MWP

Chapter 05 Biodiversity

Proposed Rínn Rua Hotel and Leisure Park, Reenroe, Co. Kerry

Rínn Rua Holiday Park LTD.

April 2024

Contents

Tables

Figures

Plates

Appendices

List of Acronyms

AA	Appropriate Assessment
AIPP	All Ireland Pollinator Plan
BCI	Bat Conservation Ireland
BCT	Bat Conservation Trust
BEA	Biodiversity Enhancement Area
BEP	Biodiversity Enhancement Plan
BHSI	Bat Habitat Suitability Index
BOCCI	Birds of Conservation Concern Ireland
BSBI	Botanical Society of Britain and Ireland
CDP	County Development Plan
CEMP	Construction and Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association
CITES	Convention on International Trade in Endangered Species
DAU	Development Applications Unit
DHLGH	Department of Housing, Local Government and Heritage
ECIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
EPA	Environmental Protection Agency
FPO	Flora Protection Order
GSI	Geological Survey Ireland
HCA	Habitat Condition Assessment
IAPS	Invasive Alien Plant Species
IBA	Important Bird Area
IEF	Important Ecological Feature
IEL	Industrial Emissions Licence
IFI	Inland Fisheries Ireland
IPC	Integrated Pollution Control
IWeBS	Irish Weland Bird Surveys
KCC	Kerry County Council
LED	Light Emitting Diode
NBDC	National Biodiversity Data Centre
NHA	National Heritage Area
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
NRA	National Roads Authority
OPR	Office of the Planning Regulator
OSI	Ordnance Survey Ireland
PE	Population Equivalent
pNHA	Proposed National Heritage Area
PRA	Preliminary Roost Assessment
PRF	Potential Roost Feature
SAC	Special Area of Conservation
SBR	Sequential Batch Reactor
SP	Sampling Point
SPA	Special Area of Protection
SuDS	Sustainable Drainage Systems

TII	Transport Infrastructure Ireland
WFD	Water Framework Directive
WWTP	Waste Water Treatment Plant
ZOI	Zone of Influence

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5. Biodiversity

5.1 Introduction

This chapter considers the potential effects on biodiversity which may arise from the Proposed Development. A full description of the Proposed Development, development lands and all associated project elements is provided in Chapter 2 of this EIAR. The nature and probability of effects on biodiversity arising from the overall project has been assessed. The assessment comprises:

- A review of the existing receiving environment
- Prediction and characterisation of likely impacts
- Evaluation of effects significance; and
- Mitigation and monitoring measures, where appropriate.

This chapter is supported by several appendices included in **Volume 3** of the **EIAR**. The full suite of Appendices attached to this chapter are as follows:

- **Appendix 5-1** Individual field surveyor profiles
- **Appendix 5-2** Bat Survey Report
- **Appendix 5-3** Bird Survey Report
- **Appendix 5-4** Habitat and Botanical Survey Report
- **Appendix 5-5** Invertebrate Survey Report
- **Appendix 5-6** NRA Ecological Evaluation Criteria
- **Appendix 5-7** Biodiversity Enhancement Plan (BEP)

A Screening for Appropriate Assessment (AA) report which considers the likelihood of significant effects on Natura 2000 site(s) as a result of the Proposed Development, either alone or in combination with other plans or projects, with respect to the Conservation Objectives of the Natura 2000 sites in question, has been prepared as a standalone document which will be submitted with the planning application.

5.1.1 Competency of Assessor

The assessment was completed by Hazel Dalton (BSc., BBus.). Hazel graduated with a first-class Bachelor of Science Honours Degree in Wildlife Biology from the Institute of Technology Tralee (IT Tralee) (now Munster Technological University - MTU) in 2015, having previously obtained a Bachelor of Business (Ord.) in Business Management. Hazel is a Senior Ecologist with over nine years' experience in ecological consultancy with MWP including in ecological surveying and impact assessment for Appropriate Assessment and EIAR. She has authored and contributed to numerous screening reports for AA, Natura Impact Statements (NIS), Ecological Impact Assessments (EcIA) and Biodiversity chapters for EIAR. She has completed assessments for a wide variety of projects including for renewable energy, infrastructure, coastal and other development projects. Hazel is an experienced field ecologist with a diverse ecological survey profile and extensive survey experience regarding habitats and flora, invasives, terrestrial mammals, bats, birds and terrestrial invertebrates. She holds/has held various NPWS licences.

MWP field surveys were undertaken by Hazel Dalton, Gerard Hayes (BSc.), Davey Farrar, Fiona McKenna (BSc.), Orla Van Der Noll (MSc., BSc.), Otto Storan (MSc., BSc.) and Petr Dobes, all ecologists with MWP, with the

assistance of Oisín Casasín (work placement student - BSc. Wildlife Biology (Hons) Degree at MTU). See **Appendix 5-1** of **Volume 3** of the **EIAR** for individual surveyor profiles.

Targeted habitat surveys within the study area were undertaken by Eamonn Delaney (BSc., MSc., MCIEEM, CECOL) of Delichon Ecology on behalf of MWP. Eamonn has sixteen years consultancy experience and has prepared Screening for AA and NIS for various projects, including residential, amenity, renewable energy and transport developments, in addition to strategic policy and planning proposals. Eamonn is experienced in undertaking botanical and habitat surveys for the purposes of EIA, EcIA and large-scale habitat surveys for local authorities. Eamonn is a member of the Botanical Society of Britain and Ireland (BSBI) and regularly attends local and regional BSBI field meetings in addition to carrying out recording for the proposed BSBI 2020 Atlas, in north Co. Galway and south Co. Mayo.

5.1.2 Legislation

Important legislation underpinning biodiversity and nature conservation in Ireland comprise the:

- EU Habitats Directive (92/43/EEC), as amended
- EU Birds Directive (2009/147/EC, as amended)
- EU Water Framework Directive (WFD, 2000/60/EC)
- European Communities (Birds and Natural Habitats) Regulations 2011 to 2015 (S.I. 477/2011), as amended
- Planning and Development Act (2000), as amended
- Planning and Development Regulations 2001 to 2011, as amended
- Wildlife Act 1976 to 2021, as amended; and
- Flora (Protection) Order, 2022.

Refer to **Chapter 1** of the **EIAR** for more information.

5.2 Methodology

5.2.1 Guidelines and Best Practice

The following guidance documents and relevant publications were used:

- '*Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland'* published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018).
- '*Guidelines for Assessment of Ecological Impacts of National Road Schemes'* (NRA, 2009).
- '*Best Practice Guidance for Habitat Survey and Mapping'* (Smith *et al*., 2011).
- '*Bat mitigation guidelines for Ireland v2*'. Irish Wildlife Manuals, No. 134. (Marnell *et al*., 2022).
- '*Bat surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*'. Bat Conservation Trust, London. (Collins/BCT, 2023).
- '*Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)*'. (Collins/BCT, 2016).
- Other information sources and reports footnoted in the course of the report.

Refer to **Chapter 1** of the **EIAR** for more information.

5.2.2 Zone of Influence (ZOI)

The 'zone of influence' (ZOI) 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. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018). With regard to potential impacts on biodiversity, the following criteria were considered when identifying the potential ZOI at the initial stages of the project:

- The nature, size and location of the project
- Identification of potential effect pathways to key ecological receptors
- The sensitivities of the relevant key ecological receptors
- Identification of suitable habitats for high conservation value species
- Ecological connectivity between the project and the wider landscape.

5.2.3 Desktop Study

The desk studies undertaken for this assessment included reviews of available published data on sites designated for nature conservation, and other ecologically sensitive sites, habitats and species of interest in the vicinity of the Proposed Development site. The available ecological data which were accessed included the following:

- Ordnance Survey Ireland (OSI) mapping and aerial photography
- Environmental Protection Agency (EPA) online mapping and datasets
- National Parks and Wildlife Service (NPWS) online mapping and datasets, including EU Habitats Directive Article 17 spatial mapping for habitats and species[1]
- National Biodiversity Data Centre (NBDC) online mapping and datasets
- Heritage Maps online mapping
- Geological Survey of Ireland (GSI) online mapping
- Bat Conservation Ireland on-line resources – http://www.batconservationireland.org
- Invasive Species Ireland on-line resources - http://www.invasivespeciesireland.com/
- Review of records of plant species protected under the Flora (Protection) Order (2022)
- National Red Lists for rare and threatened floral and faunal species[2]
- Review of the most recent Bird Atlas: Balmer *et al.*, (2013)
- Review of Birds of Conservation Concern in Ireland (BoCCI 4) 2020-2026 (Gilbert *et al.*, 2021)
- Review of BirdWatch Ireland I-WeBS (Irish Wetland Bird Surveys) site information

[1] Available at https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17
[2] https://www.npws.ie/publications/red-lists

- Checklists of Protected and Threatened Species in Ireland. Irish Wildlife Manuals No. 116 (Nelson, *et al*., 2019) Version 3.1 (February 2023)
- Review of requested records from NPWS Rare and Protected Species database, BCIreland bat records/roost database and BirdWatch Irelands I-WeBS Survey site count database
- Kerry County Development Plan 2022-2028, including Kerry County Council Biodiversity Action Plan
- Draft National Biodiversity Action Plan 2023 – 2027; and
- Other information sources and reports footnoted or referenced.

Online digital aerial mapping and satellite imagery was used in conjunction with publicly available GIS data to determine the types of habitats within the environs of the Site with potential to support protected flora and fauna, including landscape features providing potential connectivity with the wider area (e.g. hedgerows, treelines, watercourses). This mapping was used to inform the desktop study and field surveys.

5.2.3.1 Database Searches and Data Requests

The Site lies within the OSI National Grid hectad (10 km square) V46. Flora and fauna species records for this hectad were downloaded from the NBDC on-line database as part of the desktop study. A data request was submitted to NPWS on the 29th May 2023 for records of rare and/or protected species within the hectad V46. Data was received from NPWS on the 1st June 2023. Results are discussed, where relevant, in **Sections 5.3.6** to **5.3.13** below.

A data request was submitted to Bat Conservation Ireland (BCIreland) for all bat data available within a 10 km radius of the approximate centre point of the Site. Data was received from BCIreland on the 1st August 2023. This provision of bat records by BCIreland does not constitute as a consultation with BCIreland regarding the proposal. With regard to bats specifically, the desktop study included a preliminary assessment of the availability of landscape features of importance to bats within the Site and geographical area extending away from it using the NBDC's Bat Habitat Suitability Index (BHSI) mapping tool, available on-line[3], derived from an analysis of the habitat and landscape associations of Irish bats compiled in Lundy *et al*. (2011). This was reviewed with regard to the Site and surrounds to provide a preliminary evaluation of the potential importance of the Site for bats. See **Section 5.3.8.1** below and refer to **Appendix 5-2** in **Volume 3** of the **EIAR** for more information.

A data request was submitted to BirdWatch Ireland via their on-line data request facility on the 1st November 2023 for the most recent site count data available for the 'Ballinskelligs Bay 0K410' I-WeBS[4] site which adjoins the Site. See **Section 5.3.10.1** below and refer to **Appendix 5-3** in **Volume 3** of the **EIAR** for more information.

5.2.4 Consultation

The following biodiversity related statutory and non-statutory bodies, as outlined in **Table 5-1** below, were consulted in relation to the Proposed Development as part of pre-planning application consultation. A full list of consultees and their responses is available in **Appendices 1-1** and **1-4** of **Volume 3** of **the EIAR**.

[3] Maps - Biodiversity Maps (biodiversityireland.ie)
[4] I-WeBS; Irish Wetland Bird Surveywaterbirds at wetland sites across the country during the winter 'non-breeding' season (September to March).

Table 5-1. List of biodiversity-related consultees for the Proposed Development and biodiversity issues raised

Consultee	Biodiversity issue raised	Relevant Section/Appendix
Inland Fisheries Ireland (IFI)	No response received.	N/a
The Heritage Council	No response received.	N/a
National Parks and Wildlife Service (NPWS) via the Development Applications Unit (DAU) of the Department of Housing, Local Government and Heritage	Potential value of derelict buildings for bats (Low – Medium value) and nesting birds such as swallows. The eastern half of the site, comprising a proposed 'Habitat Enhancement Area' is partly within the Ballinskelligs Bay and Inny Estuary SAC. The Department would like to be involved in the development of the management plan for the Ecological Enhancement Area. A small number of Grey Seals haul out on the beach in Ballinskelligs, but these are not a QI of the SAC. The grassland on site is not very species rich, but it would be of value for pollinators. The site would benefit from a management plan to enhance its ecological value. It is recommended that the following surveys are carried out: • Habitats/Botanical (terrestrial and aquatic) • Bats • Other mammals • Birds (breeding and wintering) • Invertebrates (terrestrial and aquatic)	Section 5.3.5 to 5.3.13 Section 5.4 and 5.5 Section 5.7
Kerry County Council	• Potential impacts on chough • Disturbance of fauna • Indirect effects on biodiversity in the wider landscape • Water quality	Sections 5.4 and 5.5
An Taisce	No response received.	N/a
Minister of Agriculture, Food and the Marine	No response received.	N/a

A pre-application planning meeting was held between the Applicant, MWP and KCC on the 7th June 2023. During this meeting, a general overview of the approach to ecology fieldwork in relation to the Proposed Development, including an outline of surveys and findings to date, was presented to KCC.

Pre-planning consultation was also undertaken directly with NPWS. A site visit was undertaken between staff ecologists from MWP and the NPWS local Conservation Ranger for the area on 11th January 2024 during which the Proposed Development, ecological survey findings to date and potential proposals with regard to biodiversity mitigation and enhancement were discussed. Informal consultation was undertaken with NPWS with regard to bats, chough and the proposed BEP.

5.2.5 Study Area

In conjunction with initial desk studies, preliminary ecological walkovers of the Proposed Development site and surrounding area were undertaken in April 2022 (prior to commencement of bird surveys) and again in April 2023 (prior to commencement of all other ecological surveys) to define the scope and scale of field surveys and identify potential ecological constraints to the project. The total area encompassed within the Proposed Development site is 22.6 Ha.

The core study area for field surveys comprised the Proposed Development site (encompassing the existing derelict hotel structure and surrounding agricultural grassland) and an adjacent area of land under the ownership and control of the Applicant, which is proposed as a targeted Biodiversity Enhancement Area (BEA) – see **Figure 5-1** and **5-2** below.

Adjacent habitats ecologically connected to this area, including the shoreline and watercourses in the immediate environs, were also included for faunal surveys, such as for birds and mammals including otter, as outlined where relevant in **Section 5.3.9** and **5.3.10** below.

Figure 5-1. Proposed development site boundary (red) and proposed targeted Biodiversity Enhancement Area (yellow)

Figure 5-2. Core study area for ecological field surveys

5.2.6 Field Surveys

Field surveys comprised a combination of multi-disciplinary ecological walkover surveys and targeted surveys. All ecological field surveys, other than targeted surveys for habitats and flora, were conducted by staff ecologists from MWP. Targeted habitat and flora surveys were undertaken by Eamonn Delaney of Delichon Ecology on behalf of MWP. Refer to **Section 5.1.1** above for more information. Summaries of field survey methodologies employed are provided hereunder.

5.2.6.1 Habitats and Flora

Targeted habitat and botanical surveys, comprising Phase I habitat surveys, were undertaken by Delichon Ecology on 3rd and 12th July 2023. The principal aim of these surveys was to identify and map habitats and their component plant species within the study area using the Heritage Council's '*Best Practice Guidance for Habitat Survey and Mapping'* (2011)[5]. The classification of habitats recorded was based on the '*A Guide to Habitats in Ireland'* (Fossitt, 2000)[6]. Survey timings fell within the recognised optimum period for vegetation surveys/habitat mapping, i.e., April to September, and all species were readily identifiable during the surveys. Habitats recorded within the study area were evaluated with regard to potential links with EU Annex I habitats. The targeted habitat and botanical surveys were complemented by information gathered during multi-disciplinary ecological walkover surveys, including habitats and flora, undertaken by MWP ecologists on 20th April, 3rd and 19th May, 16th June and 12th July 2023. During all habitat and flora surveys, any invasive plant species encountered were recorded, with a focus on those species listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015).

The results of the habitat and botanical surveys undertaken were used to identify ecological constraints at the Site and inform project design during the early stages of the project. Higher value habitats were excluded from the potential developable area at the Site. An example of this was the exclusion of an area of relatively-higher value coastal calcareous grassland, identified during targeted habitat surveys, from the potential development area under consideration (see **Section 5.5.1** below).

Detailed information with regard to targeted habitat and botanical survey methods employed can be found in **Appendix 5-4** of **Volume 3** of the **EIAR**. For summary results of habitat and botanical surveys see **Section 5.3.5.2** and **5.3.6.1** below.

5.2.6.2 Non-Volant Mammals

Surveys were undertaken to gather detailed information on non-volant mammal distribution and activity within and around the Site to predict the potential effects of the Proposed Development on these fauna. Surveys for non-volant mammals (land-based mammals that cannot fly) targeted protected species under the Wildlife Acts, Annex II, Annex IV and Annex V of the EU Habitats Directive, and Irish Red Listed species (Marnell *et al*. 2019). Particular focus was given to species such as badger (*Meles meles*), otter (*Lutra lutra*), Irish hare (*Lepus timidus hibernicus*) and pine marten (*Martes martes*), given the types of habitats present within the study area and previous species records reviewed as part of the desktop study.

Surveys had regard to the following guidance and literature:

- '*Guidelines Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*' (NRA, 2009)
- *'Animal Tracks and Signs'* (Bang and Dahlstrom, 2004)
- *'Surveying for Badgers: Good Practice Guidelines*' (Scottish Badgers, 2018).

[5] Smith, G. F., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011) *Best Practice Guidance for Habitat Survey and Mapping.* Heritage Council, Kilkenny.
[6] Fossitt, J. (2000) A Guide to Habitats in Ireland. Kilkenny: Heritage Council.

- '*Monitoring the Otter Lutra lutra*' (Chanin, 2003), and
- '*Ecology of the European Otter*' by Chanin (2003b).

The non-volant mammal surveys comprised a combination of general mammal walkover surveys and a targeted otter survey.

Mammal Walkover Surveys

Walkover surveys involved comprehensive searches for general mammal activity in the form of presence of resting/breeding places, prints, scat, hair, feeding signs and trails. To supplement walkover surveys, several wildlife trail cameras were deployed to gather information on general terrestrial mammal activity within the study area. Camera surveys were undertaken in April 2023 (deployed for 8 nights) and May 2023 (deployed for 12 nights). One camera was deployed outside the entrance of a potential animal burrow under NPWS licence[7] (see **Table 5-2** below).

Table 5-2. Description of wildlife camera survey locations

Camera Number	Location (ITM)	Duration		Description of deployment location
1	445959, 568369	20/04/23 28/04/23	to	Set up within the double treeline which adjoins the existing site access road. Camera attached to tree trunk facing into central wooded/vegetated area.
2	446133, 568436	20/04/23 28/04/23	to	Set up outside a potential burrow within a small crevice at the base of a stone wall located above a drainage ditch. Remains of a rabbit/hare were noted in close proximity to crevice at time of camera set-up.
3	446056, 568412	03/05/23 15/05/23	to	Set up within the double treeline which adjoins the existing site access road. Camera attached to tree trunk facing into central wooded/vegetated area.
4	446384, 568536	03/05/23 15/05/23	to	Set up within proposed enhancement area. Attached to fencepost where a potential mammal trail was noted running parallel to the fence line.

Targeted Otter Survey

Due to the suitability of habitats within the surrounding area for otter, comprising watercourses and coastline, and the results of the desk-top study, a targeted otter survey was conducted on the 3rd May 2023. In addition to the core field study area, as shown in **Figure 5-2** above, this survey encompassed the outfall of the Emlaghmore River[8] and surrounding shoreline at Trá na Sassanach, located to the west of the Site, as well as the lower stretch of the An Rinn Rua Stream[9], draining to Trá Rinn Rua, to the east of the Site, and the majority of the intervening stretch of shoreline adjoining and surrounding the Site, comprising a total length of approximately 1 km.

During the targeted otter survey, surveyors walked along the banks of both watercourses and the mid to upper zone of the sandy/rocky shore intervening searching for signs of otter, including breeding/resting sites, spraints, prints, tracks or feeding remains. A short section of the exposed rocky shoreline to the south-east of the derelict hotel was not included in the targeted otter survey due to H&S concerns –see **Section 5.2.7** below. For results of non-volant mammal surveys, see **Section 5.3.9.2** below.

[7] NPWS Licence No. 215/2022
[8] EPA River Waterbody Code: IE_SW_21E010400
[9] EPA River Waterbody Code: IE_SW_21I010900

5.2.6.3 Bats

Surveys were undertaken to gather detailed information on bat distribution and activity within and around the Site to predict the potential effects of the Proposed Development on these fauna. A suite of bat surveys was undertaken within the study area. These had regard to best practice guidance for bat surveys in the Republic of Ireland and the UK, namely '*Bat Surveys for Professional Ecologists: Good Practice Guidelines*' (3rd and 4th editions) (Collins, 2016; 2023). There follows hereunder brief summaries of the bat surveys undertaken in relation to the Proposed Development. Detailed information with regard to bat survey methods employed can be found in **Appendix 5-2** of **Volume 3** of the **EIAR**.

Bat Foraging/Commuting Habitat Suitability Survey

Habitats and linear habitat features of potential value to bats, such as hedgerows and treelines, occurring within the study area were described in terms of plant species, overall condition and structure, and degree of connectivity within the wider landscape, to evaluate their potential suitability for foraging and commuting bats.

Bat Roost Inspection Surveys – Structures

Preliminary Roost Assessments (PRAs) of stuctures located within the study area were completed on the 4th and 20th April 2023. These surveys encompassed the derelict hotel and the derelict cottage. The surveys involved daytime inspections of both the interior and exterior of structures to identify features that could support roosting bats, and/or identify any evidence of bat activity. On completion of the PRAs, each structure was categorized as having either 'negligible', 'low', 'moderate' or 'high' suitability for roosting bats. For the purposes of assigning suitability ratings, due to the overall size of the hotel and the different external and internal structural characteristics encountered, and the varying degrees of potential suitability for roosting bats, the hotel building was categorised in terms of the four main structural components ('roofless section', 'middle tower', 'bedroom block' and 'sheds/outbuildings') (see **Figure 5-3** below). The results of the PRAs determined whether further surveys were required for each structure. Survey methods were in line with that recommended in Collins (2016).

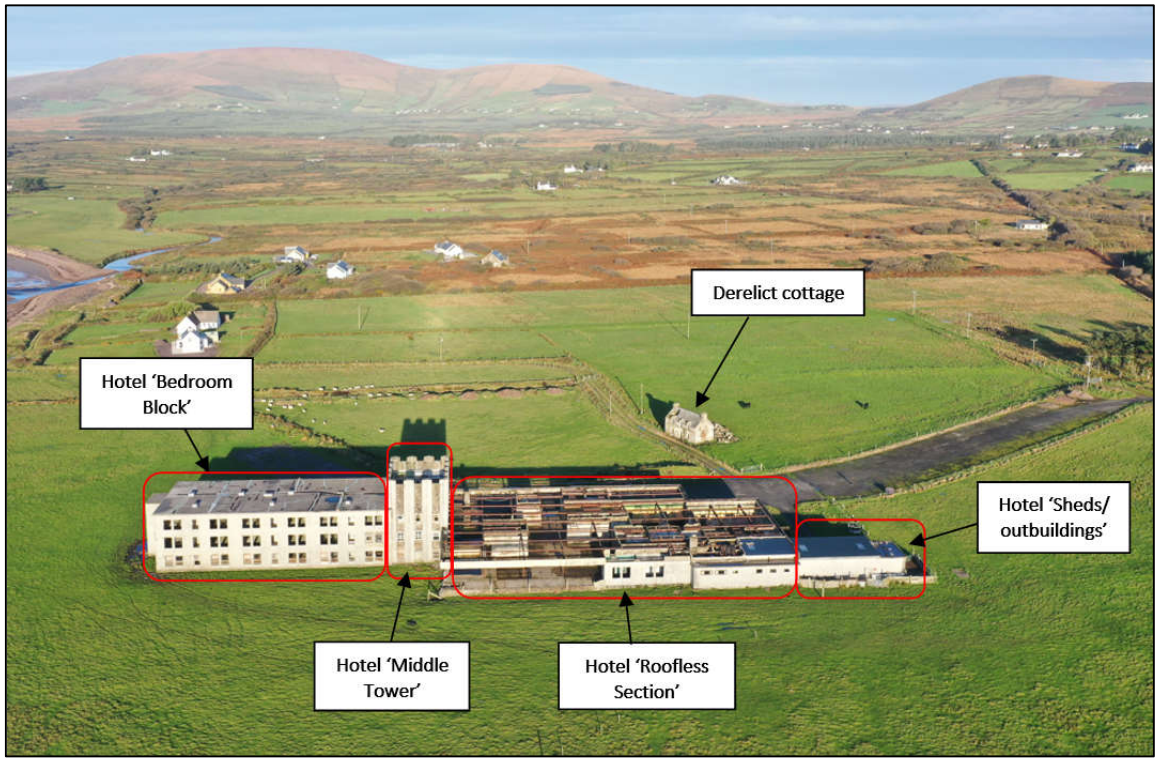

Figure 5-3. PRA bat survey areas (Hotel – Bedroom block, middle tower, roofless section, sheds/outbuildings, and Derelict cottage)

Bat Roost Inspection Surveys - Trees

A preliminary ground-level roost assessment of trees within the study area was undertaken on 4th April 2023. This involved detailed daytime inspections of the exteriors of trees to search for features with potential to support roosting bats (i.e., Potential Roost Features - PRFs), such as holes, cracks, crevices and splits, loose bark, dense ivy etc., or signs of roosting bats, such as droppings, staining etc. On completion, each tree was categorized as having either 'negligible', 'low', 'moderate' or 'high' suitability for roosting bats. The results of the PRAs determined whether further surveys were required. Survey methods were in line with that recommended in Collins (2016).

Presence/Absence Surveys (Emergence/Re-entry Surveys)

Based on the results of the PRAs, presence/absence surveys (comprising dusk emergence and dawn re-entry surveys) were undertaken at structures considered to have potential to support roosting bats. The purpose of the surveys was to record any bats emerging/returning, identify roost exit/entry points, and confirm the species and numbers occurring. During each dusk or dawn survey, surveyors positioned themselves at pre-selected locations comprising suitable vantage points to watch defined areas, identified as containing potential entry/exit points during the PRA surveys, for either emerging or returning bats. With regard to the hotel, on the basis of the results of the PRA surveys, the surveys focussed on the middle tower and bedroom block.

Surveys of the derelict hotel were undertaken at dusk on the 16th May and 27th June 2023 and at dawn on the 21st July 2023. Surveys of the derelict cottage were undertaken at dawn on the 28th June 2023 and at dusk on the 20th July 2023. Survey methods were in line with that recommended in Collins (2016).

Passive Automated Bat Surveys (PABS)

PAB surveys were undertaken using bio-acoustic recording units (static bat detectors) set up at pre-selected sampling locations (SPs) within the Site. The purpose of the surveys was to remotely record bat activity over extended periods to capture data on the level of bat activity at the Site and its spatial and temporal distribution. PAB surveys were undertaken at the Site in April and May 2023, corresponding to the spring bat survey period, as described by Collins (2016).

The static bio-acoustic units were deployed as follows:

- **April 2023 – Wider Development Site:** Five static detectors deployed throughout the Site from 5th – 20th April 2023, inclusive (16 consecutive nights) (see **Table 5-3** below).
- **May 2023 – Hotel Interior**: Six static detectors deployed at various locations all within the hotel from 3rd – 15th May 2023, inclusive (13 consecutive nights) (see **Table 5-4** below).

