Technical Appendix 2: Ecological Impact Assessment

Ballyteige Solar Farm Amendment (Planning ref. 2198)

Original report: 23/10/2020

Amendment: 20/11/2025

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Contents

EXECUTIVE SUMMARY

2.1. An Ecological Impact Assessment (EcIA) has been undertaken for a proposed solar farm Amendment on lands at Ballyteige Little, Ballyteige Big and Colehill, Tullamore, Co. Offaly to assess the potential impacts from the Proposed Amendment on local ecology. Baseline information within the ecological assessment comprises of an initial desk-based assessment and a Fossitt habitat survey, which have been outlined within the relevant sections of this report.

2.2. A Fossitt habitat survey was undertaken for the Proposed Development on the 3rd of June 2020. An updated Fossitt habitat survey was completed by Neo Environmental on 10th October 2024 to maintain the validity of baseline information.

2.3. 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 loss of the improved agricultural grassland and arable land is considered to be **negligible** for nature conservation within the local area.

2.4. The desk-based assessment identified six Special Areas of Conservation (SACs) within 15km of the Application Site: Clara Bog SAC, Raheenmore Bog SAC, Split Hills and Long Hill Esker SAC, Lough Ennell SAC, River Barrow and River Nore SAC and Charleville Wood SAC. The desk study also identified one Natural Heritage Area (NHA), Daingean Bog NHA, and three non-statutory sites, namely Murphy's Bridge Esker proposed Natural Heritage Area (pNHA), Rahugh Ridge (Kiltober Esker) pNHA and The Grand Canal pNHA. These designated sites have been outlined and fully assessed below and (where appropriate) within the supporting Natura Impact Statement (NIS) report.

2.5. It has been concluded that hydrological connectivity exists between the Application Site and Charleville Wood SAC, ecological connectivity exists between the Application Site and the River Barrow and River Nore SAC, and potential ecological connectivity exists with The Grand Canal pNHA, although there will be **no adverse effects** on the integrity of any Natura 2000 sites or other ecological designated sites from the Proposed Amendment site. However, as a precaution, several measures have been outlined within this EcIA to reduce any potential impacts of the Proposed Amendment on Natura 2000 sites.

2.6. From the current survey findings and impact assessment conducted, it is considered that the Proposed Amendment is **unlikely to have any significant effects** upon local wildlife. However, as a precaution, several measures have been outlined within this report to reduce any potential impacts on local ecology.

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

INTRODUCTION

BACKGROUND

2.8. Neo Environmental Ltd has been appointed by Ballyteige Solar Limited (the "Applicant") to undertake an Ecological Impact Assessment for a Proposed Amendment to the consented Ballyteige Solar Farm (the "Proposed Amendment") in the townlands of Ballyteige Little, Ballyteige Big and Colehill Co. Offaly (the "Application Site").

2.9. Please see **Figure 203 of Volume 2** for the layout of the Proposed Development.

DEVELOPMENT DESCRIPTION

Site Description

2.10. The Application Site is located in a rural setting, approximately 4.8km east of Tullamore and 3.9km northwest of Ballinagar. The main Grand Canal runs in a general east to west direction, circa 150m to the south of the Proposed Development (at its closest point). A narrower section of the canal runs northwest to southeast to the west of, and paralleled to, the Wood of O road circa 350m to the east of the main application site. Centred at approximate Irish Grid Reference (IGR) N 39618 26489, the Application Site is relatively flat and lies at an elevation of approximately 68 – 74m above ordnance datum (AOD), covering a total area of circa 60.53ha.

2.11. Comprising 16 fields, the Application Site primarily consists of pastureland, with one field to the southwest corner under arable crop. Fields are bound by a mixture of trees, hedgerows and post-and-wire fencing. Access to the Application Site is gained from the Wood of O road to the east of the Application Site.

Adopted Design Principles

2.12. Measures incorporated into the Proposed Development design include the following:

- A 5m buffer from hedgerows.
- 2m Buffer from Field Drains
- Tree Buffers dependant on height
- 10m OPW Drain Buffers
- 10m Buffer for overhead lines

- 30m Badger Sett Buffer

Scope of the Assessment

2.13. An Ecological Impact Assessment was completed for the Application Site to inform the submission of a planning application to Offaly County 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 Amendment footprint;
- Identify any actual or potential habitat or species constraints pertinent to the development of the Application Site and to identify how the Proposed Amendment can avoid, mitigate and, if necessary, compensate for impacts on these actual or potential constraints;
- Assess the potential impacts of the Proposed Amendment during the construction, operation and decommissioning phases;
- Provide mitigation to reduce the impacts of the activities undertaken during the various phases of the Proposed Amendment;
- Identify potential opportunities for the Proposed Amendment to enhance and add to the biodiversity resource within the site.

2.14. This allows for the identification of potential ecological impacts and the compilation of appropriate mitigation measures where applicable.

PROPOSED AMENDMENT

2.15. Overall, the proposed footprint constitutes a relatively small percentage of the total area of the Application Site (60.53ha):

- 22,191.3m2 for infrastructure (c. 3.67% of the Application Site area); and
- 167.5m2 for piling (c. 0.03% of the Application Site area).

2.16. The total ground disturbance area resulting from the Proposed Development is therefore 22,358.8m2 or c. 3.69% of the Application Site area.

2.17. The Proposed Development will consist of an Amendment to a previously consented development (planning reference: 2198). The proposed Amendment seeks minor modifications to the Consented Development including the following:

- Removal of the 38kV substation and infrastructure within the most northern field (Field 1),
- Internal access track reduced from c.3.4km to c. 3.2km, relocated and tweaked to include turning areas,
- String inverters are used instead of combined central inverters and MV transformers. The central MV transformers remain, and increase from 11No. to 12 No., however there will be a reduction in their associated hardstanding areas,
- The number of string inverters is 128,
- Table layout updated (reduced),
- PV angle tilt reduced from 10º and 30º to 10º and 20º,
- Separation area between infrastructure and OHL towers increased,
- An additional badger sett buffer added (due to new sett found during updated Fossitt Habitat Survey),
- Temporary Construction Compound has been relocated from Field 1 to Field 4,
- Alter Condition No. 10 to increase the boundary fencing from 1.8m-2m high to 2.4m high and reduce in the perimeter fence length,
- CCTV number increase from 81 to 118 and their locations have been amended,
- Adjustment of the development period from 5 years to 10 years, and
- Alter Condition No. 11 to change the operational lifetime from 35 years to 40 years.

2.18. The Application Site was initially deemed an acceptable location for solar development in 2022 when Offaly County Council ('OCC') provided a grant of permission for a solar PV development proposed by the Applicant on 60.53 hectares of land in the townlands of Ballyteige Little, Ballyteige Big and Colehill, Tullamore, Co. Offaly.

2.19. The original development (planning reference: 2198) was granted permission following a comprehensive planning and environmental assessment process. The consented scheme comprised the construction of a solar PV energy development with a total site area of 60.53 hectares, to include a single storey electrical substation building, inverter substations, modules, solar PV ground mounted on support structures, a temporary construction compound, internal access tracks, security fencing, electrical cabling and ducting, CCTV and other ancillary infrastructure, drainage, additional landscaping and habitat enhancement as

required and associated site development works relating to the access of the site. The operational lifespan was 35 years.

Statement of Authority

2.20. The assessment has been conducted by suitably qualified and experienced ecologists, and this work has been carried out in line with the relevant professional guidance, which is cited, where relevant, throughout this report.

2.21. Brogan Loughlin, who is a former ecologist at Neo Environmental who worked on the original application, has a background in wildlife conservation, with circa 2 years' experience undertaking a range of protected species surveys, extended phase 1 habitat surveys, bat surveys and fresh water surveys for various industrial schemes, renewable energy projects, quarries and National Trust sites. Brogan has written a number of reports including Ecological Impact Assessments, bat reports and Appropriate Assessments for various developments. Adding to her background in conservation, Brogan has previously worked as a volunteer Assistant Ranger and Wildlife Conservation Officer.

2.22. Daniel Flenley, who is a former ecologist at Neo Environmental who worked on the original application, has over 14 years of ecology experience including undertaking surveys and writing associated reports. A graduate member of the Chartered Institute of Ecology and Environmental Management (CIEEM), he is currently applying for full membership. Daniel has experience in undertaking and managing a range of surveys and assessments including Ecological Impacts Assessments (EcIAs), extended phase 1 habitat surveys and ornithological and protected species surveys, for around 200 projects. These include a variety of development types such as energy, commercial, industrial and transport infrastructure. Daniel holds a Great Crested Newt class licence and has worked as an accredited agent under bat and amphibian mitigation and reptile survey licences.

2.23. Dara Dunlop, who worked on the original application is a Principal Ecologist at Neo Environmental. Dara Dunlop is a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM), has circa 6 years' experience in the ecology sector, including working for two ecological consultancies undertaking a range of protected species surveys and extended phase 1 habitat surveys for various project types including energy, residential, commercial and aggregate across the UK and Ireland. Dara has authored a number of reports for various developments including EcIAs, Protected Species Reports, Appropriate Assessment and Natura Impact Statement Reports.

2.24. Kellie Kerr, who completed the Amendment of this report, is an Assistant Ecologist with over 3 years of professional experience in the ecology and conservation sector. Kellie holds a BSc Environmental Science (Hons) with Diploma in Professional Practice, achieved qualifying Chartered Institute of Ecology and Environmental Management (CIEEM) membership and has valid Construction Skills Register (CSR), manual handling and first aid qualifications. Kellie has experience completing Phase 1, Fossitt, protected species surveys. Kellie has authored and co-authored ecological reports supporting various development types including Ecological

Impact Assessment (EcIA), Biodiversity Management Plan (BMP), Natura Impact Statement (NIS)/ shadow Habitats Regulations Assessment (sHRA) as well as species specific reports.

LEGISLATION AND PLANNING POLICY CONTEXT

European Legislation

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

Table 2-1: Relevant European Legislation

Directive	Main Provisions
EU Habitats Directive 92/43/EEC	The EU Habitats Directive sets out the framework for the designation and protection of sites for nature conservation for species and habitats listed in Annex II, IV and V. The directive was adopted in 1992 as a response to the Bern Convention. "*The main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those habitats and species of European importance*" The protection of species outlined in the Habitats Directive is transposed into national legislation principally by 'EC (Natural Habitats) Regulations 1997 (amended)'[1].
The Birds Directive 2009/147/EC	European Union members meet their obligations for bird species under the Bern Convention and Bonn Convention, and more generally by the means of the EU Birds Directive. The Birds Directive sets out the criteria for Special Protection Areas including; a list of species requiring protection in Annex 1 of the Directive and mechanisms for protecting wild birds naturally occurring in Europe. This Directive is transposed into national legislation principally by the 'EC (Birds and Natural Habitats) Regulations 2011'[2]. The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. It sets broad objectives for a wide range of activities, although the

[1] Office of the Attorney General (1997), *European Communities (Natural Habitats) Regulations 1997 (amended 1998, 2005*). Available at: www.irishstatutebook.ie
[2] Office of the Attorney General (2011), *European Communities (Birds and Natural Habitats) Regulations 2011.* Available at: www.irishstatutebook.ie

	precise legal mechanisms for their achievement are at the discretion of each Member State.
Environmental Liability Directive 2004/35/EC	The **Environmental Liability Directive** aims to make those causing damage to the environment (water, land and nature) legally and financially responsible for that damage. The directive covers environmental damage caused by or resulting from occupational activities to: Species and natural habitats protected under the 1992 Habitats Directive and the 1979 Wild Birds Directive. Damage to protected species and natural habitats is "*any damage that has significant adverse effects on reaching or maintaining the favourable conservation status of such habitats or species*".
Bern Convention	The Bern Convention 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 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.

