	13-15°C	9-12m/s	8/8	Moderate

Additional Surveys

2.48. Four wintering bird surveys (WBS) were undertaken at the Application Site during the 2022/2023 winter season. Surveys were completed over 12 days. The entirety of the Application Site was covered on four occasions, the 7th – 9th December, 24th – 26th January, 21st – 23rd February and

14th – 16th March. The wintering bird surveys consisted of walking transects parallel to all linear features on site. No updated wintering bird surveys were undertaken.

2.49. During the surveys, all bird species heard or seen within and adjacent to the site were recorded. The surrounding fields were scanned from vantage points that gave unobstructed views over potentially suitable habitat for wildfowl and waders. A note was also made of birds flying overhead.

2.50. A total of 37 species of bird were recorded at the Amended Development Site. No Annex 1 listed species were observed during the surveys. The majority of the species recorded were common green-listed bird species that are typical of farmland habitats. During the January 2023 wintering bird survey 33 Lapwing were recorded foraging in wet grassland immediately adjacent to the Application Site boundary.

LIMITATIONS

2.51. Results of the assessment undertaken by Neo Environmental are representative of the time that surveying was undertaken.

2.52. The absence of specific species records returned during the data search does not necessarily indicate absence of a species or habitat from an area, but rather that these have not been recorded or are perhaps under-recorded within the search area.

2.53. A Fossitt habitat survey does not aim to produce a full botanical or faunal species list or provide a full protected species survey but, enables competent ecologists to ascertain an understanding of the ecology of the site in order to:

2.54. Broadly identify the nature conservation value of a site and preliminary assess the significance of any potential impacts on habitat/species recorded; and/or

2.55. Confirm the need and extent of any additional specific ecological surveys that are required to identify the true nature conservation value of a site.

2.56. At the time of the initial survey, access was only permitted within the landownership boundary. The areas of land which formed the ESA which were not within the landownership boundary were viewed from field boundaries, with the use of binoculars, where needed. It is considered that the limited access to areas of land directly adjacent to the Amended Development boundary has not impacted upon the findings of the habitat or species scoping surveys.

EVALUATION METHODS

2.57. The evaluation of ecological receptors is based upon CIEEM guidelines[16,17], which suggest that the value or potential value of an ecological resource or feature (for example a habitat type, species or ecosystems) should be determined within a geographical context (e.g. rare at a local level). Attributing a value to a receptor, which is also a designated site, is generally precise, as the designations themselves provide an indication of value.

Adopted Design Principles

2.58. The evaluation of the ecological baseline has enabled the inclusion of integral design measures which will ensure impacts from the Amended Development on ecological receptors can be reduced or avoided through the development design. Adopted design principles have been listed above (paragraph 2.15).

Impact Assessment

2.59. The impact assessment process involves:

- identifying and characterising impacts and their effects;
- incorporating measures to avoid and mitigate negative impacts and effects;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects; and
- identifying opportunities for ecological enhancement.

2.60. The terms 'impact' and 'effect' are used commonly throughout ecological reports. Impact is defined as a change experienced by an ecological feature, while effect is defined as the outcome to an ecological feature from an impact. Impacts and effects can be positive, negative or neutral.

2.61. Assessment of potential impacts and effects needs to consider on-site, adjacent and more distant ecological features, including habitats, species and statutory and ecological designated sites.

2.62. This Ecological Impact Assessment has been conducted by an experienced ecologist following CIEEM guidance[18].

[16] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine.
[17] CIEEM (2022) Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Version 1.2.
[18] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine. Version 1.1.

BASELINE CONDITIONS

DESIGNATED SITES

Statutory Designations

2.63. The Amended Development at Ballydonagh, Co. Galway does not lie within or directly adjacent to any statutory or non-statutory designated environmental sites.

2.64. Within 15km of the Application Site boundary there are three SPAs and four SACs. Within 5km of the Application Site boundary there is one pNHA and three designated NHAs. Each of these sites are outlined in **Table 2-6** below, and detailed within Figure 1, Appendix 2A.

2.65. The site descriptions are derived from the original site citations available from NPWS[22].

2.66. Please refer to the supporting **NIS**, Volume 1 for details of all European Designated sites within 15km of the Application Boundary.

Table 2-6 European Designated sites within 15km

Site Code	Site Name	Qualifying Features	Distance (km)	Potential Connectivity with the Proposed Development Site
SPA				
004097	River Suck Callows SPA	Whooper Swan (*Cygnus cygnus*) [A038] Wigeon (*Anas penelope*) [A050] Golden Plover (Pluvialis apricaria) [A140] Lapwing (*Vanellus vanellus*) [A142] Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395] Wetland and Waterbirds [A999]	6.39km Northeast	Potential ornithological

004086	River Little Brosna Callows SPA	Whooper Swan (*Cygnus cygnus*) [A038] Wigeon (*Anas penelope*) [A050] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Golden Plover (*Pluvialis apricaria*) [A140] Lapwing (*Vanellus vanellus*) [A142] Black-tailed Godwit (*Limosa limosa*) [A156] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395] Wetland and Waterbirds [A999]	12.47km Southeast	Potential ornithological
004096	Middle Shannon Callows SPA	Whooper Swan (*Cygnus cygnus*) [A038] Wigeon (*Anas penelope*) [A050] Corncrake (*Crex crex*) [A122] Golden Plover (*Pluvialis apricaria*) [A140] Lapwing (*Vanellus vanellus*) [A142] Black-tailed Godwit (*Limosa limosa*) [A156] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999]	10.41km Southeast	Potential ornithological
SAC				

000216	River Shannon Callows SAC	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) [6510] Alkaline fens [7230] Limestone pavements [8240] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* [91E0] *Lutra lutra* (Otter) [1355]	10.02km Southeast	Potential ecological connectivity
002213	Glenloughaun Esker SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210]	5.51km North-northwest	None
002353	Redwood Bog SAC	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the *Rhynchosporion* [7150]	11.92km Southeast	None
002356	Ardgraigue Bog SAC	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120]	4.61km South	None
pNHA				

001224	Ardgraigue Bog pNHA	Falls within boundary of Ardgraigue Bog SAC, see qualifying features above.	4.61km	None
NHA				
000249	Cloonoolish Bog NHA	Peatlands	3.17km South	None
001264	Eskerboy Bog NHA	Peatlands	4.04km Southwest	None
001303	Moorfield Bog NHA	Peatlands	2.95km Southeast	None

Habitats

2.67. A Fossitt habitat survey was undertaken in May of 2022 by Louis Maloney and updated in October and November 2025 by Rhona Coghlan. 14 habitats were identified in the 2022 survey while 14 were identified in the 2025 survey period, including those within the 50m ESA. Habitats found during the updated 2025 survey are outlined in Table 2-7 below. The target notes from both survey periods are outlined in Table 2-8 along with other relevant target notes.

2.68. In addition, the habitat map of the 2025 survey is shown in Figure 2, Appendix 2A and the habitat map of the 2022 survey is shown in Figure 3, Appendix 2A.

Habitat Type	Area/ Length	Species Present	Other Observations/ Potential for Species
Improved Agricultural Grassland (GA1)	1227815.1m^2	Perennial rye grass (*Loliuam perenne),* creeping buttercup (*Ranunculus repens)*, common nettle *(Urtica dioica),* cock's- foot (*Dactylis glomerata*), vetch (*Vicia* sp.), thistle (Cirsium sp), broad-leaved dock (*Rumex obtusifolius*)	Intensively managed and maintained grassland with low species diversity dominated by perennial rye grass. Some potential for foraging badger and Irish hare. Considered to be of low ecological value.
Amenity Grassland (GA2)	76.8 m^2	Outside of Development boundary. Uniform mown gardens.	Low species diversity. Considered to be of low ecological value.
(Mixed) broadleaved woodland (WD1)	974.8 m^2	Ash (*Fraxinus excelsior*), Oak (*Quercus robur*), Alder (*Alnus glutinosa*) and Douglas Fir (*Pseudotsuga menziesii*)	Providing bat roosting and bird nesting opportunities as well as foraging opportunities for many species. Considered to be of moderate to high ecological value.
Mixed Broadleaved/ Conifer Woodland (WD2)	22570.0 m^2	Scots pine (*Pinus sylvestris*), Alder (*Alnus glutinosa*)	Providing bat roosting and bird nesting opportunities as well as foraging opportunities for many species. Considered to be of moderate to high ecological value.
Conifer Plantation (WD4)	314745.7m2	Outside of Development boundary.	Providing bird nesting opportunities as well as foraging opportunities for many species. Considered to be of moderate to high ecological value.