Table 5-3. Locations of sampling points for PAB surveys (April 2023) and corresponding descriptions

Sampling Point (SP)	Location	Location Description
SP1	Hotel - Middle Tower	Inside stairwell on ground floor, attached to stair rail
SP2	Outside hotel	At south-eastern elevation of hotel, facing open coastal grassland
SP3	Derelict cottage	Inside structure (ground-floor)
SP4	Treeline	Attached to mature conifer
SP5	Treeline	Attached to mature conifer

Table 5-4. Locations of sampling points for PAB surveys (May 2023) and corresponding descriptions

Sampling Point (SP)	Location	Location Description
SP1	Hotel - Middle Tower	Inside stairwell on ground floor, attached to stair rail
SP2	Hotel - Bedroom block	Ground floor (main corridor)
SP3	Hotel - Bedroom block	First floor (workroom)

Sampling Point (SP)	Location	Location Description
SP4	Hotel - Middle tower	Second floor landing (outside bedroom wing entrance)
SP5	Hotel - Middle tower	Second floor landing (second landing area)
SP6	Hotel - Middle tower	Top floor of tower (roof entrance landing), attached to stair rail

Winter Hibernation Surveys

Due to the potential for structures to support hibernating bats, preliminary winter inspection surveys were undertaken within the hotel interior in December 2023, January and February 2024 with regard to Collins (2023). The winter building inspection surveys comprised daytime walkthroughs of the interior of the hotel tower and bedroom block to assess the potential suitability of the structure for hibernating bats and search for evidence of bat occupation.

Collins (2023) also outlines the use of static detectors to complement winter inspection surveys. Due to the scale of the structure and the potential for bats to be hibernating deep in crevices within the hotel interior, the visual inspection surveys, as described above, were supplemented by the deployment of winter automatic static detectors, to gather additional data on bats potentially utilising the structure over the winter period. Static detectors were deployed over the winter period, as follows:

- **January 2024 – Hotel Interior:** Four static detectors deployed at various locations within the hotel from 11th – 26th January 2024, inclusive (15 consecutive nights) (see **Table 5-5** below).
- **February 2024 – Hotel and Wider Site:** Seven static detectors deployed, including within the hotel and within the wider Site, from 19th February – 1st March 2024, inclusive (11 consecutive nights) (see **Table 5-5** below).

Table 5-5. Locations of sampling points for winter PAB surveys within hotel structure (January & February 2024) and corresponding location descriptions

Sampling Point (SP)	Location	Location Description	January 2024	February 2024
SP1	Hotel - Middle Tower	Inside stairwell on ground floor, attached to stair rail	✓	✓
SP2	Hotel - Middle tower	Top floor of tower (roof entrance landing), attached to stair rail	✓	✓
SP3	Hotel - Middle tower	Second floor landing (outside tiled room)	✓	✓
SP4	Hotel – Bedroom block	First floor bedroom, landward side of building	✓	✓
SP5	Hotel – Bedroom block	Ground floor (main corridor)	N/a	✓
SP6	Derelict cottage	Inside structure (ground-floor)	N/a	✓
SP7	Treeline	Approximately halfway along treeline	N/a	✓

Further detailed information with regard to bat survey methods employed can be found in **Appendix 5-2** of **Volume 3** of the **EIAR**. The results of the bat surveys undertaken are summarised in **Section 5.3.8.2** below.

5.2.6.4 Birds

Surveys were undertaken to gather detailed information on bird distribution and activity within and around the Site to predict the potential effects of the Proposed Development on these fauna. The field surveys comprised various distribution and abundance surveys carried out to record numbers and distributions of all bird species using the Site that might be affected, either directly or indirectly, by the Proposed Development. The distribution and abundance surveys, undertaken between May 2022 and June 2023 and capturing both summer and winter seasons, comprised:

- Point count (PC) surveys
- Walkover surveys
- Monitoring surveys of chough using the hotel building (undertaken as part of walkover surveys)

Point Count Surveys

Point count (PC) surveys were undertaken on a monthly basis during the summer months (April to August) and on a twice monthly basis during the winter months (September to March) between May 2022 and May 2023. The aim of the point count surveys was to gather data on abundance and distribution of birds occurring around the Site during both the summer and winter periods, with a focus on the surrounding coastline and in-shore marine zone. Four locations were selected for the point count surveys (see **Figure 5-4** below). All four locations were surveyed on each survey date. During point count surveys, all bird species seen or heard by the surveyor were recorded.

Figure 5-4. Point count (PC) locations for bird surveys of the area surrounding the Site

Walkover Surveys

Walkover surveys of the study area were undertaken between May 2022 and May 2023 on the same dates as point count surveys. The aim of the walkover surveys was to assess general distribution of all bird species and gather data on bird usage of the Site and surrounding area. The walkover surveys encompassed all areas of the study area, including all representative habitats. During walkover surveys, all bird species seen or heard by the surveyor were recorded.

Chough Monitoring

During the initial site visit by the field ornithologist, a pair of breeding chough were identified utilising the derelict hotel within the Site for nesting. This pair was monitored during both the 2022 and 2023 breeding seasons. During the 2023 breeding season, monitoring of chough continued for an extended period into June to capture data on fledging activity/confirm the outcome of the nest. Chough roosting activity within the hotel by the same pair was monitored during winter 2022/23. The purpose of the chough monitoring surveys was to capture data on the identified resident breeding pair and general data on chough habitat usage and distribution within the study area.

Further information with regard to bird survey methods employed can be found in **Appendix 5-3** of **Volume 3** of the **EIAR**. The results of the bird surveys undertaken are summarised in **Section 5.3.10.2** below.

5.2.6.5 Aquatic Surveys

Surveys were undertaken to gather baseline information on freshwater aquatic ecology within and around the Site to predict the potential effects of the Proposed Development on aquatic fauna and flora. Aquatic surveys were undertaken within the study area on 22nd May 2023. Due to the nature of the aquatic features occurring, the surveys focused on amphibians and aquatic macro-invertebrates.

Amphibians

All watercourses occurring within the core study area are classified as drainage ditches. The aquatic surveys aimed to establish the presence of tadpoles within these drainage features. Surveys were undertaken at four representative sites within the study area (see **Figure 5-5** below). Survey locations selected were deemed to offer the most suitable potential habitat for tadpoles. Searches were carried out at each survey site using a dip net which was swept through the water/submerged vegetation five times at each location. The results of amphibian surveys undertaken are outlined in **Section 5.3.11.2** below.

Figure 5-5. Location of aquatic survey sites within the study area

Freshwater Aquatic Macro-invertebrates

Aquatic macroinvertebrates were sampled at the sites shown in **Figure 5-5**. It is noted that most drainage ditches in the study area had been recently maintained, were devoid of growing plants and had very little water. The survey sites were not suitable for assigning a Q-rating due to the poor supporting habitat for macroinvertebrates. Information with regard to freshwater aquatic macro-invertebrate survey methods employed can be found in **Appendix 5-5** of **Volume 3** of the **EIAR**. The results of the aquatic macro-invertebrate surveys undertaken are outlined in **Section 5.3.12.1** below.

5.2.6.6 Terrestrial Macro-invertebrates

Surveys were undertaken to gather baseline information on terrestrial invertebrates within and around the Site to predict the potential effects of the Proposed Development on these fauna. Field surveys for terrestrial invertebrates comprised general invertebrate surveys (some undertaken as part of multi-disciplinary walkover surveys) and targeted surveys for marsh fritillary butterfly.

General Invertebrate Survey

Surveys for terrestrial invertebrates, such as butterflies, moths, bees, dragonflies, damselflies, slugs, snails, beetles, spiders and flies were undertaken by MWP staff ecologists within the study area on the 19th May, 16th June, 12th July, 14th August and 18th October 2023.

The surveys involved walkovers of the study area in which all representative habitats, including wet grassland, semi-improved grassland, improved grassland, reed and large sedge swamp, conifer treeline, scrub, earth banks, ditches and stonewalls were surveyed for terrestrial invertebrates. A combination of three main surveys methods

were employed; direct observation, hand-searching, and use of sweep-nets/beating trays. Any invertebrates captured were carefully removed to an examination tray for identification or were photographed in-situ, prior to being released in the same location as where captured.

Further information with regard to terrestrial invertebrate survey methods employed can be found in **Appendix 5-5** of **Volume 3** of the **EIAR**. The results of the general terrestrial invertebrate surveys undertaken are summarised in **Section 5.3.13.2.1** below.

Marsh Fritillary

Targeted surveying for marsh fritillary comprised two main elements; a Habitat Condition Assessment (HCA) survey and a larval web survey, both based on methodology recommended by the NBDC. In addition to these surveys, during site visits in May and June, coinciding with the flight period for this species, surveyors also searched for any adults on the wing (in flight).

HCA surveys were carried out within five pre-selected survey areas within the study area, comprising habitats considered potentially suitable for marsh fritillary due to the presence of the required species larval food-plant devil's-bit scabious (*Succisa pratensis*). Surveys were completed on the 19th May, 16th June and 12th July 2023. Within each area, surveyors recorded data on vegetation height and structure, abundance of devils-bit scabious and extent of management (e.g. grazing, burning etc) at regular stopping points. Based on the results, each survey area was then assigned to one of the following categories: Good Condition Habitat (GC); Suitable (Under-grazed) Habitat (SU); Suitable (Over-grazed) Habitat (SO); Unsuitable habitat (US), as per NBDC methodology.

Marsh fritillary larval web surveys were also carried out by MWP ecologists on the 14th August and 18th October 2023. During the survey, devils-bit scabious plants were examined for presence of occupied/unoccupied larval webs. These surveys focussed on those areas identified as comprising potentially suitable habitat during the HCA survey.

Further information with regard to marsh fritillary survey methods employed can be found in **Appendix 5-5** of **Volume 3** of the **EIAR**. For summary results of the marsh fritillary surveys undertaken, see **Section 5.3.13.2.2** below.

5.2.7 Statement of Limitations and Difficulties Encountered

In general, limitations to methodologies, procedures and equipment can arise during the course of an ecological assessment. Some limitations may be foreseen and can be accounted for while others may not be apparent until the actual assessment has taken place.

In relation to otter, a short section of the rocky shoreline (approx. 150 m) was not included in the targeted otter survey undertaken due to H&S concerns with regard to the topography of the cliff-face, the terrain underfoot, and tidal conditions. In relation to bats, different areas of the derelict hotel are in various states of disrepair. Similarly, the derelict cottage is in poor structural condition, in particular internally. Due to considerable H&S concerns, access to the first floor of the cottage was not possible and therefore the internal inspection of the cottage interior was undertaken from the ground floor. External surveys of all structures were also undertaken from ground-level. Refer to **Appendix 5-2** of **Volume 3** of the **EIAR** for more information.

These survey limitations are not considered to have significantly impacted upon the collection of sufficient data to inform a robust impact assessment on any ecological receptor. No other limitations or difficulties were encountered.

5.2.8 Ecological Value

The value of the ecological receptors identified was determined using the ecological evaluation guidance given in the National Roads Authority (NRA – now TII) ecological assessment guidelines '*Guidelines for Assessment of Ecological Impacts of National Roads Schemes*' (NRA, 2009). This evaluation scheme seeks to provide value ratings for ecological receptors and sets out the context for the determination of value on a geographical basis with a hierarchy (International through to Local) assigned based on the importance of any particular ecological receptor.

The NRA criteria are specific to circumstances in Ireland and, therefore, have been used in this chapter to assess the value of individual ecological features within the Site and its ZOI. The NRA (2009) guidelines provide a basis for determination of whether any particular site, habitat or species is of importance on the following scale:

- International
- National
- County
- Local Importance (higher value), and
- Local Importance (lower value)

The NRA (2009) guidelines clearly set out the criteria by which each geographic level of importance can be assigned. At the lowest end of the scale, Locally Important (lower value) receptors contain habitats and species that are widespread, of low ecological significance, and are of importance only in the local area. In contrast, Internationally Important receptors can comprise sites designated for conservation at an international level as part of the Natura 2000 Network (SAC or SPA) or which provide the best examples of habitats, or internationally important populations of protected flora and fauna.

The function of this evaluation scheme is primarily to assess the value of a site. In this case, the scheme has been adapted to assess the value of habitats and species. The value of habitats is assessed based on habitat condition, size, rarity, conservation and legal status. The value of species is assessed on its biodiversity value, legal status and conservation status. Biodiversity value is based on its national distribution, abundance or rarity, and associated trends. The NRA (2009) criterion used to evaluate the value of ecological resources has been included in **Appendix 5-6** of **Volume 3** of the **EIAR**.

Important Ecological Features (IEFs) are ecological features (*i.e*. sites designated for nature conservation, habitats and/or species) which are evaluated as Locally Important (higher value) or higher and which are likely to be impacted by the Proposed Development. All features that were evaluated as being of Local Importance (higher value) and higher were selected as IEFs for the Proposed Development in **Section 5.3.14** below. The significance of impacts arising on these IEFs as a result of the various phases of the Proposed Development has been assessed in **Section 5.4** below. In relation to bats, other guidance specific to bats and bat impact assessment, namely Marnell *et al*., (2022), has been used to determine impact significance on bats.

5.2.9 Scope of Assessment

This assessment considers the potential effects with regard to each phase of the Proposed Development: namely the construction phase and operational phase. Appropriate mitigation measures are described to avoid, reduce or offset potential negative impact(s).

The specific objectives of the assessment were to:

- Identify and document protected habitats and species in the study area and extending away from it through a desk top study of available ecological data.

- Undertake baseline ecological surveys at the study area and evaluate the nature conservation importance of the ecological resources identified using a scientifically robust and objective methodology based on current best practice.
- Predict the potential direct, indirect and cumulative effects of the project on Biodiversity.
- Prescribe measures to mitigate the potential negative effects of the project on Biodiversity, and
- Identify habitats within the study area that can benefit from ecological management for the purpose of local Biodiversity enhancement.

Determination of the significance of an effect will be made in accordance with the EPA guidance document '*Guidelines on Information to be contained in Environmental Impact Assessment Reports*' (2022). Refer to **Chapter 1** of the **EIAR** for more information.

5.3 Existing Environment

5.3.1 Site Location and Description

The Proposed Development site is located on the coast approximately 2 km north-east of Ballinskelligs and 4.5 km north-west of Waterville in rural south County Kerry. The nearest large town, Cahersiveen, is located approximately 11 km to the north (see **Figure 5-6** below). The site is situated on a small headland, known as Rinn Rua, located on the northern shore of Ballinskelligs Bay.

The Proposed Development site is presently occupied by two derelict structures, namely a former hotel and a former dwelling house. The derelict hotel is situated in the southeastern part of the Site. This building was constructed over 50 years ago and comprises mainly mass concrete. The structure is aligned in a northwest-southeast direction and commands expansive uninterrupted views of the scenic coastline and the bay to the south. The building comprises a single-story structure on the northern side (largely with roof missing and open to the elements), a tall concrete tower towards the centre and a three-story structure at the south which structurally is in relatively good condition. The different components of the building are in various states of disrepair or dereliction. A small derelict house is located c. 40 m to the north-west of the centre of the hotel building. This two-story house has both a rear and a front entrance and a chimney on both gables. The house has a slate roof, in disrepair, and is of stone construction, although largely plastered over.

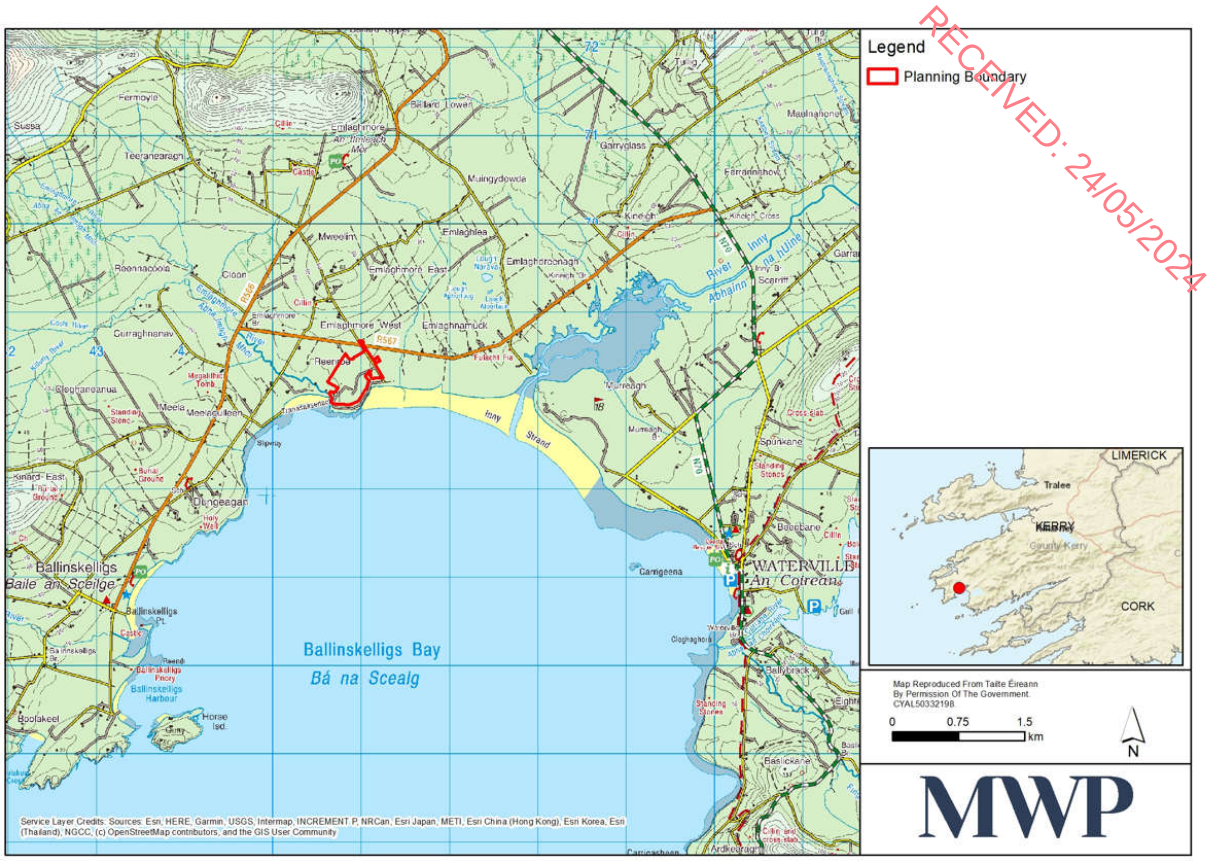

Figure 5-6. Site location

Lands within the Site are managed for agriculture, comprising grazing for sheep. Outbuildings/sheds attached to the northern end of the structure are used for agricultural purposes. Lands surrounding the Site are predominantly in low-intensity agricultural use. There are three residential dwellings located outside but immediately adjacent to the Site boundary, with several more located further west. Immediately east and west of the small headland respectively are the sandy beaches of Trá Rinn Rua (also known as Inny Strand or Reenroe Beach) and Trá na Sassanach. These beaches are connected by a public right-of-way which travels along the edge of the headland, encompassed within the southern boundary of the Site. To the south, the Site is fronted by rocky shore, sea cliff and Ballinskelligs Bay.

A review of EPA Corine (2018) mapping determined that the majority of the Site is categorised as 'Pastures', with 'Peat bogs' and 'Beaches, dunes and sand' encompassing lands extending eastwards. Similar Corine (2018) habitats occur in the wider area, along with 'Intertidal flats', 'Land principally occupied by agriculture with significant area of natural vegetation' and 'Coniferous forests' are recorded in the wider landscape.

There are areas of ecological importance nearby, and in the wider landscape, including Ballinskelligs Bay and Inny Estuary SAC (000335) and the Ballinskelligs Bay and Inny Estuary pNHA (000335) with which it overlaps. These sites adjoin sections of the Site boundary to the south, east and west. The SAC and pNHA comprise the marine waters of Ballinskelligs Bay, some adjoining terrestrial areas and the estuary of the River Inny, located approximately 1.5 km east of the Site.

Access to the site is via a local road (L-7535) off the R567 Waterville to Ballinskelligs Coast Road, and from there via a private laneway through the Site as far as the hotel building. The local road from the R567 also provides access to public car parking facilities for Trá Rinn Rua along with a dwelling which overlooks the beach.

5.3.2 Proposed Development

Refer to **Chapter 2** for a detailed description of the Proposed Development. An outline of the development for which planning permission is sought in the planning application (the Proposed Development) consists of the following:

Core Elements:	• Permission to renovate existing Reenroe Hotel to include hotel apartments comprising of 6 no. Studios, 3 no. One bed, 15 no two beds, Bar 192 sqm, Dining Room 256 sqm and Restaurant 426 sqm. • The development will also include the construction of 6 no. Hobbit Huts, 21 no. Glamping Pods, 25 no. Holiday Homes, 144 no. Mobile Homes, 20 no. Campervan Stands, 0.8 ha Tent Camping Area, Wash Room, Maintenance Building 600 sqm, Leisure Complex 1,281 sqm, Surf Shop/Café 225 sqm, Natural Play Area, Central Park Area, 149 no. Car Parking Spaces, 2 no. coach parking, 40 no. bicycle spaces, 7 no. EV Charging Points and the stabilisation of an onsite derelict building. • Internal roads, footpaths, waste storage areas, widening of the beach access road (L-7535) from the R567 including pedestrian footpath and reinstatement of existing beach parking, improved public walkway along the cliff and new private access road to two neighbouring dwellings (to the south-west of the development site), new wastewater treatment system with clear water pump station and UV system, drainage, water services, landscaping and all associated ancillary site works.

In addition to the above core elements, comprising the Proposed Development for planning consent, a Biodiversity Enhancement Plan (BEP) has been prepared and accompanies the planning application. Refer to **Section 5.7** below and **Appendix 5-7** in **Volume 3** of the **EIAR** for more information.

5.3.3 Local Hydrology

The Proposed Development site is situated in the 'South-western' River Basin District and the 'Dunmanus-Bantry-Kenmare' Water Framework Directive (WFD) Catchment. The western half of the Site is encompassed within the 'Coom_SC_010' WFD sub-catchment, while the eastern half of the Site lies within the 'Inny[Kerry]_SC_010' WFD sub-catchment[10]. There are no watercourses located within the Site; however, there are two EPA registered watercourses[11] within the nearby surrounding area that drain lands within the study area, fed by numerous field ditches. These ditches are associated with agricultural fields, field boundaries, hedgerows and treelines.

The western section of the study area is within the 'Emlaghmore_010' sub-basin, drained by the 4th order 'Emlaghmore21' river[12]. This watercourse, which drains peatland, farmland and forestry on lands to the north-west of the Site, discharges to the bay at Trá na Sassanach, approximately 0.1 km west of the Site boundary, at the closest point.

The eastern section of the study area is within the 'Inny [Kerry]_030' sub-basin, drained by the 2nd order 'An Rinn Rua' stream[13]. This watercourse rises inland further north, also draining peatlands, farmland and forestry, before discharging to the bay at Trá Rinn Rua, approximately 0.2 km east of the Site boundary, at the closest point.

The latest WFD River Waterbody Status (2016-2021) of both the Emlaghmore River and the Rinn Rua Stream is 'Moderate', and both have been assigned a WFD Risk category of 'At risk'. As part of the monitoring requirements

[10] https://gis.epa.ie/EPAMaps/ Accessed 30/05/2023
[11] https://gis.epa.ie/EPAMaps/
[12] EPA Code IE_SW_21E010400
[13] EPA Code IE_SW_21I010900

for compliance with the Water Framework Directive (Directive 2000/60/EC), the EPA carries out biological monitoring of the Emlaghmore River, at a monitoring station located at Emlaghmore Bridge, approximately 1.2 km upstream of the Trá na Sassanach outfall. The most recent Q-value which has been determined for this river is 'Q3-4 moderate', assigned in 2020[14]. No assigned Q-values are available on the EPA website for the An Rinn Rua Stream.

A review of the 'Coom_SC_010 Sub-catchment Assessment WFD Cycle 2' report determined that due to a lack of chemistry data, the significant pressures on the 'Emlaghmore_010' waterbody are not clear; however, it is noted that the proximity of recently afforested areas to the waterbody's monitoring station may indicate a biological impact due to this activity. Diffuse agriculture in certain areas throughout the water body may also be having an impact, along with peat extraction. The sub-catchment assessment notes that these pressures have been confirmed by the local authority and the EPA, who noted hydromorphological pressures from badly eroding earthen banks, suspended sediment and cattle poaching[15].

A review of the 'Inny [Kerry]_010 Sub-catchment Assessment WFD Cycle 2' report determined that while the nutrient concentrations of the waterbody are low, areas of blanket bog and certain agricultural sites near the channel may impact the biology of the waterbody. It is also possible that a pollution incident occurred in the upper sub-catchment, impacting the waterbody status and resulting in an elimination of sensitive biological taxa. The most likely drivers are impacts from forestry and clearfelling. There are also hydromorphological impacts from land drainage and reclamation and forestry[16].

The Coastal Waterbodies WFD Status (2016-2021) of Ballinskelligs Bay[17] is 'High' with a WFD Coastal Waterbodies risk category currently under review. The site is underlain by the 'Beara Sneem' ground waterbody[18] with a current Ground Waterbody WFD Status (2016-2021) of 'Good'.

Refer to **Chapter 7** of the **EIAR** for more information on hydrology.

5.3.4 Designated Sites

The following compiles a list of nature conservation sites which lie within a potential zone of impact (ZOI) for later analysis which may or may not be significantly impacted upon by the Proposed Development. Each site is characterised in the context of its conservation interests. Following this, the potential effects associated with the proposal will be identified before an assessment is made of the likely significance of these effects.

5.3.4.1 Sites of International Importance

Natura 2000 sites are sites of international importance for nature conservation and are designated and protected under European legislation. Two types of sites are incorporated within the Natura 2000 network; Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). SACs are protected under the Habitats Directive 92/43/EEC, while SPAs are protected under the Birds Directive 2009/147/EC. Both of these European Directives are transposed into Irish legislation under the European Communities (Birds and Natural Habitats) Regulations 2011, as amended. Collectively, SACs and SPAs are referred to as Natura 2000 sites or European sites.

All SACs and SPAs within a potential ZOI of the Proposed Development site have been identified and are presented in **Table 5-6** and **Figure 5-7** below.