National Legislation

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

- The Wildlife Act 1976 (amended 2000)[3] - 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 aquatic invertebrate species which were excluded from the 1976 Act.

[3] Office of the Attorney General (1976) *Wildlife Act 1976 (amended 2000).* Available at: www.irishstatutebook.ie

- EC (Birds and Natural Habitats) Regulations 2011 (amended 2015)[4] - transposes the EU directives into law. It protects species and priority habitats considered to be of European interest.

- Flora Protection Order 2015[5] - 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[6] - transposes the Water Framework Directive into national law;

- National Biodiversity Plan (2017-2021)[7] - sets out actions through which a range of government, civil and private sectors will undertake to achieve Ireland's 'Vision for Biodiversity', and follows on from the work of the first and second National Biodiversity Action Plans;

- Biodiversity Climate Change Sectoral Adaptation Plan (2019)[8] - considers terrestrial, freshwater and marine biodiversity and ecosystem services. The goal is to protect biodiversity from the impacts of climate change and to conserve and manage ecosystems so that they deliver services that increase the adaptive capacity of people and biodiversity. This is achieved by identifying adaptation options that will help to protect biodiversity and ecosystem services from the impacts of changing climate.

2.27. 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, 2024

2.28. *The Planning and Development Act 2024 was signed into law on 17 October 2024. It repeals and replaces the Planning and Development Act 2000 as amended (PDA).* [9]

[4] Office of the Attorney General (2011) *European Communities (Birds and Natural Habitats Regulations 2011 (amended 2015).* Available at: www.irishstatutebook.ie

[5] Office of the Attorney General (2015) *Flora Protection Order 2015.* Available at: www.irishstatutebook.ie

[6] Office of the Attorney General (2003) *European Communities (Water Policy) Regulations 2003.* Available at www.irishstatute book.ie

[7] Available at https://www.npws.ie/legislation/national-biodiversity-plan

[8]

[9] The Planning and Development Act 2024 - available at https://www.mhc.ie/hubs/legislation/the-planning-and-development-bill-2023

2.29. The Act will require further Amendments, and detailed regulations will be required to implement it in stages before it can be fully commenced. The Government intends to publish a plan for the commencement of the new Act on a phased basis, possibly over a period of up to two years.

2.30. The 2nd day of December 2024 is appointed as the day on which the following provisions of the Planning and Development Act 2024 (No. 34 of 2024) shall come into operation:

- (a) sections 1 to 5
- (b) Part 26

2.31. These provisions relating entirely to planning procedures and definition with little relevance to the assessment of ecology and nature conservation.

2.32. Additional provisions related to assessment of ecology and nature conservation are yet to be implemented.

2.33. Please refer to the Planning and Development Act, 2000 (as amended) for relevant or currently adopted provisions related to assessment of ecology and nature conservation.

Planning and Development Act, 2000 (as amended)[10]

2.34. 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.

[10] 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[11]

2.35. 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.”

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

[11]Environment, Community and Local Government (2015) *Planning Policy Statement 2015*. Available at: www.environ.ie

"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.

8. 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.

9. 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."

Offaly County Development Plan 2021-2027[12]

2.37. The Offlay County Development Plan 2021-2027 outlines the development policies, core strategy and objectives for the sustainable development of County Offlay.

2.38. Chapter 4 of the plan addresses Biodiversity and Landscape. The strategic aim of which is to:

'Protect and enhance Offaly's natural assets of clean water, biodiversity, landscape, green infrastructure, heritage and agricultural land.'

2.39. A number of key policies (outlined below), have been outlined within this chapter.

BLP-01 *It is Council policy to protect, conserve, and seek to enhance the county's biodiversity and ecological connectivity.*

BLP-02 *It is Council policy to conserve and protect habitats and species listed in the Annexes of the EU Habitats Directive (92/43/EEC) (as amended) and the Birds Directive (2009/147/EC), the Wildlife Acts 1976 (as amended) and the Flora Protection Orders.*

BLP-03 *It is Council policy to support and co-operate with statutory authorities and others in support of measures taken to manage proposed or designated sites in order to achieve their conservation objectives.*

BLP-04 *It is Council policy to protect and maintain the conservation value of all existing and future Natural Heritage Areas, proposed Natural Heritage Areas, Nature Reserves, Ramsar Sites, Wildfowl Sanctuaries and Biogenetic Reserves in the county.*

[12] Offaly County Development Plan 2021-2027. Available at: https://www.offaly.ie/eng/Services/Planning/County-Development-Plan-2021-2027/Stage-4-Final-Plan

BLP-05 *It is Council policy to ensure that development does not have a significant adverse impact, incapable of satisfactory avoidance or mitigation, on plant, animal or bird species protected by law.*

BLP-06 *It is Council policy to consult with the National Parks and Wildlife Service, and take account of any licensing requirements, when undertaking, approving or authorising development which is likely to affect plant, animal or bird species protected by law.*

BLP-07 *It is Council policy to support the implementation of the National Biodiversity Action Plan 2017- 2021 and the Offaly Heritage Plan Key Actions 2017-2021 and future editions in partnership with relevant stakeholders subject to available resources.*

BLP-08 *It is Council policy to work with all state agencies to promote the development of all aspects of park management in the Slieve Bloom Mountains.*

County Offaly Biodiversity Action Plan –2025-2030[13]

2.40. The aim of the County Offaly Biodiversity Action Plan 2025-2030 is to build on previous works within the county to protect and enhance natural areas to benefit biodiversity and people. The strategic objectives of the plan are concerned with:

- Surveys and monitoring
- Actions for biodiversity
- Alien invasive species
- Building resilience
- Awareness and engagement
- Amendment

Guidance Documents

BS 42020:2013 Biodiversity[14]

2.41. 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.

[13] Offaly County Council (2025) *Offaly Biodiversity Action Plan 2025-2030.* Available at: https://www.offaly.ie/app/uploads/Offaly-Biodiversity-action-Plan-2025-2030.pdf

[14] BSI (2013) *BS 42020 A Code of Practice for Biodiversity in Planning and Development*. Available at: https://www.bsigroup.com

2.42. 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

2.43. The Chartered Institute of Ecology and Environmental Management (CIEEM) have produced guidance on Ecological Impact Assessment[15] (EcIA) and Ecological Report Writing[16].

2.44. The EcIA 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 tasks 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.
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.

[15] CIEEM (2024) *Guidelines for Ecological Impact Assessment in the UK and Ireland*. Available at: https://cieem.net/
[16] CIEEM (2017) *Guidelines for Ecological Report Writing.* Available at: https://cieem.net/

2.45. The aims of their EcIA guidelines are to:

- promote good practice;
- promote a scientifically rigorous and transparent approach to Ecological Impact Assessment (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

2.46. The Zone of Influence (ZOI) is the area encompassing all predicted 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, was appropriate for gathering information for the desk study.

Table 2-3: Zone of Influence for ecological features

ECOLOGICAL FEATURE	Zone of Influence (ZOI)
International/European statutory designations	15km
National statutory designations	5km
Protected and Priority Species	2km
Extended phase one habitat survey	50m

Desk Study

2.47. A desk-based assessment was undertaken to collate available ecological information for the Proposed Amendment Site and the surrounding area. This included a search of statutory or non-statutory designated environmental sites: 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[17].

2.48. An Appropriate Assessment Screening was undertaken to assess all Natura 2000 sites within 15km of the Proposed Amendment Site. The findings of this are contained within the accompanying AA Screening and Natura Impact Statement.

2.49. A data search was conducted through the National Biodiversity Data Centre (NBDC) to obtain information regarding protected/notable species within 2km of the Proposed Amendment Site boundary. The Proposed Amendment Site is centred at approximate Irish Grid Reference (IGR) N 39618 26489.

[17] Available at: http://www.npws.ie/protected-sites.

2.50. 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.

2.51. A desktop survey was undertaken as part of the ecology assessment for the Proposed Amendment to locate any records of rare or protected flora and fauna previously recorded for the Proposed Amendment Site and surrounding area.

Fossitt Habitat Survey

2.52. A Fossitt habitat survey was carried out on the 3rd of June 2020 by Brogan Loughlin BSc (Hons) and Dara Dunlop BSc (Hons) as part of the ecology assessment for the consented solar site and a 50m buffer around the solar application site. An updated Fossitt habitat survey was completed on the 10th October 2024 by Louis Maloney for the amended planning application.

2.53. Survey work was carried out in accordance with the Joint Nature Conservation Committee (JNCC) guidelines (2010) and the Fossitt Guide to Habitats in Ireland (2000) in order to produce Fossitt habitat map.

2.54. Both of these habitat classification methods provide a standardised system to record and map semi-natural vegetation and other wildlife habitats in order to assess their potential importance for nature conservation. The survey method used for both systems is comparable, apart from a slight variation in the naming of habitat types.

Species Scoping Survey

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

2.56. 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)
Bats	Roosts – trees, buildings, bridges, caves, etc. Foraging areas – e.g. parkland, water bodies, streams, wetlands, woodland edges and hedgerow.	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

Taxon	Indicative Habitat(s)	Field Signs (In Addition to Sightings)
	Commuting routes – linear features (e.g. hedgerows, water courses, tree lines). See **Appendix 2C** for preferred foraging and commuting habitat for individual species.	wings under a feeding perch).
Badger	Found in most rural and many urban habitats.	Excavations and tracks; sett entrances, latrines, hairs, well-worn paths, prints, scratch marks on trees.
Otter	Watercourses.	Holts (or dens), prints, spraints (droppings), slide marks into watercourses, feeding signs (e.g. fish bones).
Birds	Trees, scrub, hedgerow, field margins, grassland, buildings.	Nests, droppings below nest sites (especially in buildings or trees), tree holes.
Common lizard	Rough grassland, log and rubble piles.	Shedded skins.