Scrub (WS1)	5,639.4 m^2	Gorse (*Ulex europaeus*), bramble (*Rubus fruticosus agg.*), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*)	These areas provide bird nesting and foraging opportunities as well as providing shelter to mammals. Considered to be of moderate ecological value.
Hedgerow (WL1)	2207.7 m	Ash (*Fraxinus excelsior*), hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus Spinosa*), ivy (*Hedera helix*), and bramble (*Rubus fruticosus agg.*)	These areas provide bird nesting and foraging opportunities, commuting corridors for bats, as well as providing shelter to mammals. Considered to be of moderate ecological value.
Treelines (WL2)	7,368.4 m	Ash (*Fraxinusexcelsior*), sycamore(*Acer pseudoplatanus*), hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), willow (Salix Spp), blackthorn (*Prunus spinosa*), ivy (*Hedera helix*), and bramble (*Rubus fruticosus*agg)	Providing bat roosting and bird nesting opportunities as well as foraging opportunities for many species. Treelines here do provide good connectivity to wider environs, which is of particular importance for bats.
Depositing Lowland Rivers (FW2)	318.0 m	Stream	Provides habitat for aquatic species such as fish and freshwater invertebrates. Considered to be of moderate ecological value.
Drainage Ditches (FW4)	7,600.4 m	Wetland plant species	The Application site contains drainage ditches. Drainage ditches created to divert water away from farmland. Considered to be of low to moderate ecological value.

Buildings and Artificial Surfaces (BL3)	5,839.4 m^2	Farmyard and roads Ruin building with moderate bat roosting potential	Farmyard and roads considered to be of low ecological value Ruin building considered to be of moderate ecological value
Spoil and Bare Ground (ED2)	624.5 m^2	No species present. Bare soil at field entrance	Considered to be of low ecological value.
Tilled Land (BC3)	94,768.4 m^2	No species present. Tilled in preparation for planting.	Considered to be of low ecological value.
Earth Banks (BL2)	5,318.7 m^2	Creeping buttercup (*Ranunculin repens) and* daisy *(Bellis perennis),* spear thistle *(Cirsium vulgare).*	Considered to be of low ecological value.

2.69. Of the features outlined above, the Amended Development requires the removal of 1,006.8m^2 of hedgerow and 26 trees, and the trimming of 302m of hedgerow.

Target Notes

2.70. Target notes were produced for both 2022 and 2025 surveys and outlined in **Table 2-8** for areas of habitat too small to clearly identify within the habitat survey map (Figure 2, Appendix 2A), or to note suitable habitat for protected/notable species.

Table 2-8: Target Notes

Target Note	Description
Target notes from 2025 Fossitt Habitat Survey	
TN1	Tree with LBRP
TN2	Mammal Pushthrough

TN3	Snuffling
TN4	Tree with LBRP
TN5	Tree with MBRP
TN6	Mature Oak Tree with LBRP
TN7	Bird Box
TN8	Beech with LBRP
TN9	Irish Hare
TN10	Potential Badger Sett
TN11	Snuffling
TN12	Potential Badger Sett
TN13	Structure with MBRP
TN14	Ash Tree with LBRP
TN15	Tree with LBRP
TN16	Tree with LBRP
Target notes from 2022 Fossitt Habitat Survey	
TN1	Mature Oak - Medium-Bat Roost Potential
TN2	Mature beech Medium-Bat Roost Potential
TN3	Mature beech Medium-Bat Roost Potential
TN4	2 Mature Oak Medium-Bat Roost Potential
TN5	Mature Oak – Medium-Bat Roost Potential
TN6	Cavern created by mammal
TN7	Cavern created by mammal
TN8	Small mammal hole - unused
TN9	Cavern created by mammal
TN10	Standalone hawthorn
TN11	Small mammal hole - rabbit
TN12	Bird boxes in forestry
TN13	Standalone beech
TN14	Standalone ash trees

TN15	Ruin - Medium-Bat Roost Potential
TN16	Mature Lime tree - Medium-Bat Roost Potential

PROTECTED AND NOTABLE SPECIES

Desk-based

2.71. The potential presence of protected species within the study area was assessed through a data search conducted via the NBDC. This identified records of invasive, rare, scarce and protected species within 2km of the Amended Development using the 'report by polygon' function.

2.72. Additional information on the suitability of habitat in the surrounding area for bats was also obtained from the NBDC in the form of a habitat suitability map. The map provided enhanced information on the recorded distribution of bats, and broad-scale geographic patterns of occurrence and local roosting habitat requirements for Irish bat species.

2.73. In addition, the Fossitt habitat survey included a species scoping survey in order to assess the potential of the site to support protected species.

2.74. Table 2-9 below summarises the protected/notable species recorded within the search area, and their potential to be present within the proposed Application Site boundary

Table 2-9: Summary of Biological Records

Species Name	Number of Sightings	Date of Most Recent Sighting	Suitable Habitat present within the Application Site
Swallow (*Hirundo rustica*)	14	09/08/2019	Yes
White-clawed Crayfish (*Austropotamobius pallipes*)	7	14/08/2017	No
Jenkins' Spire Snail (*Potamopyrgus antipodarum*)*	3	14/08/2017	No
Brown Long-eared Bat (*Plecotus auritus*)	4	09/08/2019	Yes
Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*)	3	24/07/2019	Yes
Hedgehog (*Erinaceus europaeus*)	1	10/04/2021	Yes
Leisler's Bat (*Nyctalus leisleri*)	3	09/08/2019	Yes

Natterer's Bat (*Myotis nattereri*)	2	09/08/2019	Yes
Pipistrelle (*Pipistrellus pipistrellus sensu lato*)	2	09/08/2019	Yes
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	2	09/08/2019	Yes

*indicates invasive species

2.75. No herptiles, bat species or invertebrates of note were identified in the data search.

2.76. Table 2-10 below details the results of the NBDC Bat Suitability Index search undertaken for the Amended Development. The index ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats. The Proposed Amendment has an overall bat suitability index score of 27.

Table 2-10: Bat Suitability Index

Species	Index Score
Brown long-eared bat (*Plecotus auritus*)	34
Common pipistrelle (*Pipistrellus pipistrellus*)	41
Daubenton's bat (*Myotis daubentonii*)	28
Leisler's bat (*Nyctalus leisleri*)	39
Lesser horseshoe bat (*Rhinolophus hipposideros*)	2
Nathusius's pipistrelle (*Pipistrellus nathusii*)	1
Natterer's bat (*Myotis nattereri*)	36
Soprano pipistrelle (*Pipistrellus pygmaeus*)	41
Whiskered bat (*Myotis mystacinus*)	21

Field Survey

Badger

2.77. No records of badger were found in the 2km desk study.

2.78. Habitats within the Application Site, such as woodland, scrub areas, treelines and hedgerow have the potential to provide suitable foraging and sett building habitat for badger. Two mammal caverns which are being treated as potential badger setts were discovered during the 2025 Fossitt habitat survey, see **target notes 10 and 12** (**Table 2-8**) and **Appendix 2B** for pictures. No definitive other signs of badger were found around the entrances of these "mammal caverns". When considering the "D" like shape of the "mammal caverns", signs of snuffling within the Amended Development, and suitable habitats present, as a precautionary measure, these "mammal caverns" have been treated as potential badger setts. Two badger setts found in previous surveys have been considered within the EcIA.

2.79. No other definitive signs of badger were discovered within the Application Site during the Fossitt habitat survey.

Bats

2.80. Six species of bat were recorded within the 2km data search for the Proposed Amendment.

2.81. The bat suitability index is presented in **Table 2-10,** with an average suitability index of 27, indicating the area being relatively low in terms of suitability for bats.

2.82. **Target notes 1, 4-6 and 8** offer trees with low to moderate roosting potential roosting potential. See **Table 2-8** and Appendix 2A – Figure 2 for locations of target notes within the 2025 habitat survey map.

Otter

2.83. No records of Otter were found during the 2km data search.

2.84. Most habitats within the Application Site are considered to be sub-optimal for otter, as these are predominantly agricultural grassland fields and tilled land with hedgerows and treelines. However, the West Kiltormer and East Loughturk stream that has been illustrated as Depositing Lowland River (FW2) habitat in the Fossitt habitat map (**Appendix 2A – Figure 2**) offers both foraging and commuting habitat for otter. There is also a drainage ditch which runs along the border.

2.85. The Fossitt habitat survey conducted at the Application Site did not identify any field signs of otter.

Birds

2.86. Wintering bird surveys were conducted within the Application Site during the winter season of 2022/2023. In addition to this, the species scoping survey was completed to identify the presence of protected species, or the potential of the Application Site to support protected species. Any incidental observations of bird species during the walk over surveys were recorded to provide information for the assessment of potential bird activity within the Proposed Amendment.