[14] Available at EPA Maps Accessed 30/05/2023
[15] https://catchments.ie/wp-content/files/subcatchmentassessments/21_120COOM_SC_01020Subcatchment20Assessment20WFD20Cycle202.pdf Accessed 30/05/2023
[16] https://catchments.ie/wp-content/files/subcatchmentassessments/21_1020Inny[Kerry]_SC_01020Subcatchment20Assessment 20WFD20Cycle202.pdf Accessed 30/05/2023
[17] EPA Code IE_SW_200_0000
[18] EPA Code IE_SW_G_019

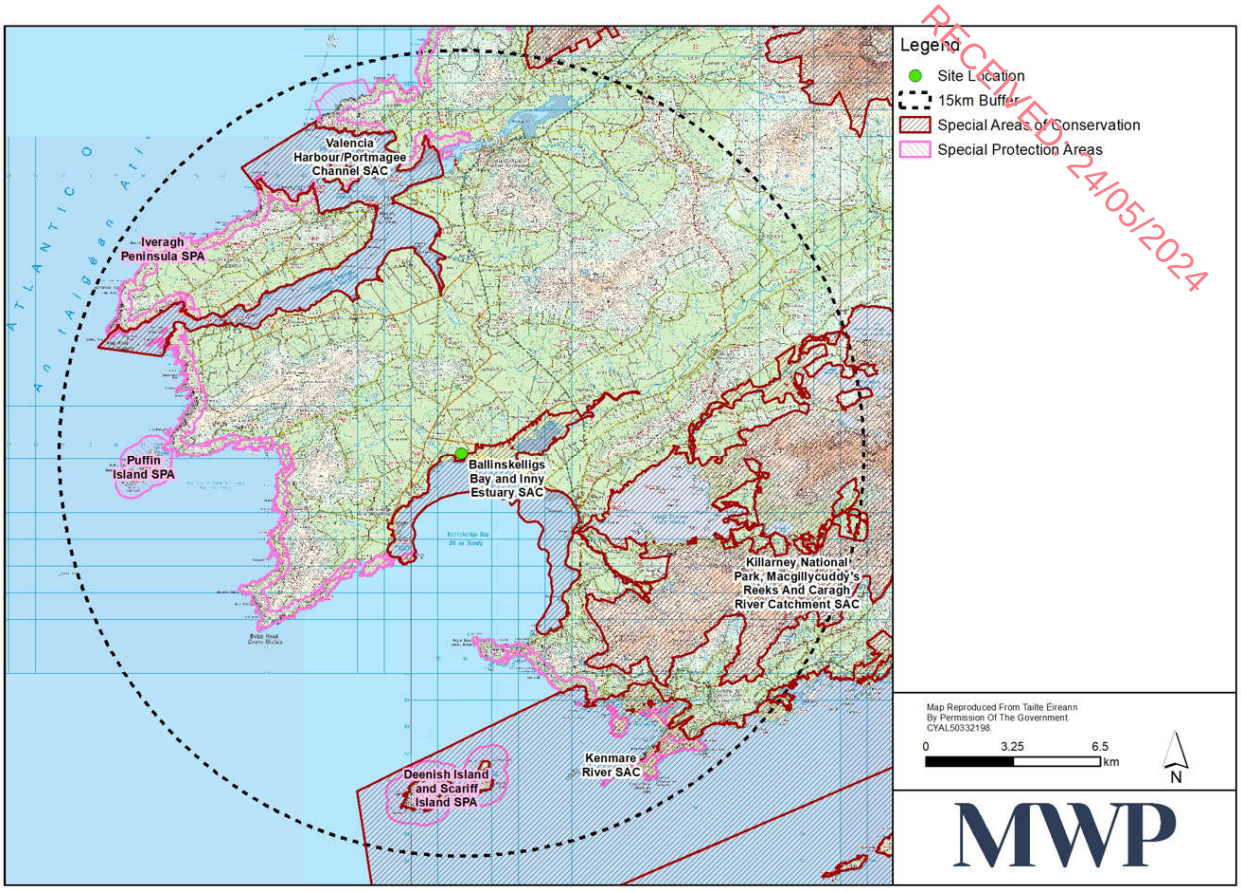

Figure 5-7. Natura 2000 sites within the area surrounding the Proposed Development site

Table 5-6. Natura 2000 sites within the potential ZOI of the Proposed Development

Designated Site	Site Code	Qualifying Features of Conservation Interest	Proximity and connection to subject site
Ballinskelligs Bay and Inny Estuary SAC	000335	• Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] • Mediterranean salt meadows (Juncetalia maritimi) [1410] • *Petalophyllum ralfsii* (Petalwort) [1395]	Contiguous with/in close proximity to parts of the Site boundary. Contiguous with parts of the proposed biodiversity enhancement area.
Killarney National Park, Macgillycuddy's Reeks and CarghRiver Catchment SAC	000365	• Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] • Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130] • Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] • Northern Atlantic wet heaths with *Erica tetralix* [4010] • European dry heaths [4030] • Alpine and Boreal heaths [4060] • *Juniperus* communis formations on heaths or calcareous grasslands [5130]	5km to east

Designated Site	Site Code	Qualifying Features of Conservation Interest	Proximity and connection to subject site
		• Calaminarian grasslands of the Violetalia calaminariae [6130] • *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] • Blanket bogs (* if active bog) [7130] • Depressions on peat substrates of the Rhynchosporion [7150] • 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] • *Taxus baccata* woods of the British Isles* [91J0] • Brook Lamprey (*Lampetra planeri*) [1096] • River Lamprey (*Lampetra fluviatilis*) [1099] • Sea Lamprey (*Petromyzon marinus*) [1095] • Killarney Shad (*Alosa fallax killarnensis*) [5046] • Lesser Horseshoe Bat (*Rhinolophus hipposideros*) [1303] • Marsh Fritillary (*Euphydryas aurinia*) [1065] • Kerry Slug (*Geomalacus maculosus*) [1024] • Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029] • Otter (*Lutra lutra*) [1355] • Slender Naiad (*Najas flexilis*) [1833] • Killarney Fern (*Trichomanes speciosum*) [1421] • Salmon (*Salmo salar*) [1106]	
Valencia Harbour/Portmagee Channel SAC	002262	• Mudflats and sandflats not covered by seawater at low tide [1140 • Large shallow inlets and bays [1160]] • Reefs [1170]	5.6km to north
Kenmare River SAC	002158	• Large shallow inlets and bays [1160] • Reefs [1170] • Perennial vegetation of stony banks [1220] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] • Mediterranean salt meadows (Juncetalia maritimi) [1410] • Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes)* [2130] • European dry heaths [4030] • *Juniperus* communis formations on heaths or calcareous grasslands [5130]	9.5km to south

Designated Site	Site Code	Qualifying Features of Conservation Interest	Proximity and connection to subject site
		• Calaminarian grasslands of the Violetalia calaminariae [6130] • Submerged or partially submerged sea caves [8330] • Narrow-mouthed Whorl Snail (*Vertigo angustior*) [1014] • Otter (*Lutra lutra*) [1355] • Harbour Seal (*Phoca vitulina*) [1365] • Lesser Horseshoe Bat (*Rhinolophus hipposideros*) [1303]	
Iveragh Peninsula SPA	004154	• Kittiwake (*Rissa tridactyla*) [A188] • Guillemot (*Uria aalge*) [A199] • Peregrine (*Falco peregrinus*) [A103] • Chough (*Pyrrhocorax pyrrhocorax*) [A346] • Fulmar (*Fulmarus glacialis*) [A009]	3.6km to southwest
Puffin island SPA	004003	• Puffin (*Fratercula arctica*) [A204] • Razorbill (*Alca torda*) [A200] • Fulmar (*Fulmarus glacialis*) [A009] • Manx Shearwater (*Puffinus puffinus*) [A013] • Storm Petrel (*Hydrobates pelagicus*) [A014] • Lesser Black-backed Gull (*Larus fuscus*) [A183]	10.5km to west
Deenish Island and Scariff Island SPA	004175	• Storm Petrel (*Hydrobates pelagicus*) [A014] • Manx Shearwater (*Puffinus puffinus*) [A013] • Arctic Tern (*Sterna paradisaea*) [A194] • Fulmar (*Fulmarus glacialis*) [A009] • Lesser Black-backed Gull (*Larus fuscus*) [A183]	10.6km to south

5.3.4.1.1 *Ballinskelligs Bay and Inny Estuary SAC*

Situated close to Waterville town at the western end of the Iveragh Peninsula in southwest County Kerry, this site comprises the marine waters of Ballinskelligs Bay and the horseshoe-shaped coastal land extending from Horse Island in the west round the bay to Rineen Point in the southeast along with the River Inny Estuary upstream as far as Breahig. A wide variety of habitats are supported within the site including the shallow marine waters of the bay, intertidal mudflats and sandflats, sandy beaches, saltmarsh, shingle, tidal river channels, sea cliffs, wet and dry grassland, freshwater marshes, swamps, cut-away bog, scrub, and bracken.

The site is designated for two habitats – Atlantic salt meadows [1330], and Mediterranean salt meadows [1410] – and one plant species – petalwort (*Petalophyllum ralfsii*) [1395]. Both types of saltmarsh are confined mainly to the northern side of the Inny Estuary while the petalwort is limited to a small area of sand dunes near the estuary's mouth. The site is also used by nationally important numbers of wintering common scoter (*Melanitta nigra*) and ringed plover (*Charadrius hiaticula*), and supports waders such as curlew (*Numenius arquata*) and oystercatcher (*Haematopus ostralegus*). A grey seal colony (*Halichoerus grypus*) also occurs within the bay.

5.3.4.1.2 *Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment SAC*

The majority of this very large site is located in County Kerry with only a small section located within County Cork. The site stretches from the Cork/Kerry border near Millstreet westwards to the Atlantic coast, encompassing numerous mountains, rivers and lakes within its borders including the Paps Mountains, Killarney National Park, the Macgillycuddy's Reeks, the lakes of Killarney, Caragh Lake and Caragh River. The site is designated for a wide range of protected habitats and species.

The extensive area of old oak woodlands [91A0] around the Killarney lakes is likely to be the most natural sessile oak (*Quercus petraea*) wood in the country. Furthermore, the herbaceous layer of these woods supports one of the best developed Atlantic bryophyte communities in Europe with several rare species present. The SAC also contains Ireland's only sizeable yew (*Taxus baccata*) woodland [91J0] located on the Muckross Peninsula with some yew specimens aged up to 200 years old. Extensive alluvial woodland [91E0] is located on the low-lying limestone floodplain of Lough Leane with dominant canopy species of alder (*Alnus glutinosa*), willow (*Salix* spp.), ash (*Fraxinus excelsior*) and downy birch (*Betula pubescens*). The various protected habitats associated with blanket bogs, heaths, and upland grassland occur throughout the site.

The site is designated for two plant species, namely slender naiad (*Najas flexilis*) [1833], found within some lakes, and Killarney fern (*Trichomanes speciosum*) [1421]. There is a significant population of lesser horseshoe bat (*Rhinolophus hipposideros*) [1303] within the site with both nursery and hibernation spots distributed throughout. Other mammals of note found within the SAC include otter (*Lutra lutra*) [1355], pine marten (*Martes martes*) and a sizeable herd of red deer (*Cervus elaphus*), the only remaining native herd left in Ireland.

Greenland white-fronted geese (*Anser albifrons flavirostris*) winter on Killarney National Park's boglands, and kingfisher (*Alcedo atthis*) is common within the Park's lakes and rivers. The SAC supports populations of breeding merlin (*Falco columbarius*), chough (*Pyrrhocorax pyrrhocorax*), and common tern (*Sterna hirundo*), and one of the country's highest concentrations of breeding peregrine (*Falco peregrinus*). The rivers and lakes of the SAC host several rare fish species, including all three Irish lamprey species [1095; 1096; 1099], Atlantic salmon [1106] and Killarney shad [1103], the latter being a unique land-locked subspecies confined to the Killarney lakes. Rare invertebrates within the site include Kerry slug (*Geomalacus maculosus*) (1024), freshwater pearl mussel (*Margaritifera margaritifera*) [1029] and marsh fritillary (*Euphydryas aurinia*) [1065].

5.3.4.1.3 *Valencia Harbour/Portmagee Channel SAC*

This site is located at the tip of the Iveragh Peninsula and encompasses Valencia Harbour and Doulus Bay and the 1 kilometre-wide channel that separates Valentia Island from the mainland. The site is designated for three Annex I habitats, namely tidal mudflats and sandflats [1140], large shallow inlets and bays [1160], and reefs [1170]. The site has a good range of sediment communities varying from gravel and pebbles to maerl, sand and mud.

5.3.4.1.4 *Kenmare River SAC*

This site is a long, narrow southwest-facing bay and contains an exceptional complement of marine and terrestrial habitats, many of which are listed on Annex I of the E.U. Habitats Directive, as well as four species that are listed on Annex II of this Directive. Marine communities range from exposed coastal areas to ultra-sheltered areas, and the site is designated for three Annex I marine habitats, namely large shallow inlets and bays [1160], reefs [1170] and sea caves [8330].

Pallas Harbour and Rossdohan Island both have good examples of perennial vegetation of stony banks [1220]. Dry heath [4030], fixed dunes [2130], marram dunes [2120], sea cliffs [1230] and salt meadows (both Atlantic [1230] and Mediterranean [1410] types) can all be found within the Derrynane Bay area on the south side of the Iveragh Peninsula. Several locally uncommon plant species are found within the SAC. Within sheltered areas occurring from Derrynane Bay to Kilmakilloge Harbour, salt meadows are well distributed, and areas of heath occur in extensive strips from sea level to higher slopes. Dry heath is particularly well-represented and occurs in association with wet heath, coastal grassland and exposed rock.

In addition to otter (*Lutra lutra*) [1355], the SAC supports an important population of common seal (*Phoca vitulina*) [1365]. Two internationally important roosts for lesser horseshoe bat (*Rhinolophus hipposideros*) [1303] have also been identified at the site – one in a souterrain near Dunkerron, and the other in a two-storey cottage near Killaha. The rare narrow-mouthed whorl snail (*Vertigo angustior*) [1014] and the nationally endangered and protected

Red Book Species, natterjack toad (*Epidalea calamita*), have both been recorded within damp slacks amongst the sand dunes at Derrynane. Common tern (*Sterna hirundo*) and Arctic tern (*S. paradisaea*) have been recorded breeding on rocky islands within Derrynane Bay and on Eyeries Island, Spanish Island and Brennel Island. Sandwich tern (*S. sandvicensis*) and little tern (*S. albifrons*) have occasionally bred at the site.

5.3.4.1.5 *Iveragh Peninsula SPA*

This large coastal SPA situated in southwest County Kerry encompasses the high coast and sea cliff sections of the peninsula from the western extent of Rossbehy in the north, around to the end of the peninsula at Valentia Island and Bolus Head, and as far east as Lamb's Head in the south. The site includes sea cliffs, the land adjacent to the cliff edge and areas of sand dunes at Derrynane and Beginish. The site is designated for five species of special conservation interest, namely chough (*Pyrrhocorax pyrrhocorax*) [A346], peregrine (*Falco peregrinus*) [A103], guillemot (*Uria aalge*) [A199], fulmar (*Fulmarus glacialis*) [A009], and kittiwake (*Rissa tridactyla*) [A188].

The site is dominated by vegetated sea cliffs that stretch along the length of the site and support a variety of plant species. Heath or coastal grassland is found on the cliff-tops while other parts of the site support dry heath, wet heath, upland acid grassland, dense bracken (*Pteridium aquilinum*), semi-improved and improved grassland, dune grassland, streams, bedrock shores and islets.

An internationally important population of breeding chough can be found at the site around the coast from Lamb's Head in the southwest to Rossbehy in the north - 106 breeding pairs were recorded at the site during a 1992 survey, and 88 pairs in a 2002/03 survey. The topography and habitat mosaics of the peninsula in proximity to breeding cliffs favour chough, with particularly high densities occurring at Valentia Island, Rossbehy, and Inch. Pairs and small slocks of chough are found around the coast and in mountainous uplands throughout the year and the SPA is the second most important site in the country for chough. The SPA also supports nationally important populations of peregrine, and breeding guillemot, fulmar, and kittiwake populations.

5.3.4.1.6 *Puffin island SPA*

This long, narrow island lies approximately 500 metres off the northern side of St. Finian's Bay in southwest County Kerry and is mostly surrounded by steep cliffs and slopes. The vegetation of the main part of the island is a typical maritime grassy sward. The site is designated for six species of special conservation interest, namely fulmar (*Fulmarus glacialis*) [A009], Manx shearwater (*Puffinus puffinus*) [A013], storm petrel (*Hydrobates pelagicus*) [A014], lesser-blacked backed gull (*Larus fuscus*) [A183], razorbill (*Alca torda*) [A200], and puffin (*Fratercula arctica*) [A204]. The site is also of special conservation interest for holding an assemblage of over 20,000 breeding seabirds and is considered one of the most important seabird sites in Ireland.

5.3.4.1.7 *Deenish Island and Scariff Island SPA*

These islands are of a small to medium size and, because they are located off the County Kerry coast between 5 and 7 kilometres west of Lamb's Head, are very exposed to the force of the Atlantic Ocean. The surrounding seas up to 500 metres around the islands are included within the SAC. Scariff is the larger of the two, has steep sides all the way round it and has an island vegetation consisting of a maritime grassland mix with areas of bracken (*Pteridium aquilinum*) and ling heather (*Calluna vulgaris*) also present. Deenish is a less rugged island than Scariff and consists mostly of grassland with some areas of heath on higher ground. The site supports important populations of breeding seabirds, and the site is designated for five species of special conservation interest, namely fulmar (*Fulmarus glacialis*) [A009], Manx shearwater (*Puffinus puffinus*) [A013], storm petrel (*Hydrobates pelagicus*) [A014], lesser-blacked backed gull (*Larus fuscus*) [A183], and Arctic tern (*Sterna paradisaea*) [A194].

Appropriate Assessment

A screening for Appropriate Assessment (AA) report has been prepared in relation to the Proposed Development. Refer to **Section 5.3.14.1** below and the standalone AA Screening report which accompanies the planning application for more information. The AA Screening report was undertaken in accordance with the European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2001), the European Commission Notice 'Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC' (EC, 2019), 'Appropriate Assessment of Plans & Projects - Guidance for Planning Authorities' prepared by the NPWS (DoEHLG, 2010), and the 'Office of the Planning Regulator (OPR) Practice Note PN01 – Appropriate Assessment Screening for Development Management' (OPR, 2021).

5.3.4.2 Sites of National Importance

In Ireland, sites of national importance for nature conservation are designated as Natural Heritage Areas (NHAs) or proposed Natural Heritage Areas (pNHAs) under the Wildlife Act 1976, as amended. NHAs are areas considered important for the habitats present or which hold species of plants and animals whose habitat needs protection. A list of pNHAs was published on a non-statutory basis in 1995, but these have not since been statutorily designated. Prior to statutory designation, pNHAs are subject to limited protection.

Sites of national importance within a potential ZOI of the Proposed Development have been identified and are listed in **Table 5-7** and shown in **Figure 5-8** below. A total of ten pNHAs have been identified. There are no NHAs located within the potential ZOI of the Proposed Development. Refer to **Section 5.3.14.1** below

Table 5-7. pNHA sites within the potential ZOI of the Proposed Development

Core Designated Site	Site Code	Features of Interest[19]	Proximity to study area
Ballinskelligs Bay and Inny Estaury pNHA	000335	Overlaps with the Ballinskelligs Bay and Inny Estuary SAC and partially with the Iveragh peninsula SPA.	Contiguous with/in close proximity to parts of the Site boundary. Overlaps with the south-eastern corner of the proposed biodiversity enhancement area.
Deenish and Scariff Islands pNHA	001345	Overlaps with the Deenish Island and Scarriff Island SPA.	11 km to the south
Moylaun Island pNHA	000376	Overlaps with the Kenmare River SAC	12 km to the south-east
Darrynane Bay Islands and Marsh, Lamb's Head pNHA	001346	Overlaps with the Kenmare River SAC and partially with the Iveragh Peninsula SPA.	10.4 km to the south-east
Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment pNHA	000365	Overlaps with the Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment SAC.	4.9 km to the south-east
Valencia River Estuary pNHA	001383	Of importance for wintering wildfowl and nesting seabirds. Overlaps partially with the Valencia Harbour/Portmagee Channel SAC and the Iveragh Peninsula SPA.	10.7 km to the north
Doulus Head to Cooncrome Harbour pNHA	001350	Supports seabird colonies. Overlaps with the Iveragh Peninsula SPA.	13.1 km to the north
Glanleam Wood pNHA	001353	Example of semi-natural woodland composed of sub-tropical species. Important for native bryophytes.	10 km to the north-west

[19] Description of sites taken from pNHA Site Synopsises [https://www.npws.ie/sites/default/files/general/pNHA_Site_Synopsis_Portfolio.pdf]

Core Designated Site	Site Code	Features of Interest[19]	Proximity to study area
Valencia Island Cliffs pNHA	001382	Overlaps partially with the Valencia Harbour/Portmagee Channel SAC and the Iveragh Peninsula SPA.	10.6 km to the north-west
Puffin Sound – Horse Island Cliffs pNHA	001373	Thought to support the largest colony of Manx shearwater in the country, as well as other seabird colonies, including an important colony of puffin. Overlaps with Puffin Island SPA.	8.5 km to the west

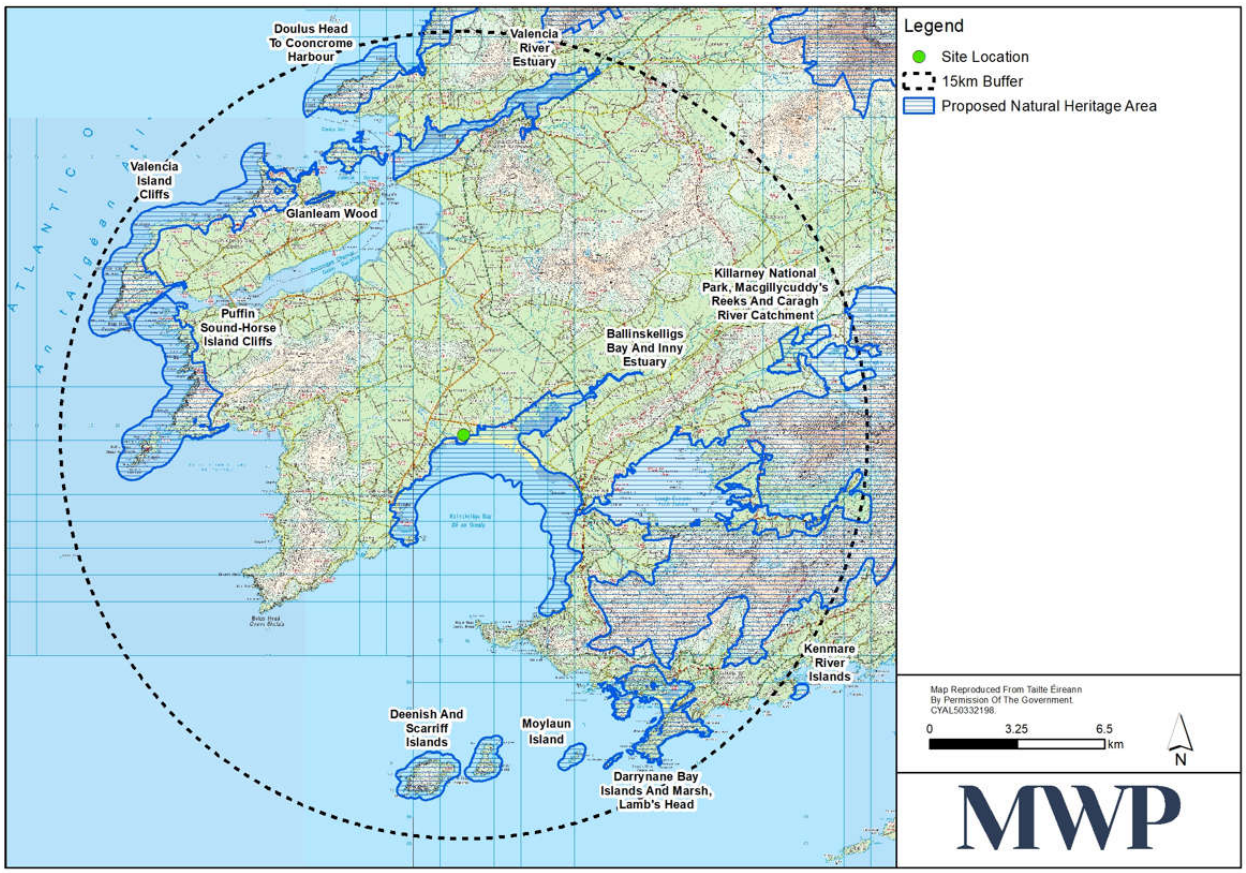

Figure 5-8. pNHAs within the area surrounding the Proposed Development site

5.3.4.3 Additional Sites

Ramsar Sites

The Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat, is an international treaty that was established for the conservation and sustainable use of wetlands. The Convention is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. A key commitment of Ramsar Contracting Parties is to identify and place suitable wetlands onto the List of Wetlands of International Importance. Ireland presently has 45 sites designated as Wetlands of International Importance. An on-line search was undertaken to search for

Ramsar sites potentially located within the ZOI of the Proposed Development. There are no Ramsar sites within a 15 km radius of the study area[20].

Important Bird and Biodiversity Areas (IBAs)

Important Bird and Biodiversity Areas (IBAs) are sites selected as important for bird conservation because they regularly hold significant populations of one or more globally or regionally threatened, endemic or congregator bird species or highly representative bird assemblages. The European IBA programme aims to identify, monitor and protect key sites for birds all over the continent. It aims to ensure that the conservation value of IBAs in Europe (now numbering more than 5,000 sites or about 40% of all IBAs identified globally to date) is maintained, and where possible enhanced. The programme aims to guide the implementation of national conservation strategies, through the promotion and development of national protected-area programmes.

An on-line search was undertaken to search for IBA sites potentially located within the ZOI of the Proposed Development. The 'Iveragh Peninsula' IBA (Site Code: IE077) is located approximately 0.5 km to the west at the closest point and largely overlaps with the Iveragh Peninsula SPA. There are no additional IBA sites within a 15 km radius of the study area[21].

Salmonid Rivers

Water channels in Ireland may be designated as a Salmonid River in line with the European Communities (Quality of Salmonid Waters) Regulations, 1988. None of the watercourses within the vicinity of the Proposed Development site are designated as Salmonid Rivers[22].

5.3.5 Habitats

5.3.5.1 Desk Study

NPWS EU Habitats Directive Annex Habitats Article 17 Datasets

The NPWS Article 17 spatial datasets for Annex I habitats were accessed via the NPWS interactive map-viewer[23] and reviewed. These datasets document the occurrence of Annex I habitats in Ireland.

A review of the terrestrial habitat spatial dataset determined that the south-east corner of the Site and the southern section of the proposed BEA are mapped as priority Annex I 'Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]'. This distribution mapping is based on the results of the Coastal Monitoring Project (2004-2006), a project carried out on behalf of NPWS to meet Irelands obligations under Article 17 of the EU Habitats Directive in relation to reporting on the conservation status of Annex I sand dune habitats in Ireland.

Results of specialist field surveys determined that the habitats on site do not correspond to fixed dunes or any of the dune complexes. At present, the area of habitat in question encompassed within the Site, to the west of the local beach access road, is modified into semi-improved grassland, most likely developed on sand substrates, and categorised as a mosaic of '**Improved agricultural grassland (GA1)/Wet grassland (GS4)**'. The habitat in question, located predominantly outside the Site, to the east of the local beach access road, is described as thinly sand covered shingle – corresponding to '**Shingle and Gravel Banks (CB1)**', with a fringe of '**Sand shores (LS2)**' immediately south and **'Wet grassland (GS4)'** to the north. Refer to **Figure 5-9** below. The results of the habitat surveys are discussed in more detail in **Section 5.3.5.2** below.

[20] https://rsis.ramsar.org/
[21] http://datazone.birdlife.org/site/mapsearch
[22] EPA Maps
[23] https://storymaps.arcgis.com/collections/1a721520030d404f899d658d5b6e159a

Figure 5-9. Top) Drone image of south-eastern corner of Site and southern section of proposed BEA where habitats determined not to correspond to fixed dune or any of the dune complexes during specialist surveys. Bottom left) View of area to west of local road within the Site. Bottom right) View of southern section of proposed BEA.

5.3.5.2 Field Surveys

In general, the Site is located within an area typically dominated by wet grassland on degraded peatland soils near the eastern and northern boundaries, with areas of free draining semi-improved grassland in mosaic with wet grassland located near the western and southern boundaries. The Site includes the derelict Reenroe Hotel and other artificial habitats such as existing outbuildings, a derelict house, and paved ground/tarmacadamed roadway.

Habitats within the study area were classified according to Fossitt (2000). The habitat types recorded within the study area are summarised in the following sections. Section 5.3.5.2.1 describes habitats recorded within the Proposed Development site boundary, while Section 5.3.5.2.2 describes habitats recorded within the wider study area, which includes the proposed BEA. Refer to the habitat map in Figure 5-10 below. Refer to Appendix 5-4 of Volume 3 of the EIAR for more detailed information regarding the results of the specialist habitat and botanical surveys undertaken.

5.3.5.2.1 *Habitats located within the Proposed Development Site*

5.3.5.2.1.1 Improved Agricultural Grassland (GA1) with Wet grassland (GS4)

Mosaics of 'Improved agricultural grassland (GA1)' with 'Wet grassland (GS4)' comprise the dominant habitats within the Site. 'Improved agricultural grassland (GA1)/Wet grassland (GS4)' is the dominant habitat near the southern and south-westernmost boundaries of the Site, fringing or in proximity to the derelict hotel building (see **Plate 5-1** below). This area is grazed by sheep and encompasses locally frequent tufts of common rush, which form the wet grassland element of the mosaic, while the remaining sections of this habitat comprise a damp semi-improved grassland habitat. Plant species composition includes perennial rye grass (*Lolium perenne*), sweet vernal grass (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), red fescue (*Festuca rubra*) and white clover (*Trifolium repens*), with localised areas of yellow iris (*Iris pseudacorus*), creeping cinquefoil (*Potentilla reptans*) and marsh pennywort (*Hydrocotyle vulgaris*) occasionally within the wet grassland element of this habitat.

