MKO Planning and Environmental Consultants

Ecological Impact Assessment

Section 146(B) Request for an Amended Grid Connection Route – Ballinrea, Co. Cork

DOCUMENT DETAILS

Client:	**Ballinrea Solar Farm Ltd**
Project Title:	**Section 146(B) Request for an Amended Grid Connection Route – Ballinrea, Co. Cork**
Project Number:	**251139**
Document Title:	**Ecological Impact Assessment**
Document File Name:	**EcIA – F - 251139– 2026.03.03**
Prepared By:	**MKO** **Tuam Road** **Galway** **Ireland** **H91 VW84**

Planning and Environmental Consultants

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01	Draft	20/02/2026	AMc	PD
02	Draft	26/02/2026	AMc	PD
03	Final	03/03/2026	AMc	PD

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1. INTRODUCTION

1.1 Background

MKO was commissioned by Ballinrea Solar Farm Ltd to prepare an Ecological Impact Assessment (EcIA) for an amended grid connection route – Shannonpark, Co. Cork. It is proposed to amend the permitted grid connection (An Comisiún Pleanála Case number: 317706) between the permitted Ballinrea Solar Farm (Cork County Council Planning Ref. No. 17/6784 & ABP-303013-18, as subsequently modified by Planning Ref. No. 23/4563 & ABP-318915-24) and the existing Raffeen substation. For the purpose of this report the proposed amended grid connection route is referred to as the "Proposed Development".

The EcIA includes an accurate description of all aspects of the proposed development. It then provides a description of the baseline ecological environment, which is based on an appropriate level of survey work that was carried out in accordance with the most appropriate guidelines and methodologies. The EcIA then completes a thorough assessment of the impacts of the Proposed Development on biodiversity. Where likely ecologically significant effects are identified, measures are prescribed to avoid, minimise or compensate for such effects.

1.2 Statement of Authority

A baseline ecological survey was carried out on the 6th of February 2026 by Pádraig Desmond (B.Sc.). This report has been prepared by Andrew McCarthy (B.Sc.) and reviewed by Pádraig Desmond. Pádraig holds an honours B.Sc. degree in Ecology and Environmental Biology and has over five years of professional experience in ecological consultancy. Pádraig has prepared a range of ecological assessments and reports for a wide variety of projects.

1.3 Relevant Guidance and Documents

The guidelines/documents listed below were consulted in the preparation of this report to provide the scope, structure and content of the assessment:

- Bat Mitigation Guidelines for Ireland – V2. Irish Wildlife Manuals, No. 134. (Marnell, Kelleher & Mullen 2022).
- Bat Surveys for Professional Ecologists – Good Practice Guidelines (3rd/4th edn.) (Collins, 2016/2023).
- CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester).
- Ecological Surveying Techniques for Protected Flora and Fauna During the Planning of National Road Schemes (National Roads Authority (TII, 2008).
- Environmental Assessment and Construction Guidelines (TII, 2006).
- Environmental Impact Assessment of National Road Schemes –A Practical Guide (TII, 2009).
- Guidelines for assessment of Ecological Impacts of National Road Schemes, (TII, 2009).
- Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018) (amended 2021).
- Guidelines for the Treatment of Bats during the Construction of National Road Schemes (TII, 2006b).
- Guidelines on the information to be contained in Environmental Impact Statements (EPA, 2022).
- The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments, Unpublished NPWS report (NPWS, 2025).
- The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments, Unpublished NPWS report (NPWS, 2025).

2. DESCRIPTION OF PROPOSED DEVELOPMENT

2.1 Site Location

The permitted development under ABP-317706-23 is located within the townlands of Ballinrea, Ballinrea South, Ardnacloghy, Shannonpark, Hilltown, Carrigaline Middle, Ballyhemiken, Carrigaline, Carrigaline East and Raffee, Co. Cork. The proposed amendment to the grid connection route, as decsribed in section 2.1.1 below, is located solely within the townland of Shannonpark, Co. Cork, approximately 2.3 km north of Carrigaline and approx. 15 km southwest of Cork city (Grid reference W 67637 71907). The site lies roughly 2.65km to the west of the Cork Harbour SPA. The Proposed Development site is accessed off the L2473 via the Ballinrea Road and the Shannonpark Road, both of which are regional roads.

The site location is shown in Figure 2-1.

2.1.1 Description of the Proposed Development

The development of a 110 kV substation, grid connection and associated infrastructure at Ballinrea, Co. Cork has previously been granted permission by An Bord Pleanála as 'Strategic Infrastructure Development" (SID) under the provisions of Section 182A of the Planning and Development Act 2000 as amended (Case Number ABP-317706-23).

The permitted development comprises the following;

- *The construction of a permanent 110 kV electrical substation in the townland of Ballinrea at the site of the permitted Ballinrea Solar Farm (Pl Ref. 17/6784, ABP Ref. PL04.303013). The proposed 110kV electrical substation includes 2 no. single storey control buildings with welfare facilities, associated electrical plant and apparatus, security fencing, entrance gate, fire wall, 4 no. lighting columns, 1 no. telecoms pole (c. 20.7m above ground), 7 no. lightning masts (c. 18m above ground), underground cabling, wastewater holding tank, watermains connection, site drainage; and all ancillary works;*
- *1 no temporary construction compound with temporary site offices and staff facilities, in the townland of Ballinrea;*
- *Realignment of the permitted internal access track permitted under Pl Ref. 17/6784, ABP Ref. PL04.303013 and the provision of a new internal cable maintenance track;*
- *Temporary alterations to the site entrance for construction phase and reinstatement of same post-construction;*
- *110kV tail fed underground electricity interconnection cables c. 6.25km in length and associated fibre cable connecting the proposed 110kV Substation at Ballinrea to the existing 220kV Raffeen Substation with underground ducting, 9 no. joint bays, communication chambers and associated site development and reinstatement works;*
- *A new 110kV cable bay, electrical equipment, the provision of a new cable maintenance track and ancillary works at the existing 220kV Raffeen Substation compound;*
- *All associated site development works, landscaping and apparatus.*

The 110kV substation and grid connection to Raffeen 220kV substation facilitate the connection of two permitted solar farms in the local area to the national grid;

- Ballinrea Solar Farm – Planning Ref. No. 17/6784 & ABP-303013-18, as subsequently modified by Planning Ref. No. 23/4563 & ABP-318915-24;
- Ballinvuskig Solar Farm – Planning Ref. No. 19/5371 & ABP-305186-19, as modified by Planning Ref. No. 23/41837 & ABP-318925-24.

Ballinrea solar farm is over midway through construction with civil works and piling for solar PV arrays nearing completion, Mechanical assembly and cable installations are also ongoing across the site. Civil works are ongoing on Ballinvuskig Solar Farm and ramming works commenced in January 2026 with completion forecast for early April 2026. All major solar farm deliveries including, PV modules, support structures, inverters and transformer centres were complete as of early January 2026. Regarding the Grid and the civil installation for the 33kV cable connection between the Ballinrea and Ballinvuskig sites is complete and the IPP substation and 110kV substation works are significantly advanced with buildings substantially complete from a civils perspective and electrical fit-out ongoing. The grid transformer was delivered to site in late January 2026.This report is prepared in support of a request to An Comisiún Pleanála to alter the permitted SID scheme in accordance with Section 146B of the Planning and Development Act 2000, as amended. In summary the proposed amendment comprises the relocation of c. 370m of the permitted 110kV grid connection from the public road (L2473 Shannonpark Road) to adjacent consented third party lands.

The proposed amendments, hereinafter referred to as the 'Proposed Development' includes for the following:

- The underground cable will leave the Shannonpark road, passing through an existing entrance onto consented third-party lands (Folio no. CK77185F) for approximately 370m before joining existing ducting at the M28 crossing in the east (as per the permitted SID route). The proposed works include the relocation of one joint bay (Joint Bay 06) to the consented third-party lands.
- A corridor of c. 5-10m in width will be required to accommodate the cable trenching works and installation of the joint bay. The underground cable works will consist of the installation of 6 No. ducts in an excavated trench to accommodate 3 No. power cables, 2 No. fibre communications cables and 1 No. earth continuity conductor. The altered grid route will be mainly through agricultural lands, and will require removal of c. 100m of scrub in proximity to the M28 crossing.
- Once the cable trenching is complete the ground will be reinstated with an access track c. 3m in width. This is required as per Eirgrid specifications to permit future access to the joint bay (bay (refer to drawing no. 300101179-DR-807)

Details with regards the method of construction for the permitted cable grid route and substation were provided in the Construction Methodology, prepared by the TLI Group (Report ref 05887-R04-01, June 2023). TLI have prepared an addendum report to accompany this alteration application. Note that there will be no changes to the methodology for constructing the cable or joint bay in the proposed offroad sections.

The layout of the Proposed Development is indicated in Figure 2-2, Figure 2-3, and Figure 2-4.