2.87. Table 2-11 below lists the bird species observed during the site visit. Species listed as amber or red in line with The Birds of Conservation Concern in Ireland 4: 2020-2026[19] list are considered to be in decline.

Table 2-11: Bird Species Observed During the Fossitt Habitat Survey

Scientific Name	Common Name	BoCCI Listed Species
Terdus merula	Blackbird	Green
Turdus viscivorus	Blue Tit	Green
Fringilla Coelebs	Chaffinch	Green
Prunella modularis	Dunnock	Green
Parus major	Great Tit	Green
Coloeus monedula	Jackdaw	Green
Pica pica	Magpie	Green
Corvus frugilegus	Rook	Green
Erithacus rubecula	Robin	Green
Palumba columbus	Wood pigeon	Green
Troglodytes troglodytes	Wren	Green
Certhia familiaris	Eurasian Treecreeper	Green
Regulus regulus	Goldcrest	Amber
Carduelis carduelis	Goldfinch	Green
Corvus cornix	Hooded crow	Green
Alauda arvensis	Skylark	Amber
Hirundo rustica	Swallow	Amber
Sturnus vulgaris	Starling	Amber

[19] Gilbert et al.(2021) Birds of Conservation Concern in Ireland 4:2020-2026 *Irish Birds 43*:1-22(2021)

2.88. Other than goldcrest and skylark, only green listed species were observed during the site visit. Habitats on site are suitable for supporting common farmland species (such as those noted above). Hedgerows and treelines are suitable for breeding birds.

2.89. Goldcrest are resident of Ireland, often seen in gardens, forests and hedgerows. These species are one of the few species that breed in dense coniferous woodlands.[20] While there are no coniferous woodland within the Application Site, there is an area of Scot's Pine which may be used by breeding Goldcrest.

2.90. Skylarks are another resident species associated with agricultural landscapes and grasslands. They are ground nesting bird and use tufts of grass as nesting material. The Application Site largely comprises of agricultural grassland, it is therefore entirely possible that skylarks will utilise the Application Site. It should be mentioned, however, that majority of these fields are intensively grazed by cattle and so, are unlikely to have large tufts capable of supporting nests.

2.91. A total of 37 species of bird were recorded within, or immediately adjacent to, the proposed site during the four surveys undertaken from December 2022 to March 2023. The majority of the species recorded within the Application Site were common, green-listed bird species that are typical of farmland habitats.

Aquatic Invertebrates

2.92. The data search identified 7 records of white-clawed crayfish (Austropotamobius pallipes). The 7 records were identified within a 2km search radius of the Application Site.

2.93. The only form of connectivity to the Proposed Amendment is via the West Kiltormer stream and then the Kilcrow river. Suitable habitat, although considered quite limited, was observed during the site visit in the form of Depositing Lowland Rivers (West Kiltormer and East Loughturk stream) that runs along the western flank of the Proposed Amendment at approximate latitude and longitude 53.233771, -8.2553324.

Other Species

2.94. No records of other protected terrestrial mammals' species, other then hedgehog were found during the 2025 2km desktop search.

2.95. Jenkin's Spire Snail, an invasive invertebrate species, was recorded within the 2km desktop search. This species is found in inland waterbodies, feeding on aquatic vegetation and can consume 75% of vegetation within a waterbody, which negatively impacts other species and causes mortality in many cases. There are two watercourses, the West Kiltormer and East Lough Turk, which may be able to support this species. These rivers were surveyed where possible and no signs indicating the presence of Jenkin's Spire Snail were observed. It is possible that this species is still present so caution must be taken when considering this species.

[20] Available at: https://birdwatchireland.ie/birds/goldcrest/

2.96. No notable terrestrial invertebrate species were identified on site.

2.97. A 2km desktop search was also conducted during the 2022/2023 survey period. One record of pine martin and one record of red squirrel was returned from the 2km desk study. Whilst there are small areas of deciduous woodland and conifer woodland spread in and around the Application Site, visible within the habitat survey map (Figure 2.2, Appendix 2A). These habitats are not considered substantial or large enough to support red squirrel and/or pine martin, nor are they large enough to attract these species.

2.98. European rabbit, a widespread invasive mammal was identified within the 2km data search records. A rabbit burrow was identified (target note 11 – Table 2-8) along the understory of a treeline. European rabbit was observed on multiple occasions within the agricultural fields.

2.99. Singular records for bank vole, woodmouse and red fox were returned from the 2km desk study. Habitats on site such as hedgerow, woodland and treeline have the potential to support bank vole, woodmouse and red fox. No definitive signs of bank vole and or woodmouse were discovered during the Fossitt habitat survey. During the Fossitt habitat survey three "mammal caverns" were discovered, as per the shape and size of entrances they indicate the potential for badger, however, it is possible that a fox may inhabit an unused badger sett, hence the term "mammal cavern". No other signs of fox were discovered during the Fossitt habitat survey.

2.100. No notable terrestrial invertebrate species were identified on site.

Flora

2.101. No records of invasive plant species were identified in the 2km data search. Sycamore (*Acer pseudoplatanus*) was observed during site surveys in the treeline habitat.

Invasive Species

2.102. The only invasive species noted on site was Sycamore (*Acer pseudoplatanus*). This species is considered an invasive species with risk of medium impact, according to the NBDC[24]. It is a widespread and common species across Ireland and naturalised in the wild. Construction methods are not believed reasonably likely to cause the spread of Sycamore (*Acer pseudoplatanus*). No specific action is deemed necessary at this time for this species.

2.103. No other high, moderate or low impact invasive species within the Amended Development boundary. As such, no further action regarding surveys or biosecurity measures is deemed necessary at this time.

IMPACT ASSESSMENT

Best Practice Pollution Prevention Measures

2.104. Standard best practice pollution prevention measures will be adhered to. This will reduce the potential for impacts on ecology during the construction stage. As these are standard measures, they are separate to mitigation measures (outlined later in this report). More detailed drainage measures should be included as part of the design and provided by a suitable drainage expert involved with the Proposed Development.

2.105. Relevant measures include but are not limited to:

Pollution Prevention

- Hydrocarbons, greases and hydraulic fluids will be stored in a secure compound area;
- All plant machinery will be properly serviced and maintained, thereby reducing risk of spillage or leakage;
- All waste produced from construction will be collected in skips with the construction site kept tidy at all times;
- Excavated soil will be stored on site or removed by a licensed waste disposal unit;
- All materials and substances used for construction will be stored in a secure compound and all chemicals will be stored in secure containers to avoid potential contamination; and
- Location of spill kit to be known by all construction workers and implemented in the event of spillage or leakage.

Waste Management

- Skips are to be used for site waste/debris at all times and collected regularly or when full;
- All hydrocarbons and fluids are to be collected in leak-proof containers and removed from site for disposal or recycling; and
- All waste from construction is to be stored within the site confines and removed to a permitted waste facility.

Environmental Monitoring

- Contractor to nominate member of staff as the environmental officer with the responsibility to ensure best practice measures are implemented and adhered to, with any incidents or non-compliance issues being reported to project team.

IN THE ABSENCE OF MITIGATION

Designated Sites

2.106. This section discusses and evaluates the likely impacts of the Amended Development affecting Designated Sites which are within the 15km Zone of Influence ("ZOI") of the Amended Development. This is to assess whether there is some ecological, ornithological or hydrological connection between the Proposed Development and a Designated Site.

2.107. As outlined above in **Table 2-6,** of the four SACs identified within 15km of the Application Site, only one SAC has ecological connectivity with the Application Site. Three SPAs within lie within Zone of Influence of the Application Site, all of which have potential for ornithological connectivity. For further detail on Natura site connectivity with the Application Site, see **Volume 1 – Natura Impact Statement.**

2.108. The Glenloughaun Esker SAC, Redwood Bog SAC, Ardgraigue Bog SAC, Ardgraigue Bog pNHA, Cloonoolish Bog NHA, Eskerboy Bog NHA and Moorfield Bog NHA are all designated for terrestrial habitats and are all more than 2.5km from the Application Site. It has been concluded that no connectivity exists. Where connectivity does not exist, there are no pathways for likely impacts, therefore the European Designated sites, pNHAs and NHAs within the study area that do not have connectivity with the Application Site will not be considered further within this assessment.

The River Suck Callows SPA

2.109. The River Suck Callows SPA is located approximately 6.39km northeast of the Application Site and has been designated for a number of important bird species of the E.U. Habitats Directive, which are detailed within Table 2-6 above. The below assessment is representative of conditions within the Application Site for both 2022 and 2025 survey periods.