Plate 5-1. Example of 'Improved agricultural grassland (GA1)' within the Site

Rush dominated 'Wet grassland (GS4)/Improved grassland (GA1)' mosaic occurs near the northwestern boundary of the Site. The more open improved grassland areas comprise a reduction in rush cover with Yorkshire fog, common bent and tormentil. This habitat does not correspond to any EU Annex I habitat type. There will be loss of this habitat (16.1 Ha) to facilitate the Proposed Development.

5.3.5.2.1.2 Wet Grassland (GS4)

'Wet grassland (GS4)' habitat within the Site occurs in the north-eastern corner adjacent to the local beach access road, and to the east of the road where the proposed WWTP is located (see **Plate 5-2** below). This area has developed on degraded peatland soils, that have been, and continue to be drained to facilitate sheep grazing, supporting localised abundance of jointed rush and common rush with locally frequent yellow iris. Other associated species occur locally throughout the rushy sward and include creeping bent, common bent (*Agrostis*

capillaris), sweet vernal grass, Yorkshire fog, greater bird's foot trefoil (*Lotus pedunculatus*), tormentil (*Potentilla erecta*) and the mosses *Calliergonella cuspidata* and *Pseudoscleropodium purum*.

There are localised areas of bare peat and remnant species associated with the now degraded peatland habitat including occasional and localised bog myrtle and ling heather (*Calluna vulgaris*). This habitat does not correspond to any EU Annex I habitat type. There will be loss of this habitat (2.86 Ha) to facilitate the Proposed Development.

Plate 5-2. Left) Example of 'wet grassland (GS4)' and 'conifer woodland (WD4)' located in north-eastern corner of Site. Right) Example of 'wet grassland (GS4)' to east of local beach access road, including site of proposed WWTP, and surrounding area proposed for enhancement

5.3.5.2.1.3 Dry Neutral and Calcareous Grassland (GS1)

Dry neutral and calcareous grassland is a semi-natural and semi-improved grassland habitat which is located along the southern and southwestern fringes of the Site. This habitat is predominantly located outside the Site boundary; however, there are negligible areas of overlap between the Site and this habitat along the route of the existing Reenroe Cliff Walk (proposed to be upgraded) (see Plate 5-3 below).

This tightly grazed grassland has developed on thin, coastal soils. Plant species composition includes red fescue, crested dog's tail and sweet vernal grass. Where soil cover is thinner and most proximal to the coastline the grassland supports a reasonably diverse broadleaved herb assemblage, in addition to the aforementioned grasses and includes yarrow (*Achillea millefolium*), wild thyme (*Thymus drucei*), red clover (*Trifolium pratense*), white clover, bird's foot trefoil, sea plantain (*Plantago maritima*), glaucous sedge (*Carex flacca*), common knapweed (*Centaurea nigra*), sea thrift (*Armeria maritima*), selfheal and sheep's bit (*Jasione montana*). The areas of this grassland habitat that are at a remove from the coastal fringe include co-abundant red fescue and crested dog's tail with clovers and selfheal with a noted reduction in calcicole broadleaved herbs.

This habitat does not correspond to any EU Annex I habitat type. This habitat is largely located outside of the Proposed Development site, other than small pockets as discussed above, but does mainly occur immediately adjacent to the Site boundary. There will be minor loss of this habitat (0.01 Ha) to facilitate the Proposed Development (comprising proposed upgrade of the existing Reenroe Cliff Walk).

Plate 5-3. Example of 'dry calcareous and neutral grassland (GS1)' (to left of track) which predominantly occurs as a discontinuous linear habitat feature in the area between the existing Reenroe Cliff Walk (shown) and the cliff edge.

5.3.5.2.1.4 Conifer Woodland (WD4)

Within the Site, the internal access road serving the derelict hotel building is fringed to the north and north-west by a section of linear conifer woodland comprising stunted and some failing sitka spruce (*Picea sitchensis*) and Norway spruce (*Picea abies*) trees. The trees in this area have failed to form a canopy and are underlain by dense grassy verge grassland and bramble (*Rubus fruticosus* agg.) scrub. This habitat does not correspond to any EU Annex I habitat type. There will be loss of this habitat (0.03 Ha) to facilitate the Proposed Development (refer to Plate 5-2 above).

5.3.5.2.1.5 Scrub (WS1)

Areas of linear scrub have established along some unmanaged field margins near the northwestern boundary of the Site and include grey willow (*Salix cinerea*), bramble (*Rubus fruticosus* agg.), gorse (*Ulex europaeus*), royal fern (*Osmunda regalis*) and bracken (*Pteridium aquilinum*) (see Plate 5-4 below). This habitat does not correspond to any EU Annex I habitat type. There will be loss of this habitat (0.06 Ha) to facilitate the Proposed Development.

Plate 5-4. Example of 'scrub (WS1)' adjoining the local beach access road in the northeast corner of the Site

5.3.5.2.1.6 Recolonising Bare Ground (ED3)

This habitat is associated with hard standing fringes of the derelict hotel building and includes species such as coltsfoot (*Tussilago farfara*), dandelion (*Taraxacum* agg.), annual meadow grass (*Poa annua*), toad rush (*Juncus bufonius*) and spreading moss growth. This habitat does not correspond to any EU Annex I habitat type. There will be loss of this habitat (0.21 Ha) to facilitate the Proposed Development.

5.3.5.2.1.7 Improved Agricultural Grassland (GA1)

A narrow strip borders the internal access road on approach to the derelict hotel within the Site. Plant species composition includes perennial rye grass (*Lolium perenne*), sweet vernal grass (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), red fescue (*Festuca rubra*), white clover (*Trifolium repens*), creeping bent (*Agrostis stolonifera*), common sorrel (*Rumex acetosa*) and creeping buttercup (*Ranunculus repens*). This habitat does not correspond to any EU Annex I habitat type. There will be loss of this habitat (0.16 Ha) to facilitate the Proposed Development.

5.3.5.2.1.8 Stonewalls and other stonework (BL1)

Stone walls occur locally within the south-western corner of the Site. These are remnant stone wall field boundaries and are partially covered with grass sod. Plant species cover is localised and includes Yorkshire fog, sweet vernal grass, foxglove (*Digitalis purpurea*), sheep's bit and navelwort (*Umbilicus rupestris*). This habitat does not correspond to any EU Annex I habitat type. There will be no loss of this habitat to facilitate the Proposed Development. Existing stonewalls will be retained within the Site.

5.3.5.2.1.9 Earth banks (BL2)

Vegetated 'Earth banks (BL2)' comprise the field boundary adjoining the eastern side of the local beach access road (see Plate 5-5 below) within the Site. Plant species recorded in this habitat include false oat grass (*Arrhenatherum elatius*), bramble, cock's-foot (*Dactylis glomerata*), foxglove, nettle (*Urtica dioica*), hedge bindweed and occasional willow (*Salix* spp.). This habitat does not correspond to any EU Annex I habitat type. There will be loss of this habitat (0.47 km) to facilitate the Proposed Development.

Plate 5-5. View of local beach access road looking south on approach to site entrance (indicated red arrow). Vegetated 'Earth banks (BL2)' adjoining eastern side of road visible on left, linear area of 'scrub (WS1)' adjoining western edge of road visible on right

5.3.5.2.1.10 Buildings and Artificial Surfaces (BL3)

This habitat includes the internal access road and tracks serving the Site, the derelict hotel building and associated outbuilding and hard standing areas, the derelict cottage, and the local beach access road and car park serving Inny Strand (see **Plate 5-1** above). This habitat does not correspond to any EU Annex I habitat type. There will be no loss of area of this habitat to facilitate the Proposed Development.

5.3.5.2.1.11 Drainage ditches (FW4)

The wet grassland fields within the northern half of the Site are fringed by drains, categorised as 'Drainage ditches (FW4)'. These channels support ephemeral water flows. Drainage channels were typically fringed by vegetated earth banks where they occur near roadside boundaries. Most of the boundary drainage channels have been recently fenced off from grazing livestock, which has resulted in the proliferation of dense common rush growth in addition to bramble, foxglove, royal fern, grey willow, gorse, angelica, purple loosestrife and ling heather.

Drainage channels within the internal field boundaries are more routinely maintained and are not fenced off and support little or no fringing/emergent plant growth (see **Plate 5-6** below). This habitat does not correspond to any EU Annex I habitat type. There will be loss of this habitat (approx. 0.3 km) to facilitate the Proposed Development.

Plate 5-6. Example of a 'drainage ditch (FW4)' within the Site

5.3.5.2.2 *Habitats located within the wider area (including proposed enhancement area)*

5.3.5.2.2.1 Shingle and gravel banks (CB1)

'Shingle and gravel banks (CB1)' occur along the southern fringe of the proposed BEA and forms the intersection between the wet/pastoral fields of this area and the open area of sand shores associated with Inny Strand. The vegetation within this habitat includes spreading or creeping species providing a thin cover over exposed gravel or sand. Plant species composition includes creeping bent (*Agrostis stolonifera*), couch grass (*Elytrigia repens*), silverweed (*Potentilla anserina*), bird's foot trefoil (*Lotus corniculatus*), white clover (*Trifolium repens*), sea milkwort (*Lysimachia maritima*), sea mayweed (*Tripleurospermum maritmum*), curled dock (*Rumex crispus*), marram grass (*Ammophila arenaria*), broadleaved plantain (*Plantago major*) and sea orache (*Atriplex* sp.).

A linear strip of this habitat is located on the shoreline of 'Trá na Sassanach' to the west of the Site. The vegetation within this habitat includes spreading or creeping species providing cover on the upper extent of the shingle and gravel banks. Plant species composition includes sea sandwort (*Honckenya peploides*), sea beet (*Beta vulgaris* subsp. *maritima*), chamomile (*Chamaemelum nobile*), sea radish (*Raphanus raphanistrum* subsp. *maritimus*) and silverweed (*Potentilla anserina*).

These areas of habitat correspond to the EU Annex I habitat, 'Perennial vegetation of stony banks (1220)'. These areas of habitat are located outside of the Proposed Development site. There are no works proposed within this habitat. There will be no loss of shingle and gravel banks (CB1) to facilitate any element of the Proposed Development.

5.3.5.2.2.2 Sand Shores (LS2)

Isolated pockets of sand shores (LS2) occur in a number of inlets in the rocky shore which is located in close proximity to the southern and southwestern boundary of the Site. Plant species cover within this habitat was mostly absent due to the ongoing tidal regime.

'Sand shores (LS2)' also occurs along the southern fringe of the proposed BEA and comprises the northern extent of the open shoreline of Inny Strand encompassed within the study area (see **Plate 5-7** below). This habitat may contain examples of the annexed habitats 'mudflats and sandflats not covered by sea water at low tide (1140)' and 'annual vegetation of drift lines (1210)'. These areas of habitat are located outside of the Proposed Development site. There are no works proposed within this habitat. There will be no loss of 'Sandy shores (LS2)' to facilitate any element of the Proposed Development.

Plate 5-7. Example of 'sandy shores (LS2)' habitat comprising Inny Strand to the south-east of the Site

5.3.5.2.2.3 Moderately exposed rocky shore (LR2)

The rocky shoreline which occurs in close proximity to the southern and southwestern boundary of the Site is categorized as moderately exposed rocky shore (LR2) and includes a mixture of primarily exposed bedrock and boulders, with pockets of stable cobbles (see **Plate 5-8** below). The lichen zone is dominated by grey lichens (*Ramalina* spp.) and the black lichen (*Verrucaria maura*). Other species recorded included channel wrack (*Pelvetia canaliculate*) and spiralled wrack (*Fucus spiralis*). Some rock pools were present. This habitat may contain examples of the annex habitat 'reef (1170)'. This habitat is located outside of the Proposed Development site. There are no works proposed within this habitat. There will be no loss of 'Moderately exposed rocky shore (LR2)' to facilitate any element of the Proposed Development.

Plate 5-8. Example of 'moderately exposed rocky shore (LR2)' which surrounds the headland on which the Site is located

5.3.5.2.2.4 Amenity Grassland (GA2)

Amenity grassland is associated with a private residential dwelling located to the north-east of the derelict hotel building. This habitat is a maintained by routine cutting and comprises grass species including crested dog's tail (*Cynosurus cristatus*), sweet vernal grass, perennial rye grass and red fescue and forbs including white clover, daisy (*Bellis perennis*), selfheal (*Prunella vulgaris*), ribwort plantain (*Plantago lanceolata*) and dandelion (*Taraxacum* agg.).

This habitat does not correspond to any EU Annex I habitat type. This habitat is located outside of the Proposed Development site. There will be no loss of 'Amenity grassland (GA2)' to facilitate the Proposed Development.

5.3.5.2.2.5 Wet grassland (GS4)

'Wet grassland (GS4)' comprises the dominant habitat in the area east of the local beach access road, predominantly comprising the proposed BEA.

This habitat has developed on degraded peatland soils, that have been, and continue to be drained to facilitate sheep grazing. This open area supports a localised abundance of jointed rush and common rush with locally frequent yellow iris. Other associated species occur locally throughout the rushy sward and include creeping bent, common bent (*Agrostis capillaris*), sweet vernal grass, Yorkshire fog, greater bird's foot trefoil (*Lotus pedunculatus*), tormentil (*Potentilla erecta*), yellow iris, marsh thistle (*Cirsium palustre*), lesser spearwort (*Ranunculus flammula*) and carnation sedge. Sections of this wet grassland near its north-eastern boundary exhibit a replacement of rush cover with locally abundant purple moor grass (*Molinia caerulea*) and areas of bare peaty ground with occasional carnation sedge, bog pimpernel (*Anagallis tenella*), common rush, yellow sedge (*Carex demissa*) and bog myrtle (*Myrica gale*). These wet grasslands support localised areas of bare peat and remnant species associated with the now degraded peatland habitat including occasional and localised tormentil, bog myrtle, ling heather (*Calluna vulgaris*), *Sphagnum rubellum* and *Sphagnum cuspidatum*.

This habitat does not correspond to any EU Annex I habitat type. There will be no loss of this habitat to facilitate the Proposed Development other than that encompassed within the Site, and already discussed in Section 5.3.5.2.1.2 above. The proposed BEA is described in detail in Appendix 5-7 of Volume 3 of the EIAR.

5.3.5.2.2.6 Drainage ditches (FW4)

The wet grassland fields within the eastern half of the study area and proposed BEA are fringed by drainage channels. Drainage channels were typically fringed by vegetated earth banks where they occur near roadside boundaries. Most of the boundary drainage channels have been recently fenced off from grazing livestock, which has resulted in the proliferation of dense common rush growth in addition to bramble, foxglove, royal fern, grey willow, gorse, angelica, purple loosestrife and ling heather. Fenced drainage channels within the internal field boundaries are more routinely maintained. Some support aquatic flora while others support little or no fringing/emergent plant growth.

This habitat does not correspond to any EU Annex I habitat type. This is an artificial and highly-modified habitat-type. This area of habitat is located outside of the Proposed Development site. There will be no loss of this habitat to facilitate the Proposed Development other than that encompassed within the Site, and already discussed in Section 5.3.5.2.1.11 above. The proposed BEA is described in detail in Appendix 5-7 of Volume 3 of the EIAR.

5.3.5.2.2.7 Reed and Large Sedge Swamp (FS1)

An area of reed and large sedge swamp is located near the south-eastern margin of the study area. This area of reedbed is likely to occur within the flood regime/tidal regime of the 'Inny (Kerry)_030' river and has developed on low lying terrain supporting peatland soils with a slightly brackish influence. This habitat exhibits signs of waterlogging and localised poaching by livestock. Common reed (*Phragmites australis*) is the dominant species within this habitat with occasional and localised marsh willowherb (*Epilobium palustre*), common rush (*Juncus effusus*), purple loosestrife (*Lythrum salicaria*), marsh ragwort (*Jacobaea vulgaris*) and sharp flowered rush (*Juncus acutiflorus*).

This habitat does not correspond to any EU Annex I habitat type. This area of habitat is located outside of the Proposed Development site. There will be no loss of reed and large sedge swamp (FS1) to facilitate the development. The proposed BEA is described in detail in Appendix 5-7 of Volume 3 of the EIAR.

5.3.5.2.2.8 Earth banks (BL2)

Earth banks are component parts of some field boundaries within the pastoral lands of the eastern half of the study area. Most earth banks are heavily vegetated and comprise dry meadows and grassy verge grassland vegetation and localised areas of scrub. Plant species includes false oat grass (*Arrhenatherum elatius*), bramble, royal fern, broad buckler fern (*Dryopteris dilatata*), cock's-foot (*Dactylis glomerata*), foxglove, nettle (*Urtica dioica*), hedge bindweed (*Calystegia sepium*) and angelica (*Angelica sylvestris*), in addition to localised shrubs such

as grey willow, hawthorn (*Crataegus monogyna*) and with fuschia (*Fuschia magellanica*) and privet (*Ligustrum* sp.) along the R567 road.

This habitat does not correspond to any EU Annex I habitat type. This area of habitat is located outside of the Proposed Development site. There will be no loss of this habitat to facilitate the Proposed Development other than that encompassed within the Site, and already discussed in **Section 5.3.5.2.1.9** above. The proposed BEA is described in detail in **Appendix 5-7** of **Volume 3** of the **EIAR**.

5.3.5.2.2.9 Depositing Lowland Rivers (FW2)

A portion of the eastern boundary of the study area adjoins the An Rinn Rua Stream. This is a sinuous but free flowing watercourse that is fed by drainage channels near the eastern boundary of the study area. The watercourse is fringed intermittently by gorse (*Ulex europaeus*) and grey willow shrubs with extensive areas of common reed dominated reed and large sedge swamp (FS1) occurring near its confluence with Inny Strand and Ballinskelligs Bay. Upstream of the study area boundary, this watercourse drains degraded peatland and rush dominated wet grassland habitats. The lower reach of the watercourse channel just upstream of the strand appers to have previously diverted/modified. The mouth of the river is partially within the tidal regime of Ballinskelligs Bay (see **Plate 5-9** below).

This habitat does not correspond to any EU Annex I habitat type. This habitat is located outside of the Proposed Development site. There will be no loss of 'Depositing lowland rivers (FW2)' to facilitate the Proposed Development. The proposed BEA is described in detail in **Appendix 5-7** of **Volume 3** of the **EIAR**.

Plate 5-9. View of the 'An Rinn Rua' stream, a habitat classified as a 'depositing/lowland river', looking north from existing bridge crossing on upper shore of Inny Strand

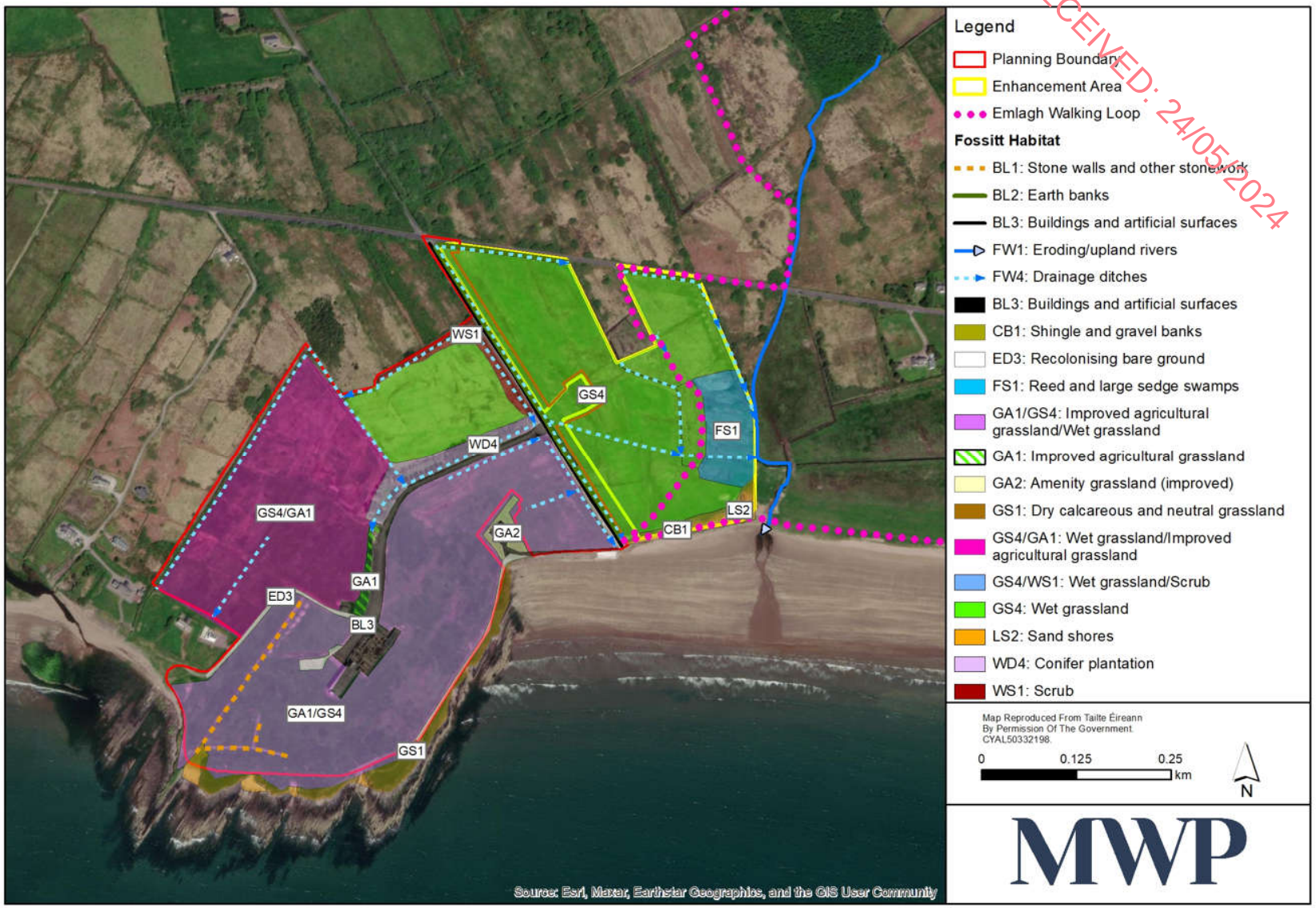

Figure 5-10. Habitat map of the study area

5.3.6 Rare and Protected Flora

5.3.6.1 Desk Study and Field Surveys

The desktop study included a review of species data held by the NBDC, data on rare and protected species provided by NPWS as part of a data request, and EU Habitats Directive Article 17 spatial data for annexed terrestrial species available on-line[24]. The search targeted plant species listed in Annex II of the EU Habitats Directive, the Flora Protection Order species (FPO) (2022), and species listed in the Irish Red Data Book (Wyse Jackson, *et al*. 2016).

Previous species records for rare and protected flora as identified during the desk study are listed in **Table 5-8** below, with field survey results also included.

Table 5-8. Desktop records of rare and protected flora species within hectad V46 and results of field surveys at the Site

Name	Designations and Status	Record Date	Record Source	Nearest Record to Proposed Development Site	Habitat Requirements[25,26]	Field Results/ Suitability of site to support this species
Chamomile (*Chamaemelum nobile*)	Irish Red List: Near threatened	2006 2010	NPWS NBDC	Reenearagh, c. 7 km to south-east	Dry sandy grassland, roadsides. Locally common throughout southwest Ireland, scarcer elsewhere.	Not identified within the Site during surveys; but identified in the wider study area. Suitable habitat occurs along the south-western boundary of the Site, outside of the proposed development footprint.
Cornflower (*Centaurea cyanus*)	Irish Red List: Waiting list	1929	NBDC	c. 1.7 km to east (east of Inny River Estuary)	Previously a common species of arable field margins, now found as a garden escape or discard on roadsides or waste ground.	Not identified within the study area during site surveys. No suitable habitat within the study area.
Marsh-mallow (*Althaea officinalis*)	Irish Red List: Near threatened	2011	NBDC	c. 0.3 km to east	Species of brackish ditches and grassland. Recorded from coastal southern and western Ireland. Introduced.	Not identified within the study area during site surveys.
Petalwort (*Petalophyllum ralfsii*)	EU Habitats Directive Annex II Species; Flora Protection Order (2022); Irish Red List: Least concern	1998	NBDC NPWS	c. 1 km to east	Species of coastal dune systems with damp, calcareous dune slacks or machair. Pioneering species of bare, moist, stable, compact sand or of short turf mainly on mildly to strongly base-rich dune slacks and machair, where it is subject to inundation in the winter.	Not identified within the study area during site surveys. Known from the Ballinskelligs Bay and Inny Estuary SAC, for which it is a QI, with an historic record (1998) of a small population located 0.8 km east of the study area.
Pennyroyal (*Mentha pulegium*)	Flora Protection Order (2022); Irish	1900	NPWS	Ballinskelligs, c. 3.6 km to south-west	Found mostly along tracks and roads, in disturbed and periodically inundated soils. Sometimes it occurs in similar habitat along river valleys and, occasionally,	Not identified within the study area during site surveys.

[24] https://storymaps.arcgis.com/collections/1a721520030d404f899d658d5b6e159a?item=2
[25] https://www.irishwildflowers.ie/habitats.html
[26] https://bsbi.org/species-accounts

Name	Designations and Status	Record Date	Record Source	Nearest Record to Proposed Development Site	Habitat Requirements[25,26]	Field Results/ Suitability of site to support this species
	Red List: Vulnerable;				around the margins of fluctuating lakes and reservoirs.	
Curl-leaved Forklet-moss (*Dicranella crispa*)	Irish Red List: Endangered	2006	NBDC, NPWS	Rinneen, c. 7.2 km to south-east	Can be found in a wide range of habitats, from disturbed areas and roadsides to grasslands, forests, and even urban environments. Can colonise diverse substrates, including soil, rocks, and tree bark.	Not identified within the study area during site surveys.
Rounded Pygmy-moss (*Acaulon muticum*)	Irish Red List: Regionally Extinct	1951	NBDC	Hog's Head	A species of bare, base deficient, well-drained soil in arable fields, gravel pits, by tracks and paths, on banks and on anthills.	Not identified within the study area during site surveys.

5.3.7 Invasive Alien Plant Species (IAPS)

5.3.7.1 Desk Study

A search for records of invasive plant species held by the NBDC for the hectad V46 was carried out with a focus on non-native plant species listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015). Documented records of high-impact invasive species within V46 include Japanese knotweed (*Fallopia japonica)* and giant rhubarb (*Gunnera tinctoria*). There are no NBDC documented records for either species in the vicinity of the Site[27].

5.3.7.2 Field Surveys

During MWP multidisciplinary ecological field surveys of the study area, three high-impact invasive plant species listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015) were recorded on-site; Japanese knotweed, giant rhubarb and rhododendron (*Rhododendron ponticum*).

The distribution of Japanese knotweed was found to be highly restricted within the Site, occurring in one location within the conifer treeline adjoining the existing site access lane, where the extent of infestation was extremely localised. It is likely that this species/infestation was recently introduced to the Site, possibly via soil or other material and/or machinery brought into the area. A single immature giant rhubarb plant was recorded several metres away, also within the conifer treeline. The ground in this area looks to have been previously disturbed and/or had material disposed of at this location, which is a potential source of the infestations. One rhododendron plant was also recorded in the same general area (see **Table 5-9** and **Figure 5-11** below). No other Third Schedule invasive plant species were recorded during any of the ecological surveys carried out.