Weather Conditions

2.57. **Table 2-5** describes the weather conditions at the time of surveys giving temperature (°C), Wind speed (mph), Cloud-cover (percentage cover) and precipitation.

Table 2-5: Weather conditions at the time of surveys

Survey date	Temperature (°C)	wind Speed (mph)	cloud-cover	Precipitation
03/06/2020	15	5 - 10	60 – 100 %	None
10/10/2024	7	5-9	10%	None

Limitations

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

2.59. 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.

2.60. The 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:

- Broadly identify the nature conservation value of a site and Preliminarily assess the significance of any potential impacts on habitat/species recorded; and/or
- Confirm the need and extent of any additional specific ecological surveys that are required to identify the true nature conservation value of a site.

2.61. 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 and publicly accessible lands (e.g. local roads or public paths) with the use of binoculars, where needed. It is considered that the limited access to areas of land directly adjacent to the Proposed Amendment boundary has not impacted upon the findings of the habitat or species scoping surveys.

Evaluation Methods

2.62. The evaluation of ecological receptors is based upon the CIEEM guidelines[18] 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 that is also a designated site, is generally precise, as the designations themselves provide an indication of value.

Adopted Design Principles

2.63. The evaluation of the ecological baseline has enabled the inclusion of integral design measures which will ensure impacts from the Proposed Amendment on ecological receptors can be reduced or avoided through the development design. These include;

- A 5m buffer from hedgerows.
- 2m buffer from field drains
- Tree buffers dependant on height
- 10m OPW drain buffers

[18] CIEEM (2024) *Guidelines for Ecological Impact Assessment in the UK and Ireland*. Available at: https://cieem.net/

- 10m buffer for overhead lines
- 30m badger sett buffer

Impact Assessment

2.64. 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.

2.65. The terms 'impact' and 'effect' are commonly used 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.

2.66. 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.

2.67. This ecological impact assessment has been concluded by an experienced ecologist following CIEEM guidance.[20]

BASELINE CONDITIONS

Designated Sites

2.68. The Proposed Amendment does not lie within or directly adjacent to any statutory or non-statutory designated environmental sites.

2.69. Within 15km of the Application Site boundary there are six Special Areas of Conservation (SACs) and no Special Protection Areas (SPAs). There is one Natural Heritage Area (NHA) within 5km of the Application Site, and three proposed Natural Heritage Areas (pNHAs). These sites are outlined in **Table 2-6** below, and detailed within **Figure 2.1, Appendix 2A**. The site descriptions of these designated environmental sites are derived from the original site citations available from the National Parks and Wildlife Service (NPWS)[19]. There are no other statutory or non-statutory designated environmental sites within the ZOI.

2.70. Please refer to the AA Screening and Natura Impact Statement for further details of all Natura 2000 sites within the ZOI of the Proposed Amendment.

Table 2-6: Designated Sites.

Site Code	Site Name	Qualifying Features	Distance (km)	Direction	Potential Connectivity with the Proposed Amendment Site
SAC					
000582	Raheenmore Bog SAC	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150]	5.55km	Northeast	None
000571	Charleville Wood SAC	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion,*	6.78km	Southwest	Hydrological

[19] CIEEM (2024) *Guidelines for Ecological Impact Assessment in the UK and Ireland*. Available at: https://cieem.net/https://www.npws.ie/protected-sites

		Alnion incanae, Salicion albae) [91E0] *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]			
000572	Clara Bog SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia)* (* important orchid sites) [6210] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the *Rhynchosporion* [7150] Bog woodland [91D0]	11.71km	Northwest	None
001831	Split Hills and Long Hill Esker SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia)* (* important orchid sites) [6210]	7.94km	North	None
002162	River Barrow and River Nore SAC	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Reefs [1170]	10.66km	South	Ecological

		Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae)* [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260] European dry heaths [4030] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Petrifying springs with tufa formation (*Cratoneurion)* [7220] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae)* [91E0] *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]			

		Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] *Austropotamobius pallipes* (White-clawed Crayfish) [1092] *Petromyzon marinus* (Sea Lamprey) [1095] *Lampetra planeri* (Brook Lamprey) [1096] *Lampetra fluviatilis* (River Lamprey) [1099] *Alosa fallax fallax* (Twaite Shad) [1103] *Salmo salar* (Salmon) [1106] *Lutra lutra* (Otter) [1355] *Trichomanes speciosum* (Killarney Fern) [1421] *Margaritifera durrovensis* (Nore Pearl Mussel) [1990]			
000685	Lough Ennell SAC	Alkaline fens [7230]	14.95km	North	None
NHA					
002033	Daingean Bog NHA	Peatlands	3.65km	East	None
pNHA					
002104	Grand Canal pNHA	The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural	0.14km	South	Potential ecological

		land and therefore provides a refuge for species threatened by modern farming methods (NPWS, 1995).			
001775	Murphy's Bridge Esker pNHA	Esker ridge with calcareous grassland and supports the rare and protected hemp nettle.	3.30km	Northwest	None
000918	Rahugh Ridge (Kiltober Esker) pNHA	The wood is exceptionally rich in species with several uncommon or rare species: Dogwood *(Cornus sanguineus*), Columbine (*Aquilegia vulgaris*), Purging Buckthorn *(Rhamnus catharticus*), Stone Bramble (*Rubus saxatilis*), Whitebeam *(Sorbus hibernica*), Wood Melick (*Melica uniflora*). The small existing gravel pits that have been allowed to become recolonised, the southernmost now has a colony of a nationally rare and protected Hemp nettle *(Galeopsis agustifolia)*	4.39km	North	None

2.71. As shown in Table 2-6 above, the Application Site is not located within or directly adjacent to any Natura 2000 site. Two Natura 2000 sites have pathways for potential impacts to the Application Site. There is one Non-statutory (Proposed Natural Heritage Area) site with pathways for potential impacts on the Application Site.

2.72. Ballyteige Big, a watercourse in the south of the Application Site, flows into the Puttaghan Stream, a tributary of the Tullamore River. This river flows through Charleville Wood SAC.

2.73. .

2.74. The Application Site is not hydrologically connected to the River Barrow and River Nore SAC. The SAC is at a higher elevation, and streams traversing the Application Site flow west towards Tullamore rather than south towards the River Barrow. However, there is a possibility that qualifying mobile species capable of traversing over land could utilise the Application Site.

Therefore, it is considered that there is ecological connectivity between the Application Site and River Barrow and River Nore SAC.

2.75. Clara Bog SAC, Split Hills and Long Hill Esker SAC, Raheenmore Bog SAC and Daingean Bog NHA are all located upstream of the Application Site, and there is no hydrological pathway for the Application Site to impact upon each of these designated sites through movement of ground water. None of these sites are designated for mobile species and there is therefore no ecological connectivity.

2.76. The Grand Canal pNHA is not hydrologically connected to the Application Site. Despite sharing the same drainage basin, the Application Site drains into the waterways present in closer proximity to the north of the Grand Canal. Although the species it is designated for are not identified, there is potential that some may use the Application Site to forage or commute.

Habitats

2.77. The Fossitt habitat survey of the Proposed Development undertaken on the 3rd of June 2020 identified eleven habitat types. During the updated Fossitt habitat survey completed on 10th October 2024, no new habitats were identified.

2.78. Each habitat identified has been outlined in **Table 2-7** below along with other relevant target notes.

2.79. In addition, the Fossitt habitat map is shown within **Figure 2.2, Appendix 2A**.

Table 2-7: Habitat types on site

Habitat type	Species present	Observations/potential for species
Improved Agricultural Grassland (GA1)	The main habitat within the Development Boundary is improved agricultural grassland, with most fields in the Proposed Development area being grazed agricultural grassland. Frequent species Occasional species include; velvet grass, clover sp., common nettle, thistle sp. and common milkwort.	Potential for foraging badger.
Wet Grassland (GS4)	Rush species abundant together with grasses. Sheep and cattle grazing.	Potential for amphibians, foraging bats, and breeding and foraging birds.

Arable Crops (BC1)	Arable crops cover one large field in the Development Site. Intensively managed and species poor.	Potential for foraging badger and birds, including ground nesting birds. Potential for foraging Irish hare.
Treelines (WL2)	Hawthorn and ash are abundant within the treeline, with nettles and bramble abundant among the trees.	Potential for breeding birds and roosting bats.
Hedgerow (WL1)	Hedgerows are found on both outer and inner field boundaries. Within the hedgerows bramble and ivy are abundant as well creeping thistle is occasional. Double hedgerows are frequent also, with ash and hawthorn in most hedgerows.	Potential for breeding birds and roosting bats.
Scrub (WS1)	Gorse and bramble.	Potential for breeding birds. Potential for foraging badger.
Dry-Humid Acid Grassland (GS3)	Scattered scrub and grass species.	None.
Conifer Plantation (WD4)	Along the boundary of Fields 2-7, 11 and 12. **(See Figure 2.2 of Appendix 2A)**	Potential for nesting birds and roosting bats.
Broadleaved Woodland (WD1)	Ash and birch.	Potential for nesting birds and roosting bats.
Depositing/Lowland Watercourses (FW2)	Ballyteige Big is a steep-banked watercourse that flows in a general southerly direction through the southeast of the Application Site. In places it is overgrown by dense bramble, with some sections also dry or almost dry.	Potential for freshwater wildlife. Potential ecological corridor for local wildlife.
Drainage Ditches (FW4)	Field drains accompanied by either hedgerows or trees border most fields in the Application Site. Most ditches wet with steep banks, some filled with aquatic plants.	Potential ecological corridor for local wildlife.

(Note: Fossitt Guide codes are indicated in brackets)

Target Notes

2.80. Target notes were produced and are outlined in **Table 2-8** for areas of habitat too small to identify clearly within the extended Fossitt habitat survey map (**Figure 2.2, Appendix 2A**), or to note suitable habitat for protected/notable species.

Table 2-8: Target Notes

Target Note	Description
TN1	Badger sett
TN2	Unidentified mammal hole; likely to be rabbit or fox.
TN3	Badger Sett
TN4	Mature Ash with 3 bat boxes - avoid
TN5	Mammal signs

Protected and Notable Species

Desk Based

2.81. The potential presence of protected species within the study area was assessed during the original application in 2020 using a data search conducted through the NBDC. An updated search was carried out in 2024 and most recently in November 2025. This identified records of invasive, rare, scarce and protected species within 2km of the Proposed Development location. The Application Site is located within the 1km grid squares N3926, N4026, N4025 and N3925. A database search was also carried out for adjacent grid squares to ensure a full assessment of the 2km radius.

2.82. 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, broad-scale geographic patterns of occurrence and local roosting habitat requirements for Irish bat species.

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

2.84. Table 2-9 below summarises the protected/notable species recorded within the search area, and their potential to be present within the Proposed Development Site.