2.110. The River Suck Callows SPA stretches from a section of the River Suck from Castlecoote, Co. Roscommon to its confluence with the River Shannon near the town of Shannonbridge, with a total distance of c. 70km. The site comprises of areas of seasonally-flooded semi-natural lowland wet callow grassland and the river itself.

2.111. Given the Amended Development site's proximity to the SPA, potential for ornithological connectivity has been closely considered. Although it is considered unlikely for qualifying bird species to depend upon the Application Site, some of them are known to frequent grassland habitat. Four

wintering bird surveys were conducted over the wintering period, to determine the use of the Application Site by qualifying species of the SPA. the entirety of the Application Site was covered on four occasions: 7th – 9th December, 24th – 26th January, 21st – 23rd February and 14th – 16th March. No updated wintering bird surveys were undertaken in the 2025 survey period; however, these results are still considered representative of the current wintering bird population within the Development Boundary.

2.112. Whooper Swan (*Cygnus cygnus*), Wigeon (*Anas penelope*), Golden Plover (*Pluvialis apricaria*), Lapwing (*Vanellus vanellus*) and Greenland White-fronted Goose (*Anser albifrons flavirostris*) are all associated with the wetland habitats of the River Suck and surrounding wet grassland. The Application Site does not contain any wetland habitats. Research indicates that these species core foraging ranges are less than 5km[21],[22],[23] as the SPA is 6.39km northeast of the Application Site and provides richer feeding areas, potential for significant adverse effects are considered unlikely on these four qualifying species of bird as a result of the Amended Development.

2.113. No scientific literature disclosing the core foraging range of wigeon was found. It is considered possible that the habitats within the Application Site provided suitable forging habitat for this species. The ideal habitat for this species is wetland habitat that is surrounded by sparse open forest, woodland and especially agricultural land[24],[25]

2.114. Only one of the five qualifying bird of the SPA was noted during the wintering bird surveys – see Appendix B of the accompanying NIS report for more detail. During the January 2023 wintering bird survey 33 lapwing were recorded foraging in wet grassland habitat in lands immediately adjacent to the Application Site. It is considered that this species is not dependant upon the habitats of the Application Site for winter foraging. Although no lapwing were observed within the Application Site itself, there is potential for this species to utilise the habitats of the Application Site. Lapwing are both an overwintering species, and a resident. There is potential for lapwing to breed within the Application Site, as lapwing breed on farmland. Areas of species-rich grassland have been proposed to be planted in replacement of the improved agricultural grassland on site. These areas of species-rich grassland will provide richer feeding areas for bird species such as Lapwing. Light intensity sheep grazing has also been proposed on site to maintain sward at a suitable height for nesting Lapwing. With the implementation of habitat enhancement measures it is considered that the Amended Development will benefit local Lapwing populations. It is recommended that breeding bird surveys be conducted prior to any construction that may occur during the breeding bird season (March to August). With the implementation of these measures, it can be concluded that the

[21] Scottish Natural Heritage. Assessing Connectivity with Special Protection Areas (SPAs). Available at: file:///C:/Users/User/Downloads/Assessing%20connectivity%20with%20special%20protection%20areas%20(4).pdf

[22] Spatial distribution of breeding meadow birds – implications for conservation and research. Available at: https://www.cr-reading.nl/V4/infopages/WaderStudyGroupPublication.pdf

[23] Managing grassland for wild geese in Britain: a review. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0006320798001347?via%3Dihub

[24] Kretchmar, A. V. 1994. Eurasian wigeon (*Anas penelope*) in north-eastern Asia. Zoologichesky Zhurnal 73(5): 68-79.

[25] MKear, J. 2005. Ducks, geese and swans volume 2: species accounts (Cairina to Mergus). Oxford University Press, Oxford, U.K.

Amended Development will not cause significant adverse effects to this qualifying species of this SPA.

2.115. No whooper swan, wigeon, golden plover or Greenland white-fronted goose were observed during the winter bird surveys. Only one species of duck (mallard) was observed, the site supports small numbers of wildfowl (woodcock and common snipe), no species of geese or swan were observed. The majority of the species recorded within the Application Site were common, green-listed bird species that are typical of farmland habitats.

2.116. No significant loss of habitat (direct or indirect) is anticipated for wetland and waterbirds species of the SPA through the construction of the Amended Development.

2.117. Given the level of suitable habitat within the wider landscape, it is considered that the potential noise disturbance from the construction and post-construction phases will not be significant for qualifying bird species associated with the SPA. It is considered that the Amended Development, in the absence of mitigation, is unlikely to cause significant adverse effects for these qualifying bird species of the SPA.

2.118. As no hydrological connectivity exists between the Application Site and the River Suck Callows SPA, therefore there is no potential for significant adverse effects on the habitats of the SPA.

2.119. The Amended Development will not result in significant adverse effects to the integrity of the River Suck Callows SPA.

The Middle Shannon Callows SPA

2.120. The Middle Shannon Callows SPA is located approximately 10.41km southeast of the Application Site and has been designated for a number of important bird species of the E.U. Habitats Directive, which are detailed within Table 2-6 above. The following assessment was carried out 2022, however, due to a lack of deviation within ecological conditions between 2022 and 2025, conclusions drawn are still considered viable.

2.121. The Middle Shannon Callows SPA is a diverse site that stretches from the town of Athlone to Portumna and is approximately 50km in length. The site comprises of an extensive area of seasonally flooded semi-natural, lowland wet grassland, along both sides of the river and the river itself.

2.122. Given the Proposed Amendment site's proximity to the SPA, and the qualifying bird species for which the SPA is designated, potential for ornithological connectivity has been closely considered in the following paragraphs. As outlined above, four Wintering Bird Surveys (WBS) were conducted over the wintering period (December 2022 – March 2023). The ecology of the following qualifying bird species with known core foraging ranges have been assessed: Whooper Swan (Cygnus cygnus), Golden Plover (Pluvialis apricaria) and Lapwing (Vanellus vanellus). The SPA has also been designated for wetland habitats, however, the Application Site does not contain any wetland habitats and as such is considered unlikely that the above- named qualifying bird species will utilise the Application Site. Although it is considered unlikely for these bird species to utilise the site, some of them are known to frequent grassland habitat, and at worst, will be subject to short term habitat

displacement during construction. The surrounds of the Application Site mainly comprise of agricultural land, thus providing ample amount of suitable habitat for these species to be displaced to. In addition, these qualifying bird species' core foraging ranges were assessed. Research indicates that these species core foraging ranges are less than 5km[26],[27],[28]. as the SPA is 10.41km southeast of the Application Site and provides richer feeding areas, potential for significant adverse effects are considered unlikely on these three qualifying species of bird as a result of the Amended Development.

2.123. During the Wintering Bird Survey Lapwing were the only qualifying bird species of the SPA observed and were found foraging in a field adjacent to the Application Site - see Appendix B of the accompanying NIS report for more detail. It is unlikely that the population of lapwing observed were associated with the Middle Shannon Callows SPA, given the distance. Nonetheless, mitigation measures have been proposed to ensure the protection of this species during the breeding season.

2.124. Wigeon (*Anas Penelope),* Corncrake (*Crex crex*), Black-headed Gull *(Chroicocephalus ridibundus)* and Black-tailed Godwit *(Limosa limosa)* are the remaining qualifying features that need to be assessed. No scientific literature disclosing its core foraging range was found for any of these species.

2.125. The ideal habitat for Wigeon is wetland habitat that is surrounded by sparse open forest, woodland and especially agricultural land[29],[30]. When considering that the site is not immediately surrounding the wetland habitat of the SPA and the SPA provides a more suitable and richer feeding grounds for Wigeon, that no Wigeon were sighted during the 2022/23 wintering bird survey, it has been concluded that Wigeon are unlikely to use the Application Site, therefore, there is no potential for significant adverse effects on this species as a result of the amended development.

2.126. The habitat preferences of Corncrake (*Crex crex*), Black-headed Gull *(Chroicocephalus ridibundus)* and Black-tailed Godwit *(Limosa limosa)* was assessed. None of these species were observed during the wintering bird surveys.

2.127. Information gathered from birdwatchireland.ie indicates that Black-tailed Godwit *(Limosa limosa)* primarily reside around wetland habitats[31]. Considering that the SPA is a significant distance from the development area and that the Application Site does not contain wetland habitats, it is unlikely that Black-tailed Godwit *(Limosa limosa)* will use the terrain within the Application Site. It can be concluded that there is no potential for significant adverse effects on Black-tailed Godwit *(Limosa limosa)* as a result of the amended development.