Map Legend

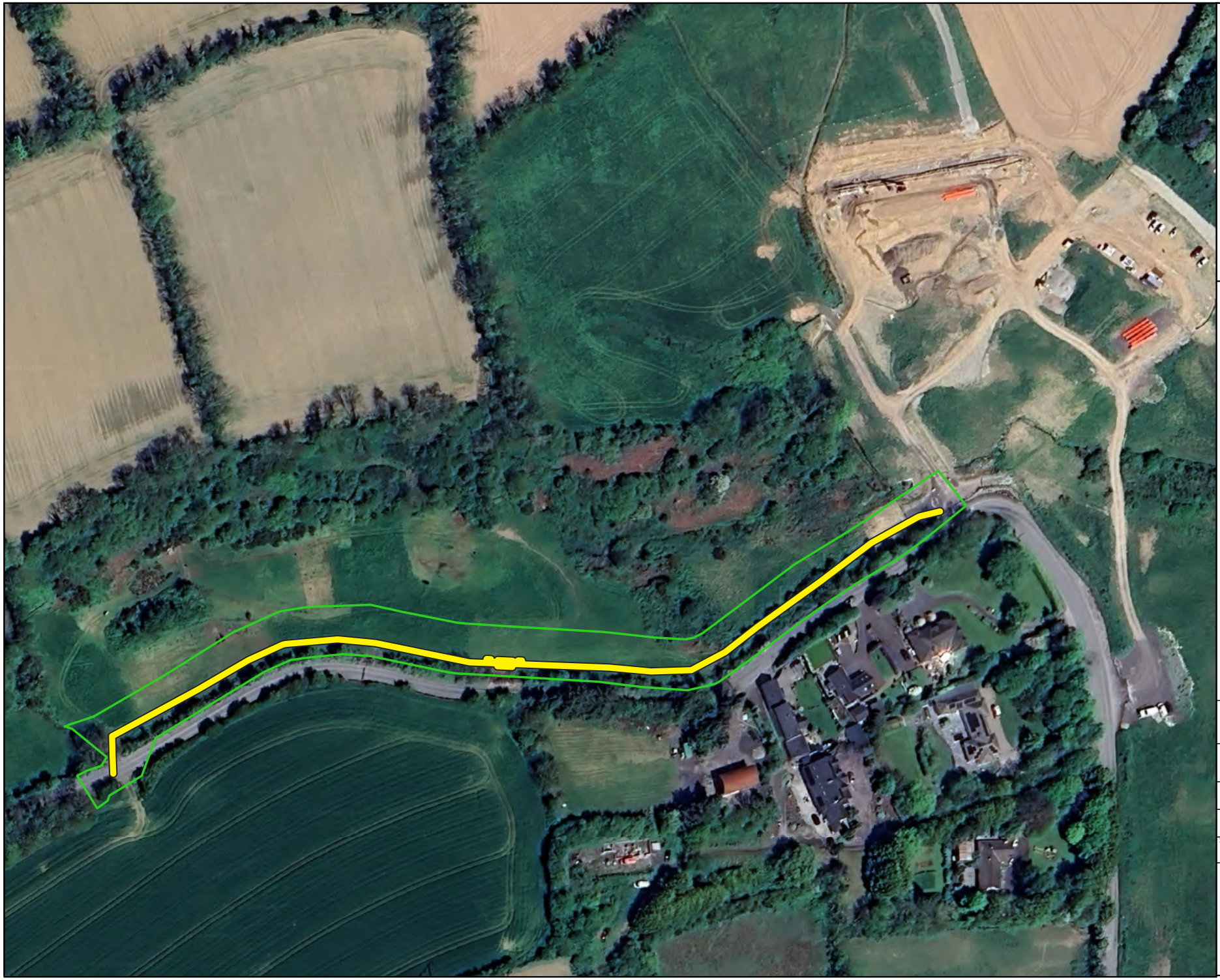
Boundary of proposed works

Drawing Title

Site Location

Project Title: Ballinrea Grid Connection Amendment	
Drawn By: AMc	Checked By: PD
Project No.: 251139	Drawing No.: Figure 2-1
Scale: 1:60,000	Date: 04/03/2026

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: www.mkoireland.ie



Map Legend

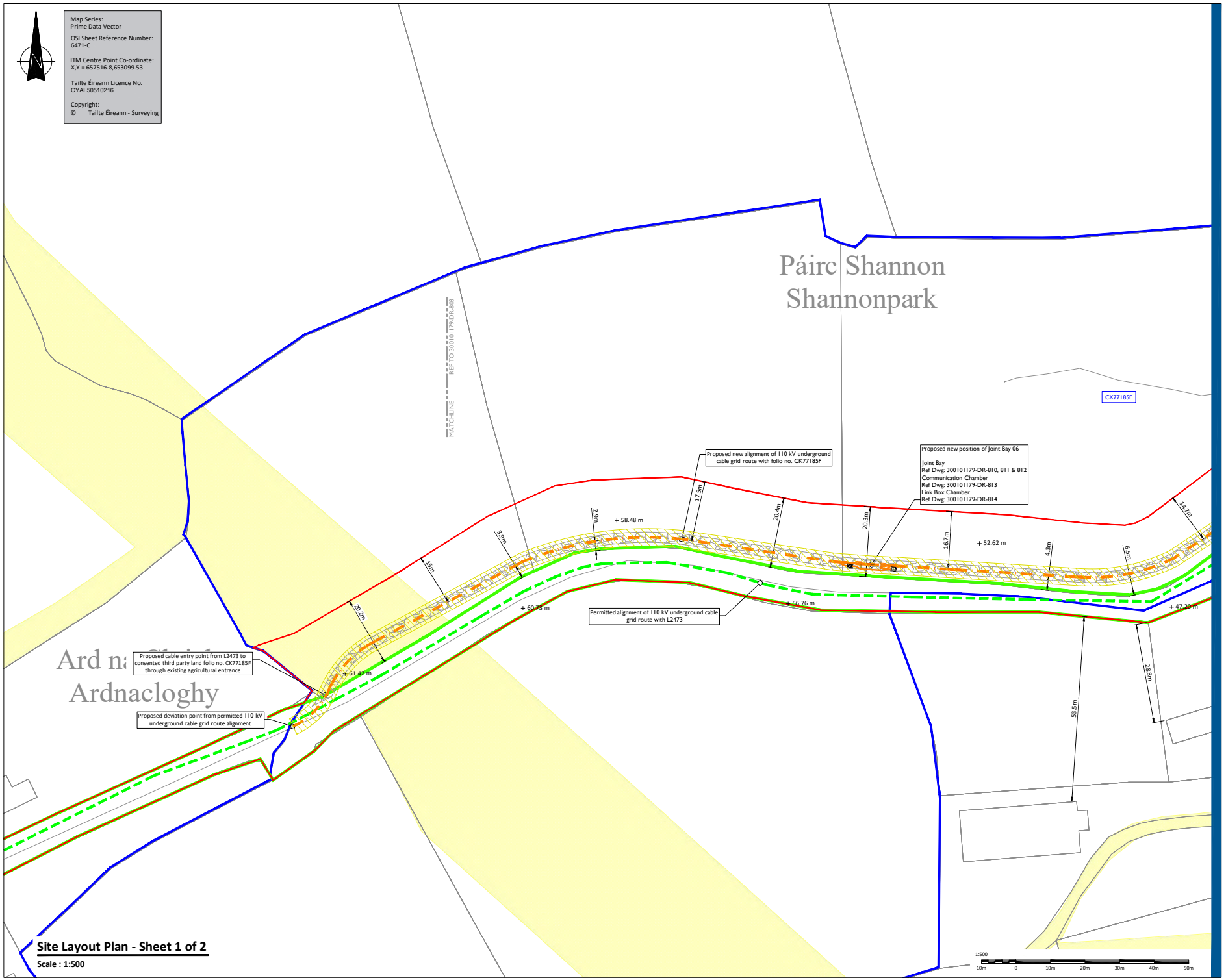
- Proposed Grid Connection Amendment Route
- Boundary of Proposed Works

Drawing Title: Project Layout

Project Title: Ballinrea Grid Connection Amendment

Drawn By	Checked By
AMc	PD
Project No.	**Drawing No.**
251139	Figure 2-2
Scale	**Date**
1:2,000	04.03.2026

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: ww.mkoireland.ie



Site Layout Plan - Sheet 1 of 2

Scale : 1:500

ISO A1 594mm x 841mm

Project Management Initials: Designer: POS Checked: ER Approved: AC

tli GROUP

Head Office
Beenreigh,
Abbeydorney,
Tralee, Co. Kerry
Ireland
Tel: 00353 66 7135710

Regional Office
Basepoint Business Centre
Stroudley Road, Basingstoke,
Hampshire,
RG24 8UP, UK
Tel: 00 44 1256406664

PROJECT

Ballinrea 110kV Grid Route
S146B Alteration Application

CLIENT

kirby engineering & construction

CONSULTANTS

Issued for Planning Amendment
Not for Construction
02.03.2026

NOTES: -

- Path of cable route and location of associated Joint Bays, Link Boxes and Comms Chambers may vary depending on site conditions and following detailed design. Deviations will remain within the planning boundary at all times.
- Other services may be encountered along the route.
- Final levels may vary depending on local ground condition.