Table 2-9: Summary of Biological Records

Species	Grids with Recordings of Species	Suitable Habitat or Field Signs Observed within Ecological Survey Area	Potential for species within Application Site
MAMMALS			
Badger (*Meles meles*)	N3728, N3828, N3928, N4128, N3727, N3827, N3927, N4027, N3726, N3826, N3926, N3725, N3825. N3925, N4025, N3724, N3824, N4324, N4024, N3723, N3823, N3923, N4123.	Yes	Yes
European Otter (*Lutra lutra*)	N3627, N3727, N3827, N3927 N3626, N3726, N3826, N3926 N3625, N3725, N3825, N3925 N3624, N3724, N3824, N3924, N3623, N3723, N3823, N3923	Yes	Yes
Irish Hare (*Lepus timidus*)	O0050	Yes	Yes
Fallow Deer *(Dama dama*)	N3627, N3727, N3827, N3927 N3626, N3726, N3826, N3926 N3625, N3725, N3825, N3925 N3624, N3724, N3824, N3924, N3623, N3723, N3823, N3923	Yes	Yes
Eurasian Pygmy Shrew *(Sorex minutus)*	N3626	Yes	Yes
Eurasian Red Squirrel *(Sciurus vulgaris)*	N3627, N3727, N3827, N3927 N3626, N3726, N3826, N3926 N3625, N3725, N3825, N3925 N3624, N3724, N3824, N3924, N3623, N3723, N3823, N3923	Yes	Yes

Pine Marten (*Martes martes)*	N3627, N3727, N3827, N3927 N3626, N3726, N3826, N3926 N3625, N3725, N3825, N3925 N3624, N3724, N3824, N3924, N3623, N3723, N3823, N3923	Yes	Yes
West European Hedgehog (*Erinaceus europaeus)*	N3627, N3727, N3827, N3927 N3626, N3726, N3826, N3926 N3625, N3725, N3825, N3925 N3624, N3724, N3824, N3924, N3623, N3723, N3823, N3923	Yes	Yes
BIRDS			
Barn Owl (*Tyto alba*)	All Grid Squares within 2km	Yes	Yes
Black-headed Gull (*Larus ridibundus*)	All Grid Squares within 2km	Yes	Yes
Blackcap (*Sylvia atricapilla*)	N3728	Yes	Yes
Buzzard (*Buteo buteo*)	All Grid Squares within 2km	Yes	Yes
Carrion Crow (*Corvus corone*)	All Grid Squares within 2km	Yes	Yes
Chaffinch (*Fringilla coelebs*)	All Grid Squares within 2km	Yes	Yes
Coal Tit (*Periparus ater*)	All Grid Squares within 2km	Yes	Yes
Common Coot (*Fulica atra*)	All Grid Squares within 2km	Yes	Yes
Cuckoo (*Cuculus canorus*)	All Grid Squares within 2km	Yes	Yes
Collared Dove (*Streptopelia decaocto*)	All Grid Squares within 2km	Yes	Yes
Curlew (*Numenius arquata*)	All Grid Squares within 2km	Yes	Yes

Kestrel (*Falco tinnunculus*)	All Grid Squares within 2km	Yes	Yes
Kingfisher (*Alcedo atthis*)	All Grid Squares within 2km	Yes	Yes
Linnet (*Carduelis cannabina*)	All Grid Squares within 2km	Yes	Yes
Moorhen (*Gallinula chloropus*)	All Grid Squares within 2km	Yes	Yes
Pheasant (*Phasianus colchicus*)	All Grid Squares within 2km	Yes	Yes
Raven (*Corvus corax*)	All Grid Squares within 2km	Yes	Yes
Snipe (*Gallinago gallinago*)	All Grid Squares within 2km	Yes	Yes
Swift (*Apus apus*)	All Grid Squares within 2km	Yes	Yes
Whitethroat (*Sylvia communis*)	All Grid Squares within 2km	Yes	Yes
Wood Pigeon (*Columba palumbus*)	All Grid Squares within 2km	Yes	Yes
Jackdaw (*Corvus monedula*)	All Grid Squares within 2km	Yes	Yes
Jay (*Garrulus glandarius*)	All Grid Squares within 2km	Yes	Yes
Oystercatcher (*Haematopus ostralegus*)	All Grid Squares within 2km	No	No
Siskin (*Carduelis spinus*)	All Grid Squares within 2km	Yes	Yes
Sparrowhawk (*Accipiter nisus*)	All Grid Squares within 2km	Yes	Yes

Snipe (*Gallinago gallinago*)	N32Y	Yes	Yes
Teal (*Anas crecca*)	All Grid Squares within 2km	No	No
Tree Sparrow (*Passer montanus*)	All Grid Squares within 2km	Yes	Yes
Treecreeper (*Certhia familiaris*)	All Grid Squares within 2km	Yes	Yes
Woodcock (*Scolopax rusticola*)	All Grid Squares within 2km	Yes	Yes
Golden Plover (*Pluvialis apricaria*)	All Grid Squares within 2km	Yes	Yes
Goldfinch (*Carduelis carduelis*)	All Grid Squares within 2km	Yes	Yes
Greenfinch (*Carduelis chloris*)	All Grid Squares within 2km	Yes	Yes
Robin (*Erithacus rubecula)*	All Grid Squares within 2km	Yes	Yes
Fieldfare (*Turdus pilaris*)	All Grid Squares within 2km	Yes	Yes
Goldcrest (*Regulus regulus*)	All Grid Squares within 2km	Yes	Yes
Great Black-backed Gull (*Larus marinus*)	All Grid Squares within 2km	No	No
Great Cormorant (*Phalacrocorax carbo*)	All Grid Squares within 2km	No	No
Great Tit (*Parus major*)	All Grid Squares within 2km	Yes	Yes

Grey Heron (*Ardea cinerea*)	All Grid Squares within 2km	Yes	Yes
Grey Partridge (*Perdix perdix*)	All Grid Squares within 2km	Yes	Yes
Grey Wagtail (*Motacilla cinerea*)	All Grid Squares within 2km	Yes	Yes
Hedge Accentor (*Prunella modularis*)	All Grid Squares within 2km	Yes	Yes
Herring Gull (*Larus argentatus*)	All Grid Squares within 2km	No	No
Hooded Crow (*Corvus cornix*)	All Grid Squares within 2km	Yes	Yes
House Martin (*Delichon urbicum*)	All Grid Squares within 2km	Yes	Yes
House Sparrow (*Passer domesticus*)	All Grid Squares within 2km	Yes	Yes
Lesser Black-backed Gull (*Larus fuscus*)	All Grid Squares within 2km	Yes	Yes
Lesser Redpoll (*Carduelis cabaret*)	All Grid Squares within 2km	Yes	Yes
Little Egret (*Egretta garzetta*)	All Grid Squares within 2km	Yes	Yes
Little Grebe (*Tachybaptus ruficollis*)	All Grid Squares within 2km	No	No
Long-eared Owl (*Asio otus*)	All Grid Squares within 2km	Yes	Yes

Long-tailed Tit (*Aegithalos caudatus*)	All Grid Squares within 2km	Yes	Yes
Mallard (*Anas platyrhynchos*)	All Grid Squares within 2km	No	No
Meadow Pipit (*Anthus pratensis*)	All Grid Squares within 2km	Yes	Yes
Mew Gull (*Larus canus*)	All Grid Squares within 2km	No	No
Mistle Thrush (*Turdus viscivorus*)	All Grid Squares within 2km	Yes	Yes
Mute Swan (*Cygnus olor*)	All Grid Squares within 2km	No	No
Northern Lapwing (*Vanellus vanellus*)	All Grid Squares within 2km	Yes	Yes
Redwing (*Turdus iliacus*)	All Grid Squares within 2km	Yes	Yes
Reed Bunting (*Emberiza schoeniclus*)	All Grid Squares within 2km	Yes	Yes
Rock Pigeon (*Columba livia*)	All Grid Squares within 2km	Yes	Yes
Rook (*Corvus frugilegus*)	All Grid Squares within 2km	Yes	Yes
Sand Martin (*Riparia riparia*)	All Grid Squares within 2km	No	No
Sedge Warbler (*Acrocephalus schoenobaenus*)	All Grid Squares within 2km	Yes	Yes
Skylark (*Alauda arvensis*)	All Grid Squares within 2km	Yes	Yes

Song Thrush (*Turdus philomelos*)	All Grid Squares within 2km	Yes	Yes
Spotted Flycatcher (*Muscicapa striata*)	All Grid Squares within 2km	Yes	Yes
Starling (*Sturnus vulgaris*)	N32Y	Yes	Yes
Stock Pigeon (*Columba oenas*)	All Grid Squares within 2km	Yes	Yes
Stonechat (*Saxicola torquata*)	All Grid Squares within 2km	Yes	Yes
Swallow (Hirundo rustica)	N32Y	Yes	Yes
White Wagtail (*Motacilla alba*)	All Grid Squares within 2km	Yes	Yes
Whooper Swan (*Cygnus cygnus*)	All Grid Squares within 2km	No	No
Willow Warbler (*Phylloscopus trochilus*)	All Grid Squares within 2km	Yes	Yes
Winter Wren (*Troglodytes troglodytes*)	All Grid Squares within 2km	Yes	Yes
Yellowhammer (*Emberiza citrinella*)	All Grid Squares within 2km	Yes	Yes
HERPTILES			
Common Frog (*Rana temporaria*)	N3627, N3727, N3827, N3927 N3626, N3726, N3826, N3926 N3625, N3725, N3825, N3925 N3624, N3724, N3824, N3924, N3623, N3723, N3823, N3923	Yes	Yes
INVERTEBRATES			

Speckled Wood (*Pararge aegeria)*	N4126, N4125	Yes	Yes
Green-veined White (*Pieris napi)*	N3625, N4325, N4025, N4125, N4226	Yes	Yes
Peacock Butterfly *(Inachis io)*	N4225	Yes	Yes
Common Garden Snail (*Cornu aspersum*)*	N32Y	No	Yes
Vulgar Slug (*Arion (Arion) vulgaris*)*	N32Y	No	Yes
Red-tailed Bumblebee (*Bombus lapidarius*)	N32Y	No	Yes
FLORA			
Japanese Rose (*Rosa rugosa*)*	N32Y	No	Yes
Corn Marigold (*Glebionis segetum*)	N32Y	No	Yes

*invasive species

2.85. Table 2-10 below details the results of the NBDC Bat Suitability Index search undertaken for the Proposed Development. The overall score was 30.33, indicating moderate bat suitability.