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[26] Scottish Natural Heritage. Assessing Connectivity with Special Protection Areas (SPAs). Available at: file:///C:/Users/User/Downloads/Assessing%20connectivity%20with%20special%20protection%20areas%20(4).pdf

[27] Spatial distribution of breeding meadow birds – implications for conservation and research. Available at: https://www.cr-reading.nl/V4/infopages/WaderStudyGroupPublication.pdf

[28] Managing grassland for wild geese in Britain: a review. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0006320798001347?via%3Dihub

[29] Kretchmar, A. V. 1994. Eurasian wigeon (*Anas penelope*) in north-eastern Asia. Zoologichesky Zhurnal 73(5): 68-79.

[30] MKear, J. 2005. Ducks, geese and swans volume 2: species accounts (Cairina to Mergus). Oxford University Press, Oxford, U.K.

[31] https://birdwatchireland.ie/ - accessed on 12/08/2022

2.128. Black-headed gulls nest in wetland habitats, but are not confined to wetlands, and will forage in domestic waste and fields of crop. There is no food waste or crop associated with the Application Site, therefore, there is no potential for gull species to scavenge within the site boundary.

2.129. Corncrake are known to frequent in grassland habitats managed for the production of hay[32]. At the time of the Fossitt habitat survey (10th May) the primary use of the land was for the production of grass for silage. This improved agricultural grassland maintained for silage is suboptimal for this species due to average height of vegetation being too small. Corncrake are known to frequent in habitats with vegetation height of 30cm to 2m[33] as it provides coverage from predators and areas for breeding.

2.130. There is no evidence to suggest that the habitats within the Application Site support significant numbers of qualifying species for Middle Shannon Callows SPA.

2.131. No significant loss of suitable habitat (direct or indirect) is anticipated for these species through the construction of the Amended Development.

2.132. Given the level of suitable habitat within the wider landscape, it is considered that the potential noise disturbance from the construction and post-construction phases will not be significant for qualifying bird species associated with the SPA. It is considered that the Amended Development, in the absence of mitigation, is unlikely to cause significant adverse effects for these qualifying bird species of the SPA.

2.133. With the implementation of best practice pollution prevention measures, integral design measures and proposed mitigation measures, effects upon the qualifying features of this SPA would be negligible

2.134. The Amended Development will not result in significant adverse effects to the integrity of the Middle Shannon Callows SPA

[32] Barnes, K. N. 2000. The Eskom Red Data Book of birds of South Africa, Lesotho and Swaziland. BirdLife South Africa, Johannesburg. https://www.iucnredlist.org/ - accessed on 31/08/2022

[33] Taylor, B.; van Perlo, B. 1998. Rails: a guide to the rails, crakes, gallinules and coots of the world. Pica Press, Robertsbridge, UK. - https://www.iucnredlist.org/ - accessed on 31/08/2022

The River Little Brosna Callows SPA

2.135. The River Little Brosna Callows SPA is located approximately 12.47km southeast of the Application Site and has been designated for a number of important bird species of the E.U. Habitats Directive, which are detailed within Table 2-6 above.

2.136. The River Little Brosna Callows SPA stretches from its confluence with the River Shannon for c. 9km south-eastward and just past New Bridge located on the R438 road. The site comprises of areas of seasonally-flooded low-lying callow grassland and the river itself.

2.137. Given the Amended Development site's proximity to the SPA, and the qualifying bird species for which the SPA is designated, potential for ornithological connectivity has been closely considered in the following paragraphs.

2.138. The ecology of the following qualifying bird species with known foraging ranges were assessed: Whooper Swan (*Cygnus cygnus*), Golden Plover (*Pluvialis apricaria*), Pintail (Anas acuta), Lapwing (*Vanellus vanellus*), Greenland White-fronted Goose (*Anser albifrons flavirostris*). The SPA has also been designated for wetland habitats; however, the Application Site does not contain any wetland habitats and as such is considered unlikely that the above- named qualifying bird species will utilise the Application Site. Although it is considered unlikely for these bird species to utilise the site, some of them are known to frequent grassland habitat, and at worst, will be subject to short term habitat displacement during construction. The surrounds of the Application Site mainly comprise of agricultural land, thus providing ample amount of suitable habitat for these species to be displaced to. In addition, these qualifying bird species' core foraging ranges were assessed. Research indicates that these species core foraging ranges are less than 5km[34],[35],[36],[37] as the SPA is 12.47km southeast of the Application Site and provides richer feeding areas, potential for significant adverse effects are considered unlikely on these five qualifying species of bird as a result of the Amended Development.

2.139. As outlined above, lapwing were the only Annex I species observed during the wintering bird survey and were found foraging in a field adjacent to the Application Site see Appendix B of the accompanying NIS report for more detail. Areas of species-rich grassland have been proposed to be planted in replacement of the improved agricultural grassland on site. These areas of species-rich grassland will provide richer feeding areas for bird species such as Lapwing. There is potential for lapwing to breed within the Application Site. Light intensity sheep grazing has been proposed on site to maintain sward at a suitable height for nesting Lapwing.

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[34] Scottish Natural Heritage. Assessing Connectivity with Special Protection Areas (SPAs). Available at: file:///C:/Users/User/Downloads/Assessing%20connectivity%20with%20special%20protection%20areas%20(4).pdf

[35] Spatial distribution of breeding meadow birds – implications for conservation and research. Available at: https://www.cr-reading.nl/V4/infopages/WaderStudyGroupPublication.pdf

[36] Managing grassland for wild geese in Britain: a review. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0006320798001347?via%3Dihub

[37] Spring Migration Ecology of Northern Pintails in South-Central Nebraska. Available at: https://bioone.org/journals/waterbirds/volume-34/issue-1/063.034.0102/Spring-Migration-Ecology-of-Northern-Pintails-in-South-Central-Nebraska/10.1675/063.034.0102.full

2.140. With the implementation of habitat enhancement measures it is considered that the Amended Development will benefit local Lapwing populations. It is recommended that breeding bird surveys be conducted prior to any construction that may occur during the breeding bird season (March to August). With the implementation of these measures, it can be concluded that the Amended Development will not cause significant adverse effects to this qualifying species of this SPA.

2.141. Wigeon (*Anas Penelope),* teal *(Anas crecca),* shoveler *(Anas clypeata),* black-tailed godwit *(Limosa limosa) and* black-headed gull *(Chroicocephalus ridibundus)* are the remaining qualifying features that need to be assessed. No scientific literature disclosing core foraging range of each species was available at the time of creating this report.

2.142. The ideal habitat for wigeon is wetland habitat that is surrounded by sparse open forest, woodland and especially agricultural land[29],[30] This species was not observed during the winter bird surveys. When considering that the site is not immediately surrounding the wetland habitat of the SPA and the SPA provides a more suitable and richer feeding grounds for Wigeon, it has been concluded that Wigeon are unlikely to use the Application Site. Therefore, there is no potential for significant adverse effects on this species as a result of the amended development.

2.143. The ecology of Teal (Anas crecca), Shoveler (Anas clypeata), Black-tailed Godwit (Limosa limosa) was assessed. None of these species were observed during the winter bird surveys. Information gathered from birdwatchireland.ie indicates that these three species primarily reside around wetland habitats[31]. Considering that the SPA is a significant distance from the development area and that the Application Site does not contain wetland habitats, it is unlikely that these species will use the terrain within the Application Site. Although it is considered unlikely for these bird species to utilise the site, some of them are known to frequent grassland habitat, and at worst, will be subject to short term habitat displacement during construction. The surrounds of the Application Site mainly comprise of agricultural land, thus providing similar habitat for these species to be displaced to. It can be concluded that there is no potential for significant effects as a result of the amended development.

2.144. Black-headed gulls nest in wetland habitats, but are not confined to wetlands, and will forage in domestic waste and fields of crop. This species was not observed during the winter bird surveys. As there is there is no food waste or crop associated within the Application Site it is considered unlikely that gull species will scavenge within the site boundary, and therefore, there is no potential for significant effects on this species.

2.145. No significant loss of suitable habitat (direct or indirect) is anticipated for these species through the construction of the Amended Development.

2.146. Given the level of suitable habitat within the wider landscape, it is considered that the potential noise disturbance from the construction and post-construction phases will not be significant for qualifying species associated with the SPA. It is considered that the Amended Development will not result in significant adverse effects for these qualifying bird species of the SPA.

2.147. The Amended Development will not result in significant adverse effects to the integrity of the River Little Brosna Callows SPA.

River Shannon Callows SAC

2.148. The River Shannon Callows SAC is located approximately 10.02km southeast of the Application Site, this SAC has been designated for a number of important Annex I habitats and Annex II species. Ecological connectivity exists between this SAC and the Application Site.