LEGEND: -

- Proposed Planning Amendment Red Line Boundary
- Permitted Planning Application Boundary
- Consented Third Party Landowner Boundary
- Permitted 110 kV Underground Cable Grid Route
- Proposed 110 kV Underground Cable Grid Route Amendment
- Proposed 3 m Wide Permanent Access Track
- Statutory Wayleave in Respect of the 110 kV Cable Route
- Spot Height + 47.20 m
- Existing Wayleave

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P5	02.03.26	Issued for Planning Amendment
P4	25.02.26	Issued for Planning Amendment
P3	09.02.26	Issued for Planning Amendment
P2	03.02.26	Issued for Planning Amendment
P1	12.12.25	Issued for Planning Amendment

PROJECT NUMBER

300-101179

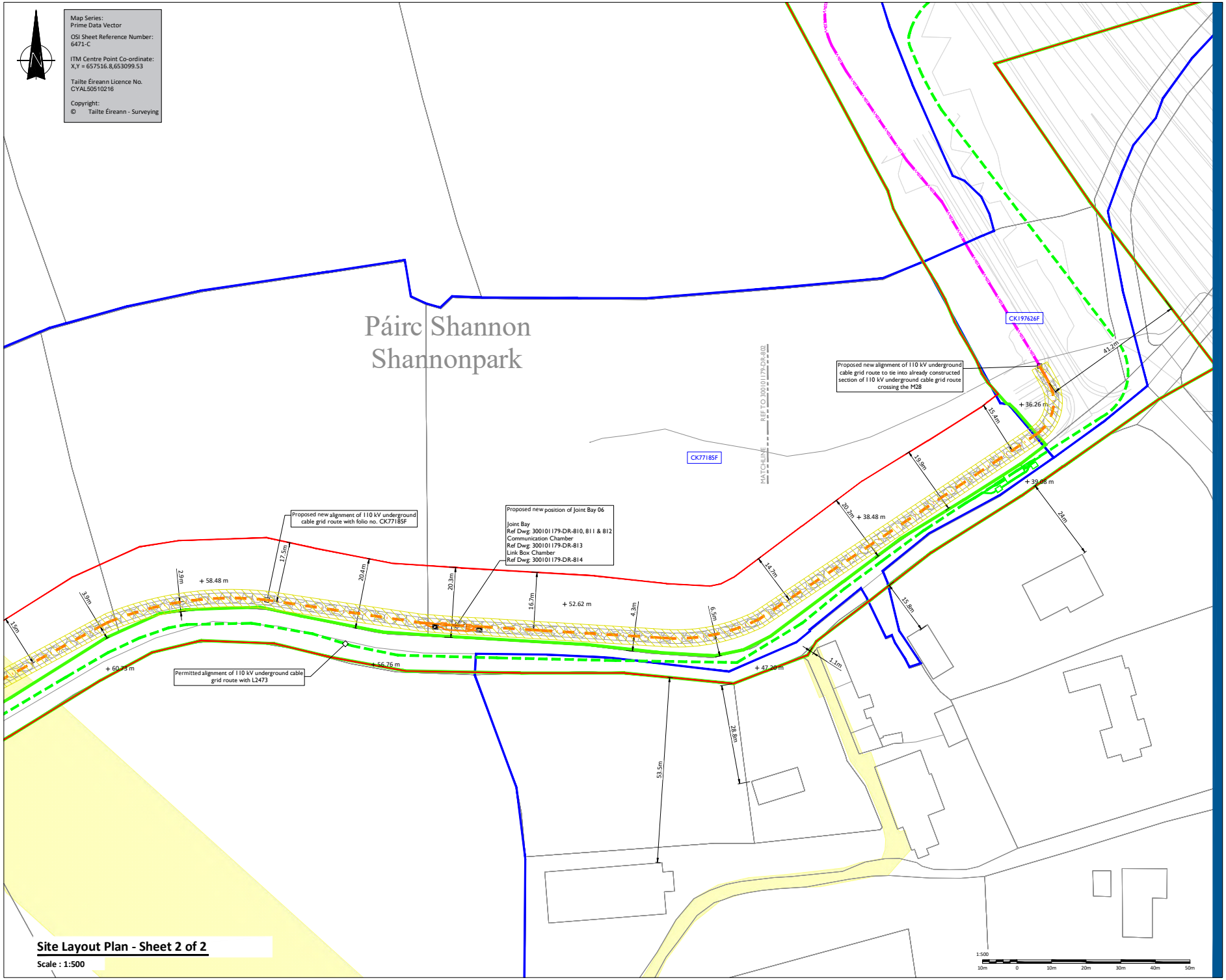
SHEET TITLE

Site Layout Plan
Sheet 1 of 2

Figure 2-3

SHEET NUMBER

300101179-DR-802



Site Layout Plan - Sheet 2 of 2

Scale : 1:500

ISO A1 594mm x 841mm

Project Management Initials: Designer: POS Checked: ER Approved: AC

tli GROUP

Head Office
Beenreigh,
Abbeydorney,
Tralee, Co. Kerry
Ireland
Tel: 00353 66 7135710

Regional Office
Basepoint Business Centre
Stroudley Road, Basingstoke,
Hampshire,
RG24 8UP, UK
Tel: 00 44 1256406664

PROJECT

Ballinrea 110kV Grid Route
S146B Alteration Application

CLIENT

kirby engineering & construction

CONSULTANTS

Issued for Planning Amendment
Not for Construction
02.03.2026

NOTES: -

- Path of cable route and location of associated Joint Bays, Link Boxes and Comms Chambers may vary depending on site conditions and following detailed design. Deviations will remain within the planning boundary at all times.
- Other services may be encountered along the route.
- Final levels may vary depending on local ground condition.

LEGEND: -

- Proposed Planning Amendment Red Line Boundary
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- Proposed 110 kV Underground Cable Grid Route Amendment
- Built 110 kV Underground Cable Grid Route
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- Statutory Wayleave in Respect of the 110 kV Cable Route
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P1	12.12.25	Issued for Planning Amendment

PROJECT NUMBER

300-101179

SHEET TITLE

Site Layout Plan
Sheet 2 of 2

Figure 2-4

SHEET NUMBER

300101179-DR-803

3. METHODOLOGY

The following sections describe the methodologies followed to establish the baseline ecological condition of the Proposed Development site and surrounding area. Assessing the impacts of any project and associated activities requires an understanding of the ecological baseline conditions prior to and at the time of the project proceeding. Ecological Baseline conditions are those existing in the absence of proposed activities (CIEEM, 2018).

3.1 Desk Study

A desk study was undertaken to inform this ecological impact assessment. This study includes a thorough review of available information that is relevant to the ecology of the site of the proposed development. This information provides valuable existing data and also helps in assessing the requirement for additional ecological surveys.

The following list describes the sources of data consulted:

- Environmental Protection Agency (EPA), Water Framework Directive (WFD) Mapping.[1]
- Review of NPWS Article 17 metadata and GIS database files.[2]
- Designated site data from the National Parks and Wildlife Service (NPWS).[3]
- National Biodiversity Data Centre (NBDC) online mapper.[4]Review of RSK Ireland Ltd. 2023 Badger Survey Report

3.1.1 Designated Sites

3.1.1.1 *Identification of the Designated Sites within the Likely Zone of Influence (ZOI) of the Proposed development*

The potential for the Proposed Development to impact on sites that are designated for nature conservation was considered in this EcIA.

Special Areas of Conservation (SACs) and Special Protection Areas for Birds (SPAs) are designated under the EU Habitats Directive and EU Birds Directive, respectively and are collectively known as 'European Sites'. The potential for significant effects and/or adverse impacts on the integrity of European Sites is fully assessed in the AA Screening Report that accompanies this application.

Natural Heritage Areas (NHAs) are designated under Section 18 the Wildlife (Amendment) Act 2000 and their management and protection is provided for by this legislation and planning policy.

Proposed Natural Heritage Areas (pNHAs) were designated on a non-statutory basis in 1995 but have not since been statutorily proposed or designated. However, the potential for effects on these designated sites is fully considered in this assessment.

The following methodology was used to establish which sites that are designated for nature conservation have the potential to be impacted by the proposed development:

[1] https://gis.epa.ie/EPAMaps/
[2] https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17
[3] https://www.npws.ie/maps-and-data/designated-site-data
[4] https://maps.biodiversityireland.ie/Map

- All designated sites within the vicinity of the Proposed development site were identified. In addition, the potential for connectivity with European or Nationally designated sites at greater distances from the Proposed development site was also considered in this initial assessment.
- The designation features of these sites, as per the NPWS website (www.npws.ie), were consulted and reviewed at the time of preparing this report.
- Where potential pathways for Significant Effect are identified, the site is included within the Likely Zone of Influence (ZoI) and further assessment is required.

3.2 Field Surveys

3.2.1 Multi-disciplinary ecological walkover surveys

Multi-disciplinary ecological walkover surveys were undertaken in accordance with NRA Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes (NRA, 2009b). This survey provided baseline data on the ecology of the study area. The walkover surveys were designed to detect the presence, or suitable habitat for a range of protected faunal species that may occur in the vicinity of the proposed development.

Habitats were classified in accordance with the Heritage Council's 'Guide to Habitats in Ireland' (Fossitt, 2000). Habitat mapping was undertaken with regard to guidance set out in 'Best Practice Guidance for Habitat Survey and Mapping' (Smith et al., 2011).

During the multidisciplinary surveys, a search for Invasive Alien Species (IAS), with a focus on those listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2011), was also conducted.

3.3 Methodology for Assessment of Impacts and Effects

3.3.1 Determining Importance of Ecological Receptors

The importance of the ecological features identified within the study area was determined with reference to a defined geographical context. This was undertaken following a methodology that is set out in Chapter 3 of the 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (NRA, 2009b). These guidelines set out the context for the determination of value on a geographic basis with a hierarchy assigned in relation to the importance of any particular receptor. The guidelines provide a basis for determination of whether any particular receptor is of importance on the following scales:

- International
- National
- County
- Local Importance (Higher Value)
- Local Importance (Lower Value)

The Guidelines clearly set out the criteria by which each geographic level of importance can be assigned. Locally Important (lower value) receptors contain habitats and species that are widespread and of low ecological significance and of any importance only in the local area. Internationally Important sites are either designated for conservation as part of the Natura 2000 Network (SAC or SPA) or provide the best examples of habitats or internationally important populations of protected flora and fauna. Specific criteria for assigning each of the other levels of importance are set out in the guidelines and have been followed in this assessment. Where appropriate, the geographic frame of reference set out above was adapted to suit local circumstances. In addition, and where appropriate, the conservation status of habitats and species is considered when determining the significance of ecological receptors.

Any ecological receptors that are determined to be of Local Importance (Higher Value), County, National or International importance following the criteria set out in NRA (2009a) are considered to be Key Ecological Receptors (KERs) for the purposes of ecological impact assessment if there is a pathway for effects thereon. Any receptors that are determined to be of Local Importance (Lower Value) are not considered to be KERs.