Table 2-10: Bat Suitability Index

Species	Index Score
Soprano pipistrelle (*Pipistrellus pygmaeus*)	42
Brown long-eared bat (*Plecotus auritus*)	36
Common pipistrelle (*Pipistrellus pipistrellus*)	47
Lesser horseshoe bat (*Rhinolophus hipposideros*)	0
Leisler's bat (*Nyctalus leisleri*)	47

Whiskered bat (*Myotis mystacinus*)	21
Daubenton's bat (*Myotis daubentonii*)	35
Nathusius's pipistrelle (*Pipistrellus nathusii*)	6
Natterer's bat (*Myotis nattereri*)	37

Field Survey

Badger

2.86. Records of badger were identified within the 2km desk-study data search. Definitive signs of badger activity were noted. During the 2020 survey one inactive outlier sett was noted and during the updated species scoping survey in October 2024 there was an additional badger sett found within the Proposed Amendment Site.

2.87. Suitable habitats for badgers were observed, including woodland and scrub for sett-building and arable habitat, amenity grassland and improved agricultural grassland for foraging badgers.

Bats

2.88. There were no records of bats in the 2km data search of the site. Improved grassland and arable habitats form the majority of this site, offering sub-optimal foraging habitat for bat species due to their limited prey abundance. The woodlands, treelines and hedgerows provide more suitable foraging and roosting habitat, while the watercourse, drainage ditches, scrub and wet grassland will also provide some foraging opportunities.

2.89. No sightings or field signs of bats were observed within the survey area. However, there were bat boxes identified within the Application Site during the Fossitt habitat survey, the location of this target note has been mapped and will be maintained.

Otter

2.90. Records of otter were identified by the 2km desk-study data search.

2.91. No sightings or field signs of otter were noted during the site walkover. However, suitable habitat for foraging/commuting otter was noted in the survey area. The watercourse and drainage ditches within the Application Site may provide suitable habitat for foraging and commuting otters. However, most habitats within the Application Site are considered to be sub-optimal for otter, as these are predominantly arable grassland, bound by hedgerows and treelines. Therefore, the use of the Application Site by otter is likely to be restricted to foraging/commuting otter.

Pygmy Shrew

2.92. Records of pygmy shrew were identified within the 2km desk-study data search. This species is adapted to a wide range of habitats including improved grassland and hedgerows.

2.93. No evidence of this species was identified during the walkover surveys.

Red Squirrel

2.94. Records of red squirrel were identified within the 2km desk-study data search.

2.95. Conifer and mixed broadleaf forest in the ESA may provide suitable habitat for red squirrel. However, most habitats within the Application Site are considered to be sub-optimal, as these are predominantly arable grassland, bound by hedgerows and treelines. Therefore, the use of the Application Site by red squirrel is likely to be restricted to commuting along tree lines due to the abundance of optimal habitat outside of the Application Site.

Pine Marten

2.96. Records of pine marten were identified within the 2km desk-study data search.

2.97. Conifer and mixed broadleaf forest on the edge of the Development Area may provide suitable habitat for pine marten. However, most habitats within the Application Site are considered to be sub-optimal, as these are predominantly arable grassland, bound by hedgerows and treelines.

Other Mammals

2.98. Records of Irish hare were identified within the 2km desk-study data search. This species is adapted to a wide range of habitats including improved grassland and arable crops. No evidence of this species was identified during the walkover surveys.

2.99. There were no direct observations of terrestrial mammals during either site walkover survey.

2.100. During the phase one survey an unidentified mammal hole/burrow was also noted. Rabbits and fox were identified in the 2km data survey; therefore, this is more than likely a rabbit burrow or fox earth.

Birds

2.101. A desk study was completed to identify any possible protected species on or within 2km of the site, and the potential of the Application Site to support protected species.

2.102. Hedgerows, treelines and mature trees within the ESA provide suitable habitat for breeding birds. Improved grassland and arable land may offer potential nesting and feeding habitat for

farmland breeding birds as areas of the Application Site sward are between five and fifteen centimetres high due to grazing.

Herptiles

2.103. The 2km desk-study data search found records of common frog. This species lives in a wide range of habitats and is strongly associated with water bodies such as ponds and drainage ditches. Suitable habitat for this species observed within the ESA includes wet drainage ditches, watercourse and wet grassland.

2.104. Hedgerows, woodland and scrub provide refuge, foraging and commuting habitats for herptile species.

2.105. No sightings or evidence of herptile activity was noted within the survey area.

Invertebrates

2.106. Speckled wood, green-veined white, red-tailed bumblebee and peacock butterfly were identified in the 2km desk study. These species are not of conservation concern in Ireland. There is available habitat on site for all three species, which are present in a wide range of habitats including woodland and drainage ditches.

2.107. Common garden snail (*Cornu aspersum*) and vulgar slug (*Arion (Arion) vulgaris*) were identified in the 2km data search. These invasive species are widespread and well-established in Ireland. The development does not include pathways that would facilitate their population expansion and are not considered to be impacted by the Proposed Amendment.

2.108. No notable invertebrate species were recorded during the Fossitt habitat surveys.

Flora

2.109. Japanese Rose (*Rosa rugosa*) was noted in the 2km data search. This invasive species is widespread and well-established in Ireland. This species was not identified within the Application Site and the development does not include pathways that would facilitate their population expansion and are not considered to be impacted by the Proposed Amendment.

2.110. Corn Marigold (*Glebionis segetum*) is classed as near threatened, this species was not identified within the Application Site and is not considered to be impacted by the Proposed Amendment.

IMPACT ASSESSMENT

Best Practice Pollution Prevention Measures

2.111. Standard best practice pollution prevention measures will be adhered to, which will reduce the potential for impacts on ecology during the construction stage. As these are standard requirements, they are separate to mitigation measures which are outlined later in this report.

2.112. 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;
- 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;
- 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 the project team.

Adopted Design Principles

- Integral design measures will ensure that impacts on ecological receptors from the proposed Amendment will be reduced. These are separate to mitigation measures, which are outlined later in this report. As part of the Proposed Development design, security fencing is to have 0.1m gap at the bottom mammal gates to allow free movement of otter through the site;
- Protection buffers of 2m along field drains and a 10m buffer along the Ballyteige Big have been incorporated into the design of the Proposed Development;
- Buffers of 30m will be implemented around all badger setts to reduce any chance of disturbance to the species.

Designated Sites

2.113. Potential pathways for impact for these Natura 2000 designated sites have been outlined within the NIS (Volume 1).

2.114. Within 15km of the Application Site boundary there are six Natura 2000 designated sites, and within 5km of the Application Site there are four nationally designated sites (one Natural Heritage Area and three proposed Natural Heritage Areas). Of these ten sites, two Special Area of Conservation sites and one Proposed Natural Heritage Area are connected to the Application Site: River Barrow and River Nore SAC, Charleville Wood SAC and The Grand Canal pNHA.

River Barrow and River Nore SAC

In the Absence of Mitigation

2.115. River Barrow and River Nore SAC is located approximately 10.66km south of the Application Site and is designated for a number of important Annex I habitats and Annex II species (see Table 2-6 above). Ecological connectivity exists between this SAC and the Application Site.

2.116. The coastal habitats of the SAC (Estuaries, Mudflats and sandflats not covered by seawater at low tide, Reefs, *Salicornia* and other annuals colonising mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) and Mediterranean salt meadows (*Juncetalia maritimi*)) are located over 100km from the Application Site.

2.117. 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 Proposed Amendment.

2.118. River lamprey (*Lampetra fluviatilis*), sea lamprey (*Petromyzon marinus*), brook lamprey (*Lampetra planeri*), twaite shad (*Alosa fallax fallax*), Atlantic salmon (*Salmo salar*), white-clawed crayfish (*Austropotamobius pallipes*) and Nore pearl mussel (*Margaritifera durrovensis*) and freshwater pearl mussel (*Margaritifera margaritifera*) are species confined to the aquatic environment. As the Application Site is not hydrologically connected to the SAC there will be no significant effect on these qualifying species.

2.119. Otter are a highly mobile species and can hold territories from 2km to 20km. Although there is not a direct hydrological pathway, there are rivers and streams between the SAC and the Application Site, and otter are capable of traversing overland to suitable habitat for feeding and resting. Although considered unlikely, there is potential that otter from the SAC could occasionally use the Application Site. Other rivers and watercourses between the SAC and the site offer more suitable habitat and therefore it is unlikely they would commute as far as the Application Site.

2.120. No evidence of otter was noted during the site walkover. However, suitable habitat for foraging/commuting otter was noted in the survey area. It is therefore considered that any potential impacts for this species would be limited to foraging/commuting otter.

2.121. Potential impacts for otter include the loss of habitat, disturbance, fragmentation of habitat and pollution.

2.122. Best practice pollution prevention measures and integral design measures have been adopted minimise any effects from pollution. The Proposed Development design includes 2m buffers from all field drains, and a 10m buffer from Puttaghan Stream (an OPW drain).

2.123. Post-construction, the Proposed Amendment will ensure the retention of habitats throughout the lifetime of the of the proposed solar farm. As part of the planning application for the Proposed Amendment, a Biodiversity Management Plan (BMP) will be submitted (see Appendix 2D), which will ensure the enhancement of the Application Site post-construction and will increase the potential prey sources for otter, particularly herptile species.

2.124. It is considered that due to the distance, lack of hydrological connectivity, adopted design principles, best practice measures, and the activities that will occur within the Application Site, no significant effects will occur for the qualifying species of the SAC.

2.125. It is considered that, due to the distance between the site and the SAC and the lack of hydrological connectivity, the proposed Amendment would not result in any adverse effects on the integrity of Natura 2000 site in view of its conservation objectives (even in the absence of best practice measures). In accordance with the precautionary principle, this conclusion has been reached in the absence of any consideration of mitigation measures to avoid or reduce any significant effect which may be applied during the construction or operational phases of Amendment.

2.126. Given the nature and design of the Proposed Amendment, it is considered that no significant effects will occur on the qualifying species of the SAC. Therefore, **no significant effects** on the SAC are predicted.

Charleville Wood SAC

In the Absence of Mitigation

2.127. The Charleville Wood SAC is located approximately 6.78km southwest of the Application Site and is designated owing to an Annex I habitat (Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)) and its importance for the Annex II species *Vertigo moulinsiana* (Desmoulin's whorl snail).

2.128. Charleville Wood is a large area of ancient woodland. The qualifying habitat of the SAC is not present within the Application Site. Desmoulin's whorl snail is restricted to wetlands (usually bordering lakes and river, or in fens). Suitable habitat for supporting this species is not found within the Application Site.

2.129. As the Application Site has a direct hydrological pathway to Charleville Wood SAC via the Ballyteige Big watercourse and Puttaghan Stream, which flows into the Tullamore River, there is potential for the occurrence of contaminates to enter the SAC.

2.130. Potential contaminates are capable of undermining water quality and the conservation objectives of each qualifying species and habitat occurring within the ZOI of the overall Amendment.

2.131. The Amendment will be subject to mandatory requirements under the Health and Safety at Work (Construction) Regulations 2013. Measures have been included within the overall Amendment design to prevent pollution entering the aquatic environment.