[27] https://maps.biodiversityireland.ie/Map

Table 5-9. IAPS recorded within the study area during field surveys

Species	Designation	Location (ITM)	Description at Site
Japanese knotweed (*Fallopia japonica*)	High impact; listed on Third Schedule of EC (Birds and Natural Habitats) Regulations 2011	0445991,0568380 0445989, 568381 0445993, 568380	Minor infestation comprising four individual immature plants of maximum height 30 cm (April 2023). These were recorded growing within metres of each other in the conifer treeline within the Site.
Giant rhubarb (*Gunnera tinctoria*)	High impact; listed on Third Schedule of EC (Birds and Natural Habitats) Regulations 2011	0446057, 568405	A single shoot recorded very close to the minor Japanese knotweed infestation within conifer treeline. Very young plant of height <10 cm (April 2023).
Rhododendron (*Rhododendron ponticum*)	High impact; listed on Third Schedule of EC (Birds and Natural Habitats) Regulations 2011	0446128, 568434	One plant recorded in the conifer treeline, adjacent to the Site entrance.
Montbretia (*Crocosmia* x *crocosmiiflora*)	Low impact	N/a	Widespread throughout the conifer treeline within the Site.

Figure 5-11. Invasive plant species recorded within the study area during surveys

5.3.8 Bats

5.3.8.1 Desk Study

Following a review of data received from BCIreland as part of the data request undertaken (see **Section 5.2.6.3** above), it was determined that low numbers of records for common pipistrelle, soprano pipistrelle and Leisler's bat are retained by BCIreland for the area within a 10 km radius of the approximate centre point of the Site. These all comprise ad hoc observations, the closest of which is located approximately 1.2 km north-west of the Site. The BCIreland data provided as part of the data request did not identify any known bat roosts within the 10 km search radius.

A review of the NBDC's BHSI available on-line (see **Section 5.2.6.3** above) determined that for the area encompassed within the Site, and also including the lands extending away from the Site, the BHSI rating that has been assigned for 'all bats' combined is 22.33 out of 100, based on the analysis of the habitat and landscape associations of Irish bats compiled in Lundy *et al.* (2011). The BHSI ratings assigned for bats indicate that the Site and surrounding area is of relatively low overall value for bats.

5.3.8.2 Field Surveys

Bat Foraging/Commuting Habitat Suitability Survey

The Site is dominated by the derelict hotel building which is surrounded by expansive, open, flat, coastal grassland occurring on an exposed headland. The only linear feature occurring within the Site considered to have any real value to either foraging or commuting bats is the conifer treeline in the east of the Site. This is connected to some degree at its eastern end to the wider landscape to the north via linear 'scrub' and gappy vegetated 'earth banks' adjoining the local beach access road but is not connected to any other linear features within the Site (see **Figure 5-10** Habitat Map, above). Other than the treeline, there are no other linear features of note encompassed within the Site. Some sections of the Site boundary do, however, comprise gappy hedgerow/vegetated earth banks, including that outlined above.

Using Collins (2016) and habitat associations of bats, discussed in Section 3.3 of **Appendix 5-2** of the **EIAR**, the conifer treeline encompassed within the Site is considered to be of 'moderate' value to foraging/commuting bats, while the linear boundary features described above are assigned 'low to moderate' value. The other habitats occurring within the Site, comprising a mix of predominantly 'improved grassland' and coastal 'wet grassland', are considered to be of 'low to moderate' value to bats.

Bat Roost Inspection Surveys

The hotel building comprises a large, modern, mass concrete and steel structure which has been disused and falling into dereliction for many years. The majority of the building is in poor structural condition, and is open to the elements (refer to **Figure 5-3** in **Section 5.2.6.3** above). Some parts of the hotel which are in better condition are currently used for storage, or as workshops and tool rooms.

Hotel 'Roof-less Section'

The single-storey (northern) section of the hotel structure is completely roof-less with just exposed and corroded steel beams remaining at roof-level. In terms of potential bat roosting habitat, some crevices were noted in the exposed blockwork masonry of internal walls which could potentially be used by small numbers/individual bats; however, this section of the hotel is extremely exposed and open to the elements and no evidence of bat activity was recorded. With regard to Collins (2016), this section of the hotel was classed as having 'negligible' suitability for roosting bats.

Hotel 'Middle Tower'

The middle tower, structurally, is in relatively good condition and houses various disused rooms as well as some storerooms which are in use. All rooms are located off a main stairwell which provides access from the ground-floor entrance up through each level as far as roof-level. The extent to which windows in this part of the hotel are sealed varies. Potential bat entry and exit points observed comprised unsealed and partially sealed windows and/or damaged window coverings, as well as various gaps and crevices around window/door frames. Multiple crevices, holes and other potential bat roosting sites were noted throughout this part of the hotel. With regard to Collins (2016), this section of the hotel was classed as having 'moderate' suitability for roosting bats.

During the PRA undertaken on 20th April 2023, evidence of bat activity, comprising bat droppings, were recorded at three locations within the middle tower. These comprised two locations on the second-floor landing of the stairwell and one location on the uppermost (roof-landing) stairwell area. The majority of droppings encountered were degraded in appearance and were considered old.

Hotel 'Bedroom block'

Internally, the bedroom wings of the hotel are physically separated from the middle tower on all levels by well-sealed doors which are either locked or barricaded. Some of the rooms within the eastern end of the bedroom block are used as tool and equipment storage areas, workshops or very basic canteen facilites e.g., with kettle, microwave etc.; however, overall, the multitude of former bedrooms on all levels of the bedroom block are empty of all furniture and fittings. The ceilings in much of the main corridors in this part of the hotel are missing, with block and concrete work of the floor above, or flat roof in the case of the uppermost floor, exposed. The vast majority of window openings on all levels of both the seaward and landward sides of the bedroom block are completely unsealed, meaning that the interior of this part of the hotel structure is very exposed, draughty and open to the elements, allowing strong coastal winds and rain to enter this part of the building. During surveys, the majority of the rooms in the bedroom block were found to be very drafty, cold and in places, very damp and/or with water ingress. In some rooms, water was noted trickling down walls.

In terms of potential roosting sites, small gaps and crevices or other small spaces associated with sections of collapsed suspended ceiling and/or exposed blockwork or timber floor joists, as well as other openings and cavities were considered to comprise potentially suitable bat roosting features. No evidence of bats was recorded within the bedroom block during the PRA surveys. With regard to Collins (2016), this part of the hotel was classed as having 'negligible' to 'low' suitability for roosting bats.

Hotel 'Sheds/Outbuildings'

A number of sheds/outbuildings adjoin the hotel structure at its northern end. These are in good condition structurally and are currently in-use for agricultural and/or storage purposes, with farm machinery and equipment noted. Internal inspections determined that walls and ceilings are intact and plastered, with no crevices or cracks observed. No evidence of bats was recorded either externally or internally in relation to these structures. With regard to Collins (2016), this part of the hotel was classed as having 'negligible' suitability for roosting bats.

Derelict Cottage

A derelict cottage is situated at a short remove from the hotel. This structure comprises a two-storey former dwelling which is in poor condition structurally. The cottage is originally of stone construction, subsequently plastered over, with a slate roof, and a chimney at both gable ends. The roof is in disrepair. Internally, the upper-level floor has largely collapsed. On the upper level, in the centre of the roof, there is no ceiling, and the roof void is largely open and visible with timber roof-joists exposed. During the PRA, no evidence of bats was recorded within or around the derelict cottage; however, the structure contains numerous features which could potentially be used by roosting bats, such as gaps and crevices around window and door frames and in exposed masonry,

crevices, holes and voids behind false ceilings, or in the roof space or roof tiles, chimneys etc. With regard to Collins (2016), this structure was classed as having 'moderate' suitability for roosting bats.

Bat Roost Inspection Surveys – Trees

The treeline adjoining the internal access road in the east of the Site comprises a mix of non-native sitka spruce and Norway spruce. During ground-level assessments, some of the larger specimen conifers were found to have some PRFs, such as minor areas of loose bark and small gaps; however, these features were considered to provide limited roosting potential for bats. No evidence of bats was recorded. With regard to Collins (2016), all of the trees were classed as having 'low' suitability for roosting bats and therefore no further surveys were undertaken.

Presence/Absence Surveys (Emergence/Re-entry Surveys)

During a dusk survey of the hotel middle tower on 16th May 2023, one soprano pipistrelle was observed emerging from a small hole in exposed blockwork on the second-floor landing at 22:00 Hrs, confirming a soprano pipistrelle roost at this location. During a second dusk survey of the hotel middle tower on 27th June 2023, five common pipistrelles were recorded emerging from broken windows/window frame gaps on the landward side of the middle tower, confirming common pipistrelle roosting within this part of the hotel. During a dusk survey of the derelict cottage on 20th July 2023 one *Myotis* sp. and one common pipistrelle were recorded emerging from a hole in the roof indicating roosting in this structure.

Passive Automated Bat Surveys (PABS)

Over the course of the April and May 2023 PAB survey periods, encompassing a combined total of 29 nights of static data, a total of 10,313 bat passes were recorded (April - 6,602 passes, May - 3,711 passes). Combining April and May 2023 PABS data, common pipistrelle had the highest number of passes recorded at the Site accounting for 90.98% of all calls recorded. All species recorded across April and May 2023, with their combined total percentage passes, are as follows: common pipistrelle (90.98%), soprano pipistrelle (2.45%), Nathusius' pipistrelle (0.33%), Leisler's bat (0.16%), brown long-eared bat (0.04%) and lesser horseshoe bat (2.16%). In addition to these, calls recorded which could not be attributed to a species and/or genus during the PAB surveys comprised 'Unidentified' calls (3.4%) and calls from species of the genus *Myotis* (0.48%).

Common pipistrelle was the most frequently recorded species in April 2023 and the total number of bat passes attributed to this species (6,147 passes) comprised 93.0% of the total, with the next most frequently recorded species comprising soprano pipistrelle with 164 passes (2.5% of the total). On the basis of the nightly/hourly average calls, for common pipistrelle an overall activity rating of 'High' was assigned for SPs 1-4, while a 'Medium' activity rating was assigned for SP5. For all other species recorded, the activity rating was assigned 'Low' for all SP locations during the April survey period (see **Table 5-10** below).

Table 5-10. Overview of individual species activity recorded in April 2023 with overall species activity rating assigned

Species	No. of positive nights activity across site/ No. nights in survey window	No. of positive SPs/ No. SP locations	SP with highest total calls	SP with highest nightly total calls	Overall activity rating assigned/ SP*
Common pipistrelle	15/16 nights deployment	5/5	2	2	SP1 – SP4 = **High** SP5 = **Medium**
Soprano pipistrelle	11/16 nights deployment	5/5	4	4	SP1 – 5 = **Low**
Myotis sp.	12/16 nights deployment	4/5	5	2	SP1 – 5 = **Low**
Nathusius' pipistrelle	8/16 nights deployment	3/5	2	1	SP1 – 5 = **Low**
Leisler's bat	4/16 nights deployment	4/5	5	5	SP1 – 5 = **Low**
Brown long-eared bat	3/16 nights deployment	1/5	5	5	SP1 – 5 = **Low**
Lesser horseshoe bat	1/16 nights deployment	2/5	2	2	SP1 – 5 = **Low**

Common pipistrelle was also the most frequently recorded species in May 2023 and the total number of bat passes attributed to this species (3,239 passes) comprised 87.28% of the total, with the next most frequently recorded species comprising lesser horseshoe bat with 219 passes (5.9% of the total). The highest number of calls attributable to common pipistrelle at any one location occurred at SP1 (on the ground floor of the middle tower), where a total of 1,832 passes were recorded. On the basis of the nightly/hourly average calls, an overall activity rating of 'High' was assigned for SP1 and SP2 for common pipistrelle, while a 'Medium' activity rating was assigned for SP5 for lesser horseshoe bat. For all other species recorded, the activity rating was considered 'Low' for all SP locations during the May survey period (see **Table 5-11** below).

Table 5-11. Overview of individual species activity recorded in May 2023 with overall species activity rating assigned

Species	No. of positive nights activity across site/ No. nights in survey window	No. of positive SPs/ No. SP locations	SP with highest total calls	SP with highest nightly total calls	Overall activity rating assigned/ SP*
Common pipistrelle	13/13 nights deployment	5/6	1	1	SP1 & SP2 = **High** SP3-SP6 = **Low**
Soprano pipistrelle	13/16 nights deployment	4/6	1	1	SP1 – 6 = **Low**
Nathusius' pipistrelle	9/16 nights deployment	3/6	2	2	SP1 – 6 = **Low**
Lesser horseshoe bat	7/16 nights deployment	4/6	5	5	SP5 = **Medium** SP1-4, SP6 **= Low**
Leisler's bat	4/16 nights deployment	3/6	4	4	SP1 – 6 = **Low**
Myotis sp.	3/16 nights deployment	1/6	1	1	SP1 – 6 = **Low**
Brown long-eared bat	0/16 nights deployment	0/6	N/a	N/a	N/a

Winter Hibernation Surveys

Evidence of bats was recorded in the second-floor landing area of the hotel middle tower and in one room on the first-floor of the hotel bedroom block during daytime winter inspection surveys and/or during deployment and collection of static detectors.

During PAB surveys in January 2024, common pipistrelle activity was recorded at SP4 (located on the first floor of the bedroom block), where a total of 102 passes were recorded during the 15 nights of deployment. This was the only species recorded during this PAB survey period. During PAB surveys in February 2024, four species were recorded. Common pipistrelle accounted for the vast majority of all calls with a total of 1,421 passes recorded, comprising 92.63% of all calls. The remaining three species identified comprised soprano pipistrelle, *Myotis* spp., and one pass was attributed to lesser horseshoe bat. All species, except lesser horseshoe bat, were recorded within the hotel during the February PAB survey period. Lesser horseshoe bat was only recorded within the derelict cottage at this time.

Summary of Bat Survey Results

In terms of usage of the Site for foraging, baseline surveys undertaken have determined that bats are using both the derelict hotel, derelict cottage and surrounding open grassland. The grassland habitats surrounding the hotel, although highly exposed and not well connected to the wider landscape, still retain a degree of value to foraging bats. It is considered that the absence of artificial lighting within the Site allows a greater degree of usage of more open habitats.

Bats have been confirmed roosting on-site. It is considered that the hotel middle tower supports day/night roosts for common pipistrelle and soprano pipistrelle. It is considered that the hotel middle tower also supports a day/night roost for lesser horseshoe bat; however, the structure is not considered to be suitable to support any type of significant roost for this species based on the structural characteristics of the hotel and occurrence of sub-

optimal habitat only. On the basis of the winter static surveys, it is considered that the roof-landing area of the hotel middle tower may support a common pipistrelle hibernation roost.

It is considered that the hotel bedroom block ground-floor potentially supports a common pipistrelle roost. In relation to this roost, it is considered that the likelihood of a significant/maternity roost being present is reduced; however, on a highly precautionary basis, the presence of a common pipistrelle summer/maternity roost within this part of the hotel cannot be ruled out. It is considered that the hotel bedroom block (both the first floor and ground-floor) potentially supports minor hibernation roosts for common pipistrelle. It is considered that the derelict cottage supports a day/night roost for common pipistrelle and a species from the genus *Myotis* (and potentially also soprano pipistrelle). The derelict cottage potentially supports a minor hibernation roost for common pipistrelle.

See **Appendix 5-2** of **Volume 3** of the **EIAR** which describes the results of all bat surveys undertaken in detail.

5.3.9 Other Mammals

5.3.9.1 Desk Study

Records of protected non-volant and marine mammals were retrieved from the NBDC database for the hectad V46 and information received from the NPWS data request for rare and protected species was also reviewed. The EU Habitats Directive Article 17 spatial data for annexed terrestrial and marine species were also accessed and reviewed[28]. The relevant records obtained in relation to protected mammals (excluding bats) are listed in **Table 5-12** below.

Table 5-12. Desktop records of protected mammals (excluding bats) from hectad V46

Species Name	Level of Protection	Record Date	Record Source	Nearest Record to the Site
Badger (*Meles meles)*	Wildlife Act, 1976 (as amended)	2016	NBDC	1km grid square V4668 partially overlapping with study area, recorded 2008
Pygmy shrew *(Sorex minutus)*	Wildlife Act, 1976 (as amended)	1969	NBDC	V46 – more precise location information not specified
Red squirrel (*Sciurus vulgaris*)	Wildlife Act, 1976 (as amended)	1969	NBDC	V46 – more precise location information not specified
Otter (*Lutra lutra*)	Annex II & IV EU Habitats Directive, Wildlife Act, 1976 (as amended)	2012; 2018	NPWS; NBDC	Record of an otter spraint from Inny Strand, adjacent to Site boundary (2010)
Irish hare (*Lepus timidus hibernicus*)	Annex V EU Habitats Directive, Wildlife Act, 1976 (as amended)	2007; 2021	NPWS; NBDC	Record of hare from the Site (2021)
Irish stoat (*Mustela erminea hibernica*)	Wildlife Act, 1976 (as amended)	2017	NBDC	Record of stoat approx. 0.3 km north-east of Site boundary.

[28] https://storymaps.arcgis.com/collections/1a721520030d404f899d658d5b6e159a?item=2

Species Name	Level of Protection	Record Date	Record Source	Nearest Record to the Site
Pine marten (*Martes martes*)	Annex V EU Habitats Directive, Wildlife Act, 1976 (as amended)	1969	NBDC	V46 – more precise location information not specified
Red deer (*Cervus elaphus*)	Wildlife Act, 1976 (as amended)	1969	NBDC	V46 – more precise location information not specified
Hedgehog (*Erinaceus europaeus*)	Wildlife Act, 1976 (as amended)	2021	NBDC	Record of hedgehog approx. 1.1 km west of Site boundary (2011).
Grey seal (*Halichoerus grypus*)	Annex II, Annex V EU Habitats Directive, Wildlife Act, 1976 (as amended)	1983; 2021	NPWS; NBDC	Adjacent to Site boundary (dead seal on shoreline, recorded 2021). The DAU[29] also indicated that a small number of grey seals haul out on the beach at Ballinskelligs as part of pre-planning application consultation.
Harbour/common seal (*Phoca vitulina*)	Annex II, Annex V EU Habitats Directive, Wildlife Act, 1976 (as amended)	2003; 2019	NPWS; NBDC	Ballinskelligs Bay - approx. 3.5 km to south-east of Site, recorded 2003.

In addition, a large number of cetacean (whale, dolphin and porpoise) species, as follows, are known from the marine waters encompassed within the hectad V46. All cetecean species which occur in Ireland are protected under the Wildlife Act, 1976 (as amended) and are listed on Annex IV of the EU Habitats Directive. Records are held by the NBDC and/or NPWS for the following cetacean species:

- Common dolphin (*Delphinus delphis*)
- Atlantic white-sided dolphin (*Lagenorhynchus acutus*)
- Bottle-nosed dolphin (*Tursiops truncates*)
- Common porpoise (*Phocoena phocoena*)
- Cuvier's beaked whale (*Ziphius cavirostris*)
- Long-finned pilot whale (*Globicephala melas*)
- Minke whale (*Balaenoptera acutorostrata*)
- Risso's dolphin (*Grampus griseus*)
- Sowerby's beaked whale (*Mesoplodon bidens*)
- Striped dolphin (*Stenella coeruleoalba*)
- True's beaked whale (*Mesoplodon mirus*)
- White beaked dolphin (*Lagenorhynchus albirostris*)

[29] DAU Development Applications Unit of the Department of Housing, Local Government and Heritage

The invasive terrestrial mammal species American mink (*Mustela vison*), brown rat (*Rattus norvegicus*), European rabbit (*Oryctolagus cuniculus*), feral goat (*Capra hircus*), house mouse (*Mus musculus*) and sika deer (*Cervus nippon*) have all also been previously recorded in the subject hectad by the NBDC.

5.3.9.2 Field Surveys

Protected non-volant mammal species recorded comprised Irish hare, pine marten and otter. By far the most abundant mammal species recorded on-site comprised Irish hare which was regularly recorded throughout the study area. There was one sighting of a pine marten, recorded via camera trap. No other evidence of pine marten was recorded. One otter spraint was recorded on the bank of the An Rinn Rua Stream outside the Site on 11th January 2024. No other evidence of otter was recorded. No evidence of badger was recorded anywhere within the study area.

No breeding/resting places of any protected mammal species were identified. Indeed, very little evidence of non-volant mammals was recorded generally within the study area over the course of the baseline ecology surveys, including targeted mammal walkover surveys and camera trap surveys.

One potential mammal burrow was identified close to the entrance of the Site. This comprised a small crevice at the base of a stone wall. Due to the discovery of partial remains of a rabbit/hare close by a wildlife camera was deployed at this location (see **Section 5.2.6.2** above). Analysis of footage obtained via this camera trap (deployed for a one week period) determined the only mammal species which was recorded during the survey window was rat.

No other evidence of mammal activity, in the form of scat, prints, hair etc., was recorded. The study area and Site are considered to be of low value to non-volant mammals on the basis of the desktop study and field surveys undertaken. The results of the camera trap surveys are outlined in **Table 5-13** below.

Table 5-13. Results of terrestrial mammal camera trap surveys undertaken within the study area

Species	No. of Observations	Description
Camera 1		
Irish hare	5	A low number of sightings of Irish hare recorded over the camera trap survey window.
Pine marten	1	One potential sighting of a pine marten.
Non-target species		Raven
Camera 2		
Rat	7	Several sightings.
Non-target species		Song thrush, wren, great tit, chaffinch.
Camera 3		
Irish hare	6	A low number of sightings of Irish hare recorded over the camera trap survey window, mainly during daylight hours.
Non-target species		Raven
Camera 4		
Irish hare	15	Regularly recorded over the camera trap survey window.
Fox	2	
Non-target species		Meadow pipit, blackbird, pheasant (pair), raven

5.3.10 Birds

5.3.10.1 Desk Study

The Iveragh Peninsula SPA (004154) is situated approximately 3.7 km to the south-west of the Site and is designated for the protection of several avian species. This is the closest SPA to the Site, with additional SPAs located in the wider area. See **Section 5.3.4.1** above. There is one IBA, the Iveragh Peninsula IBA (Site Code: IE077), located approximately 0.5 km west of the Site. This linear site encompasses the coastline stretching from Caherdaniel as far as Glenbeigh comprising sea cliff, grassland and heath habitats. It overlaps with much of the Iveragh Peninsula SPA. The Ballinskelligs Bay and Inny Estuary SAC (000335) overlaps with the southern fringe of the study area and is of importance in winter to nationally important numbers of several bird species.

The rocky shore of the headland on which the derelict hotel is located, the inner part of Ballinskelligs Bay and the River Inny Estuary form part of the 'Ballinskelligs Bay 0K410' I-WeBS site. Summary data for this site was not available on the BirdWatch Ireland I-WeBS website. A data request for the most recent 5-year annual count data available for this site was submitted to BirdWatch Ireland and data was received for the most recent count period '2022/23'.

Refer to **Appendix 5-3** of **Volume 3** of the **EIAR** for more information on the desk study undertaken in relation to birds.

5.3.10.2 Field Surveys

A wide variety of bird species were recorded over the course of the bird surveys undertaken each month between May 2022 and May 2023. Species recorded within the Site comprised common gull (*Larus canus*), oystercatcher (*Haematopus ostralegus*), golden plover (*Pluvialis apricaria*), bar-tailed godwit (*Limosa lapponica*), curlew (*Numenius arquata*), whimbrel (*Numenius phaeopus*), kestrel (*Falco tinnunculus*), hen harrier (*Circus cyaneus*), chough (*Pyrrhocorax pyrrhocorax*), jackdaw (*Coloeus monedula*), swallow (*Hirundo rustica*), meadow pipit (*Anthus pratensis*), sand martin (*Riparia riparia*), linnet (*Carduelis cannabina*), skylark (*Alauda arvensis*), starling (*Sternus vulgaris*), goldcrest (*Regulus regulus*), Northern wheatear (*Oenanthe oenanthe*) and willow warbler *(Phylloscopus trochilus).*

Species recorded in the area surrounding the Site comprised black guillemot (*Cepphus grylle*), razorbill (*Alca torda*), great Northern diver (*Gavia immer*), black-throated diver (*Gavia arctica*), red-throated diver (*Gavia stellata*), herring gull (*Larus argentatus*), lesser black-backed gull (*Larus fuscus*), great black-backed gull (*Larus marinus*), common gull, Mediterranean gull (*Larus melanocephalus*), black-headed gull (*Larus ridibundus*), gannet (*Morus bassana*), sandwich tern (*Sterna sandvicensis*), common tern (*Sterna hirundo*), common scoter (*Melanitta nigra*), shelduck (*Tadorna tadorna*), teal (*Anas crecca*), wigeon (*Anas penelope*), red-breasted merganser (*Mergus serrator*), light-bellied Brent goose (*Branta bernicla hrota*), oystercatcher, common sandpiper (*Actitus hypoleucos*), dunlin (*Calidris alpina*), ringed plover (*Charadrius hiaticula*), turnstone (*Arenaria interpres*), golden plover, bar-tailed godwit, greenshank (*Tringa nebularia*), redshank (*Tringa tetanus*), sanderling (*Calidris alba*), curlew, whimbrel, little egret (*Egretta garzetta*), cormorant (*Phalacrocorax carbo*), kestrel, hen harrier, chough, jackdaw, swallow, meadow pipit, sand martin, linnet, skylark, starling, raven (*Corvus corax*), stonechat (*Saxicola torquata*) and snipe (*Gallinago gallinago*).

Most notable in terms of bird activity on-site is the presence of a resident pair of chough recorded during baseline bird surveys. Chough is an Annex I species under the EU Birds Directive, and in Ireland is amber-listed. This pair were recorded nesting within the derelict hotel over two consecutive breeding seasons, comprising summer 2022 and summer 2023, and successfully fledged young in both years. This pair also used the hotel, albeit a different location within, as a winter roost-site during winter 2022/23.

Other species recorded breeding on-site comprised swallow, starling and jackdaw, all recorded nesting in the derelict hotel and derelict cottage. The perimeter hedgerows bounding the Site likely support breeding passerines such as wren (*Troglodytes troglodytes*), robin (*Erithacus rubecula*), dunnock (*Prunella modularis*), blackbird (*Turdus merula*) and song thrush (*Turdus philomelos*). The value of the Site for breeding birds generally in terms of the suitability of the habitats occurring pertains largely to the existing structures and the limited areas where there is tall vegetation occurring, comprising mainly the treeline and perimeter hedgerows/vegetated earth banks.

The short-cropped coastal grassland and damp pasture which are associated with the Site provide foraging and resting habitat for a variety of species including waders and gulls, birds of prey and passerines. The marine waters, sandy beaches and coastal grassland and wetland habitats in the wider surrounding area provide foraging and roosting habitat for a variety of seabird, gull, wader and waterbird species. Wetlands habitats, such as reedbed and saltmarsh in the wider area also provide breeding habitat for a variety of waders and other waterbirds.

Refer to Appendix 5-3 of Volume 3 of the EIAR for detailed information on field survey results in relation to birds.

5.3.11 Reptiles & Amphibians

5.3.11.1 Desk Study

The NBDC and NPWS hold records of common frog (*Rana temporaria*) within the hectad V46, most recently recorded in 2011. NPWS also holds a record of common lizard (*Zootoca vivipara*), recorded in 2021. Both species are protected under the Wildlife Act, 1976 (and Wildlife (Amendment) Act, 2000) and common frog is also listed under Annex V of the EU Habitats Directive. Both the NBDC and NPWS hold records for loggerhead turtle (*Caretta caretta*) (2002) and leathery turtle (*Dermochelys coriacea*) (1992). Loggerhead turtle is protected under Annex II and Annex IV of the EU Habitats Directive, as well as the Wildlife Act. Leathery turtle is protected under Annex IV of the EU Habitats Directive, the Wildlife Act and the OSPAR Convention.

5.3.11.2 Field Surveys

The wet grassland habitats and associated mosaics, drainage ditches, small ponds and reedbed encompassed within the study area comprise suitable habitats for breeding/foraging/resting common frog. Tadpoles were recorded at one sampling site (Site 4) situated within the central north section of the Site, where small numbers of tadpoles were recorded (see Section 5.2.6.5 above). Adult common frogs were recorded in the proposed BEA to the east of the local beach access road. While smooth newt and common lizard were not recorded during ecological surveys of the study area, there is suitable breeding, foraging and resting habitat for these species present in the form of damp grassland, woodland, vegetated earth banks, drainage ditches and wetland habitats. Exposed stone walls and the rocky shoreline may be used by basking common lizard.