3.3.2 Characterisation of Impacts and Effects

The Proposed Development site will result in a number of impacts. The ecological effects of these impacts are characterised as per the CIEEM 'Guidelines for Ecological Impact Assessment in the UK and Ireland (2018). The headings under which the impacts are characterised follow those listed in the guidance document and are applied where relevant. A summary of the impact characteristics considered in the assessment is provided below:

- **Positive or Negative.** Assessment of whether the Proposed Development site result in a positive or negative effect on the ecological receptor.
- **Extent.** Description of the spatial area over which the effect has the potential to occur.
- **Magnitude** to size, amount, intensity and volume. It should be quantified if possible and expressed in absolute or relative terms e.g. the amount of habitat lost, percentage change to habitat area, percentage decline in a species population.
- **Duration** is defined in relation to ecological characteristics (such as the lifecycle of a species) as well as human timeframes. For example, five years, which might seem short-term in the human context or that of other long-lived species, would span at least five generations of some invertebrate species.

- **Frequency and Timing.** This relates to the number of times that an impact occurs and its frequency. A small-scale impact can have a significant effect if it is repeated on numerous occasions over a long period.
- **Reversibility.** This is a consideration of whether an effect is reversible within a 'reasonable' timescale. What is considered to be a reasonable timescale can vary between receptors and is justified where appropriate in the impact assessment section of this report.

3.3.3 Determining the Significance of Effects

The ecological significance of the effects of the Proposed Development site are determined following the precautionary principle and in accordance with the methodology set out in Section 5 of CIEEM (2018). The NRA *Guidelines for assessment of Ecological Impacts of National Road Schemes*, (NRA, 2009a) were also considered when determining significance and the assessment is in accordance with those guidelines.
For the purpose of EcIA, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local (CIEEM, 2018).

When determining significance, consideration is given to whether:

- Any processes or key characteristics of key ecological receptors will be removed or changed.
- There will be an effect on the nature, extent, structure, and function of important ecological features.
- There is an effect on the average population size and viability of ecologically important species.
- There is an effect on the conservation status of important ecological habitats and species.

4. DESK STUDY

4.1 Designated Sites

A map of all Nationally Designated Sites in the vicinity of the Proposed Development site is shown in Figure 4-1. European Sites within the vicinity of the Proposed Development site are shown in Figure 4-2.

Table 4-1 provides details of all relevant Nationally designated sites initially considered to potentially be within the ZoI of the Proposed development. All European Designated Sites are fully described and assessed in the Appropriate Assessment Screening Report accompanying the planning application for the Proposed development. There were no European Sites identified to be within the ZoI of the Proposed Development; therefore a Natura Impact Statement was not required.

No designated sites were considered to be within the likely ZoI of the Proposed Development as discussed further in Table 4.1 below.

Map Legend

- Proposed Natural Heritage Area (pNHA)
- Natural Heritage Area (NHA)
- WFD Hydrological Catchments
- WFD River Waterbodies
- Boundary of Proposed Works

Drawing Title: Nationally Designated Sites within the Likely Zone of Influence

Project Title: Ballinrea Grid Connection Amendment

Drawn By	Checked By
AMc	PD
Project No.	Drawing No.
251139	Figure 4-1
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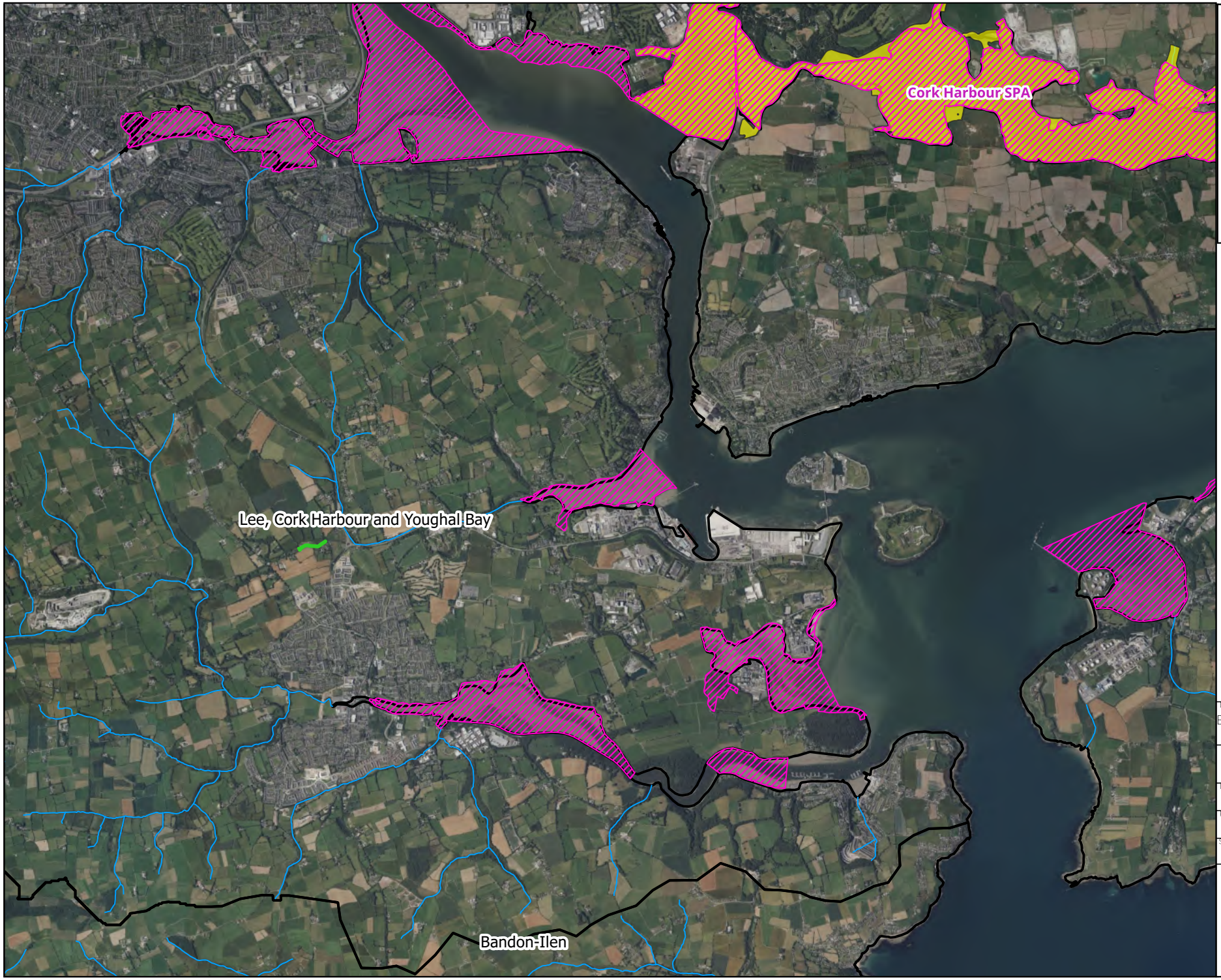
MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: ww.mkoireland.ie



Map Legend

- WFD Hydrological Catchments
- WFD River Waterbodies
- Special Areas of Conservation (SACs)
- Special Protected Areas (SPAs)
- Boundary of Proposed Works

Drawing Title
European Designated Sites within the Likely Zone of Influence

Project Title
Ballinrea Grid Connection Amendment

Drawn By	Checked By
AMc	PD
Project No.	Drawing No.
251139	Figure 4-2
Scale	Date
1:65,000	04.03.2026

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: www.mkoireland.ie

Table 4-1 Nationally Designated Sites

Designated Sites and distance from proposed works	Zone of Impact Determination
Natural Heritage Areas (NHA)	
There are no NHAs in the vicinity of the proposed development.	
Proposed Natural Heritage Areas (pNHAs)	
Monkstown Creek pNHA [001979] Distance: ~2.6km Hydrological distance: ~2,5km	There is no potential for direct effects as the Proposed Development is located outside the boundary of this designated site. No surface water connectivity was identified between the Proposed Development and this pNHA during the desk study. However, an unmapped watercourse was recorded within the Proposed Development site, which has downstream connectivity to this pNHA. Whilst significant effects are not anticipated on this National Site, given the short-term nature and scale of the Proposed Development, as well as the very small size of this watercourse, taking a highly precautionary approach, this pNHA is within the **Likely Zone of Influence.**
Douglas River Estuary pNHA [001046] Distance: ~4.9 km Hydrological distance: ~11.6 km	There is no potential for direct effects as the Proposed Development is located outside the boundary of these designated sites. No surface water connectivity was identified between the Proposed Development and the pNHAs during the desk study. Whilst an unmapped water course was recorded during the site visit, this was a very small water course which was culverted and did not provide a significant pathway for significant effects on these national sites as a result of deterioration of water quality. Given the nature and scale of the Proposed Development no new pathway for significant effects on these sites as a result of the proposed amendments has been identified. **These sites are not within the Likely Zone of Influence and no further assessment is required.**
Lough Beg (Cork) pNHA [001066] Distance: ~4.8 km Hydrological distance:~8 km	
Owenboy River pNHA [001990] Distance: ~2.01 km Hydrological distance:~13.9 km	
Whitegate Bay pNHA [001084] Distance: ~9.5 km Hydrological distance: ~9.6km	
Great Island Channel pNHA [001058] Distance: ~7.2 km Hydrological distance: ~9.5 km	
Dunkettle Shore pNHA [001082] Distance: ~7.6 km	