2.132. Best practice construction methods as detailed in **Technical Appendix 8: Outline Construction Environmental Management Plan (OCEMP)**, will be employed during the construction stage. Measures included within the Proposed Development design include a 5m buffer from hedgerows, 2m buffer from field drains and 10m OPW watercourse buffer.

2.133. Given the nature and design of the Proposed Amendment, it is considered that no significant effects will occur on the qualifying species of the SAC. Therefore, **no significant effects** are predicted for the SAC.

The Grand Canal pNHA

In the Absence of Mitigation

2.134. The Grand Canal is located approximately 0.14km south of the Application Site and is designated for its importance for the diversity of species it supports along its linear habitats.

2.135. The Application Site is potentially ecologically connected to the Application Site. Although the species it is designated for are not identified by name, there is potential that some may use the Application Site to forage or commute.

2.136. However, in the absence of mitigation it is unlikely that the loss of a small proportion of the common habitats present within the Application Site will amount to any significant impact upon the assemblage of common species associated with the pNHA. Protected species are assessed in the relevant sections elsewhere in this report.

2.137. Best practice pollution prevention measures and integral design measures have been adopted to minimise any effects from pollution. The Amendment will be subject to mandatory requirements under the Health and Safety at Work (Construction) Regulations 2013. Measures have been included within the overall development design to prevent pollution entering the aquatic and terrestrial environment. The recommended **standard pollution prevention measures** can be secured through a suitably worded planning condition requesting a Construction Environmental Management Plan (See **Technical Appendix 8**).

2.138. It is therefore considered that there will be **no significant effect** upon the Grand Canal pNHA as a result of the Proposed Amendment.

Recommended Measures

2.139. Standard best practice pollution prevention measures will be adhered to reduce any potential impacts on ecology during the construction phase.

2.140. An **Outline Construction Environmental Management Plan** (OCEMP) has been produced in support of this application, outlining the best practice measures for protecting the local environment, including terrestrial and aquatic habitats. Best practice pollution prevention measures and integral design measures have been adopted to minimise any effects from pollution.

2.141. Protection buffers of 2m along field drains and 10m from OPW watercourses have been incorporated into the design of the Proposed Development. Best practice pollution prevention measures and integral design measures have been adopted to minimise any effects from pollution. Adopted Design Principles included within the Proposed Development include SuDS in the form of soakaway channels outlined within the supporting **Technical Appendix 4: Flood Risk & Drainage Impact Assessment.** Operations and activities that have the potential to impact on the water environment will be regularly monitored throughout the construction of the Proposed Development by the Site Manager.

2.142. As outlined above, the Proposed Amendment will ensure the retention of habitats throughout the lifetime of the proposed solar farm. As part of the planning application for the Proposed Amendment, a Biodiversity Management Plan (BMP) will be submitted which will ensure the enhancement of the Application Site post-construction, which will in turn benefit an SAC qualifying species (otter).

Residual Effects After Design, Best Practice and Mitigation Measures

2.143. From the findings of the above assessment, it is considered that **no significant adverse effects** will arise for any of the designated sites.

Habitats

In the Absence of Mitigation

2.144. The construction of the Proposed Amendment will occur over land which has been identified as mainly improved grassland and arable crop, with small areas of scrub, woodland, conifer planation, wet grassland, dry-humid acid grassland being present on site also. These habitats are of **low ecological value** and currently offer limited potential to support wildlife, these habitats are abundant within the greater area where the small percentage loss will not create a significant affect.

2.145. Habitat loss will only occur under the Proposed Amendment footprint in regard to structures such as access tracks, cable trenches and hardstanding for transformer stations. The total ground disturbance area resulting from the Proposed Development is therefore 22,358.8m2 or c. 3.69% of the Application Site area.

2.146. As the panels will be raised off the ground, over 96% of the field will be accessible for plant growth and wildlife enhancement measures will be put in place. With the implementation of the Biodiversity Management Plan (BMP) under which habitats will be re-seeded with additional species specific to habitats within the Application Site, the overall biodiversity value of the Application Site will be increased.

2.147. It is therefore considered that the loss of habitat under the Proposed Amendment footprint **will not be significant**.

Recommended Enhancement Measures

2.148. With the correct management in place during the lifespan of the Proposed 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 Effects after Enhancement Measures and Best Practice

2.149. With the implementation of this enhancement measure, it is considered that there will be **no significant adverse effects**. With the implementation of the proposed enhancement measures outlined in the BMP (See **Appendix 2D**) the Proposed Amendment will result in **net beneficial gains** for habitats.

Protected and Notable Species

In the Absence of Mitigation

2.150. Each section below details the potential impacts in the absence of mitigation for protected and notable species during the construction phase and the operational phase of the Proposed Amendment.

Badger

2.151. Definitive signs of badger activity were noted in the form of one inactive outlier sett and a further badger sett identified during the updated species scoping survey. Suitable habitat for foraging badger was also observed.

2.152. The construction phase has the potential to impact upon badger by causing disturbance or destruction of badger setts. During the construction phase, the Proposed Development can cause undue stress if accidently trapped within any exposed excavations left overnight. During the operation phase the security fencing used within the Proposed Development can affect access to foraging areas within the Application Site which are part of a clan's territory. In the absence of mitigation, badgers may be significantly affected by the Proposed Development.

2.153. This Application Site offers foraging habitat for badger; there is also suitable sett building habitat available in the form of hedgerows, scrub and woodland. However, improved grassland habitat covers the majority of this site. There will only be loss of a small percentage of improved grassland. Given the abundance of improved grassland within the site, the operational phase of the Proposed Development will not lead to a significant adverse effect on the local badger population through loss of foraging habitat. The implementation of the BMP will also create new and enhanced hedgerows within the Application Site, improving the foraging resource for badgers and leading to a positive effect.

2.154. However, in the absence of mitigation, there is the potential for **significant effects for badger** from the Proposed Development owing to the potential impacts of the construction phase.

Bats

2.155. There were no records of bats from the 2km data search of the site. Improved grassland and arable habitats form the majority of the Application Site and this habitat offers sub-optimal foraging habitat for bat species due to their limited prey abundance. The loss of these improved grasslands and arable habitats under the Proposed Amendment footprint will not lead to a significant reduction in foraging habitat for local bats. Drainage ditches, treeline, woodland and hedgerows may provide suitable habitat for foraging and commuting bats. Given the minimal loss of hedgerows and the abundance of suitable habitat in this area, the proposed losses are not expected to have a significant effect on bats.

2.156. There is suitable habitat available in the development in the form of a large mature treelines. In the event that a mature tree may require trimming or felling, the tree should be surveyed for potential bat roosts before any work commences.

2.157. There are **no predicted significant adverse effects** for bat species in the absence of mitigation.

Otter

2.158. The movement of otter between suitable habitats cannot be fully ruled out, as otter are highly mobile species and can travel significant distances across land while foraging. No field signs of this species were observed during the survey work undertaken, and use of the Application Site by otter is likely to be restricted to foraging and commuting otter.

2.159. Pollution from contaminated surfaces or ground waters can potentially enter the aquatic system and affect otter indirectly. Best practice pollution prevention measures and integral design measures have been adopted to minimise any effects from pollution.

2.160. There is potential for any otters using the site during the construction phase to become trapped in trenches excavated during works. However, in line with best practice, all excavations during the construction phase of the Proposed Development will be securely covered and will therefore prevent the accidental trapping of this species.

2.161. Standard best practise measures in regard to pollution prevention (as identified in **Technical Appendix 8: Outline Construction Environmental Management Plan**) will be implemented to prevent contamination of the aquatic environment during the construction phase of the Proposed Amendment.

2.162. With design measures in place and the use of standard best practice measures, there will be **no significant adverse effects** on otter from the Proposed Amendment.

Birds

2.163. Main impacts on bird species from developments include:

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

2.164. The Proposed Development will predominantly occur on land that is currently of low ecological value and is subject to a level of disturbance from current agricultural activities. However, potential nesting and feeding habitat is present for farmland breeding birds.

2.165. Where works occur during the breeding bird season (March to August inclusive) potential disturbance for breeding birds is likely to occur in the absence of mitigation, leading to a **significant adverse effect**.

Herptiles

2.166. Drainage ditches offer potential habitat for supporting herptile species, particularly common frog. There will be buffers of 2m or more from all field drains and a 10m buffer from the Puttaghan Stream; therefore, it is considered that **potential effects will not be significant** for local herptile species.

Invertebrates

2.167. The Proposed Amendment **will not lead to significant loss** of habitat for invertebrate species. Small areas of scrub, woodland and wet grassland habitats will be lost, but these are abundant within the local area.

Flora

2.168. The Proposed Amendment **will not lead to significant loss** of protected flora. No likelihood of rare or protected plant species present were identified during the baseline assessment.

Mitigation and Enhancement Measures and Further Survey

Bats

2.169. In the event that a mature tree may require trimming or felling, the tree should be surveyed for potential bat roosts before any work commences.

2.170. With the implementation of the supporting BMP (**Appendix 2D**) which proposes new hedgerow planting, infilling existing hedgerows, and outlines measures to increase the diversity of flora species within the Application Site, fauna diversity will also increase, including prey for foraging bat species. The installation of bat boxes will provide new roosting opportunities.

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

Badger

2.172. Given that badger are a highly mobile species, and are known to be present within the Proposed Amendment Site, it is recommended that a pre-construction badger survey is undertaken to ascertain whether new badger setts have been excavated and assess potential impacts on badger at the time of construction.

2.173. Appropriate buffers of 10m (in which no construction activities will take place), 20m (only light work will occur, with no use of wheeled vehicles) and 30m (no use of heavy machinery) will be implemented around all badger setts present to reduce any chance of disturbance to the species[20]. During the breeding season (December to June inclusive), none of the above works should be undertaken within 50m of any sett deemed active prior to commencement.

2.174. All excavations during the construction phase of the Proposed Amendment will be securely covered and will therefore prevent the accidental trapping of this species. Security fencing will contain mammal gates to allow free movement of badgers through the site.

[20] Available at: https://cieem.net/resource/guidelines-for-the-treatment-of-badgers-prior-to-the-construction-of-national-road-schemes/

2.175. With the implementation of these measures, **no significant effects** are predicted for badger from the Proposed Amendment.

Otter

2.176. No otter or field signs of otter were identified within the ESA. With design measures in place and the use of standard best practice measures, there will be **no significant adverse effects** on otter from the Proposed Amendment.

2.177. It is, however, recommended that a precautionary pre-commencement survey be undertaken prior to any construction works should otter be using the watercourse, drainage ditches or any of the terrestrial habitats present. This is to account for the possibility that any otters present locally (though considered unlikely to be those individuals associated with the River Barrow and River Nore SAC) may be using the site at the time of construction.