5.3.12 Fish and Freshwater Macro-invertebrates

5.3.12.1 Desk Study and Field Surveys

A desktop review of NBDC and NPWS data was carried out to collate information on past records of protected aquatic species (fish and macroinvertebrates) and marine fish within V46 so as to identify potential features of aquatic ecological importance within the study area.

The NBDC database holds records for European eel (*Anguilla Anguilla*) and basking shark (*Cetorhinus maximus*) for this hectad. European eel is a 'Threatened species: Critically endangered', while basking shark is protected

under the OSPAR Convention[30] and CITES[31]. Basking sharks are now protected under the Wildlife Act, 1976 (and Wildlife (Amendment) Act, 2000). WFD fish sampling reports available on the Inland Fisheries Ireland (IFI) website were reviewed for the reporting period 2014 – 2021[32]. No information was available for the WFD sub-catchments relevant to the Site. No protected freshwater macroinvertebrate species such as freshwater pearl mussel (*Margaritifera margaritifera*) or white-clawed crayfish (*Austropotamobius pallipes*) are known from the hectad.

No Annex II macro-invertebrate species were recorded on-site during any ecological surveys. In general, the majority of invertebrate species identified are considered common and widespread. Invertebrate species diversity was not found to be high, likely associated with the extent to which much of the site has been modified/improved for agriculture and on-going land management practices. Three-spined stickleback (*Gasterosteus aculeatus*) was recorded at one sampling site, located on the 'An Rinn Rua' stream bordering the east of the study area.

Refer to **Appendix 5-5** of **Volume 3** of the **EIAR** for more information on field survey results in relation to aquatic macro-invertebrates.

5.3.13 Terrestrial Macro-invertebrates

5.3.13.1 Desk Study

Records are held by the NBDC for the hectad V46 for a wide variety of species of worms, crustaceans, insects (beetles, bees, butterflies and moths, grasshoppers, may flies, caddis flies and stoneflies, dragonflies, true flies, millipedes) and non-marine molluscs, including numerous threatened species.

Of note are records of marsh fritillary and Kerry slug. The marsh fritillary butterfly is the only Irish butterfly species listed under Annex II of the EU Habitats Directive. It requires the presence of the devil's bit scabious occurring in a suitably short sward. Kerry slug is listed under Annex II and Annex IV of the Habitats. This species is typically associated with two broad habitat-types; broadleaved woodland and rock outcroppings associated with heath or blanket bog. The study area does not contain suitable habitat for Kerry slug, and it is not considered further here.

Refer to **Appendix 5-5** of **Volume 3** of the **EIAR** for more information on the desk study undertaken in relation to terrestrial invertebrates.

5.3.13.2 Field Surveys

5.3.13.2.1 *Terrestrial Invertebrates*

A total of 44 species of terrestrial invertebrates were identified within the study area during surveys in May, June, July, August and October 2023. No Annex II species were recorded. The majority of species identified are considered common and widespread. Notable was the single record of wall brown butterfly (*Lassiommata megera*), recorded in the proposed BEA in mid-August 2023. This species is listed as 'Endangered' in Ireland and has suffered severe declines over the last several decades.

Refer to **Appendix 5-5** of **Volume 3** of the **EIAR** for more information on the field survey results in relation to general terrestrial invertebrates.

[30] Convention for the Protection of the Marine Environment of the North-East Atlantic or OSPAR Convention is the current legislative instrument regulating international cooperation on environmental protection in the North-East Atlantic.
[31] Convention on International Trade in Endangered Species of Wild Fauna and Flora, a multilateral treaty to protect endangered plants and animals from the threats of international trade
[32] http://wfdfish.ie/ Accessed 29/06/23

5.3.13.2.2 *Marsh Fritillary*

Marsh fritillary (either adult butterflies or larval webs) was not recorded during any of the targeted or multi-disciplinary ecology surveys undertaken within the study area.

A total area of 11.86 Ha of habitat was surveyed within the study area for potential suitability for marsh fritillary, as part of the HCA surveys undertaken. No suitable marsh fritillary habitat was identified within the Site; however, two survey areas (Area C2 and Area D) (see **Section 5.2.6.6** above), located within the proposed BEA, were found to comprise potentially 'Suitable (Under-grazed) (SU)' habitat for this species These two areas account for a combined total area of 7.4 Ha of potentially suitable habitat within the proposed BEA.

Refer to **Appendix 5-5** of **Volume 3** of the **EIAR** for more information on the results in relation to targeted marsh fritillary surveys. Refer also to **Appendix 5-7** of **Volume 3** of the **EIAR**.

5.3.14 Identification of Important Ecological Features (IEFs)

5.3.14.1 Selection of Designated Sites as IEFs

A screening for AA report was undertaken by MWP to determine whether the project, alone or in combination with other plans or projects, is likely to result in significant effects on Natura 2000 sites, in view of the sites Conservation Objectives. A total of seven Natura 2000 sites were identified within the potential ZOI of the proposal as listed in **Table 5-6** above. The screening for AA report concluded that significant effects on all seven sites are not considered likely to occur. None of the designated sites are therefore considered to comprise IEFs in relation to the project and thus will not be considered further in this evaluation. Refer to the screening for Appropriate Assessment report (MWP, 2024) which accompanies the planning application for the Proposed Development for more information.

Due to the fact that nine of the ten nationally designated sites identified to be within the potential ZOI of the proposal, namely Ballinskelligs Bay and Inny Estaury pNHA, Deenish and Scariff Islands pNHA, Moylaun Island pNHA, Darrynane Bay Islands and Marsh, Lamb's Head pNHA, Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment pNHA, Valencia River Estuary pNHA, Doulus Head to Cooncrome Harbour pNHA, Valencia Island Cliffs pNHA and Puffin Sound – Horse Island Cliffs pNHA, as well as the Iveragh Peninsula IBA, spatially overlap with Natura 2000 sites, as outlined in **Sections 5.3.4.2** and **5.3.4.3** above, it is considered that potential impacts on these designated sites arising from the project have been fully considered as part of the screening for Appropriate Assessment report. Significant effects on these pNHAs or other nature conservation sites are therefore not envisaged. Therefore, these sites will not be considered further in this evaluation.

With regard to the remaining nationally designated sites identified to be within the potential ZOI of the proposal, namely Glanleam Wood pNHA, which does not overlap with any Natura 2000 site, it is considered that due to the intervening distance between this pNHA and the Site, and the absence of any potential impact pathway through which effects could ensue, significant effects on this pNHA as a result of the Proposed Development are not envisaged. This designated site is therefore not considered to comprise an IEF in relation to the project and will not be considered further in this evaluation.

Therefore, no designated sites within the potential ZOI of the Proposed Development are considered to comprise IEFs, and designated sites will not be considered further in this chapter.

5.3.14.2 Selection of Habitats as IEFs

The habitat types within the study area are evaluated in **Table 5-14** below for their conservation importance in line with the ecological evaluation scheme outlined in **Section 5.2.8** above. Those habitats identified as being of 'Local importance (higher value)' or higher and which are likely to be impacted by the Proposed Development are selected as IEFs.

Table 5-14. Selection of habitats as IEFs for the Proposed Development

Habitat Type	Extent/Location within study area	Ecological value in context of study area (NRA, 2009)	Approx Area of Loss (Ha/Km)	Rationale	IEF (Yes/No)
Improved agricultural grassland (GA1) in mosaic with Wet grassland (GS4)	A relatively large area of mixed semi-improved grassland habitats, dominating the Site.	Locally important (higher value)	16.1 Ha	Semi-improved habitat grazed by sheep. Localised areas of relatively higher species diversity associated with the wet grassland component of this habitat mosaic. Of value to fauna, including birds, invertebrates and small mammals.	**Yes**
Wet grassland (GS4)	Occurs in the central north section of the Site.	Locally important (higher value)	2.86 Ha	Semi-improved habitat, grazed by sheep and subject to drainage. Of value to fauna, including birds, invertebrates and small mammals.	**Yes**
Conifer woodland (WD4)	Linear double treeline adjoining the internal Site access road.	Local importance (lower value)	0.03 Ha	Treeline of poor botanical diversity, comprising non-native conifer species which are stunted and/or failing. Of limited value to fauna.	No
Scrub (WS1)	Associated with field boundaries in north-east corner of Site.	Local importance (lower value)	0.06 Ha	Habitat of some botanical diversity, provides cover and foraging opportunities for a range of small mammals and avifauna.	**Yes**
Recolonising bare ground (ED3)	Mainly associated with hard standing areas of hotel building within the Site.	Local importance (lower value)	0.21 Ha	Previously disturbed habitat which is in the process of recolonising, mainly with ruderal species and grasses. Of limited value to fauna.	No
Improved agricultural grassland (GA1)	Narrow strip borders the internal access road in centre of Site.	Local importance (lower value)	0.16 Ha	Highly modified and managed habitat with low species diversity and limited biodiversity value.	No
Stonewalls and other stonework (BL1)	Occur locally within the south-western corner of the Site.	Local importance (lower value)	N/a	Remnant field boundaries with localised plant cover. Of limited value to fauna.	No
Earth banks (BL2)	Adjoining the local beach access road within the Site.	Local importance (lower value)	0.47 Km	Habitat of poor botanical diversity associated with field boundaries. Provides cover and foraging opportunities for a range of small mammals and avifauna.	No

Habitat Type	Extent/Location within study area	Ecological value in context of study area (NRA, 2009)	Approx Area of Loss (Ha/Km)	Rationale	IEF (Yes/No)
Buildings and artificial surfaces (BL3)	Comprising the derelict hotel building, outbuildings and hard standing areas, derelict cottage, internal access road within the Site, as well as the local beach access road serving Inny Strand.	Local importance (lower value) to Local importance (higher value)	N/a	Habitat of negligible botanical diversity or value. However, hotel and cottage of value to nesting and roosting birds and roosting bats which increases the ecological value.	Yes
Drainage ditches (FW4)	Associated with field boundaries throughout the Site and the wider area.	Local importance (lower value)	0.3 km	Artificial habitat of generally low botanical diversity. These are seasonally wet habitats that are of value for invertebrate fauna and amphibians.	No
Dry neutral and calcareous grassland (GS1)	Occurs in isolated sections largely outside but immediately adjacent to the southern and southwestern fringes of the Site boundary.	Local Importance – Higher Value / International Importance*	0.01 Ha	Semi-natural and semi-improved grassland habitat of moderate to high species diversity. Of relatively higher value to birds, mammals and invertebrates than more intensively managed pastoral land.	**Yes**
Shingle and gravel banks (CB1)	Linear strip occurs at southern fringe of the proposed enhancement area. Also occurs beyond the south-western boundary of the Site.	County Importance / International Importance*	N/a	Habitat of comparably high botanical diversity in the context of the study area. Corresponds to Annex I habitat. Precautionary principle due to proximity.	**Yes**
Sand shores (LS2)	Isolated pockets occur along the southwestern Site boundary. Also occurs along the southern fringe of the proposed enhancement area.	County Importance / International Importance*	N/a	Habitat of low botanical diversity but may contain examples of Annex habitat. Precautionary principle due to proximity.	**Yes**
Moderately exposed rocky shore (LR2)	Occurs around much of the headland, to the south and southwest of the Site.	Local Importance – Higher Value / International Importance*	N/a	Species-poor habitat although may contain examples of the annex habitat 'reef (1170)'; however, located outside and at a remove from the works area.	No
Amenity grassland (GA2)	Associated with an existing dwelling outside the Site.	Local importance (lower value)	N/a	Species-poor habitat located outside the Site.	No
Reed and large sedge swamp (FS1)	Not encompassed within the Site. Occurs in the east/south-east of the proposed enhancement area.	Local importance (higher value)	N/a	Localised habitat of moderate botanical diversity. Contiguous with and within the influence of other semi-natural wetland habitats such as depositing lowland rivers, wet grassland and sand shores. Likely of local value to invertebrate fauna, in	No

Habitat Type	Extent/Location within study area	Ecological value in context of study area (NRA, 2009)	Approx Area of Loss (Ha/Km)	Rationale	IEF (Yes/No)
				addition to providing viable foraging and commuting habitat for small mammals and avifauna. Located outside the Site.	
Depositing lowland river (FW2)	Comprising the 2nd order 'An Rinn Rua' stream. Not encompassed within the Site. Bounds a portion of the eastern boundary of proposed enhancement area.	Local Importance – Higher Value / International Importance*	N/a	An important habitat locally, providing connectivity between the local area and Ballinskelligs Bay. Located outside the Site.	No

* Categorised as habitat of 'International importance' where the habitat overlaps with a European Site, namely the Ballinskelligs Bay and Inny Estuary SAC [000335]. In the case of 'Dry neutral and calcareous grassland (GS1)', areas of this habitat which are located inside the Site are categorised as of 'Local Importance – higher value', but for areas adjacent to the Site and within the SAC, this habitat is assigned a rating of 'International importance' due to the overlap with the SAC boundary. It is noted that there is no overlap between the Site and the SAC, that this habitat is not a qualifying feature of the SAC nor does it correspond to any Annex I habitat under the EU Habitats Directive.

5.3.14.3 Selection of Flora and Fauna Species as IEFs

In relation to rare and protected flora, there are no desktop records for rare and/or protected plant species within the study area. Chamomile was not recorded within the Site; however, was recorded in the wider study area during field surveys. This species was found to be associated with 'shingle and gravel bank (CB1)' habitat to the west of the Site boundary at Trá na Sassanach. On a highly precautionary basis, due to its occurrence in the immediate vicinity of the Site boundary, the plant species chamomile is considered to be an IEF. In relation to the other remaining rare and/or protected species outlined in Section 5.3.6.1 above, none of these species were recorded during ecological surveys of the study area. These species are not considered to comprise IEFs for the project, and therefore these species will not be considered further in this evaluation.

The following table (Table 5-15) presents an evaluation of the ecological value of the floral and faunal species or species groups identified within the receiving environment of the Proposed Development and rationale for inclusion, or, exclusion as IEFs. As for habitats, species identified as being of 'Local importance (higher value)' or higher and which are likely to be impacted by the Proposed Development are selected as IEFs.

Table 5-15. Evaluation of fauna as IEFs for the Proposed Development

Ecological receptor	Legislative protection	Ecological Value in Context of Study Area	Rationale	Important Ecological Feature
Rare and/or Protected Flora				
Chamomile (*Chamaemelum nobile*)	N/a	Local importance (higher value)	Not recorded on site; however, recorded in adjacent area. Suitable habitat exists. Precautionary principle.	**Yes**
Mammals (excl. bats)				
Hedgehog (*Erinaceus europaeus*)	Wildlife Act, 1976 (as amended)	Local importance (higher value)	Not recorded on site; however, suitable habitat exists and there are desktop records in the greater area. Precautionary principle.	**Yes**

Ecological receptor	Legislative protection	Ecological Value in Context of Study Area	Rationale	Important Ecological Feature
Badger (*Meles meles*)	Wildlife Act, 1976 (as amended)	Local importance (higher value)	Not recorded on site; however, suitable habitat exists and there are desktop records in the area. Precautionary principle.	Yes
Pygmy Shrew (*Sorex minutus*)	Wildlife Act, 1976 (as amended)	Local importance (higher value)	Not recorded during ecological surveys but suitable habitat occurs. Precautionary principle.	Yes
Red Squirrel (*Sciurus vulgaris*)	Wildlife Act, 1976 (as amended)	Local importance (higher level)	Not recorded during ecological surveys. Site does not support suitable habitat for this species.	No
Irish hare (*Lepus timidus hibernicus*)	Annex V EU Habitats Directive, Wildlife Act, 1976 (as amended)	Local Importance (higher level)	Recorded frequently on-site.	Yes
Irish stoat (*Mustela erminea Hibernica)*	Wildlife Act, 1976 (as amended)	Local Importance (higher level)	Not recorded during ecological surveys but suitable habitat occurs. Precautionary principle.	Yes
Otter (*Lutra lutra*)	Annex II, IV EU Habitats Directive, Wildlife Act, 1976 (as amended)	Local importance (higher level)	Not recorded on-site but surrounding shoreline comprises suitable foraging/commuting habitat. Otter spraint recorded on banks of An Rinn Rua Stream during site surveys. Previous record of otter from Inny Strand.	Yes
Pine marten (*Martes martes*)	Annex V EU Habitats Directive, Wildlife Act, 1976 (as amended)	Local importance (higher level)	Presence of pine marten was confirmed on trail camera footage on one occasion during surveys.	Yes
Red deer (*Cervus elaphus*)	Wildlife Act, 1976 (as amended)	Local importance (lower value)	Historic record from hectad only. No records from the area. Habitats occurring do not comprise suitable habitat.	No
Grey seal (*Halichoerus grypus*)	Annex II, Annex V EU Habitats Directive, Wildlife Act, 1976 (as amended)	Local importance (higher level)	Not recorded during any site surveys; however, records exist for the surrounding area of shoreline and marine waters. Seals have the potential to haul out on the surrounding sandy or rocky shoreline. Precautionary principle.	Yes
Harbour/common seal (*Phoca vitulina*)	Annex II, Annex IV EU Habitats Directive, Wildlife Act, 1976 (as amended)	Local importance (higher level)	Not recorded during any site surveys; however, records exist for the greater area. Shoreline and marine waters comprise suitable habitat. Seals have the potential to haul out on the surrounding sandy or rocky shoreline. Precautionary principle.	Yes

Ecological receptor	Legislative protection	Ecological Value in Context of Study Area	Rationale	Important Ecological Feature
Cetaceans (whales, dolphins and porpoise)	Annex IV EU Habitats Directive, Wildlife Act, 1976 (as amended)	Local importance (higher level)	Not recorded during any site surveys; however, records exist for the greater area. Surrounding marine waters comprise suitable habitat. Precautionary principle.	**Yes**
Bats				
All bat species	Annex IV of EU Habitats Directive; lesser horseshoe bat also listed in Annex II; Wildlife Act, 1976 (as amended)	Local Importance (higher level)[33]	Multiple bat species recorded within the study area, using the site for foraging and commuting. A number of bat roosting sites identified within derelict hotel and derelict cottage. Bat roosts for common pipistrelle, lesser horseshoe bat and *Myotis* sp. categorised as being of 'Moderate significance' and for soprano pipistrelle of 'Low significance' recorded[34].	**Yes**
Birds				
Chough	Annex I of EU Birds Directive; Wildlife Act, 1976	County Importance[35]	One resident pair recorded nesting and winter roosting in the hotel during bird surveys. Small flocks infrequently recorded using the Site and surrounding area for foraging during surveys.	**Yes**
Waders found to be associated with the Site	Annex I of EU Birds Directive and/or Wildlife Act, 1976	Local Importance (higher level)	Low numbers of several species of wader typically associated with grassland habitats (golden plover, bar-tailed godwit, oystercatcher, curlew, whimbrel) were recorded foraging/roosting on grassland within the Site during bird surveys.	**Yes**
Other waders recorded in vicinity of the Site and Waders generally	Annex I of EU Birds Directive and/or Wildlife Act, 1976	Local Importance (higher level)	Other wader species (common sandpiper, dunlin, ringed plover, turnstone, greenshank, redshank, sanderling) recorded using coastal habitats in the vicinity of the Site and surrounding coastline during surveys. This stretch of coastline is suitable for a wide variety of wader species.	**Yes**

[33] The ecological value which has been assigned to brown long-eared bat is 'Negligible' in the context of the study area; however, it is included here and brought forward for impact assessment on a highly precautionary basis. All other bat species are considered to be of 'Local Importance (higher value)' at the Site.
[34] With regard to Marnell *et al*., (2022). See Section 9 of the 'Bat Survey Report' in **Appendix 5-2** of **Volume 3** of the **EIAR**.
[35] The most recent national census for chough (2021) estimated 68 breeding pairs for County Kerry (Colhoun *et al*, 2023 in Norfolk and Siriwardena, 2024). The previous census (2002/03) estimated a minimum 122 pairs for County Kerry and 47 pairs on the Iveragh Peninsula (Trewby, *et al*., 2006). On this basis, with regard to the resident/regularly occurring pair, it is considered that the Site holds 1% of the county's breeding population, and the pair is therefore of County Importance. With regard to non-breeding birds, Trewby, *et al*., (2006) recorded a total flock of 233 for the county and a total flock of 86 for the Iveragh Peninsula. Although not found to occur regularly during surveys, on a precautionary basis, the flocks of chough recorded at the Site and surrounds during surveys are also assigned an ecological rating of 'County Importance'.

Ecological receptor	Legislative protection	Ecological Value in Context of Study Area	Rationale	Important Ecological Feature
Gulls	Annex I of EU Birds Directive and/or Wildlife Act, 1976	Local Importance (higher level)	Herring gull, lesser black-backed gull, great black-backed gull, Mediterranean gull, black-headed gull and common gull were recorded using coastal habitats in the vicinity of the Site during surveys. Common gull was the only gull recorded on-site; however, the grassland habitats within the Site are suitable for a variety of foraging/loafing gulls generally.	**Yes**
Raptors	Annex I of EU Birds Directive and/or Wildlife Act, 1976	Local Importance (higher level)	Kestrel and hen harrier were both recorded using habitats within and around the Site for foraging and commuting during surveys. The Site comprises suitable foraging habitat for raptors generally.	**Yes**
Other corvids & Passerines	Wildlife Act, 1976	Local Importance (higher level)	The habitats within and around the Site are suitable for a wide variety of corvid and passerine species, and several were recorded within and around the Site during surveys.	**Yes**
Seabirds	Annex I of EU Birds Directive and/or Wildlife Act, 1976	Local Importance (higher level)	Seabirds were not recorded using the Site. However, this stretch of coastline and the marine waters of Ballinskelligs Bay are suitable for a wide variety of seabird species, and several were recorded in the area surrounding the Site.	**Yes**
Waterbirds (Ducks, Geese & Other Waterbird species)	Annex I of EU Birds Directive and/or Wildlife Act, 1976	Local Importance (higher level)	Waterbirds were not recorded using the Site. However, this stretch of coastline is suitable for a wide variety of waterbird species, and several were recorded in the area surrounding the Site.	**Yes**
Reptiles & Amphibians				
Common frog (*Rana temporaria*)	Annex V of the Habitats Directive Wildlife Act, 1976 (as amended)	Local Importance (higher value)	Suitable foraging and breeding habitats present on site, and both adult frogs and tadpoles recorded during surveys.	**Yes**
Smooth newt (*Lissotriton vulgaris*)	Wildlife Act, 1976 (as amended)	Local importance (higher value)	Not recorded during surveys and no records in the greater area; however, suitable habitats occur. Precautionary principle.	**Yes**
Common lizard (*Zootoca vivipara*)	Wildlife Act, 1976 (as amended)	Local importance (higher value)	Not recorded during surveys; however, pockets of suitable habitat and records exist for surrounding area. Precautionary principle.	**Yes**
Freshwater aquatic species				
Freshwater fish (lampreys, Atlantic salmon)	Annex II and/or Annex V of the EU Habitats Directive	Local importance (lower value)	There are no watercourses within the Site. The only aquatic features comprise drainage ditches which are regularly maintained and do not comprise suitable habitat.	No

Ecological receptor	Legislative protection	Ecological Value in Context of Study Area	Rationale	Important Ecological Feature
	Wildlife Act, 1976 (as amended)			
Other fish species added (e.g. Brown trout European eel, three-spined stickleback	N/a	Local importance (lower value)	There are no watercourses within the Site. The only aquatic features comprise drainage ditches which are regularly maintained and either do not comprise suitable habitat or are sub-optimal habitat.	No
Freshwater White-clawed crayfish (*Austropotamobius pallipes*)	Annex II and Annex V of EU Habitats Directive, Wildlife Act, 1976 (as amended)	Local importance (lower value)	Not identified during site surveys. Habitats not considered suitable. Outside species known distribution.	No
Freshwater Pearl Mussel (*Margaritifera margaritifera*)	Annex II and Annex V of EU Habitats Directive, Wildlife Act, 1976 (as amended)	Local importance (lower value)	Not identified during site surveys. Habitats not considered suitable. Outside species known distribution.	No
Other aquatic macro-invertebrates (aquatic snails, water beetles and other aquatic insects)	N/a	Local Importance (lower value)	There are no watercourses within the Site. The only aquatic features comprise drainage ditches which are regularly maintained. Aquatic surveying of drainage ditches draining the Site rated habitat for aquatic macroinvertebrates as poor. The Site was not found to support high diversity or abundance of aquatic macro-invertebrates; however, this species group has an important role at the lower level of ecosystem food chains.	**Yes**
Terrestrial Macro-Invertebrates				
Marsh Fritillary (*Euphydryas aurinia*)	Annex II on EU Habitats Directive	Local importance (lower value)	The species was not recorded on-site during field surveys. No suitable habitat was recorded within the Site.	No
Other terrestrial macro-invertebrates (bees, butterflies etc.)	N/a	Local importance (higher value)	Terrestrial invertebrates have an important role at the lower level of ecosystem food chains, for example, essential prey resource for small mammals, bats and birds. A variety of species were recorded on-site during surveys.	**Yes**

5.3.15 Do-Nothing Scenario

The Proposed Development site is situated in an area where a well-established pattern of mixed land use pertains. These comprise predominantly low-intensity agriculture and recreational amenity in the immediate surrounds, complimented by semi-natural habitat types comprising mainly grassland and coastal habitats. The lands encompassed within the Site are not subject to any form of formal nature designation and are under private

ownership; however, the Site is largely surrounded to the south, east and west by the Ballinskelligs Bay and Inny Estuary SAC.

If the Proposed Development does not progress beyond the planning application stage, it is likely that the current land-use practices within the Site and within the wider landholding, including potentially further land drainage works for agriculture, will continue. It is also anticipated that the structures on-site will continue to fall into dereliction.

5.4 Assessment of Impacts and Effects

This section identifies the impacts of the construction and operational phase of the Proposed Development on the local natural environment.

Development projects generally may potentially impact on the natural environment (habitats, flora, fauna, water quality and aquatic ecology). For the Proposed Development, by virtue of the nature and location of the Site, both the construction and operational phases are likely to have the most effects on biodiversity. This section will identify in detail the ecological impacts of the construction and operational phases of the Proposed Development on the receiving natural environment. The potential impacts are considered and assessed to ensure that all effects on IEFs are adequately addressed and no significant residual effects are likely to remain following the implementation of mitigation measures.

5.4.1.1 Habitats

Construction Phase

The Proposed Development has been designed to avoid/minimise the loss of higher-value habitat features within the Site.

Habitat loss and/or alteration will/could occur via construction of the temporary site compound, vegetation clearance, general construction activity including groundworks, excavations and demolition work, movement of plant and machinery, storage of construction materials and spoil, potential encroachment from works areas, side-casting of materials, construction of the on-site WWTP and percolation area, construction of new hardstanding areas, car parking, road network and pathways, leisure centre, maintenance building, and various other structures, ancillary site development works, installation of services and site landscaping.

Construction activity also generally poses a risk of spread/introduction of invasive species to Site (through soil disturbance, vegetation disturbance and general construction activity and movement of plant/machinery). Plant, machinery, tools/equipment, workers clothing/footwear and imported building and other materials including soil and fill can all potentially be contaminated with IAPS infested soil, viable seed or other IAPS material and therefore pose a risk of introduction of IAPS to the Site.

Early infestations of Japanese knotweed, giant rhubarb and rhododendron were identified within the Site during baseline surveys. All of the infestations were very minor in extent and highly localised (see Section 5.3.7.2 above). Treatment/management of invasive species has potential for inadvertent habitat/flora impacts through potential use of chemical herbicides and risk to surrounding flora and/or water quality, and/or risk of spread within the site where physical treatments are employed or use of plant and machinery within or near infestations is required.