Designated Sites and distance from proposed works	Zone of Impact Determination
Natural Heritage Areas (NHA)	
Hydrological distance: ~13.5 km	
Cuskinny Marsh pNHA [001987] Distance: ~9.0 km Hydrological distance:~10.7 km	
Rostellan Lough, Aghada Shore and Poulnabibe Inlet pNHA [001076] Distance: ~11.9 km Hydrological distance:	
Rockfarm Quarry, Little Island pNHA [001074] Distance: ~7.2 km Hydrological distance:	There is no potential for direct effects as the Proposed Development is located entirely outside of these designated sites. Given the nature and scale of the Proposed Development, the terrestrial nature of these pNHAs and the separation distance between the Proposed Development site and these pNHAs, there is no potential for significant indirect effect. Therefore, there is no source-pathway-receptor chain for impact. **These sites are not within the Likely Zone of Influence and no further assessment is required.**
Templebreedy National School, Crosshaven pNHA [000107] Distance: ~7.8 km Hydrological distance: ~11.5 km	

4.6 Biodiversity Ireland Database

The National Biodiversity Data centre database was accessed on the 14th of January 2026 and the following information was obtained. Table 4-2 lists all records of the protected species (excluding birds) recorded within the hectads pertaining to the current study area (W76). The database was also searched for records of Third Schedule non-native invasive species within these hectads. Table 4-3 lists the non-native invasive species recorded within the hectad. Table 4-4 shows all birds listed as Annex I of the EU Birds Directive and those on the Bird of Conservation Concern Ireland (BOCCI) red list previously recorded within the hectads.

Table 4-2 Protected species recorded in 10km squares.

Common Name	Scientific Name	Status
Badger	*Meles meles*	WA
Beluga whale	*Delphinapterus leucas*	Annex IV, WA
Brown long-eared bat	*Plecotus auritus*	Annex IV, WA
Bottlenose dolphin	*Tursiops truncatus*	Annex II, IV, WA
Common frog	*Rana temporaria*	Annex V, WA
Common pipistrelle	*Pipistrellus pipistrellus*	Annex IV, WA
Daubenton's bat	*Myotis daubentonii*	Annex IV, WA
Fallow deer	*Dama dama*	WA
Fin whale	*Balaenoptera physalus*	Annex IV, WA
Grey seal	*Halichoerus grypus*	Annex II, V, WA
Harbour porpoise	*Phocoena phocoena*	Annex II, IV, WA
Harbour seal	*Phoca vitulina*	Annex II, V, WA
Hedgehog	*Erinaceus europaeus*	WA
Irish hare	*Lepus timidus subsp. hibernicus*	Annex V, WA
Irish stoat	*Mustela erminea subsp. hibernica*	WA
Killer whale (orca)	*Orcinus orca*	Annex IV, WA
Leatherback turtle	*Dermochelys coriacea*	Annex IV, WA
Leisler's bat	*Nyctalus leisleri*	Annex IV, WA
Natterer's bat	*Myotis nattereri*	Annex IV, WA
Northern bottlenose whale	*Hyperoodon ampullatus*	Annex IV, WA
Otter	*Lutra lutra*	Annex II, IV, WA
Pine marten	*Martes martes*	Annex V, WA
Common pipistrelle (sensu lato)	*Pipistrellus pipistrellus sensu lato*	Annex IV, WA
Pygmy shrew	*Sorex minutus*	WA
Red deer	*Cervus elaphus*	WA
Red squirrel	*Sciurus vulgaris*	WA
Risso's dolphin	*Grampus griseus*	Annex IV, WA
Short-beaked common dolphin	*Delphinus delphis*	Annex IV, WA
Sika deer	*Cervus nippon*	WA
Soprano pipistrelle	*Pipistrellus pygmaeus*	Annex IV, WA

Table 4-3 Invasive species recorded in 10km squares.

Common Name	Scientific Name	Hectad
Rhododendron	*Rhododendron ponticum*	W76
Three-cornered garlic	*Allium triquetrum*	W76
Japanese knotweed	*Fallopia japonica*	W76
Sea buckthorn	*Hippophae rhamnoides*	W76
Spanish bluebell	*Hyacinthoides hispanica*	W76
Common cordgrass	*Spartina anglica*	W76
Greylag goose	*Anser anser*	W76
Canada goose	*Branta canadensis*	W76
Sika deer	*Cervus nippon*	W76
Fallow deer	*Dama dama*	W76

Common Name	Scientific Name	Hectad
Harlequin ladybird	*Harmonia axyridis*	W76
Coypu (nutria)	*Myocastor coypus*	W76
Ruddy duck	*Oxyura jamaicensis*	W76
Leathery sea squirt	*Styela clava*	W76

Table 4-4 All NBDC Records for Birds

Common Name	Scientific Name	Status
Razorbill	*Alca torda*	BoCCI Red List
Kingfisher	*Alcedo atthis*	Annex I
Meadow pipit	*Anthus pratensis*	BoCCI Red List
Swift	*Apus apus*	BoCCI Red List
Short-eared owl	*Asio flammeus*	Annex I
Greater scaup	*Aythya marila*	BoCCI Red List
Barnacle goose	*Branta leucopsis*	Annex I
Goldeneye	*Bucephala clangula*	BoCCI Red List
Dunlin	*Calidris alpina*	Annex I, BoCCI Red List
Knot	*Calidris canutus*	BoCCI Red List
Curlew sandpiper	*Calidris ferruginea*	BoCCI Red List
Ruff	*Calidris pugnax*	Annex I
Marsh harrier	*Circus aeruginosus*	Annex I
Hen harrier	*Circus cyaneus*	Annex I
Long-tailed duck	*Clangula hyemalis*	BoCCI Red List
Stock dove	*Columba oenas*	BoCCI Red List
Corncrake	*Crex crex*	Annex I, BoCCI Red List
Little egret	*Egretta garzetta*	Annex I
Yellowhammer	*Emberiza citrinella*	BoCCI Red List
Merlin	*Falco columbarius*	Annex I
Peregrine falcon	*Falco peregrinus*	Annex I
Kestrel	*Falco tinnunculus*	BoCCI Red List
Common snipe	*Gallinago gallinago*	BoCCI Red List
Black-throated diver	*Gavia arctica*	Annex I
Great northern diver	*Gavia immer*	Annex I
Red-throated diver	*Gavia stellata*	Annex I
Oystercatcher	*Haematopus ostralegus*	BoCCI Red List
Little gull	*Hydrocoloeus minutus*	Annex I
Bar-tailed godwit	*Limosa lapponica*	Annex I, BoCCI Red List
Black-tailed godwit	*Limosa limosa*	BoCCI Red List
Common scoter	*Melanitta nigra*	BoCCI Red List
Smew	*Mergellus albellus*	Annex I
Red kite	*Milvus milvus*	Annex I, BoCCI Red List
Grey wagtail	*Motacilla cinerea*	BoCCI Red List
Curlew	*Numenius arquata*	BoCCI Red List
Golden plover	*Pluvialis apricaria*	Annex I, BoCCI Red List
Grey plover	*Pluvialis squatarola*	BoCCI Red List
Slavonian grebe	*Podiceps auritus*	Annex I, BoCCI Red List
Black-necked grebe	*Podiceps nigricollis*	BoCCI Red List
Spotted crake	*Porzana porzana*	Annex I
Chough	*Pyrrhocorax pyrrhocorax*	Annex I
Kittiwake	*Rissa tridactyla*	BoCCI Red List
Woodcock	*Scolopax rusticola*	BoCCI Red List
Eider	*Somateria mollissima*	BoCCI Red List
Shoveler	*Spatula clypeata*	BoCCI Red List
Roseate tern	*Sterna dougallii*	Annex I
Common tern	*Sterna hirundo*	Annex I
Arctic tern	*Sterna paradisaea*	Annex I
Little tern	*Sternula albifrons*	Annex I

Common Name	Scientific Name	Status
Sandwich tern	*Thalasseus sandvicensis*	Annex I
Wood sandpiper	*Tringa glareola*	Annex I
Redshank	*Tringa totanus*	BoCCI Red List
Redwing	*Turdus iliacus*	BoCCI Red List
Barn owl	*Tyto alba*	BoCCI Red List
Lapwing	Vanellus vanellus	BoCCI Red List

Annex I – Of EU Birds Directive, Red List – Birds of Conservation Concern in Ireland *2020 - 2026*

5. FIELD STUDY

5.1 Baseline Habitats

Assessing the impacts of any project and associated activities requires an understanding of the ecological baseline conditions prior to and at the time of the project proceeding. Ecological Baseline conditions are those existing in the absence of proposed activities (CIEEM 2018).

A multidisciplinary walkover survey was conducted on the 6th of February 2026 by Pádraig Desmond (B.Sc.) of MKO in line with NRA (2009) guidelines (Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes). Habitats were identified in accordance with the Heritage Council's 'Guide to Habitats in Ireland' (Fossitt, 2000). Plant nomenclature for vascular plants follows 'New Flora of the British Isles' (Stace, 2019), while mosses and liverworts nomenclature follows 'Mosses and Liverworts of Britain and Ireland - a field guide' (British Bryological Society, 2010).

During the surveys, the site was searched for species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations (S.I. 477 of 2011) and the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No 374 of 2024).

The Proposed Development will consist of an amended grid connection route on the Shannonpark road. The works involve moving the cable out of the public road into private lands, offsetting from the original route.

The proposed amended grid route diverges from the permitted grid route, leaving the Shannonpark road (L2473) and enters agricultural fields via an existing entrance. .

The agricultural fields are best classified as **Improved agricultural grassland (GA1)** along the western section of the route (Plate 5-1) and **Dry meadows and grassy verges (GS2)** with encroaching **Scrub (WS1)** in eastern section (GS4). These are delineated from the existing Shannonpark road by a combination of **Treelines (WL2)**, **Hedgerows (WL1)**, and areas of Scrub (WS1), examples of which are provided in Plate 5-3, Plate 5-4, and Plate 5-5, respectively.