2.178. Enhancement measures include the creation of features to benefit invertebrate populations. This will provide an enhanced food resource for potential otter prey items such as amphibians. This will therefore lead to a **minor positive effect** on otter.

Birds

2.179. During the construction phase (including site preparation), it is considered that potential impacts on bird species from disturbance are likely.

2.180. Breeding birds are highly susceptible to disturbance, and therefore where works are to commence during the breeding season (March to August inclusive) bird surveys should be undertaken prior to the initiation of construction works. A 5m buffer from hedgerows will be in place, as well as tree buffers to ensure that disturbance is minimal.

2.181. However, the proposed BMP (**Appendix 2D**) will lead to enhancement of foraging and nesting opportunities through the creation of new habitat by enhancing the existing hedgerow boundaries by infilling gaps and planting new species-rich hedgerows. Other enhancing measures for nesting birds within the site include placing bird boxes throughout the Application Site, and this in turn will lead to a positive effect on the bird community.

2.182. Post construction, with the implementation of the measures outlined within the supporting BMP, the potential to support local bird species will therefore increase within the Application Site. The creation of invertebrate-rich habitats will also provide a suitable food source for many bird species and will therefore result in **positive effects** for birds.

Herptiles

2.183. Post-construction, the creation of a herptile hibernaculum within the Application Site boundary will provide suitable shelter for these species. The proposed BMP (**Appendix 2D**) will also increase herptile prey abundance through the erection of invertebrate banks and

insect hotels. The combination of these and the creation of species-rich invertebrate habitat will result in a **significant positive effect** for local herptile species.

Invertebrates

2.184. As part of ecological enhancement measures within the BMP, invertebrate hotels will be created.

2.185. The implementation of the BMP will lead to a higher value habitat for invertebrate species within the Application Site, leading to a **significant positive effect**.

Residual Effects after Design, Best Practice and Enhancement Measures

2.186. With the implementation of design, best practice and enhancement measures, including further surveys prior to and during the construction phase of the Proposed Amendment, it is considered that there will be **no significant adverse effects** upon protected or notable species. Indeed, there will be **positive effects** on certain species.

CUMULATIVE EFFECTS

2.187. As well as singular effects, in-combination effects also need to be considered. Article 6 (3) 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 affect a European Designated Site require consideration.

2.188. In-combination effects can become a conservation concern even when individual development proposals have a small impact on European Designated Sites. If other nearby proposals are anticipated to have ecological or ornithological impacts, the combined result can have a significant impact on European Designated Site(s).

2.189. The European Commission Habitats Directive and the Habitats Regulations 2011 require that the impacts on European Designated (formerly 'Natura 2000') 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 European sites.

2.190. This Ecological Impact Assessment has identified other plans and projects that could act, in combination with this Proposed Amendment, and has assessed whether or not those plans or projects pose likely significant effects on European Designated sites.

2.191. The main aim of this process is to assess if these other plans and projects have undergone EcIA themselves and have either been adopted or consented, then they cannot pose likely significant adverse effects on European sites, priority habitats and species.

Plans

2.192. A review of the following plans was undertaken;

National Planning Framework 2040

2.193. 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.

2.194. 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").

2.195. 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 European

Designated 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.

2.196. 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)."

2.197. Thus, the in-combination impacts from the NPF, with the Proposed Development are not predicted to result in any Likely Significant Effects to any European Site(s).

Regional Spatial and Economic Strategy for the Eastern and Midland Region

2.198. 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), Screening for AA was undertaken at an early stage in the drafting of the RSES.

2.199. The AA Screening undertaken by ecologists at RPS on behalf of the Eastern and Midland 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.

2.200. The screening concluded that an AA 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, based on objective information, that the Plan, individually or in combination with other plans or projects, would have a significant effect on a European site.

2.201. Therefore, adopting the precautionary principle, it was concluded that a NIR should be prepared. The NIR (prepared by RPS on behalf of the Eastern and Midland Regional Assembly) considered the potential for the RSES to adversely affect the integrity of any Natura 2000 site(s), concerning their qualifying interests, associated conservation status, the structure/function of the site(s) and the overall site(s) integrity.

2.202. The Assembly determined that according to Article 6(3) of the Habitats Directive and Part XAB of the Planning and Development Act 2000-2018, the adoption and publication of the RSES as a replacement for the "Regional Planning Guidelines" for 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.

2.203. A consolidated Natura Impact Report (NIR) has been prepared in support of the Appropriate Assessment (AA) of the Offaly County Development Plan 2021-2027[21] in accordance with the requirements of Article 6(3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

2.204. All projects within the Plan area and receiving environment were considered in combination with any and all lower tiers projects that may arise due to the implementation of the Plan. Given the uncertainties that exist with regard to the scale and location of developments facilitated by the Plan, it is recognised that the identification of in-combination effects is limited, and that the assessment of in-combination effects will need to be undertaken in a more comprehensive manner at the project-level.

2.205. The effects that could arise from the Plan were examined in the context of several factors that could potentially affect the integrity of any European site. On the basis of the findings of this Screening for AA, it is concluded that the Plan:

- Is not directly connected with or necessary to the management of any European site; and
- May, if unmitigated, have significant effects on 38 (no.) European sites.

2.206. Consequently, a Stage 2 AA was required for the Plan. This assessed whether the Plan alone, or in-combination with other plans, programmes, and/or projects, would result in adverse impacts on the integrity of the 38 European sites brought forward from screening.

2.207. The Assessment of potential impacts on European sites was conducted utilising a standard source-pathway model (see approach referred to under Sections 1.3 and 3). The 2001 European Commission AA guidance outlines the following potential changes that may occur at a designated site, which may result in effects on the integrity and function of that site: loss/reduction of habitat area; habitat or species fragmentation; disturbance to key species; reduction in species density; changes in key indicators of conservation value (water quality etc.); and climate change.

2.208. The risks to the safeguarding and integrity of the qualifying interests, special conservation interests and conservation objectives of the European sites have been addressed by the inclusion of mitigation measures that will prioritise the avoidance of effects in the first place and mitigate effects where these cannot be avoided. In addition, all lower level plans and projects arising through the implementation of the Draft Plan will themselves be subject to AA/screening for AA when further details of design and location are known. In-combination effects from interactions with other plans and projects was considered in the assessment and the mitigation measures incorporated into the plan are seen to be robust to ensure there will

[21]CAAS Ltd, Consolidated Natura Impact Report in support of the Appropriate Assessment for the Offaly County Development Plan 2021-2027 (2021). Available at: https://www.offaly.ie/eng/Services/Planning/County-Development-Plan-2021-2027/Stage-2-Draft/Draft-Offaly-County-Development-Plan-2021-2027.html

be no significant effects as a result of the implementation of the Draft Plan either alone or in combination with other plans/projects.

2.209. With the incorporation of mitigation measures, it is concluded that the Draft Offaly County Development Plan is not foreseen to give rise to any significant effects on designated European sites, alone or in combination with other plans or projects

2.210. The above plan **is not predicted to result in any significant effects** to any European Designated site and there will be **no effects on European Designated sites from the Proposed Development**. Therefore, it has been concluded from the above assessments that there will be no in combination effect from the reviewed plans with the Proposed Development and associated future elements.

Projects

2.211. There is no standard prescriptive method for assessing in-combination effects of nearby proposed or consented developments subject to planning applications within a given area. Planning applications considered within this assessment have been screened by distance, scale and nature, and further determined by comparing potentially overlapping Zones of Influence from other projects in regard to species, habitats and designated sites.

2.212. Current guidance[22] from CIEEM states:

"The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change."

2.213. A search of the Offaly County Council planning portal was undertaken in November 2025 to identify key planning applications (projects) beyond the vicinity of the Proposed Development.

2.214. There are a number of smaller projects in the wider area. It is not considered that these projects would result in significant in-combination effects on any European designated sites. It can be concluded that if a Project has been adopted following an AA, then it cannot pose likely significant adverse effects on any European sites.

2.215. The search included key developments preceding the date of issue of this report and excluded retention applications and incomplete, withdrawn or refused applications. The relevant projects with the potential for in-combination likely significant effects on European sites are detailed in **Table 2-11**.

[22]CIEEM (2024) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3 Available at: https://cieem.net/wp-content/uploads/2018/08/EcIA-Guidelines-v1.3-Sept-2024.pdf

Table 2-11: Key Planning Applications within the surrounding area of the Proposed Amendment

Application Number	Type of Development	Development Description	Decision	Distance and Direction
N/A	SID	A 110kV substation, access road, interconnection cables and grid route. The Proposed Development is to facilitate the connection of Ballyteige (PA Ref: 2198) and Derrygrogan (PA Ref: 22378 and ABP 318041-23) solar farms to the national grid. The method of connection to the national grid for the new substation will be a 110kV tail-fed connection into the existing Thornsberry Substation.	N/A	0.00km north
2460002	Grid System	A 10-year planning permission. The development will consist of a grid system services facility within a total site area of 3.5 hectares	Conditional	3.55km west
2460514	Substation	Substation building within the existing car park to cater for 5no. Electric car charging points for 10no. Electric car parking spaces	Conditional	4.10km west
22378	Solar	10 years to construct and complete a solar pv energy development with a total site area of 73.9 hectares, to include a control building, inverter substations, modules, solar p	Conditional	0.75km north
218	Solar	A development consisting of a 52.75-hectare solar farm and battery energy storage system and 9.32-kilometre underground electricity grid con	Conditional	2.70km north
18167	Grid system	Rid system services facility within a total site area of 0.84 hectares, to include 1 no. Single storey electrical substation building, 1 no. Customer switchgear container, 17 no. 2mw electrical inverter/transformer station	Conditional	3.75km west
EX25008	Commercial	Construction of a maintenance depot with warehouses, on site car/truck parking area,	Conditional	3.40km west

301489	Residential	Construction of 12 two storey dormer semi-detached houses, 1 detached two storey dormer house and 7 terraced two storey dormer houses and all ancillary services.	Granted	4.70km west
311101	Residential	Development of 4 storey nursing home, step down facility and rehabilitation and convalescence unit to accommodate a total of 244 bedrooms, communal spaces, dining areas, administration, ancillary service spaces and meeting and consulting rooms. Site to accommodate 197 car park spaces	Granted	4.55km west
311741	Residential	349 no. Residential units (196 no. Houses, 153 no. Apartments	Awaiting	4.70km west
317318	Residential	A large-scale residential development (LRD). Construction of 102 dwellings in a mix of houses, duplex and apartments.	Granted	3.65km west
317341	Residential	Construction of 95 houses.	Granted	4.75km west
318041	Solar	10 years to construct solar energy development with ancillary development works. Solar farm will be operational for 35 years	Granted	0.05km north
318339	Residential	Construction of Large-Scale Residential Development (LRD) comprising 148 residential units	Granted	4.45km north

2.216. The adjacent proposed Colehill 110kV substation (Strategic Infrastructure Development application) will be submitted at the same time as this application. The SID has been subject to ecological assessment which determine there will be no loss of priority habitats or impacts on protected or notable species. Where there are impacts associated with the Proposed Development, appropriate mitigation measures have been considered. Given its location, the proposed SID assessed the Charleville Wood SAC for its hydrological connectivity with the site and the River Barrow and River Nore SAC for its ecological connectivity in respect to otter in the form of an AA Screening report. When assessing potential impacts for ecological features associated with European Designated site via a hydrological route, it was found any negative impacts would not be significant or effect the integrity of the Charleville Wood SAC as a result of construction mitigation measures and integral design measures. Alongside the measures

outlined within this report, **it was determined that this development would not have any significant impacts on any sensitive ecological receptors**. An assessment of in-combination effects was also undertaken, and **it was found that, in combination with other projects, this development would not have a significant cumulative impact**. .