2.149. Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*, alkaline fens, limestone pavements, lowland hay meadows and Molinia meadows on calcareous peaty of clayey silt laden soils are qualifying features of the River Shannon Callows SAC. Theses habitats are not found within the Application Site boundary, and there is no hydrological pathway between the Application Site and the SAC. There will be no loss or contamination of any of the qualifying habitats of the SAC from the Amended Development. The Amended Development will not result in significant adverse effects for qualifying habitat features of the SAC.

2.150. Otter (*Lutra lutra*) are a qualifying feature of the River Shannon Callows SAC. Otter is a highly mobile species and can hold territories from 2km up to 40km. It is therefore possible that otter could be present within the Application Site. Potential impacts for otter include the loss of habitat, disturbance, fragmentation of habitat and pollution.

2.151. Most habitats within the Application Site are considered to be sub-optimal for otter, as these are predominantly agricultural grassland and tilled land, bound by hedgerows and treelines. The West Kiltormer stream (Depositing Lowland River (FW2) – Appendix 2A – Fossitt Habitat Map) which exist within the red line boundary of the site offers both foraging and commuting habitat for otter. As such the species could be found within the Amended Development boundary.

2.152. Loss of habitat directly under the Amended Development footprint will be relatively low, and will mainly comprise of agricultural land (agricultural grassland), which is of low value for otter. Post-construction, the Proposed Development will ensure the retention of habitats throughout the lifetime of the proposed solar farm. Recommendations made in the Biodiversity Management Plan (BMP) (please see Appendix 2D) will ensure the enhancement of the Application Site post-construction, which will increase the potential prey sources for otter, particularly herptile species.

2.153. No works will occur within or directly adjacent to waterways. Protection buffers of 2m and 5m along any field drains and a minimum of 5m from any streams within the site have been incorporated into the design of the Proposed Development. Other Adopted Design Principles (see paragraph 2.15) included within the Proposed Development include SuDS. Operations and activities that have the potential to impact on the water environment will be regularly monitored throughout the construction of the Amended Development by the Site Manager.

2.154. Best practice pollution prevention measures and integral design measures have been adopted minimise any effects from pollution, as listed above. It is however recommended that further mitigation be provided in relation to this species, as in the absence of mitigation, this qualifying feature of the SAC otter may experience temporary negative effects in relation to noise and disturbance.

Recommended Measures

2.155. It is recommended that a pre-construction otter survey is undertaken within 48 hours of construction. All excavations should be securely covered, or a suitable means of escape provided at the end of each working day.

2.156. Breeding bird surveys be conducted prior to the removal or disturbance of any habitats suitable for ground nesting birds (most notably lapwing) that may occur during the breeding bird season (March to August).

Residual Effects

2.157. Possible residual effects of the Amended Development include the indirect loss of habitat due to water borne pollutants entering the watercourses and field drains on, and adjacent to the site. With measures included in the Amended Development design and the use of best practice pollution prevention measures during the construction phase, it is unlikely that any indirect loss of habitat will occur due to water-based pollutants. Furthermore, with the implementation of mitigation measures this will reduce any potential impacts further.

2.158. By ensuring potential pollution from construction is managed, there will be will a negligible effect upon Annex I habitats and Annex II species, of the above-named designated sites.

Habitats

In the Absence of Mitigation

2.159. The proposed solar farm will occur over land which has been identified as mostly improved agricultural grassland. These habitats are of low ecological value and currently offer limited potential to support wildlife.

2.160. Habitat loss, including 1,006m^2 of vegetation removal, 302m^2 of hedgerow trimming, and the removal of 26 trees, will only occur under the Amended Development footprint in regard to structures such as access tracks, cable trenches and transformers. Overall, the proposed footprint constitutes a relatively small percentage of the total area of the Application Site (c. 81.9ha). The total footprint of the Proposed Amendment is therefore 35,684.2m^2 or c. 4.70% of the Application Site area. As the panels will be raised off the ground, over 95% of the land will be accessible for plant growth and wildlife enhancement measures will be put in place as described within this report and the BMP (Appendix 2D).

2.161. It is therefore considered that the loss of habitat under the Amended Development footprint will not be significant.

Recommended Mitigation Measures

2.162. With the correct management in place during the lifespan of the Amended Development, the potential of the site to support wildlife could be increased. The supporting BMP (Appendix 2D of this document) outlines the management proposals to enhance the sites ecological value and therefore increase the Application Site's potential to support local wildlife.

Residual Impacts

2.163. With implementation of measures included in the Amended Development design, best practice measures implemented during the Amended Development and the habitat management outlined that there will be no significant negative residual impacts. With the proposed enhancement measures outlined in the BMP (See Appendix 2D) there is the potential for net beneficial gains for the local biodiversity.

PROTECTED AND NOTABLE SPECIES

In the Absence of Mitigation

2.164. Each section below details the potential impacts in the absence of mitigation for protected and notable species during the construction phase (9 months) and the operational phase (c. 40years) of the Amended Development.

Bats

2.165. Appendix 2C of this report details the general/preferred foraging and commuting habitat of each bat species. Many species of bats in Ireland generally commute and forage along linear features, such as streams/river, hedgerow or woodland edges (this is true for *Pipistrelle* and *Myotis* species). However, on occasion they will cross open features, particularly species with strong echolocation such as Leisler's bat (*Nyctalus leisleri*).

2.166. The majority of the Application Site is comprised of improved agricultural grassland. Grassland offers sub-optimal foraging habitat for bat species due to the limited number of prey species present. The loss of this habitat under the Amended Development footprint will not lead to a significant reduction in foraging habitat for local bats.

2.167. Drainage ditches, hedgerows, treelines and the West Kiltormer stream provide suitable habitat for foraging and commuting bats. A 5m buffer around hedgerows, tree buffers (dependent on tree height), 2m and 5m buffer from all field drains and a minimum of 5m buffer to watercourses (West Kiltormer stream) has been included as part of the design of the Amended Development.

Badger

2.168. Two badger setts were identified in the 2022 Fossitt habitat survey and a further two mammal caverns which are being treated as potential badger setts were discovered during the 2025 Fossitt habitat survey. Although no other distinct signs of badger were identified, the four potential setts have to be treated with precaution as they have potential to support badger.

2.169. Given that badgers are a highly mobile species and new setts may be built prior to construction. It is recommended that a pre-commencement badger survey is carried out as a precautionary measure.

2.170. There is the potential for the disturbance of badger during the construction phase of the Amended Development. During the construction phase, the Proposed Development can cause undue stress in a number of ways. Installation of security fencing or hoarding can disrupt badger paths and cut off foraging areas within a clan's territory. Excavations can destroy badger setts, and any excavations lefts overnight can trap badgers.

2.171. It is considered likely that the Proposed Development will have a moderate effect on the local badger population. Given the nature of the construction of the panels, length of time before the construction phase is complete, disturbance to the local population of badger is likely through a reduction in foraging areas, and disturbance caused by noise and vibration during construction. However, these effects are considered to be temporary. Furthermore, as precautionary integral design measure all identified potential badger setts will have a buffer of 30m to reduce potential of the species being disturbed by ongoing works during construction and 50m during their breeding season.

Otter

2.172. The West Kiltormer stream, which bisects the site provides good habitat for foraging and commuting otter. All other drains on site are considered to be too dry, shallow and narrow to support otter.

2.173. Most habitats within the Application Site are considered to be sub-optimal for otter, predominantly being agricultural grassland and tilled land bound by hedgerows and treelines, with narrow, shallow field drains. It is considered that the use of the Application Site by otter is likely to be restricted to foraging and commuting otter using the stream identified.

2.174. Like badger, otter are also a highly mobile mammal with large territories between 2km and 20km +, using watercourses and ditches to commute to suitable foraging areas. Although no otter or field signs of otter were identified within the ESA it is recommended that a pre-commencement otter survey is carried out as a precautionary measure.

2.175. Pollution from contaminated surface or ground waters can potentially enter the aquatic system and affect otter indirectly. Best practice pollution prevention and integral design (i.e. not mitigation) measures have been adopted to minimise any effects from pollution. In addition to indirect impacts

from pollution, foraging areas may be reduced by the installing of security fencing, otter can become trapped in trenches, and holt creation opportunity reduced by direct loss of habitat.

2.176. A buffer of 2m will be in place for the West Kiltormer stream and a 2m buffer for all field drains within the redline boundary of the site.

2.177. In the absence of mitigation, it is considered that the Proposed Amendment will have **a negligible effect upon the local otter population** as the habitats that will be impacted are suboptimal for otter.

Other Mammals

2.178. In the absence of mitigation, no significant effects are considered likely on other mammals of nature conservation value. Fencing around the substation will have a 10cm gap at base and other fencing used on site will have mammal gates to allow free movement of mammals, including pine marten, red squirrel and hedgehog through the site.