The Proposed Development will require the direct loss of the following locally important habitats: 'Improved agricultural grassland (GA1)' in mosaic with 'Wet grassland (GS4)' (16.1 Ha), 'Wet grassland (GS4)' (2.86 Ha) and 'Scrub (WS1)' (0.06 Ha). While there will be no reduction in area of 'Buildings and artificial surfaces (BL3)' within the Site, some elements of this habitat (comprising parts of the hotel building, sheds/outbuildings and existing hard standing areas) will be removed, so there will be a degree of loss. Direct habitat loss effects for these IEFs

during the construction phase are assessed as **Permanent, Likely, Not significant, Negative effects**. Potential habitat alteration/disturbance effects for these IEFs during the construction phase are assessed as **Temporary to Short-term, Likely, Not significant, Negative effects**.

The Proposed Development will require very minor loss of 'Dry neutral and calcareous grassland (GS1)' (0.01 Ha) where this habitat-type overlaps with the route of the existing Reenroe Cliff Walk (to be upgraded) within the Site. This habitat has been evaluated as being of 'Local importance – higher value' within the Site. It is noted that the proposed upgrade works to the existing Reenroe Cliff Walk (widening and tarmacking) have been cognisant of this habitat at project design stage and have aimed to minimise loss and disturbance as much as is practicably possible (e.g., proposed widening will take place along the landward side of the existing track only, avoiding any direct loss on the seaward side of the track where the vast majority of 'Dry calcareous and neutral grassland (GS1)' is located (see **Section 5.5.1** below). Areas of loss of 'dry calcareous and neutral grassland (GS1)' will therefore be restricted to those pockets of this habitat which either overlap with or extend slightly landward of the existing route of the cliff-walk. Refer to **Plate 5-3** and **Figure 5-10** above. Direct habitat loss effects for this IEF during the construction phase are assessed as **Permanent, Likely, Not significant, Negative effects**. Potential habitat alteration/disturbance effects on this IEF during the construction phase are assessed as **Temporary to Short-term, Likely, Moderate, Negative effects**.

There will be no loss of either 'Shingle and gravel banks (CB1)' or 'Sand shores (LS2)' as a result of the Proposed Development. Potential habitat alteration/disturbance effects on these IEFs during the construction phase are assessed as **Temporary to Short-term, Likely, Slight, Negative effects**.

Without intervention, IAPS could be introduced to and/or spread within the Proposed Development site during construction works, where infestation may be accelerated in combination with proposed works. The introduction/spread and treatment/management of IAPS could have implications for habitats and native flora. The significance of the presence of IAPS infestations to habitats and flora in the context of proposed works during the construction phase of the Proposed Development is assessed as a **Medium-term, Likely, Moderate, Negative effect**.

Operational Phase

During the operational phase of the Proposed Development, significant effects on habitats are not anticipated. Once the construction phase has ceased large scale excavation will no longer be required. No additional habitat loss is required as part of the operational phase. During site reinstatement, any bare areas of ground at the Site will be planted as part of landscaping proposals, reducing the potential for encroachment of invasive and ruderal species, and also reducing any potential for run of from the Site.

There will be a substantial increase in human activity at the Site as a result of the Proposed Development and the enhanced visitor facilities which will be available to both hotel guests and the general public. This increased human presence can be expected to encompass the existing Reenroe Cliff Walk which surrounds the headland on which the development will be located, and which is proposed to be upgraded as part of the works, and in the general surrounding area including the local beach amenities of Trá Rinn Rua and Trá na Sassanach (Inny Strand). The Emlagh Loop walking trail, which traverses the proposed BEA, can also be expected to be subject to increased footfall as a result of the Proposed Development due to its immediate proximity to the Site.

Increased human presence in the general area has the potential to result in indirect alteration of habitat and disturbance of associated flora through increased trampling and/or erosion effects. This impact will be of greater significance in those areas where more sensitive and/or botanically diverse habitats occur within or in close proximity to the Site, such as the areas of 'Dry calcareous and neutral grassland (GS1)' which occur along the cliff-top surrounding the headland or the areas of 'Shingle and gravel banks (CB1)' located on both beaches, which correspond to the annexed habitat, 'perennial vegetation of stony banks (1220)'. Increased human presence in

the area also has the potential to result in indirect alteration of habitat via potential for increased litter within and around the Site. It is noted that these areas are publicly accessible and already form part of the local recreational amenity resource.

The potential effects on terrestrial habitats and associated flora, identified as IEFs in Error! Reference source not found.**Table 5-14** above, during the operational phase of the Proposed Development are assessed as **Long-term, Likely, Not significant to Slight, Negative Effects**.

In **Table 5-16** below, the relevant rating for each of the types of criteria pre mitigation is provided for these effects on habitats. The criteria, their explanations and the effect rating methodology outlined in **Chapter 1** of the **EIAR** have been used to assess these effect.

Table 5-16. Potential effects on habitats identified as IEFs and the significance of unmitigated effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
CONSTRUCTION PHASE						
Habitat Loss						
Improved agricultural grassland (GA1) in mosaic with Wet grassland (GS4)	Negative	Not significant	Localised	Permanent	Direct	Likely
Wet grassland (GS4)	Negative	Not significant	Localised	Permanent	Direct	Likely
Scrub (WS1)	Negative	Not significant	Localised	Permanent	Direct	Likely
Buildings and artificial surfaces (BL3)	Negative	Not significant	Localised	Permanent	Direct	Likely
Dry neutral and calcareous grassland (GS1)	Negative	Not significant	Localised	Permanent	Direct	Likely
Shingle and gravel banks (CB1)	Neutral	N/a	Localised	Permanent	N/a	Likely
Sand shores (LS2)	Neutral	N/a	Localised	Permanent	N/a	Likely
Habitat Alteration/Disturbance						
Improved agricultural grassland (GA1) in mosaic with Wet grassland (GS4)	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Wet grassland (GS4)	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Scrub (WS1)	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Buildings and artificial surfaces (BL3)	Negative	Not significant	Localised	Short-term	Direct and Indirect	Likely
Dry neutral and calcareous grassland (GS1)	Negative	Moderate	Localised	Temporary to Short-term	Direct and Indirect	Likely
Shingle and gravel banks (CB1)	Negative	Slight	Localised	Temporary to Short-term	Direct and Indirect	Likely
Sand shores (LS2)	Negative	Slight	Localised	Temporary to Short-term	Direct and Indirect	Likely

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
Presence of IAPS						
Habitats	Negative	Moderate	Localised	Medium-term	Indirect	Likely
OPERATIONAL PHASE						
Habitat Alteration/Disturbance						
Improved agricultural grassland (GA1) in mosaic with Wet grassland (GS4)	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Wet grassland (GS4)	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Buildings and artificial surfaces (BL3)	Neutral	N/a	Localised	Permanent	N/a	Likely
Dry neutral and calcareous grassland (GS1)	Negative	Slight	Localised	Long-term	Direct and Indirect	Likely
Shingle and gravel banks (CB1)	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Sand shores (LS2)	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely

5.4.1.2 Mammals (excluding Bats)

Construction Phase

Direct species disturbance/displacement could occur to mammal IEFs (excluding bats) during the construction phase via increased human presence/activity. This has the potential to occur during those periods in which the construction site is open and active throughout the extended construction phase of the project (phased over 4.5 to 5 years). Direct and indirect species disturbance/displacement impacts could also occur via increased noise/vibration/lighting or use of chemicals associated with construction works, or due to physical disturbance of individuals, such as through inadvertent injury or mortality during works. Indirect species disturbance/displacement could occur via indirect water quality effects, loss/fragmentation or direct or indirect alteration of foraging, commuting, breeding or resting habitat, or via impacts on prey biomass.

Habitats which will be lost provide potential foraging and resting habitat for IEFs such as hedgehog, badger, pygmy shrew, Irish stoat and Irish hare. These habitat types are common and widespread in the greater area. Habitat loss effects on these IEFs during the construction phase are assessed as **Short-term, Likely, Not Significant to Slight, Negative Effects**. Habitats which will be lost are not considered to be of particular ecological value to otter. There will be loss of some artificial drainage ditches which are considered sub-optimal for foraging otter and which are common and widespread in the greater area. There will be no loss of shoreline or other typical habitat for otter. The Site does not contain an abundance of suitable habitat for pine marten and does not support a population of pine marten. Habitat loss effects on otter and pine marten during the construction phase are assessed as **Short-term, Likely, Not significant, Negative Effects**.

Disturbance and/or displacement effects could arise on IEFs such as hedgehog, badger, pygmy shrew, Irish stoat, Irish hare, otter and pine marten as a result of increased noise and human activity during the construction phase. Disturbance and/or displacement effects on these IEFs are assessed as **Temporary to Short-term, Likely, Not significant to Slight, Negative Effects.**

There will be no loss of suitable habitat for seals or cetaceans during the construction phase. Disturbance and/or displacement effects on seals could arise as a result of increased noise, human activity or water quality impacts during the construction phase. Disturbance and/or displacement effects on seals during construction are assessed as **Temporary to Short-term, Likely, Not significant, Negative Effects**. Construction phase disturbance and/or displacement effects on cetaceans are not anticipated; however, on a precautionary basis, it is considered that there is, albeit limited, potential for effects as a result of potential water quality impacts during the construction phase. Disturbance and/or displacement effects on cetaceans during construction are assessed as **Temporary to Short-term, Unlikely, Not significant, Negative Effects.**

Operational Phase

No significant disturbance and/or displacement impacts are expected to protected mammals (excluding bats) selected as IEFs, outlined in **Table 5-15**, **Section 5.3.14.3**, above.

Once the construction phase of the Proposed Development has been completed, individuals of smaller species such as hedgehog and pygmy shrew that may have been temporarily displaced owing to construction activity, and considered to comprise species that can occupy more disturbed/active environmental settings such as within urban areas, are expected to utilise the habitats within and adjacent to the Site within a short period of time as they are more likely to be more tolerant of the higher levels of human activity and noise emissions which are anticipated with regard to the day-to-day running of the development. Potential disturbance/displacement impacts on fauna such as badger, Irish hare, Irish stoat, otter, pine marten, grey and harbour seal are expected to

be somewhat greater, as these species are considered less likely to tolerate higher levels of human activity/fugitive noise emissions, in particular those anticipated during peak times of operation.

With regard to increased human presence on-site during operation, it is considered that certain accommodation elements, such as camping, hobbit huts/glamping pods and holiday lodges will only open at certain times of year. Human activity is expected to be concentrated within the Site and the immediate area. It is further expected that human activity will be greatest during the day with relatively low levels at night, during which time many mammal species are more active. The level of human activity and noise which may result in potential disturbance/displacement impacts on faunal IEFs will therefore fluctuate throughout the year and will decrease with distance from the Site. Notwithstanding the above, there will be a considerable increase in human activity within and around the Site once the development is operational. Increases in human activity and fugitive noise emissions can be expected to be significantly over and above current baseline conditions. While this is primarily anticipated during the facility's expected peak period of between May and September each year, it is noted that the facility may ultimately open year-round, depending on demand. Therefore, a year-round scenario is used to inform the assessment of potential disturbance/displacement impacts and effects on non-volant mammal IEFs with regard to human activity and noise.

There will be a considerable increase in artificial light levels within the Site in the context of current baseline conditions to facilitate the Proposed Development. Increased lighting has the potential to result in disturbance/displacement impacts on some terrestrial mammal species, in particular those which are typically more active at night, such as badger, otter and hedgehog. Although there will be an increase in traffic movement on the local road servicing the Site and within the Site itself as a result of the Proposed Development, vehicle speed will be limited and controlled for H&S which will reduce the risk of potential impacts to terrestrial mammal species.

It is noted that very little terrestrial mammal activity was recorded on-site during surveys, other than of Irish hare. Direct operational phase effects which may arise as a result of potential disturbance/displacement impacts on mammals (excluding bats) identified as IEFs (badger, otter, hedgehog, pygmy shrew, Irish hare, Irish stoat, pine marten, grey seal and harbour seal) as a result of increased noise, lighting, human activity and vehicle traffic, are assessed as **Long term, Likely, Not significant to Slight, Negative Effects**.

With regard to the potential for indirect disturbance/displacement of aquatic/marine mammal IEFs, such as otter, grey seal, harbour seal and cetaceans, as a result of stormwater management, standard Sustainable Drainage Systems (SuDS) measures form part of the proposed drainage plan for the development. With regard to the potential for indirect disturbance/displacement of these aquatic/marine mammal IEFs as a result of proposed wastewater management, installation of a tertiary wastewater treatment and infiltration pad system will ensure that effluent is treated to a very high level and will be safe for release to ground (see **Section 3** of the **Civils Report** for this planning application and **Chapter 7** of the **EIAR**). These aspects of the operational phase are discussed further in relation to general water quality **Section 5.4.1.8** below. Indirect operational phase effects which may arise as a result of potential disturbance/displacement impacts on aquatic/marine mammals identified as IEFs as a result of proposed management of stormwater and wastewater are assessed as **Long term, Likely, Imperceptible, Negative Effects**.

In **Table 5-17** below, the relevant rating for each of the types of criteria pre mitigation is provided for these effects on mammals (excluding bats). The criteria, their explanations and the effect rating methodology outlined in **Chapter 1** of the **EIAR** have been used to assess these effect.

Table 5-17. Potential effects on mammals (excl. bats) identified as IEFs and the significance of unmitigated effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
CONSTRUCTION PHASE						
Habitat Loss						
Hedgehog	Negative	Not significant	Localised	Short-term	Direct	Likely
Badger	Negative	Not significant	Localised	Short-term	Direct	Likely
Pygmy shrew	Negative	Not significant	Localised	Short-term	Direct	Likely
Irish stoat	Negative	Not significant	Localised	Short-term	Direct	Likely
Irish hare	Negative	Slight	Localised	Short-term	Direct	Likely
Otter	Negative	Not significant	Localised	Short-term	Direct	Likely
Pine marten	Negative	Not significant	Localised	Short-term	Direct	Likely
Seals	Neutral	N/a	Localised	Short-term	N/a	Likely
Cetaceans	Neutral	N/a	Localised	Short-term	N/a	Likely
Disturbance/Displacement						
Hedgehog	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Badger	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Pygmy shrew	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Irish stoat	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Irish hare	Negative	Slight	Localised	Temporary to Short-term	Direct	Likely
Otter	Negative	Not significant to Slight	Localised	Temporary to Short-term	Direct and indirect	Likely
Pine marten	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Seals	Negative	Not significant	Localised	Temporary to Short-term	Direct and indirect	Likely
Cetaceans	Negative	Not significant	Localised	Temporary to Short-term	Indirect	Unlikely
OPERATIONAL PHASE						
Disturbance/Displacement						
Hedgehog	Negative	Not significant	Localised	Long-term	Direct	Likely
Badger	Negative	Not significant	Localised	Long-term	Direct	Likely

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
Pygmy shrew	Negative	Not significant	Localised	Long-term	Direct	Likely
Irish stoat	Negative	Not significant	Localised	Long-term	Direct	Likely
Irish hare	Negative	Slight	Localised	Long-term	Direct	Likely
Otter	Negative	Not significant to Slight	Localised	Long-term	Direct and Indirect	Likely
Pine marten	Negative	Not significant	Localised	Long-term	Direct	Likely
Seals	Negative	Not significant to Imperceptible	Localised	Long-term	Direct and Indirect	Likely
Cetaceans	Negative	Imperceptible	Localised	Long-term	Indirect	Likely

5.4.1.3 Bats

Construction Phase

During proposed works, activities such as demolition, construction or renovation could result in physical injury or mortality of roosting bats. Similarly, these activities pose a risk of loss, physical disturbance/modification of roosts or their access points e.g., through direct physical alteration of roosts or access points, or indirectly through changes in temperature, humidity, ventilation, lighting or vegetation cover. The Proposed Development will result in the loss and/or potential loss/disturbance/modification of bat roosts for common pipistrelle, soprano pipistrelle, lesser horseshoe, and *Myotis* sp. These roosts have been categorised as ranging from 'Low' to 'Moderate' in significance, in accordance with Marnell *et al*., (2022). Refer to **Appendix 5-2** of **Volume 3** of the **EIAR** for more information.

There will be an increased human presence on-site throughout the construction phase, scheduled to take place in phases over a period of 4.5 to 5 years. This is expected to be at its greatest level during the initial phase, in which time the main construction and demolition activity, associated with the hotel refurbishment, will take place, after which noise emissions will reduce for subsequent phases. The use of machinery and general construction activity will still result in an increase in fugitive noise emissions considerably over and above current baseline conditions for a sustained period.

During the construction phase, there will be an increase in the level of lighting on-site; however, use of lighting will be temporary as it will mainly be associated with works during standard construction hours and is expected to be localised within the Site, corresponding to the area of works active at any one time. Development of the Site during the construction phase will result in the loss/modification/fragmentation or alteration of foraging/commuting habitats (either physically or indirectly e.g., through lighting). The Site does not contain any high-value foraging/commuting habitats for bats, but the proposal will result in the loss/modification of approximately 19 Ha of open grassland habitats (improved and semi-improved) which have some value to foraging bats.

Effects on common pipistrelle associated with loss/disturbance of lower conservation significance roosts (day/night roosts) are assessed as **Permanent, Likely, Slight, Negative effects** and for moderate conservation significance roosts (potential summer/maternity/hibernation roost) **Permanent, Likely, Moderate, Negative effects**. Effects on soprano pipistrelle associated with loss/disturbance of lower conservation significance roosts (day/night roosts) are assessed as **Permanent, Likely, Slight, Negative effects.** Effects on lesser horseshoe bat

associated with loss/disturbance of a moderate conservation significance roost (day/night) are assessed as **Permanent, Likely, Moderate, Negative effects**. Effects on *Myotis* sp. associated with the potential disturbance of a moderate conservation significance roost (day/night) are assessed as **Permanent, Likely, Moderate, Negative effects**.

Effects on all bat species associated with construction-related disturbance/displacement as a result of increased noise and lighting are assessed as **Short-term, Likely, Slight to Moderate, Negative effects**. Effects on all bat species associated with loss of foraging/commuting habitat during construction are assessed as **Permanent, Likely, Slight, Negative effects**.

Operational Phase

With regard to increased human presence on-site during operation, it is considered that certain accommodation elements, such as camping, hobbit huts/glamping pods and holiday lodges will only open at certain times of year. Human activity is expected to be concentrated within the Site and the immediate area. It is further expected that human activity will be greatest during the day with relatively low levels at night, during which time bats can be expected to be active. The level of human activity and noise which may result in potential disturbance/displacement impacts on bats will therefore fluctuate throughout the year and will decrease with distance from the Site. Notwithstanding the above, there will be a considerable increase in human activity within and around the Site once the development is operational. Increases in human activity and fugitive noise emissions can be expected to be significantly over and above current baseline conditions. While this is primarily anticipated during the facility's expected peak period of between May and September each year, it is noted that the facility may ultimately open year-round, depending on demand. Therefore, a year-round scenario is used to inform the assessment of potential disturbance/displacement impacts and effects on bats.

During the operational phase, there will be a permanent and significant increase in the level of artificial lighting across the site. Use of artificial lighting during this phase in particular is expected to have the most potential to result in impacts on bats. Artificial lighting can impact on bats in several ways. Artificial lighting has the potential to result in loss, modification/alteration or fragmentation of bat foraging/commuting/roosting habitats, or impact on the prey biomass available to bats. The extent to which lighting may affect bats depends on individual species sensitivity to light. Lighting attracts insect prey, resulting in concentrations of prey in potentially less suitable areas and a corresponding reduction in prey availability in more suitable foraging areas. For light sensitive species, such as lesser horseshoe bat, lighting can therefore reduce the area of foraging habitat available and can fragment the landscape and cause barriers to movement.

In summary, direct/indirect disturbance and/or displacement effects on bats could arise as a result primarily as a result of operational-related lighting, and to a lesser extent noise and human activity. Effects associated with operational-related disturbance/displacement impacts on bats (all species) due to artificial lighting are assessed as **Long-term, Likely, Moderate to Significant, Negative effects**. Effects associated with operational-related disturbance/displacement impacts on bats (all species) due to noise and human activity are assessed as **Long-term, Likely, Slight, Negative effects**.

In **Table 5-18** below, the relevant rating for each of the types of criteria pre mitigation is provided for these effects on bats. The criteria, their explanations and the effect rating methodology outlined in **Chapter 1** of the **EIAR** have been used to assess these effect.

Table 5-18. Potential effects on bats identified as IEFs and the significance of unmitigated effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
CONSTRUCTION PHASE						
Loss/Disturbance of Roosts/Roosting Bats						
Common pipistrelle (low conservation significance roosts)	Negative	Slight	Localised	Permanent	Direct and Indirect	Likely
Common pipistrelle (moderate conservation significance roosts)	Negative	Moderate	Localised	Permanent	Direct and Indirect	Likely
Soprano pipistrelle (low conservation significance roosts)	Negative	Slight	Localised	Permanent	Direct and Indirect	Likely
Lesser horseshoe bat (moderate conservation significance roosts)	Negative	Moderate	Localised	Permanent	Direct and Indirect	Likely
Myotis sp. (moderate conservation significance roosts)	Negative	Moderate	Localised	Permanent	Direct and Indirect	Likely
Disturbance/Displacement (noise, human activity, lighting)						
All bats	Negative	Slight to Moderate	Localised	Short-term	Direct and Indirect	Likely
Habitat Loss/Fragmentation						
All bats	Negative	Slight	Localised	Permanent	Direct and Indirect	Likely
OPERATIONAL PHASE						
Disturbance/Displacement (noise/human activity)						
All bats	Negative	Slight	Localised	Long-term	Direct and Indirect	Likely
Disturbance/Displacement (lighting)						
All bats	Negative	Moderate to Significant	Localised	Long-term	Direct and Indirect	Likely

5.4.1.4 Birds

Construction Phase

Direct species disturbance/displacement of avian IEFs could occur during the construction phase via increased human presence/activity. This has the potential to occur during those periods in which the construction site is open and active throughout the extended construction phase of the project (phased over 4.5 to 5 years). Direct species disturbance/displacement could also occur via increased noise/vibration/lighting and use of chemicals associated with construction works, or due to physical disturbance of individuals, such as through injury or mortality during works. Indirect species disturbance/displacement could occur via indirect water quality effects, loss/fragmentation or direct or indirect alteration of foraging, commuting, breeding or resting habitat, or via impacts on prey biomass.

Renovation of the hotel will result in the loss of an established nest-site for one pair of chough which use the hotel for nesting (recorded successfully breeding in 2022 and 2023). Loss of a chough breeding site during the construction phase is assessed as a **Medium-term, Likely, Significant, Negative effect**. Renovation of the hotel will

result in the loss of a winter roost-site for this same pair. Loss of winter roost-site effects on this pair of chough during construction are assessed as **Medium-term, Likely, Moderate, Negative effects**. There is potential that loss of the established nest and winter roost site and foraging habitat may displace the resident pair from their territory. Potential displacement effects from their territory on this pair of chough are assessed as **Medium-term, Likely, Moderate, Negative effects**.

The short-cropped grassland habitat which will be lost (8.1 Ha) provides foraging habitat for the resident pair of chough and their young. Low numbers of other non-breeding birds may use the Site for foraging on occasion; however, surveys indicate that the Site does not regularly support other non-breeding birds. There was only one record of a flock including non-breeding birds (11 birds total) within the Site over the course of the bird surveys undertaken (see **Section 5.3.10.2** above). This habitat is common and widespread in the surrounding area. Foraging habitat loss effects on chough during construction are assessed as **Medium-term, Likely, Slight, Negative Effects**. Disturbance/displacement effects on chough could arise as a result of increased noise and human activity during the construction phase; however, these sources of potential disturbance will be localised within the Site and will occur as part of a phased programme of works. Chough are tolerant of a degree of human activity. This is discussed further below in relation to potential operational phase impacts. Disturbance and/or displacement effects on chough during construction are assessed as **Temporary to Short-term, Likely, Slight, Negative Effects.**

The mix of improved and semi/improved wet grassland habitats which will be lost (19 Ha) provide foraging/resting habitat for a variety of waders which were found to be associated with grassland within the Site (golden plover, bar-tailed godwit, oystercatcher, curlew and whimbrel). Low numbers of waders were found to be associated with the Site during surveys. Surveys indicate that the Site does not support any significant populations of these species. The habitat types are common and widespread in the surrounding area. Foraging/resting habitat loss effects during construction on wader species associated with the Site are assessed as **Short-term, Likely, Not Significant, Negative Effects.** Surveys indicate that the Site does not contain suitable habitat for and/or support any significant populations of other wader species. There will be no loss of suitable wader habitat other than the grassland habitats encompassed within the Site. Habitat loss effects on other waders are assessed as **Short-term, Likely, Not Significant, Negative Effects**. Disturbance/displacement effects on waders within the Site or in the area surrounding the Site could arise as a result of increased noise, human activity or water quality impacts during the construction phase. Disturbance and/or displacement effects on waders during construction are assessed as **Temporary to Short-term, Likely, Slight, Negative Effects**.

The habitats which will be lost do not comprise suitable/typical foraging/resting habitat for waterbirds. Surveys indicate that the Site does not support any significant populations of these species. The habitat types are common and widespread in the surrounding area. Habitat loss effects on waterbirds are assessed as **Short-term, Likely, Not Significant, Negative Effects**. Disturbance/displacement effects on seabirds and waterbirds in the surrounding area could arise during construction as a result of increased noise and human activity. Disturbance and/or displacement effects on seabirds and waterbirds are assessed as **Temporary to Short-term, Likely, Not significant to Slight, Negative Effects**.

The grassland habitats which will be lost provide foraging/resting habitat for a variety of gulls and raptors. Surveys indicate that the Site does not support any significant populations of these species. The habitats which will be lost provide primarily foraging, and in some instances breeding habitats for corvids and passerines. Swallows, starlings, and jackdaw utilise the derelict hotel for nesting. The habitat types are common and widespread in the surrounding area. Foraging/resting habitat loss effects on gulls, raptors, corvid and passerine species during construction are assessed as **Short-term, Likely, Not Significant, Negative Effects**. Breeding habitat loss effects (corvids other than chough and passerines) are assessed as **Short-term, Likely, Slight to Moderate, Negative Effects**. Disturbance/displacement effects on gulls, raptors, corvids and passerines within and around the Site could arise as a result of increased noise, human activity and/or water quality impacts during the construction

phase. Disturbance and/or displacement effects on these IEFs are assessed as **Temporary to Short-term, Likely, Not significant to Slight, Negative Effects**.

Operational phase

With regard to chough, tourist development generally at some coastal sites may displace some feeding chough, but the species is extremely tolerant of human presence and has been found to continue to breed at several tourist spots (Bullock, *et al*., 1983). A previous study by Owen (1988, as cited in Poole, 2003) found that human activity, at levels of up to thirty tourist groups per day, did not appear to cause chough to move to alternative feeding areas. More recently, breeding chough surveys undertaken in relation to a proposed replacement of a cable car and construction of a visitor centre on Dursey Island in 2019 noted that chough were recorded feeding on grassland within c. 15 m of a car park during the daytime when there was 'plenty of visitor activity at the cable car site' (Roughan & O'Donovan Consulting Engineers, 2019).

Similarly, a very recent NatureScot research review comparing different biotic and abiotic factors affecting chough populations across Ireland and the UK found that there is evidence that individuals/pairs do become habituated to a certain degree of disturbance. This was based on observations of nesting birds using nest boxes/platforms in cattle sheds in south-west Ireland (as found during the most recent national chough census [Colhoun *et al*., 2023]) and also in Islay in Scotland, where some pairs at least do appear to have become habituated to the continuous close activity of farm machinery, livestock and people (Norfolk and Siriwardena, 2024)[36]. These studies provide examples of how chough are tolerant of a significant level of human activity.