2.217. **Planning consent 2460002** involves the construction of a grid system services facility that will compose of a substation, switch rooms, mounted modules, battery blocks and other ancillary works. Associated Ecological assessment and Appropriate Assessment Stage 1 Screening was conducted, and **it was determined that this development would not have any significant impacts on priority habitats and species or conservation objectives and qualifying interests of any European Designated sites**. An assessment of in-combination effects was also undertaken, and **it was found that, in combination with other projects, this development would not have a significant cumulative impact**.

2.218. **Planning Consent 2460514** involves a new prefabricated substation building within the existing car park to cater for 5no. electric car charging points for 10no. electric car parking spaces, along with all associated ancillary site works. Due to the nature and scale of the development, an Appropriate Assessment Stage 1 Screening was not required for the development. As the Proposed Development will include mitigation measures, it is **unlikely that in-combination effects from these developments will have a significant cumulative impact due to a lack of surrounding projects.**

2.219. **Planning Consent 22378 (ABP-318041)** involves the construction of a solar farm comprising of photovoltaic panels mounted on support structures, access tracks, construction compounds, security fencing, electric cabling, and all other associated works. Associated Ecological assessment and Natura Impact Statement was produced which states that, with the implementation of mitigation measures, this development **will not have a significant impact on any priority habitats and species or European Designated sites, their conservation objectives or qualifying interests.** A cumulative impact assessment was also undertaken which determined that **this development, in combination with other surrounding projects, will not have a significant cumulative impact on any European Designated sites due to a lack of surrounding projects**.

2.220. **Planning Consent 218** involved a Battery Energy Storage System and Solar Farm, an ecological assessment and NIS was produced to review any potential direct, indirect or cumulative impacts the development may have on European Designated Sites or their designated species or habitats. This NIS concluded that with the implementation of the mitigation measures and further measures within the CEMP report, **any adverse effects which could impact the integrity of any European Designated site as a result of the development would not be significant**.

2.221. **Planning Consent 18167** is a battery storage unit over 4km northwest of the substation location and approximately 200m east of the proposed grid route. Appropriate Assessment Screening report was produced in order to assess the potential impacts on European Designated sites. It was deduced that **no negative effects would result from the development**

though direct habitat loss or damage, no negative effects for the qualifying species of the European Designated designation sites and no negative effects on these designated sites arising from water quality impacts. Furthermore, it was stated there would be no potential negative impacts on European Designated sites as a result of Planning Consent 18167 in combination with other plans and projects.

2.222. Planning consent EX25008 is for the extension of the appropriate period for the construction of a maintenance depot with warehouses, on site car/truck parking area, effluent treatment system and revised site entrances and all associated site works and services. The submissions associated with this development were inaccessible at the time this assessment was completed. However, it is considered that with the implementation of measures to mitigate impacts on European Sites, there can be no potential for this development to give rise to LSEs in combination with the Proposed Amendment.

2.223. ACP-301489 is for the construction of a residential development. An AA screening was not required for this development as the urban location and the 2km distance between the subject site and the Charlesville Wood SAC. There would be no likely significant impact on European sites from the proposed development.

2.224. ACP-311101 involves the construction of a nursing home, facility and rehabilitation and convalescence unit with 224 bedrooms, a communal space, dining area and other facilities, a car park, site entrance, pump station and other associated works. An Appropriate Assessment Stage 1 Screening was carried out and it was concluded that this development would not have any significant impact on the conservation objectives or qualifying interests of any European Designated sites. In-combination effects were also considered during assessment, and it was determined that, in combination with other projects, there would be no significant cumulative impact.

2.225. ACP-311741 involves the construction of 349 residential units comprising of 196 houses and 153 apartments, a crèche and all other ancillary and associated works. A Natura Impact Assessment was produced for this development and within this report, it was concluded that this development would not have a significant impact on the conservation objectives or qualifying interests of any European Designated sites. In-combination effects were also considered, and it was determined that this project, in combination with other developments, would not have a significant cumulative impact.

2.226. Planning Consent 22523 (ACP-317318) involves the construction of a large-scale development consisting of 102 dwellings, with a mix of houses, duplex and bungalows, and a creche, as well as all other associated works. A Natura Impact Assessment was produced which stated that, with the implementation of mitigation and restrictive measures, this development is unlikely to have a significant effect on any European Designated sites, their conservation objectives, and qualifying interests. An assessment of in-combination effects was undertaken, and it was determined that this development, in combination with other surrounding projects, would not have a significant cumulative effect due to a lack of surrounding projects.

2.227. **ACP-317341** involves the construction of 95 residential unts comprising of terraced and semi-detached houses and all other associated siteworks. An Appropriate Assessment Stage 1 Screening was conducted, and **it was determined that this site would not adversely impact the conservation objectives or qualifying interests of any European Designated sites**. In-combination effects were also considered, and **it was concluded that this project, in combination with other projects, would not have a significant cumulative impact.**

2.228. **ABP-318041** involves the construction of a solar farm containing mounted photovoltaic panels, a substation, control building, inverter substations, temporary construction compounds, access tracks, security fencing and other associated works, which will remain in place for a period of 35 years. A Natura Impact Assessment was produced for this development, and **it was concluded that, with implementation of mitigation measures, this development would not have any significant impact on the conservation objectives or qualifying interest of European Designated sites.** In-combination effects were also assessed in this report, and **it was determined that, in combination with other projects, there would be no likely significant cumulative impact.**

2.229. **ABP-318339** involves the construction of Large-Scale Residential Development (LRD) comprising 148 residential units and creche. A Stage 1 AA screening report was produced for this development, and **it was concluded that, the development has no potential pathways for connectivity to impact any European Sites and Stage 2 AA was not required.** In-combination effects were also assessed in this report, and **it was determined that, in combination with other projects, there would be no likely significant cumulative impact.**

2.230. The developments listed above were all granted subject to conditions with the conclusion that there would be no significant effects on European Designated sites. It has been concluded that, due to the nature of the Amendment, the conclusive statements for the above developments, that the Proposed Development will **not have any significant direct or indirect cumulative impact on the conservation objectives any associated European Designated site.**

2.231. As described above in the mitigation section above, measures put in place within the Application site will ensure no impacts to the connected European Designated sites occur.

2.232. **No likely significant cumulative effects** on any European Designated sites are expected as a result of the planning developments listed in **Table 6-1** Therefore, it is considered that the Proposed Amendment in combination with other proposed developments in the wider area, will have **no likely significant cumulative effect**.

CONCLUSION

2.233. To minimise potential effects 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 2-12** 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 2-12 below.

2.234. A total of eleven habitat types were noted during the Fossitt habitat surveys undertaken in June 2020. The Fossitt habitat survey was updated on 10th October 2024 to maintain the validity of the baseline survey.

2.235. 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 construction of the Proposed Amendment will occur over land which has been identified as mainly improved grassland and arable crop, with small areas of scrub, woodland, conifer planation, wet grassland and dry-humid acid grassland also present. The habitats proposed for removal are broadly of low intrinsic ecological value and are abundant within the wider area. The loss of small amounts of these is considered not significant in terms of effects on nature conservation.

2.236. The desk-based assessment identified six Special Areas of Conservation (SAC): Clara Bog SAC, Raheenmore Bog SAC, Split Hills and Long Hill Esker SAC, Lough Ennell SAC, River Barrow and River Nore SAC and Charleville Wood SAC, and no Special Protection Areas (SPAs). The desk study also identified one Natural Heritage Area, Daingean Bog NHA, and three potential Natural Heritage Areas (Murphy's Bridge Esker pNHA, Rahugh Ridge (Kiltober Esker) pNHA and The Grand Canal pNHA). These designated sites have been outlined and fully assessed below and (where appropriate) within the supporting AA Screening and Natura Impact Statement.

2.237. Clara Bog SAC, Raheenmore Bog SAC, Split Hills and Long Hill Esker SAC, Lough Ennell SAC, Murphy's Bridge Esker pNHA and Rahugh Ridge (Kiltober Esker) pNHA are not connected to the Application Site hydrologically, ornithologically or ecologically. The Application Site is hydrologically connected with the Charleville Wood SAC through a stream in the southeast of the Application Site flowing into the Puttaghan Stream, a tributary of the Tullamore River. This river flows through Charleville Wood SAC. The River Barrow and River Nore SAC and The Grand Canal pNHA are ecologically connected to the Proposed Amendment. The findings of the AA Screening conclude that there will be no adverse effects for the integrity of any Natura 2000 sites from the Proposed Development.

2.238. Further survey work as part of the relevant mitigation measures has been provided within this report (please refer to Table 2-13 below).

2.239. It is considered that the disturbance from the Proposed Amendment will not be significant, if the recommended measures are implemented. With the implementation of the Biodiversity Management Plan (BMP), the potential of the site to support local wildlife will increase. This will result in a net gain for biodiversity.

Table 2-12: Integral Design and Standard Best Practice Measures

Site/ Species	Potential Development Impacts	Phase of Development	Measures implemented
INTEGRAL DESIGN MEASURES			
Aquatic environment	Pollution	Construction	2m to 5m buffer around drainage ditches 10m buffer from OPW Watercourse
Badger	Exclusion from foraging habitat	Operational	Buffers around all badger setts: 10m (no construction activities) / 20m (only light work, with no use of wheeled vehicles) / 30m (no use of heavy machinery) Security fencing is to have mammal gates to allow free movement of badgers through the site.
Otter	Exclusion from foraging habitat	Operational	Security fencing is to have mammal gates to allow free movement of otters through the site.
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 2-13: 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 all vegetation to be removed (Only if works are undertaken between March and August) (Measures dependant on survey findings).

APPENDICES

Appendix 2A -Figures

- Figure 2.1 – Environmental Designations Map
- Figure 2.2 – Habitat Map

Appendix 2B – Site Photographs

Appendix 2C – Habitat of Bat Species in Ireland

Appendix 2D – Biodiversity Management Plan

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