Birds

2.179. Main impacts on bird species from developments include:

- Direct loss or deterioration of habitats.
- Indirect habitat loss as a result of displacement by disturbance.

2.180. The Proposed Amendment will occur on land that is currently of low ecological value and is subject to a level of disturbance from current agricultural activities. Post construction, it is considered that with the implementation of the BMP, it will increase the ecological value of the Application Site and therefore, enhance the local area for birds. The majority of trees and hedgerows will be retained post construction.

2.181. It is considered that given the short construction phase, the abundance of similar habitat within the local area and the implementation of the BMP post-construction, **no significant impacts** will occur for these species.

Invertebrates

2.182. The majority of the identified habitat types (improved agricultural grassland and tilled land) within the Application Site are considered to be of very limited value to invertebrates as it is species-poor, with high levels of herbicide and fertilizer inputs. However, tree-lines, hedgerow and woodland are all considered likely to support a more diverse invertebrate assemblage. In addition, the Kiltormer stream and drainage ditches within the Proposed Amendment are also likely to support an assemblage of aquatic invertebrates.

2.183. Although white-clawed crayfish were returned in the 2km desk study from a grid square that is located outside of the Application Site's boundary, the Kiltormer stream has been considered to have limited potential for this species.

2.184. Pollution from contaminated surface or ground waters can potentially enter the aquatic system and affect white-clawed crayfish indirectly. Best practice pollution prevention and integral design (i.e. not mitigation) measures have been adopted to minimise any effects from pollution.

2.185. A buffer of 2m will be in place for the West Kiltormer stream and a 2m buffer for all field drains within the redline boundary of the site.

2.186. Impacts on these species are likely to be limited to dust and other pollution emitted during the construction phase of the Proposed Amendment.

2.187. In the absence of mitigation, it is considered that the Proposed Amendment will have **a negligible effect upon the local, white-clawed crayfish population**.

Flora

2.188. No protected flora species were identified on site. Therefore, it is considered that the Proposed Amendment **will not lead to any significant loss** of protected flora.

Mitigation Measures and Further Survey

Bats

2.189. As mentioned previously, a 5m buffer around hedgerows, tree buffers (dependent on tree height), a 2m buffer surrounding the streams within the Application Site and a 2m buffer from all field drains have been included as part of the design of the Proposed Amendment. This will minimise disturbance to commuting and foraging routes for bat species within the area of the Proposed Amendment.

2.190. In the event that a mature tree may require trimming or felling, the tree will need to be surveyed for Potential Roost Features (PRF) prior to removal, In line with Bat Conservation Trust guidelines[38]. Further surveys will be required should this PRF check determine the tree to be of medium or high bat roosting potential. Soft felling techniques will be used if low potential exists to ensure that no cavities are cut through, and branches or trunk pieces with cavities are lowered carefully to the ground and left with the access hole upward facing over night to allow any bats to leave.

2.191. In addition, the enhancements designed into the Proposed Amendment (see **Appendix 2D, Biodiversity Management Plan**) include the following measures for bats:

- Installation of bat boxes on retained trees of suitable size and location (including designs suitable for locally-present bat species identified by the desk study);
- Creation of new species-rich grassland, wildflower areas, treelines and hedgerows providing new bat foraging opportunities;
- Measures to increase invertebrate numbers, increasing potential bat prey availability

[38] Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd edition. Bat Conservation Trust, London.

2.192. Mitigation planting is to include 2,452m of Hawthorn Light, 1,045m of Infill Hedgerow and 235m of Native Hedgerow.

2.193. It is therefore considered that the Proposed Amendment will have a **positive significant effect** on bats post-construction.

Badger

2.194. Given that badger is a highly mobile species and may be present within the Application Site, it is recommended that a **pre-construction badger** survey is undertaken to assess the presence of badger two weeks before construction.

2.195. In addition, fencing used on site will have a combination of mammal gates and 10cm gaps at the base to allow free movement of mammals, including badgers, through the site as well as the installation of mammal gates to facilitate movement of species.

2.196. Furthermore, securely covering all excavations at the end of each working day to prevent accidental trapping of badger, otter or other small mammals has been included in **Appendix 2D, Biodiversity Management Plan**, as an extra measure to reduce any potential negative impact construction could have on badgers within the area of the Proposed Amendment Site.

2.197. Buffers around the four potential badger sets have been incorporated as an integral design measure, see **Table 2-13**.

Otter

2.198. Otter presence is likely to be restricted to areas directly adjacent to the West Kiltormer and East Loughturk stream as other habitat types within the proposed site were identified as being sub-optimal for use by the species.

2.199. However, there is potential for any otters using the site during the construction phase to become trapped in trenches excavated during works. In line with construction best practice, all excavations during the construction phase of the Proposed Amendment will be covered securely; this will therefore prevent the accidental trapping of otters.

2.200. In addition, it is suggested that a **pre-commencement otter survey** be carried out for presence of otters prior to construction.

Birds

2.201. Breeding birds are highly susceptible to disturbance. As the constructive phase may have a significant impact on breeding birds within and adjacent to the Application Site, the following measure has been recommended to ensure that no significant impacts occur:

- Pre-construction breeding bird survey on hedgerow to be removed and nest checks in grassland/tilled land areas (only if works are undertaken between **March and August inclusive**).

- Proposed amended enhancements (see **Appendix 2D, Biodiversity Management Plan**) include the following measures for birds:
- Planting of new species-rich grassland, species-rich hedgerow and areas of native trees providing new nesting and foraging resources;
- Measures to increase invertebrate numbers, increasing potential prey availability for insectivorous birds;
- Erection of varied bird boxes.

Invertebrates

2.202. As part of ecological enhancement measures within the BMP, invertebrate hotels will be created. The implementation of the BMP will lead to the creation of an enhanced range of habitats for terrestrial invertebrate species within the Application Site, leading to a **significant positive effect.**

2.203. Regarding aquatic invertebrates such as white-clawed crayfish, it is envisaged through the correct implementation of pollution prevention measures, that there will be **no significant effects** as a result of the Proposed Amendment.

2.204. No further survey is required for invertebrates.

Flora

2.205. Floristic diversity on site will increase through enhancements to the existing hedgerow network, use of native species and sowing of species rich grassland. This will lead to a **long-term positive effect** on the site's flora.

Residual Impacts

2.206. With the implementation of mitigation measures and further survey work prior to and during the construction phase of the Proposed Amendment, it is considered that there will be **no significant effects** upon protected or notable species.

CONSIDERATION OF CUMULATIVE EFFECTS

2.207. As well as singular effects, cumulative effects also need to be considered. Article 6 of the EU Habitats Directive and Regulation 15 of the European Communities (Natural Habitats) Regulations state that any plan or project that may, either alone or in combination with other plans or projects, significantly affects a Natura 2000 site, should be the subject of an AA.

2.208. Cumulative impacts can be an issue when proposals have a small impact on Natura 2000 sites. If other proposals have a small impact, the combined result can have a significant impact on the Natura 2000 site.

2.209. The European Commission Habitats Directive and the Habitats Regulations 2011 require that the impacts on European sites be assessed from the plan or project in question and also in the presence of other plans and projects that could affect the same Natura 2000 sites.

2.210. This Stage 2 AA screening has identified other plans and projects that could act in combination with the Proposed Amendment and its associated future elements, to identify if they pose likely significant effects on European sites.

2.211. It concludes that if these other Plans and Projects have undergone an AA themselves and have either been adopted or consented following an AA then it cannot pose likely significant adverse effects on European sites.

Plans

2.212. A review of the following plans was undertaken;

National Planning Framework 2040

2.213. The National Planning Framework (NPF) 2040 is a high-level, national vision and provides the strategic framework and principles to manage future population and economic growth in Ireland over the next 20 years. It informs the parameters for the preparation of Regional Spatial and Economic Strategies (RSESs) by each of the three Regional Assemblies, established under the Local Government Reform Act 2014.

2.214. In order to comply with the requirements of Article 6(3) of the EU Habitats Directive an AA screening was undertaken at an early stage in the drafting of the National Planning Framework (NPF).

2.215. Adopting the precautionary principle, it was concluded that a NIS should be prepared. An NIS was prepared by RPS on behalf of the Minister for Housing, Planning and Local Government. The NIS considered the potential for the NPF to adversely affect the integrity of any Natura 2000 site(s); with regard to their qualifying interests, associated conservation status, the structure/function of the site(s) and the overall site(s) integrity. This was done in a two-stage process, initially assessing the draft NPF and subsequently assessing the changes made post consultation for the NPF.