A habitat map of the Proposed Development site is provided in Figure 5-1.

Improved agricultural grassland (GA1) was recorded along the western section of the amended route and consisted of dominant perennial ryegrass (*Lolium perenne*), with occasional recordings of chickweed (*Stellaria media*), white clover (*Trifolium repens*), and docks (*Rumex* spp.).

Dry meadows and grassy verges (GS2) with encroaching Scrub (WS1) was recorded adjacent to the eastern section of the proposed route, and was dominated by Yorkshire fog (*Holcus lanatus*), with frequent to occasional recordings of lesser celandine, ragwort (*Senecio jacobaea*), thistles (*Cirsium* spp.), creeping buttercup (*Ranunculus repens*), and common sorrel (*Rumex acetosa*).

Treelines (WL2) recorded delineating the agricultural fields from the Shannonpark road were dominated by blackthorn (*Prunus Spinosa*) and grey willow (*Salix cinerea*), with occasional mature ash (*Fraxinus excelsior*), as well as ash saplings in the understory.

Hedgerows (WL1) were recorded as small sections of the above treeline where canopy height was less than 5m. Species composition was similar to that of Treelines (WL2), with a thick understory of gorse (Ulex europaeus) and bramble (*Rubus fruticosus* agg.) Scrub (WS1).

The proposed grid connection will travel though approx. 100m of gorse dominated scrub within the eastern section of the route.

An unmapped watercourse was recorded within the Proposed Development site, which enters the site via a culvert from the Shannonpark Road, and ran parrel to the Treeline (WL2) in an eastern direction. This watercourse was classified as an Upland eroding stream (FW1), and very small, with an average depth of 2cm following a period of heavy rainfall and presented no fisheries value. Examples are shown in Plates 2-6 and 2-7.

Due to low biodiversity value and limited floral diversity, Improved agricultural grassland (GA1), Dry meadows and grassy verges (GS2), and Scrub (WS1) were assessed as Local Importance (lower value).

Treelines (WL2), Hedgerows (WL1), and Upland eroding rivers (FW1) were assessed as Local Importance (higher value), as they provide important foraging corridors for a range of protected fauna and provide corridors to other habitats in the wider environment.

No habitats listed under Annex I of the EU Habitats Directive were recorded within the site of the Proposed Development and no suitable supporting habitat for species listed under Annex II of the EU Habitats Directive was identified during the walkover survey. No birds listed under Annex I of EU Birds Directive, nor significant suitable habitat, were recorded within the Proposed Development site during the walkover survey.

No protected floral species including those listed on the Annex II of the Habitats Directive, Ireland Red List No. 10 Vascular Plants (Wyse Jackson *et al.*, 2016) or protected under the Flora (Protection) Order, 2022 were recorded within the Proposed Development site.

No invasive plant species listed on the First Schedule under Part 1 of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374 of 2024) were recorded.

Plate 5-1 Improved agricultural grassland (GA1) in the western section of the route.

Plate 5-2 Dry meadows and grassy verges (GS2) in the section of the route, with encroaching Scrub (WS1).

Plate 5-3 Blackthorn dominated Treeline (WL2) with occasional ash.

Plate 5-4 Gorse dominated Scrub (WS1) within the footprint of the proposed route.

Plate 5-5 Gorse dominated Scrub (WS1) within the footprint of the proposed route. M28 construction works visible in the background.

Plate 5-6 Culvert entering the Proposed Development site from the Shannonpark Road.

Plate 5-7 Unmapped watercourse flowing east, from the culvert.

Map Legend

- Eroding/Upland Rivers (FW1)
- Treelines (WL2)
- Spoil and bare ground (ED2)
- Improved agricultural grassland (GA1)
- Dry meadows and grassy verges (GS2)
- Scrub (WS1)

Drawing Title
Habitat Map

Project Title
Ballinrea Grid Connection Amendment

Drawn By	Checked By
AMc	PD
Project No.	Drawing No.
251139	Figure 5-1
Scale	Date
1:2,500	04.03.2026

MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email:info@mkoireland.ie
Website: ww.mkoireland.ie

5.2 Fauna

The walkover survey was designed to detect the presence, or likely presence, of a range of protected species, including birds and mammals. Habitats were investigated for signs of animal presence or their suitability to support all faunal species. Linear vegetative features such as ornamental trees, Scrub, Hedgerow and Treeline and grassland have the potential to provide some suitable supporting habitat for local nesting and foraging bird species.

5.2.1 Birds

Bird species identified during the multidisciplinary walkover survey comprised an assemblage of common garden bird species. A total of 12 bird species were recorded within, in close proximity and flying over the site during the survey, as seen in below in Table 5-2. Wood pigeons were recorded nesting in the derelict open structure at Galway Crystal factory. Two SCI bird species designated as part of the Cork harbour SPA were recorded (Lesser black backed gull and black headed gull). However, neither were observed using the site. No Birds of Conservation Concern in Ireland (BoCCI) Red Listed bird species were recorded utilising the habitats within the Proposed Development site during the multidisciplinary walkover survey.

Table 5-1 Birds recorded on site during the walkover survey

Common Name	Latin Name	Conservation Status (BoCCI)	Behaviour
Dunnock	*Prunella modularis*	Green list	Perched/Calling
Robin	*Erithacus rubecula*	Green list	Perched/Calling
Wood pigeon	*Columba palumbus*	Green list	Flying/Travelling
Blackbird	*Turdus merula*	Green list	Perched/Calling
Wren	*Troglodytes troglodytes*	Green list	Perched/Calling
Herring gull	*Larus argentatus*	Amber List	Flying/Travelling
Long-tailed tit	*Aegithalos caudatus*	Green list	Foraging
Black-headed gull	*Chroicocephalus ridibundus*	Amber list	Flying/Travelling
Buzzard	*Buteo buteo*	Green list	Flying/Travelling
Rook	*Corvus frugilegus*	Green list	Flying/Travelling
Rock dove	*Columba livia*	Green list	Perched/Calling
Lesser black-backed gull	*Larus fuscus*	Amber list	Flying/Travelling

5.2.2 Mammals

No breeding site, nor significant indications, of any protected mammal was recorded within the Proposed Development site during the survey undertaken. Whilst an unmapped watercourse was recorded, this provided no fisheries value and did not provide any supporting habitat for otter. Some worn trails were recorded through the agricultural fields, but no other indication of protected fauna was recorded, including badger.

5.2.3 Bats

Bat Habitat Appraisal

With regard to foraging and commuting bats within the Proposed Development site, a Treeline (WL2) was recorded between the proposed route and the Shannonpark Road and was assessed as *Moderate* foraging habitat for bats (Collins, 2023). Grasslands were assessed as *Low* foraging habitat for bats.

Trees within the Proposed Development site were assessed as providing no (*None*) roosting potential for bats, due to the absence of suitable cavities. No structures were present within the site.

5.3 Identification of Key Ecological Receptors

Table 5-1 lists all identified Key Ecological Receptors (KERs) and assigns them an ecological importance in accordance with the Guidelines for Assessment of Ecological Impacts on National Road Schemes (NRA, 2009a). This table also provides the rationale for this determination.

Table 5-2: Importance of Ecological Receptors

Habitat and Geographic Importance	KER	Rationale
Designated Sites		
National to International Importance › European Sites › National Sites	*Yes*	pNHAs have been assessed National Importance as they are sites proposed to be designated as Natural Heritage Areas (NHAs),while European Sites have been assigned International Importance as they are sites designated as part of the Natura 2000 Network under the EU Habitats Directive. Monkstown Creek pNHA has been considered to be within the likely ZOI, as an unmapped watercourse with hydrological connectivity to this site was identified. Whilst no significant effects on this National Site are anticipated, taking a highly precautionary approach, this pNHA **is considered a KER.**
Habitats		
Local Importance (lower value) › Improved agricultural grassland (GA1) › Dry meadows and grassy verges (GS2) › Scrub (WS1)	*No*	These habitats are classified as of Local Importance *(lower value*). Despite some containing small areas of semi-natural habitat that are of some local importance for wildlife, these are common and widespread in the local and wider landscape. Whilst there will be some loss of some of these habitats to facilitate the Proposed Development, these losses are not anticipated to be significant. Therefore, these habitats are **not** considered as KERs.
Local Importance (higher value) › Treeline (WL2) › Hedgerow (WL1)	*No*	Linear habitats are assessed as being of Local Importance (higher value) as they help maintain links and ecological corridors between features of higher ecological value and are likely to be utilised by

		commuting and foraging bats, breeding birds and other faunal species. However, as these habitats will be entirely retained as part of the Proposed Development, they are **not** considered as KERs.
Water Quality and Aquatic habitats and species	*Yes*	No mapped watercourses are present within the Proposed Development site, but an unmapped watercourse in the eastern section of the site was recorded. This watercourse was very small and was recorded during a period of heavy and prolonged rain and is therefore likely ephemeral in nature. However, taking a precautionary approach, there is a potential for significant effects on water quality and aquatic receptors, as a result of the runoff of pollutants into this watercourse, during the construction phase of the Proposed Development. **Therefore, aquatic receptors have been included as a KER for further assessment.**
Fauna		
Birds	*Yes*	The site does not support significant supporting habitat for protected bird species. The bird species recorded within the site comprised an assemblage of common birds typical of greenfield sites in agricultural areas. However, Treeline (WL2), Hedgerow (WL1), and Scrub (WS1) habitat on site provide some suitable supporting habitat for breeding bird species. As there will be loss of scrub habitat to facilitate the Proposed Development, and taking a highly precautionary approach, there is potential for disturbance and direct mortality to bird species, as a result of the construction phase of the Proposed Development. **Therefore, birds have been included as a KER.**
Bats	*Yes*	All bat species in Ireland are protected under the Bonn Convention (1992), Bern Convention (1982) and the EU Habitats Directive (92/43/EEC). Additionally, in Ireland bat species are afforded further protection under the Birds and Natural Habitats Regulations (2011) and the Wildlife Acts 1976 (as amended). The overall site was found to be of *negligible* suitability for roosting bats while Treeline (WL2) and Hedgerow (WL1) adjacent to the proposed route were assessed as *Moderate* suitability for foraging and commuting bats. While these habitat habitats will be retained, taking a precautionary approach, there is potential for disturbance to bats utilizing these features, as a result of light spillage and noise arising from the construction phase of the Proposed Development. **Therefore, bats are considered as KERs.**

6. IMPACT ASSESSMENT

6.1 Do-Nothing Effect

If the Proposed Development was not to proceed, it is unlikely that any change would be made to the current land uses, which are comprised of agricultural fields with encroaching scrub.

6.2 Impacts during Construction

6.2.1 Effects on Water Quality

The construction phase of the development will involve earth works, the most significant of which will relate to trenching for the cable ducting, which will create the potential for pollution to adjacent waterbodies in various forms, i.e. the generation of suspended solids and the potential for spillage of fuels, concrete etc.

In the absence of mitigation, taking a precautionary approach, there is potential for significant effects on the unmapped watercourse within the site, as a result of deterioration of water quality.

6.2.1.1 Mitigation

The mitigations provided in the EcIA prepared for the permitted development will also be applied to the Proposed Development. The following additional measures will also be applied.

Environmental Monitoring

- The contractor will assign a member of the site staff as the environmental officer with the responsibility for ensuring the environmental measures prescribed in this document are adhered to. Any environmental incidents or non-compliance issues will immediately be reported to the project team.

Site Set-up

- Prior to the commencement of works, the site boundary will be clearly demarcated using temporary fencing and no works will take place outside the fenced area.
- Once vegetation has been cleared and prior to the commencement of earthworks silt fencing will be set up as appropriate to prevent any run-off from works from entering any nearby watercourse.
- Silt fencing will be erected between the proposed works areas and the full length of the unmapped watercourse within the site. This will be embedded into the ground adjacent to the perimeter boundary. The silt fences will be left in place throughout construction until all exposed soil has revegetated.
- A temporary construction compound is proposed for the construction phase of the permitted development. All construction materials and substances for the Proposed Development will be stored in the site compound.
- All vegetation removal and site up works will carried out under the supervision of a qualified Ecological clerk of works.

Mitigations relating the following are fully detailed in the permitted grid connection EcIA, and will also be adhered to along the proposed amended section:

- Pollution Prevention

- Cement Based Products
- Hydrocarbon Management
- Sediments and siltation management
- Waste Management
- Wastewater Disposal
- Applicable guidance to be followed

Residual Effects

Following the implementation of mitigation measures outlined above, no significant residual effects on aquatic habitats and species are anticipated as a result of the Proposed Development.

6.2.2 Effects on Habitats

6.2.2.1 Habitat loss

The Proposed Development is located within an agricultural field with encroaching gorse scrub, and was dominated by habitats of Local Importance (lower value).

Whilst there will be requirement to remove sections of Scrub (WS1) to facilitate the Proposed Development, which have been assessed as habitats of Local Importance (lower value), these habitats are common and widespread in the local area, and the minor losses are not anticipated to be significant.

No significant loss of habitat is anticipated at any geographic scale as a result of the Proposed Development.

Mitigation

No mitigation required.

Residual effects

No significant residual effects are anticipated.

6.2.3 Impacts to Fauna

6.2.3.1 Loss of Faunal Habitat

The Proposed Development will not result in the loss of any significant supporting habitat for any faunal species. The construction phase of the development will result in the permanent loss of highly modified grassland habitats, and sections of gorse dominated Scrub (WS1).

No significant loss of faunal habitat is anticipated at any geographic scale as a result of the Proposed Development.

Mitigation

No mitigation required.

Residual effects

No significant residual effects are anticipated.

6.2.3.2 Disturbance & Displacement of Fauna

The Proposed Development will be constructed within highly modified habitats within an agricultural setting which does not provide significant supporting habitat for any species, with all adjacent habitats to be retained. However, to accommodate the Proposed Development there will be requirement to remove sections of Scrub (WS1), within which birds may be foraging or breeding. Therefore, taking a highly precautionary approach, there is potential for disturbance to nesting birds, assessed at a local geographical scale only.

Additionally, as linear features adjacent to the Proposed Development were assessed as *Moderate* suitability for foraging and commuting bats, noise and lighting associated with the construction of the Proposed Development has the potential to disturb opportunistic bats within the area.

As such, measures have been prescribed below, to negate any disturbance impacts to fauna, during the construction and operational phases of the Proposed Development.

Best Practice measures during Construction

- Vegetation removal will be undertaken in line with the Wildlife Act 1972-2022.
- Any lighting required for night-time works will be switched off when not needed.
- Lighting required for night-time works will be directed onto the works areas and will not be focussed onto the treeline on the eastern boundary.
- All plant and equipment for use will comply with Statutory Instrument No 359 of 1996 "European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996".
- Operating machinery will be restricted to the works area.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the works.
- Compressors will be of the "sound reduced" models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
- Machines, which are used intermittently, will be shut down during those periods when they are not in use.

Residual Effects

Following the incorporation of the best practice measures outlined above, no significant residual effects are anticipated as a result of the construction phase of the Proposed Development.

6.3 Impacts During Operation

The Proposed Development refers to a minor and localised amendment to a permitted grid connection route. The Proposed Development will be lain underground and will require no operational maintenance or lighting. Once construction is complete, an access track will be lain above. This will not be a sealed track, and therefore, there will be no impacts on surface water runoff.

Therefore, there is no potential for any operational effects on habitat or fauna, during the operational phase of the Proposed Development.

6.4 Impacts on Designated Sites

6.4.1 Impacts on European Sites

The potential for impact on European sites has been fully assessed in the Appropriate Assessment Screening Report (AASR) that has been prepared in support of the current application.

The AASR concludes as follows:

'*It is concluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, that the Proposed Development, individually or in combination with other plans and projects, will not have a significant effect on any European Site*.'

6.4.2 Impacts on National Sites

Impacts on nationally designated sites including NHAs and pNHAs are considered in this section of the report. While no significant effects are anticipated on any National Site, taking a highly precautionary approach, the following pNHA was identified to be within the Zone of Influence of the Proposed Development, as a result of deterioration of water quality during construction:

- Monkstown Creek pNHA [001979]

The mitigation prescribed within this report have been designed to ensure that the Proposed Development will not result in any deterioration of water quality, and therefore, there is no potential for significant effects on this pNHA, as a result of the Proposed Development.

7. CUMULATIVE IMPACT ASSESSMENT

In order to take account of cumulative in-combination effects, plans and projects that are completed, approved but uncompleted, or proposed (but not yet approved) should be considered in this context (European Commission, 2021). A search and review in relation to plans and projects that may have the potential to result in cumulative effects on European sites was conducted. This included a review of online Planning Registers, development plans and other available information and served to identify past and future plans and projects, their activities and their predicted effects.

7.1 Projects

Assessment material for this in-combination impact assessment was compiled on the relevant developments within the vicinity of the Proposed Development. The material was gathered through a search of relevant online Planning Registers, reviews of relevant documents, planning application details and planning drawings, and served to identify past and future projects, their activities and their environmental impacts. All relevant projects were considered in relation to the potential for in-combination effects. All relevant data was reviewed (e.g. individual EISs/EIARs, NISs, layouts, drawings etc.) for all relevant projects where available.

The dominant land uses in the area were also considered in the assessment, these included agriculture, residential and road infrastructure.

- Permission for development of a 110kV substation, grid connection and associated infrastructure **(ACP Ref. 317706)**
- Cork County Council has made an application for the provision of a Motorway Scheme between Cork and Ringaskiddy, referred to as the proposed M28 Road Scheme. The proposed scheme comprises 12.5km. It commences at the Bloomfield Interchange on the existing N28/N40 junction and terminates at the Port of Cork to the east of the village of Ringaskiddy. Part of the Scheme is online along the route of the N28, (approx. 2km) but a substantial part of the scheme is off-line, from Carr's Hill to Ringaskiddy. The final 1.6km section of the road from Barnahely is a single carriageway, Protected Road Scheme and there is a proposed Service Area near the termination point (ABP Case Reference HA04.HA0053).
- The construction of 98 no. dwelling houses and all ancillary site development works. The proposed development consists of the construction of 4 no. 5 bedroom detached dwelling houses, 5 no. 4 bedroom detached dwelling houses, 12 no. 4 bedroom semi-detached dwelling houses, 48 no. 3 bedroom semi-detached dwelling houses, 20 no. 3 bedroom townhouses and 9 no. 2 bedroom townhouses. The proposed development also provides for a revised central amenity parkland from that previously permitted by Cork County Council Planning Reference 16/4289. Access to the proposed development will be via the existing junction with the Carrigaline Road and internal road network permitted by planning reference 16/4289 (as amended by planning references 20/4650 and 20/5451) **(Planning Ref. 215556).**
- Modifications to the permitted solar farm (Pl. Ref. No.: 17/6784, ABP Ref. PL04.303013). The modifications are within the boundary of the permitted development and will consist of: i) Changes to the layout and dimensions of the permitted solar photovoltaic layout which will decrease the solar photovoltaic footprint from c. 159,100 sq.m of solar panels, to c. 145,000 sq.m of solar panels on ground mounted frames (this modification is to allow for the inclusion of a proposed 110kV substation and grid connection which will be subject to a separate application); ii) Amendments to the internal track layout and the removal of the permitted battery storage unit; iii) 6 no. single storey inverter/transformer stations (reduced from 10 no. permitted inverter/transformer stations). Permission is also sought for the provision of a 33kV internal network cable (c. 3,760m underground with c. 114m of overhead line) linking the Ballinrea solar farm with the Ballinvuskig solar farm (c. 1.74 km to the northwest). The proposed development includes all associated site works and ancillary infrastructure. A Natura