2.216. The Minster of Housing, Planning and Local Government, having considered the AA and its conclusions determined that;

> *"the adoption and publication of the NPF as a replacement of the National Spatial Strategy for the purposes of section 2 of the Planning Development Act 2000 will not individually or in combination with any other plan or project adversely affect the integrity of any European Site (as defined)."*

2.217. Thus, the in-combination impacts from the NPF, with the Proposed Amendment are **not predicted to result in any Likely Significant Effects** to any European site(s).

Regional Spatial and Economic Strategy for the Northern and Western Regional Assembly

2.218. In order to comply with the requirements of Article 6 (3) of the EU Habitats Directive and Part XAB of the Planning and Development Act 2000 (as amended), the process of Screening for Appropriate Assessment (AA) was undertaken at an early stage in the drafting of the Regional Spatial and Economic Strategy (RSES).

2.219. The AA Screening undertaken by ecologists at RPS on behalf of the Northern and Western Regional Assembly, assessed whether the RSES was likely to have significant effects on any European Sites within the Natura 2000 network, either alone or in combination with other plans and projects.

2.220. The screening concluded that an Appropriate Assessment of the RSES was required, as the Plan is not directly connected with or necessary to the management of the sites as European sites and as it cannot be excluded, on the basis of objective information, that the Plan, individually or in combination with other plans or projects, would have a significant effect on a European site.

2.221. Therefore, adopting the precautionary principle, it was concluded that a NIR should be prepared. The NIR (prepared by RPS on behalf of the Northern and Western Regional Assembly) considered the potential for the Regional Spatial and Economic Strategy to adversely affect the integrity of any Natura 2000 site(s), with regard to their qualifying interests, associated conservation status, the structure/function of the site(s) and the overall site(s) integrity.

2.222. The Assembly determined that pursuant to Article 6(3) of the Habitats Directive and Part XAB of the Planning and Development Act 2000-2018, that the adoption and publication of the RSES as a replacement for the "Regional Planning Guidelines" for the purposes of Section 24 (4) of the Planning and Development Act 2000 (as amended) would not either individually or in combination with any other plan or project adversely affect the integrity of any European Site.

Galway County Development Plan 2022-2028

2.223. In accordance with European and National legislation, the Council carried out an AA under the Habitats Directive, which informed the preparation of the Galway County Development Plan. The Stage 2 AA NIR was also use to inform the preparation of the Draft Galway County Development Plan 2022-2028.

2.224. It concluded that with the incorporation of mitigation measures, the Plan is **not foreseen to give rise to any significant effects** on designated European sites, alone or in combination with other plans or projects.

Projects

2.225. A search of the Galway County Council online planning portal revealed that currently there is one solar farm (Planning Reference: 26/61749) adjacent to the Proposed Amendment and no windfarms or considerably large developments granted or pending within 5km of the Application Site.

2.226. The majority of planning applications within the area of the Application Site are small residential or agricultural developments.

2.227. **Planning Application 2461749 (and subsequent amendment planning application)**, adjacent to the proposed amended development, consists of an extension to the proposed Amended Development. An EcIA was produced for this development which stated that best practice, mitigation measures and integrated designs measures implemented correctly, no adverse effect would occur on the surrounding environment or designated sites as a result of the development. An EcIA has also been produced for the proposed amended development, which also stated that adverse effects were predicted to occur on the surrounding environment as a result of the Proposed Amended Development. It can therefore be concluded that the Proposed Amended Development, alone or in combination with this development, will not contribute to a significant cumulative effect.

2.228. With the implementation of mitigation and integral design measures during the construction and operation of the Proposed Amendment, at worst the development will have a negligible effect upon any individual receptor. For the purposes of this this assessment, it is therefore confirmed that **no likely significant cumulative effects** will occur upon any nearby environmental designated site, habitats or protected and Priority species.

CONCLUSION

2.229. To minimise potential impacts on local wildlife, ecological measures have been incorporated into the Proposed Amendment as part of the iterative design process. These include buffers from potentially sensitive ecological receptors (see **Table 2-13** below). Standard best practice pollution prevention measures for the construction stage have also been outlined and considered as part of the impact assessment stage, prior to mitigation. These measures are also outlined within **Table 2-14** below.

2.230. A Fossitt habitat survey undertaken in May of 2022 and updated in October and November 2025. A total of 14 habitats were found during the 2022 survey period while 13 were found during the 2025 survey period. The main impacts during the construction phase include the direct loss of habitat under the Proposed Amendment footprint and indirect loss of habitat due to disturbance and pollution.

2.231. The desk-based assessment identified four Special Areas of Conservation (SACs) and three Special Protection Areas (SPA) within the 15km study zone. These designated sites have been outlined and fully assessed within the supporting **Natura Impact Statement (NIS)**. It has been concluded that there is potential for ecological connectivity between the Application Site and the River Shannon Callows SAC and potential for ornithological connectivity exists between the Application Site and the River Suck Callows SPA, River Little Brosna Callows SPA and Middle Shannon Callows SPA, providing a pathway for potential impacts. With the implementation of integral design measures, mitigation and best practice construction methods, there will be **no significant effects** for all Natura 2000 designated sites within the zone of influence (ZOI).

2.232. There are three Natural Heritage Areas (NHAs) and one proposed Natural Heritage Area (pNHA) located within 5km of the Application Site. When considering the terrestrial nature of the sites and that they are all over 2.5km from the Application Site, no connectivity exists. In conclusions, the Proposed Amendment will have no adverse effects on any of the features of the identified pNHA and the three NHAs.

2.233. It was found that baseline conditions had not deviated significantly from previous conducted in 2022; therefore, further surveys recommended as part of the relevant mitigation measures are provided within this report (please refer to **Table 2-14** below) and have not been altered specifically. These include pre commencement checks for badger, otter and birds.

2.234. A number of enhancement measures have been included in the supporting **Biodiversity Management Plan (BMP),** including planting of species-rich vegetation, comprising of 2,452m of hawthorn light, 1,045m of infill hedgerow and 235m of native hedgerow to provide a plentiful source of food and shelter for a range of fauna species. Other enhancement measures include the development of a species-rich grassland and wildflower areas across the site, as well as creating herptile hibernacula, log piles, bird and bat boxes.

2.235. It is considered that the short-term disturbance from the Proposed Amendment **will not be significant on any ecological features** if the best practice and recommended mitigation are

implemented. With the implementation of the Biodiversity Management Plan (BMP), the potential of the site to support local wildlife will increase.

Table 2-13: Integral design measures and standard best practice

Site/ Species	Potential Development Impacts	Phase of Development	Measures implemented
INTEGRAL DESIGN MEASURES			
Aquatic environment	Pollution	Construction	2m and 5m drain buffers around field drains
Badger	Destruction / Disturbance of setts	Construction	Buffers around potential badger sett: 10m (no construction activities) / 20m (only light work, with no use of wheeled vehicles) / 30m (no use of heavy machinery)/50m (in the event that work is to occur in close proximity to a badger sett during breeding season December to June)
	Exclude from foraging habitat	Operational	Security fencing to have mammal gates at base to allow free movement of badger through the site. Security fencing around substation will have a 10cm gap to allow free movement.
Otter	Excluded from foraging habitat	Operational	Security fencing to have mammal gates at base to allow free movement of badger through the site. Security fencing around substation will have a 10cm gap to allow free movement.
STANDARD BEST PRACTICE MEASURES			
Aquatic environment	Pollution	Construction	Best practice pollution prevention measures implemented prior to and throughout the construction phase to prevent contaminants entering the aquatic environment.

Badger	Accidental trapping with excavations	Construction	All excavations should be securely covered, or a suitable means of escape provided at the end of each working day.
Otter	Accidental trapping with excavations	Construction	All excavations should be securely covered, or a suitable means of escape provided at the end of each working day.

Table 2-14: Recommended mitigation measures

MITIGATION MEASURES			
Badger	Destruction of badger setts.	Pre-construction	Pre-commencement survey (Measures dependant on survey findings).
Otter	Disturbance	Pre-construction	Pre-commencement survey (Measures dependant on survey findings).
Breeding birds	Disturbance / destruction of nest (Only if works are undertaken between March and August)	Construction	Pre-construction breeding bird survey on any trees or hedgerow to be removed Pre-construction breeding bird survey on any grassland habitats (ground nesting birds) (Only if works are undertaken between March and August) (Measures dependant on survey findings).
Bats	Destruction of roosts	Construction	Pre-construction potential roost inspection surveys on any trees to be removed (Measures dependant on survey findings).

APPENDICES

Appendix 2A -Figures

Figure 1- Environmental Designations Map

Figure 2– Fossitt Habitat Maps

Appendix 2B – Site Photographs

Appendix 2C – Habitat of bat species in Ireland

Appendix 2D – Biodiversity Management Plan

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