Impact Statement (NIS) has been prepared in respect of the proposed development and the NIS will be submitted to the Planning Authority with the application **(Planning Ref. 234563).**

- The construction of a single dwelling house, the construction of a detached domestic garage, the closure of the existing site entrance, the construction of a new site entrance, the installation of a new connection to public water mains, the installation of a wastewater treatment unit and associated raised soil polishing filter, and all ancillary works **(Planning Ref. 214245).**
- Construction of a dwelling house, a garage for domestic purpose, installation of a domestic water treatment system, construction of a new vehicular entrance and to carry out all associated site works **(Planning Ref. 217371).**
- The construction of 98 no. dwelling houses and all ancillary site development works. The proposed development consists of the construction of 9 no. 5 bedroom detached dwelling houses, 1 no. 4 bedroom detached dwelling house, 22 no. 4 bedroom semi-detached dwelling houses, 30 no. 3 bedroom semi-detached dwelling houses, 26 no. 3 bedroom townhouses and 10 no. 2 bedroom townhouses. Access to the proposed development will be via the existing junction with the Carrigaline Road and internal road network permitted by planning reference 16/4289 (as amended by planning references 20/4650 and 20/5451) **(Planning Ref. 215936).**
- The construction of 12 no. dwelling houses comprising 8 no. 3 bedroom semi-detached dwelling houses and 4 no. 4 bedroom semi-detached dwelling houses and all ancillary site development works. The proposed development is a change of plan from that permitted by Cork County Council planning reference 16/4289 (as amended by Cork County Council planning reference 19/5801). Access to the proposed development will be via the existing junction with the Carrigaline Road and internal road network permitted by Cork County Council planning reference 16/4289 **(Planning Ref. 215151).**
- Proposed development of a 110kV substation, grid connection and associated infrastructure **ACP Ref. 317706).**
- The construction of 98 no. dwelling houses and all ancillary site development works. The proposed development consists of the construction of 3 no. 5 bedroom detached dwelling houses, 3 no 4 bedroom detached dwelling houses, 14 no 4 bedroom semi-detached dwelling houses, 46 no 3 bedroom semi-detached dwelling houses, 18 no 3 bedroom townhouses and 14 no 2 bedroom townhouses. The proposed development also makes provision for a two storey creche with associated surface car park, bicycle parking and bin stores. The proposed development provides for the extension of the Janeville Spine Road permitted by planning reference 16/4289 (as amended and extended by planning references 20/4650, 20/5451, 21/5556 and 21/5936) to accommodate the provision of a new vehicular entrance to Janeville from the Rock Road (L-2490) with associated footpath and road upgrades. The proposed development also comprises minor amendments from that previously permitted by planning reference 21/5936 to the west of the site (**Planning Ref. 224809).**

7.2 Plans

The following Development Plans have been reviewed and taken into consideration as part of this assessment:

- Cork County Development Plan 2022-2028
- Ireland's 4th National Biodiversity Action Plan 2023-2030

The review of these Plans is provided below in Table 3-2.

Table 7-1 Review of Plans

Plans	Key Policies/Issues/Objectives Directly Related to European Sites in The Zone of Influence	Assessment of Potential Effects on European Sites
Cork County Development Plan 2022-2028	BE 15-2: Protect sites, habitats and species a) Protect all natural heritage sites which are designated or proposed for designation under European legislation, National legislation and International Agreements. Maintain and where possible enhance appropriate ecological linkages between these. This includes Special Areas of Conservation, Special Protection Areas, Marine Protected Areas, Natural Heritage Areas, proposed Natural Heritage Areas, Statutory Nature Reserves, Refuges for Fauna and Ramsar Sites. These sites are listed in Volume 2 of the Plan. b) Provide protection to species listed in the Flora Protection Order 2015, to Annexes of the Habitats and Birds Directives, and to animal species protected under the Wildlife Acts in accordance with relevant legal requirements. These species are listed in Volume 2 of the Plan. c) Protect and where possible enhance areas of local biodiversity value, ecological corridors and habitats that are features of the County's ecological network. This includes rivers, lakes, streams and ponds, peatland and other wetland habitats, woodlands, hedgerows, tree lines, veteran trees, natural and semi-natural grasslands as well as coastal and marine habitats. It particularly includes habitats of special conservation significance in Cork as listed in Volume 2 of the Plan. d) Recognise the value of protecting geological heritage sites of local and national interest, as they become notified to the local authority, and protect them from inappropriate development e) Encourage, pursuant to Article 10 of the Habitats Directive, the protection and enhancement of features of the landscape, such as traditional field boundaries, important for the ecological coherence of the Natura 2000 network and essential for the migration, dispersal and genetic exchange of wild species. BE 15-3: Local Authority plan making a) Ensure that biodiversity issues are considered at the earliest possible stages of plan making; b) Ensure that plans and strategies comply with nature conservation legislation and policy as required (fulfil Strategic Environmental Assessment and Appropriate Assessment requirements); and c) Carry out ecological impact assessment of plans and strategies as appropriate. BE 15-4: Local Authority development and projects	The Development plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the Natura 2000 network and other natural heritage interests. No potential for cumulative impacts when considered in conjunction with the current proposal were identified. There will be no impact on designated sites as a result of deterioration in water quality, habitat loss, or disturbance. Best practice preventative measures will be implemented to avoid effects on water quality, as outlined in Section 5.2.1 of this report. There will be no adverse effects on the QIs/SCIs of European Sites, as a result of deterioration in water quality from the proposed modifications. There will be no adverse effects on sensitive aquatic receptors listed as QIs/SCI.

	a) Ensure that biodiversity protection is considered at design stage for works and development planned and progressed by Cork County Council and that all such projects comply with nature conservation legislation and policy as required; b) Fulfil Appropriate Assessment and Environmental Impact Assessment requirements and carry out Ecological Impact Assessment in relation to Local Authority plans and projects as appropriate. BE 15-6: Biodiversity and New Development Provide for the protection and enhancement of biodiversity in the development management process and when licensing or permitting other activities by: a) Providing ongoing support and guidance to developers on incorporating biodiversity considerations into new development through preplanning communications and the Council's guidance document 'Biodiversity and the Planning Process – guidance for developments on the management of biodiversity issues during the planning process' and any updated versions of this advice; b) Encouraging the retention and integration of existing trees, hedgerows and other features of high natural value within new developments; c) Requiring the incorporation of primarily native tree and other plant species, particularly pollinator friendly species in the landscaping of new developments; d) Fulfilling Appropriate Assessment and Environmental Impact Assessment obligations and carrying out Ecological Impact Assessment in relation to development and activities, as appropriate; e) Ensuring that an appropriate level of assessment is completed in relation to wetland habitats subject to proposals which would involve drainage or reclamation. This includes lakes and ponds, watercourses, springs and swamps, marshes, heath, peatlands, some woodlands as well as some coastal and marine habitats; Ensuring that the implementation of appropriate mitigation (including habitat enhancement, new planting or other habitat creation initiatives) is incorporated into new development, where the implementation of such development would result in unavoidable impacts on biodiversity - supporting the principle of biodiversity net gain.	
Ireland's 4th National Biodiversity Action Plan 2023-2030	Objective 2 - Meet Urgent Conservation and Restoration Needs Outcome 2A: The protection of existing designated areas and species is strengthened and conservation and restoration within the existing protected are network are enhanced Outcome 2B: Biodiversity and ecosystem services in the wider countryside are conserved and restored – agriculture & forestry	Ireland's 4th National Biodiversity Action Plan 2023-2030

	Outcome 2C: Biodiversity and ecosystem services in the wider countryside are conserved and restored – peatlands & climate action Objective 2D: Biodiversity and ecosystem services in the marine and freshwater environment are conserved and restored Outcome 2E: Genetic diversity of wild and domesticated species is safeguarded Outcome 2F: A National Restoration Plan is in place to contribute to the ambition of the EU Biodiversity Strategy 2030 and global nature restoration targets Outcome 2H: Invasive alien species (IAS) are controlled and managed on an all-island basis to reduce the harmful impact they have on biodiversity and measures are undertaken to tackle the introduction and spread of new IAS to the environment.	

7.3 Conclusion on Cumulative Effects

Taking the above information into consideration and having regard to the precautionary principle, it is considered that the Proposed Development will not result in the loss of habitats or species of high ecological significance and with mitigation in place will not have any significant effects on the ecology of the wider area. Due the nature of the above developments, the separation in distance, the absence of effects identified as a result of the Proposed Development and absence of in-combination impact pathways identified, no potential for significant in-combination impacts to arise.

8. CONCLUSION

Taking the above information and detailed assessment set out in the preceding sections of this chapter into consideration, and having regard to the precautionary principle, it is considered that the Proposed Development will not result in the loss of habitats or species of high ecological significance and will not have any significant effects on the ecology of the Proposed Development site or the wider area.

The potential residual impacts on ecological receptors will not be significant and no potential for the Proposed Development to contribute to any cumulative impacts on biodiversity when considered in-combination with other plans and projects was identified.

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