The study by Owen (1988, as cited in Poole, 2003) found that an abundance of good quality foraging habitat in the surrounding area appears to counteract any potential disturbance caused as a result of high levels of human activity. In relation to the Site and environs, the abundance of suitable alternative foraging habitat available to chough in the surrounding area, in the wider Ballinskelligs Bay area, and indeed within the Iveragh Peninsula SPA (004154) further to the southwest and southeast of the Site, and for which chough is a qualifying interest, is noted, in particular in the context of the relatively small area of foraging habitat which will be lost to chough as a result of the Proposed Development. It is considered that any foraging chough displaced from the Site would temporarily re-locate to alternative foraging areas, which are readily available in the surrounding area, as outlined above.

While potential disturbance/displacement impacts on certain species groups, such as waders, which were recorded utilising the Site in low numbers and which were identified as IEFs, are expected to be relatively greater, as these species are more prone to disturbance impacts and less likely to tolerate the expected higher levels of human activity/fugitive noise emissions relative to chough, in particular those anticipated during peak times of operation, it is considered that any foraging/roosting waders displaced from the Site would temporarily re-locate to alternative areas, which are readily available in the surrounding area, comprising the shoreline of Ballinskelligs Bay.

It is considered that avian species occupying the general area are likely to be already tolerant of a degree of disturbance, given the predominant surrounding agricultural and recreational amenity land-uses within and in the vicinity of the Site. This includes current farm activity in the Site, public access to the recreational Reenroe Cliff Walk within the Site, public access to the recreational Emlagh Loop walking trail in the immediate vicinity of the

[36] Available at NatureScot Research Report 1291 - Review of chough management between populations - a comparison of the biotic and abiotic factors influencing chough populations across the UK and Irish range | NatureScot

Site, and the presence of two beaches to either side of the headland, one of which in particular (Inny Strand) is a popular local amenity.

It is noted that, once operational, the development will have a peak season encompassing only certain months of the year (expected May to September), that certain accommodation elements, such as camping, hobbit huts/glamping pods and holiday lodges will only open at certain times of year and that human activity is expected to be concentrated within the Site and the immediate area. The level of human activity and noise which may result in potential disturbance/displacement impacts on avian IEFs will therefore fluctuate throughout the year and will decrease with distance from the Site.

With regard to potential disturbance/displacement effects on chough and waders which were recorded using the Site and immediate environs, and in the context of the degree of usage of the Site by these IEFs, operational phase effects which may arise as a result of increased human activity and noise are assessed as **Long term, Likely, Slight, Negative Effects.**

Once the construction phase of the Proposed Development has been completed, passerine species that may have been temporarily displaced owing to construction activity are expected to utilise the habitats within and adjacent to the Site within a short period of time as such species are expected to be tolerant of some degree of human activity and noise emissions as will be associated with the day-to-day running of the development. With regard to other avian IEFs identified (gulls, seabirds, waterbirds, raptors, other corvids and passerines), and in the context of the degree of usage of the Site by these IEFs, operational phase effects which may arise as a result of increased human activity and noise are assessed as **Long term, Likely, Not significant, Negative Effects.**

There will be a considerable increase in artificial light levels within the Site in the context of current baseline conditions to facilitate the Proposed Development. Increased lighting has the potential to result in disturbance/displacement impacts on some avian species which migrate, forage or are otherwise active at night/during low light conditions, such as Manx shearwater, curlew and Brent goose[37]. Operational phase effects which may arise as a result of potential disturbance/displacement impacts on avian species identified as IEFs as a result of increased lighting are assessed as **Long term, Likely, Slight to Moderate, Negative Effects**.

Operational phase effects which may arise as a result of potential disturbance/displacement impacts on marine and coastal species identified as IEFs, such as waders, gulls, seabirds and waterbirds, and other avian IEFs as a result of proposed management of stormwater and wastewater on-site are assessed as **Long term, Likely, Imperceptible, Negative Effects**.

In **Table 5-19** below, the relevant rating for each of the types of criteria pre mitigation is provided for these effects on birds. The criteria, their explanations and the effect rating methodology outlined in **Chapter 1** of the **EIAR** have been used to assess these effect.

[37] https://www.darksky.ie/

Table 5-19. Potential effects on birds/avian groups identified as IEFs and the significance of unmitigated effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
CONSTRUCTION PHASE						
Loss of Chough Breeding Site	Negative	Significant	Localised and Regional	Medium-term	Direct	Likely
Loss of Chough Winter Roost Site	Negative	Moderate	Localised and Regional	Medium-term	Direct	Likely
Potential displacement of Chough from Territory	Negative	Moderate	Localised and Regional	Medium-term	Direct	Likely
Loss of Foraging/Resting Habitat						
Chough	Negative	Slight	Localised	Medium-term	Direct	Likely
Waders found to be associated with the Site	Negative	Not significant	Localised	Short-term	Direct	Likely
Other waders recorded in vicinity of the Site and Waders generally	Negative	Not significant	Localised	Short-term	Direct	Likely
Gulls	Negative	Not significant	Localised	Short-term	Direct	Likely
Raptors	Negative	Not significant	Localised	Short-term	Direct	Likely
Other Corvids and Passerines	Negative	Not significant	Localised	Short-term	Direct	Likely
Seabirds	Neutral	N/a	Localised	Permanent	N/a	Likely
Waterbirds (Ducks, Geese and Other Waterbirds)	Negative	Not significant	Localised	Short-term	Direct	Likely
Loss of Breeding Habitat						
Other Corvids and Passerines	Negative	Slight to Moderate	Localised	Short-term	Direct	Likely
Disturbance/Displacement (noise/ human activity/water quality)						
Chough	Negative	Slight	Localised	Temporary to Short-term	Direct	Likely
Waders found to be associated with the Site	Negative	Slight	Localised	Temporary to Short-term	Direct and Indirect	Likely
Other waders recorded in vicinity of the Site and Waders generally	Negative	Slight	Localised	Temporary to Short-term	Direct and Indirect	Likely
Gulls	Negative	Not significant to Slight	Localised	Temporary to Short-term	Direct and Indirect	Likely
Raptors	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Other Corvids and Passerines	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
Seabirds	Negative	Not significant to Slight	Localised	Temporary to Short-term	Direct and Indirect	Likely
Waterbirds (Ducks, Geese and Other Waterbirds)	Negative	Not significant to Slight	Localised	Temporary to Short-term	Direct and Indirect	Likely
OPERATIONAL PHASE						
Disturbance/Displacement (noise and human activity)						
Chough	Negative	Slight	Localised	Long-term	Direct	Likely
Waders	Negative	Slight	Localised	Long-term	Direct	Likely
Gulls	Negative	Not significant	Localised	Long-term	Direct	Likely
Raptors	Negative	Not significant	Localised	Long-term	Direct	Likely
Other Corvids and Passerines	Negative	Not significant	Localised	Long-term	Direct	Likely
Seabirds	Negative	Not significant	Localised	Long-term	Direct	Likely
Waterbirds (Ducks, Geese and Other Waterbirds)	Negative	Not significant	Localised	Long-term	Direct	Likely
Disturbance/Displacement (increased artificial light)						
Avian species which migrate, forage or are otherwise active at night/during low light conditions	Negative	Slight to Moderate	Localised	Long-term	Indirect	Likely
Disturbance/Displacement (water quality)						
Marine and coastal species, and other IEFs	Negative	Imperceptible	Localised	Long-term	Indirect	Likely

5.4.1.5 Reptiles & Amphibians

Construction Phase

The habitats which will be lost provide potential foraging and resting habitat for common frog, smooth newt and common lizard. These habitat types are common and widespread in the greater area. There will be some loss of some drains comprising confirmed/potential breeding habitat for common frog and smooth newt. Habitat loss/alteration effects on these IEFs are assessed as **Short-term, Likely, Not significant to Slight, Negative Effects**.

Direct disturbance and/or displacement effects on these IEFs could potentially ensue as a result of increased noise and human activity. Direct disturbance and/or displacement effects on these IEFs are assessed as **Temporary to Short-term, Not significant to Slight, Negative Effects**. Indirect disturbance and/or displacement effects on common frog and smooth newt could potentially ensue as a result of water quality impacts to

foraging/breeding/resting habitat. Indirect disturbance and/or displacement effects on these IEFs are assessed as **Temporary to Short-term, Moderate, Negative Effects.**

Operational Phase

No significant disturbance and/or displacement impacts are expected to reptile and amphibian species selected as IEFs, outlined in **Section 5.3.14.3** above. Once the construction phase of the Proposed Development has been completed, individuals that may have been temporarily displaced owing to construction activity are expected to utilise the habitats within and adjacent to the Site within a short period of time. Human activity is expected to be concentrated within the Site and the immediate area and will be at its highest levels during peak operational periods. Potential disturbance/displacement impacts on reptile and amphibian IEFs will be greatest within the immediate environs of the Site and will decrease with distance. It is noted that very little to no reptile and amphibian activity was recorded on-site during surveys.

Operational phase effects which may arise as a result of potential disturbance/displacement impacts on reptile and amphibian species identified as IEFs (common frog, smooth newt and common lizard) as a result of increased noise, lighting, human activity and vehicle traffic, are assessed as **Long term, Likely, Not significant, Negative Effects**.

With regard to the potential for indirect disturbance/displacement of amphibian IEFs, the proposed management of stormwater during operation will avoid release of sediment, silt and hydrocarbons to the existing drainage network. Similarly, the proposed management of wastewater including tertiary treatment will ensure that treated effluent is safe for release to ground. Operational phase effects which may arise as a result of potential disturbance/displacement impacts on amphibian species identified as IEFs (common frog, smooth newt) as a result of proposed management of stormwater and wastewater on-site are assessed as **Long term, Likely, Not significant, Negative Effects**.

In **Table 5-20** below, the relevant rating for each of the types of criteria pre mitigation is provided for these effects on amphibians and reptiles. The criteria, their explanations and the effect rating methodology outlined in **Chapter 1** of the **EIAR** have been used to assess these effect.

Table 5-20. Potential effects on reptiles and amphibians identified as IEFs and the significance of unmitigated effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
CONSTRUCTION PHASE						
Habitat Loss/Alteration						
Common frog	Negative	Not significant to Slight	Localised	Short-term	Direct	Likely
Smooth newt	Negative	Not significant to Slight	Localised	Short-term	Direct	Likely
Common lizard	Negative	Not significant	Localised	Short-term	Direct	Likely
Disturbance/Displacement (noise/ human activity)						
Common frog	Negative	Not significant to Slight	Localised	Temporary to Short-term	Direct	Likely
Smooth newt	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Common lizard	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
Disturbance/Displacement (water quality)						
Common frog	Negative	Moderate	Localised	Temporary to Short-term	Indirect	Likely
Smooth newt	Negative	Moderate	Localised	Temporary to Short-term	Indirect	Likely
OPERATIONAL PHASE						
Disturbance/Displacement (noise/ lighting/human activity)						
Common frog	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Smooth newt	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Common lizard	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Disturbance/Displacement (water quality)						
Common frog	Negative	Not significant	Localised	Long-term	Indirect	Likely
Smooth newt	Negative	Not significant	Localised	Long-term	Indirect	Likely

5.4.1.6 Freshwater Macro-invertebrates

Construction phase

The proposed development will require loss of approximately 0.3km of artificial drainage ditches. Habitat loss effects on aquatic macroinvertebrate species durig construction are assessed as **Short-term, Likely, Not significant Negative effects**. Potential water quality impacts in the existing drainage network could result in indirect alteration of habitat and indirect disturbance/displacement of aquatic macroinvertebrate species. Indirect disturbance and/or displacement effects on aquatic macro-invertebrates during construction are assessed as **Temporary to Short-term, Likely, Slight, Negative Effects**.

Operational Phase

Once the construction phase has been completed, it is expected that any freshwater macroinvertebrate species that may have been temporarily affected or displaced due to construction activity would utilise the habitats within and adjacent to the Site, including remaining drainage features within the Site, within a short period of time. With regard to the potential for indirect disturbance/displacement of freshwater macro-invertebrates, the proposed management of stormwater during operation will avoid release of sediment, silt and hydrocarbons to the existing drainage network. Similarly, the proposed management of wastewater including tertiary treatment will ensure that treated effluent is safe for release to ground. Operational phase effects which may arise as a result of potential disturbance/displacement impacts on freshwater macro-invertebrate species identified as IEFs are assessed as **Long term, Likely, Not significant, Negative Effects**.

In **Table 5-21** below, the relevant rating for each of the types of criteria pre mitigation is provided for these effects on freshwater macro-invertebrates. The criteria, their explanations and the effect rating methodology outlined in **Chapter 1** of the **EIAR** have been used to assess these effect.

Table 5-21. Potential effects on freshwater macro-invertebrates identified as IEFs and the significance of unmitigated effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
CONSTRUCTION PHASE						
Habitat Loss/Alteration	Negative	Not significant	Localised	Short-term	Direct and Indirect	Likely
Disturbance/Displacement	Negative	Slight	Localised	Temporary to Short-term	Indirect	Likely
OPERATIONAL PHASE						
Disturbance/Displacement (water quality)	Negative	Not significant	Localised	Long-term	Indirect	Likely

5.4.1.7 Terrestrial Macro-Invertebrates

Construction phase

Habitat loss will result in the loss of terrestrial macroinvertebrate habitat. Within the Site, most of the species recorded were associated with damper areas of open grassland. Invertebrate species diversity was not found to be high, likely associated with the extent to which much of the site has been modified/improved for agriculture and on-going land management practices. The majority of invertebrate species identified during surveys were considered common and widespread. The impact of the Proposed Development is at a local scale. Habitats which will be created will likely be of higher value to terrestrial macro-invertebrates than the current baseline conditions. Habitat loss/alteration effects on terrestrial macro-invertebrate species during construction are assessed as **Temporary, Likely, Not significant, Negative Effects**. Construction phase effects which may arise as a result of potential disturbance/displacement impacts on terrestrial macro-invertebrate species identified as IEFs are assessed as **Temporary to Short-term, Likely, Not significant, Slight, Negative Effects**.

Operational Phase

Once the construction phase has been completed, it is expected that any terrestrial macroinvertebrate species that may have been temporarily affected or displaced due to construction activity would utilise the habitats within and adjacent to the Site within a short period of time. Operational phase effects which may arise as a result of potential disturbance/displacement impacts on terrestrial macro-invertebrate species identified as IEFs are assessed as **Long term, Likely, Imperceptible, Negative Effects**.

In **Table 5-22** below, the relevant rating for each of the types of criteria pre mitigation is provided for these effects on terrestrial macro-invertebrates. The criteria, their explanations and the effect rating methodology outlined in **Chapter 1** of the **EIAR** have been used to assess these effect.

Table 5-22. Potential effects on terrestrial macro-invertebrates identified as IEFs and the significance of unmitigated effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
CONSTRUCTION PHASE						
Habitat Loss/Alteration	Negative	Not significant	Localised	Temporary	Direct and Indirect	Likely
Disturbance/Displacement	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
OPERATIONAL PHASE						
Disturbance/Displacement	Negative	Imperceptible	Localised	Long-term	Direct and Indirect	Likely

5.4.1.8 Water Quality

Construction Phase

As part of aquatic ecology surveys, none of drainage ditches within the Site, comprising the only aquatic features within the Site, were found to be suitable for assigning a Q-rating due to the poor supporting habitat for macroinvertebrates (see **Appendix 5-5** of **Volume 3** of the **EIAR**). These features comprise agricultural field drains which are all highly-modified and managed to varying degrees. It is noted that the Coastal Waterbodies WFD Status (2016-2021) of Ballinskelligs Bay is 'High'.

Improper management during the construction phase of the development has the potential to lead to excessive runoff of silt, nutrients, and organic matter during heavy rainfall or substances such as fuels, oil and other pollutants to the aquatic environment. As the existing drainage network outfalls to the nearby shoreline, it is considered that existing drains provide a direct pathway between the Site and the intertidal/marine zone. Uncontrolled leaching of fuels/oils or cementitious material to ground in the event of accidental spillage also poses a potential risk to groundwater quality. Consequently, in the absence of mitigation, construction on site has the potential to affect surface water quality within the field drainage network and potentially within the surrounding marine area, as well as groundwater.

The potential effects of the construction phase to water quality within the existing drainage network are assessed as **Temporary to Short-term, Likely, Moderate, Negative effects** due to the potential for increased sediment load and/or ingress of pollutants to local drainage features within the Site as a result of the Proposed Development.

Although less likely to occur, and with due regard to the diluting effect of the sea in the event of such an impact occurring, it is considered that the potential effects of the construction phase to marine water quality within the surrounding waters of Ballinskelligs Bay are assessed as **Temporary, Unlikely, Moderate, Negative effects** due to the potential for conveyance of sediment and/or pollutants to the shoreline via the local drainage network within the Site as a result of the Proposed Development. It is considered that water quality during construction can be protected with appropriate mitigation.

Operational phase

Sources of potential surface or ground water quality impacts associated with the operational phase include ingress of sediment, silt, nutrients or chemical pollution to the aquatic environment via either run-off, or release. Management and disposal of stormwater and wastewater on-site could lead to secondary effects such as alteration of aquatic habitats and disturbance/displacement of species.

Though there are no watercourses within the Site, there is potential for the release of silt, sediment and other pollutants to enter the existing drainage network via run-off or direct discharge from the proposed stormwater

network and from there enter coastal waters. However, the implementation of standard measures of Sustainable Drainage Systems (SuDS) including hydrocarbon interceptors will avoid the potential for significant adverse effects on either freshwater or marine water quality. All surface water drainage will pass through two petrol interceptors before discharging to existing drains.

The potential effects on water quality within any part of the retained drainage network and the surrounding marine habitats of Ballinskelligs Bay during the operational phase of the Proposed Development due to management of stormwater are assessed as **Long-term, Likely, Imperceptible, Negative Effects**.

With regard to proposed management of wastewater, an on-site WWTP, comprising of Sequential Batch Reactor SBR) system, followed by use of tertiary treatment with an infiltration pad system to percolate to ground, is proposed. Tertiary treatment is supplementary to primary and secondary treatments and is mainly physicochemical in nature providing additional disinfection, oxidation, UV treatments and/or filtration to treat effluent to such a level as to render it inert and harmless to the environment and therefore safe for release to ground. The treatment system proposed for the development is a coconut filter with a 38,000-litre tank. See **Chapter 7** of the EIAR and **Section 3** of the **Civils Report** for this planning application for more information.

The potential effects on water quality within the existing drainage network and the surrounding marine habitats of Ballinskelligs Bay during the operational phase of the Proposed Development due to management of wastewater are assessed as **Long-term, Likely, Not significant, Negative Effects**.

In **Table 5-23** below, the relevant rating for each of the types of criteria pre mitigation is provided for these effects on water quality. The criteria, their explanations and the effect rating methodology outlined in **Chapter 1** of the **EIAR** have been used to assess these effect.

Table 5-23. Potential effects on water quality and the significance of unmitigated effects

Impact	Quality of Effect	Significance	Spatial Extent	Duration	Other Relevant Criteria	Likelihood
CONSTRUCTION PHASE						
Construction Activity (run-off or ingress of silt, pollutants, nutrients etc)						
Surface water quality (existing drainage network)	Negative	Moderate	Localised	Temporary to Short-term	Direct and Indirect	Likely
Marine water quality	Negative	Moderate	Localised	Temporary	Direct and Indirect	Unlikely
OPERATIONAL PHASE						
Management of Stormwater	Negative	Imperceptible	Localised	Long-term	Direct and Indirect	Likely
Management of Wastewater						
Surface water quality (existing retained drainage network)	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Marine water quality	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely

5.4.2 Cumulative Effects

As well as singular effects, the potential for cumulative effects also needs to be considered. A cumulative impact arises from incremental changes caused by other past, present, or reasonably foreseeable activities interacting synergistically with the impacts generated by the Proposed Development in a manner that has the potential to

cause effects on the receiving environment. According to EPA (2022), cumulative effects can be described as 'the addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects'.

The plans, projects activities and pressures identified as plausible sources of impacts to be assessed for their potential to generate cumulative effects are discussed in **Sections 5.4.2.1** to **5.4.2.4**, below.

5.4.2.1 Plans

With regards to the potential for cumulative or in-combination effects, the Kerry County Development Plan (CDP) 2022-2028 was considered. This Plan came into effect on the 15th August 2022. No specific elements of this Plan were identified which were considered to have the potential to interact with the proposal in the context of potential cumulative effects.

In general, County Development Plans, including the Kerry CDP 2022-2028, have a range of environmental and natural heritage policy safeguards in place. These safeguards to protect the natural environment will also apply to the Proposed Development described in this report. No significant cumulative effects are predicted with the Kerry CDP 2022-2028.

5.4.2.2 Permitted and Proposed Developments

The main sources of potential cumulative effects due to interaction between the proposal and other proposed/permitted developments are considered to comprise cumulative habitat loss, cumulative water quality impacts and/or cumulative species disturbance/displacement impacts.

Section 1.6.2.5 of **Chapter 1** of the **EIAR** details applications within 10 km of the Proposed Development site and identified around 48 residential dwellings that were granted planning within the last five years. The majority of these planning applications in the surrounding area consist of small scale works to existing dwellings, applications to construct new dwellings and other small-scale developments with minor changes. In addition to small scale residential planning applications, thirteen non-residential development planning applications were approved in the last seven years. Six of these were in the pre-covid period and are likely to be completed and will therefore have no cumulative effect with the Proposed Development. One pertains to a minor change in use (from hostel to self-catering accommodation) and thus is not predicted to have potential to result in any cumulative effects with the Proposed Development. Of the remaining six non-residential development planning applications approved in the last seven years, five are associated with tourism or recreation and one comprises a wood chipping facility.

While the Proposed Development will result in the loss of areas of locally important, semi-natural habitats, comprising primarily wet grassland or wet grassland mosaic, in addition to semi-improved agricultural grassland, and scrub, the areas of loss are not substantial, and the habitats do not comprise habitats of high intrinsic ecological value in the context of the Site. No significant habitat loss is predicted as a result of the Proposed Development. In the context of other permitted and proposed developments in the locality and wider area, significant cumulative habitat effects are not envisaged as a result of the proposal.

With regard to water quality, no significant effects during either construction or operation have been identified as a result of the Proposed Development. Of the remaining six non-residential development planning applications, as outlined above, none are identified as having the potential to interact with the Proposed Development with regard to potential water quality impacts. Therefore, significant cumulative water quality effects are not envisaged as a result of the proposal.

The habitats at the Site are used or have the potential to be used by a range of fauna as a breeding/resting/foraging/commuting resource. In terms of direct species disturbance/displacement effects as a result of increased noise and human activity during either construction or operation, no significant species

disturbance/displacement effects have been identified. All of the remaining non-residential development planning applications in the wider area are located at a minimum remove of 4 km from the Site. Significant cumulative direct species disturbance/displacement effects in relation to noise and human activity as a result of potential interaction between the proposal and proposed/permitted developments elsewhere are not envisaged as a result of the proposal.

The Proposed Development will result in a temporary increase in artificial lighting within the vicinity of the site during the construction phase, and a permanent increase in artificial light levels during the operational phase. It has been determined in **Sections 5.4.1.3** and **5.4.1.4** above that there is potential for 'moderate to significant' and 'slight to moderate' negative effects to bats and birds respectively as a result of operational lighting associated with the Proposed Development. In the absence of mitigation, light pollution at the Site has the potential to result in potential indirect cumulative effects on local bat populations and other fauna, including migratory birds and other bird species which are active at night or in low light conditions. However, mitigation measures to avoid or reduce impacts on fauna associated with construction and in particular operational phase lighting are included and are outlined in **Sections 5.5.2.1.9, 5.5.2.1.10.6** and **5.5.2.2.1** below.

With regard to some bats and chough, it has been determined in **Sections 5.4.1.3** and **5.4.1.4** above that there is potential for 'moderate', and 'significant' or 'moderate' negative effects to certain bat species and chough respectively as a result of loss of breeding or roosting habitat as a result of the proposal. In the absence of mitigation, there is potential for potential cumulative habitat loss effects on local bat and bird populations which breed and/or roost at the Site. However, mitigation measures to avoid or reduce impacts on these fauna associated with construction of the Proposed Development are proposed in **Sections 5.5.2.1.10.2 and 5.5.2.1.11** with regard to providing alternative suitable breeding/resting habitat for these fauna.

5.4.2.3 EPA Licenced Facilities

A review of the EPA website[38] determined that there are no IPPC, IPC and IEL EPA licenced facilities in or within the vicinity of the Proposed Development site[39]. Therefore, no cumulative effects arising from interaction between the project and such EPA licenced facilities are predicted.

Waterville Wastewater Treatment Plant (WWTP)[40] is located approximately 4.6 km south-east of the Proposed Development site. This treatment plant has a plant design PE[41] of 3,000 and an agglomeration PE of 1,648 (recorded in 2022). The plant treatment system comprises secondary effluent treatment. Dungeagan/Ballinskelligs Sewerage Treatment Works[42] is located approximately 3.6 km to the south-west of the Proposed Development site. This treatment plant has a plant design PE of 500 and an agglomeration PE of 400 (recorded in 2013). Both facilities discharge treated wastewater into Ballinskelligs Bay. The WFD Coastal Water Quality (2018-2020) of Ballinskelligs Bay[43] is 'unpolluted'.

With regard to the proposal to discharge wastewater and stormwater from the operational development to Ballinskelligs Bay, and the potential to result in cumulative impacts on receiving aquatic habitats/species via interaction with existing wastewater treatment and stormwater management elsewhere in the bay, the proposed management of wastewater including WWTP design, and use of tertiary treatment, and use of best-practice SuDS measures, which will ensure that wastewater and stormwater is treated to a high level, is considered. In light of the above, no significant cumulative effects on any habitats or species are predicted as a result of the proposed management of wastewater or stormwater during the operational phase.

[38] https://gis.epa.ie/EPAMaps/
[39] IPPC Integrated Pollution Prevention Control, IPC Integrated Pollution Control, IEL Industrial Emissions Licence
[40] Waterville WWTP Registered No. D0287-01
[41] PE Population Equivalent
[42] Dungeagan/Ballinskelligs Sewerage Works Registered No. A0087-01
[43] Waterbody Code IE_SW_200_0000

In conclusion, no significant cumulative effects arising from interaction between the Proposed Development and any EPA licenced facilities are predicted.

5.4.2.4 Existing Land-use and On-going Activities

Existing land-use within the Proposed Development site comprises agriculture. Agriculture, and to a lesser extent forestry and peat extraction, interspersed with residential dwellings, are the dominant land-uses extending away from the Site to the east, west and north. In general, agriculture can result primarily in increased nutrient/sediment run-off to watercourses and habitat loss and fragmentation within the landscape. Poorly managed and inappropriately sited forest operations can negatively impact on water quality and aquatic habitats and species. The most common water quality problems arising from forestry relate to the release of sediment and nutrients and the impacts from acidification. Forestry may also give rise to changes in stream flow regimes caused by associated land drainage[44]. Peat harvesting generally can result in habitat loss and fragmentation, alteration of hydrology, biodiversity loss, carbon loss, impacts from erosion and sedimentation and other water quality and aquatic habitat impacts. These activities have been discussed in relation to the area surrounding the Site in **Section 5.3.1** and **5.3.3** above. Residential developments generally result in habitat loss/alteration, increased artificial light levels, increased human activity/noise levels and increased pressure on aquatic receptors in rural scenarios with regard to treatment of wastewater.

With regard to potential cumulative impacts arising from habitat loss and alteration, increased lighting, increased noise and human activity and water quality, these aspects of the proposal have been discussed in detail in relation to permitted and proposed developments in the locality in **Section 5.4.2.2** above. In the context of the existing land-use and on-going activities in the locality, significant cumulative habitat or species impacts are not envisaged as a result of the proposal.

With regard to water quality impacts during construction, it is noted that there are no watercourses located within the Site and significant cumulative water quality effects on existing drainage features are not predicted. With regard to water quality impacts during operation, the proposal with regard to the treatment and management of both stormwater and wastewater will ensure no significant operational phase water quality impacts. No significant cumulative water quality impacts are envisaged as a result of potential interaction between the proposal and existing land-use and on-going activities in the locality.

In conclusion, significant cumulative or in-combination effects as a result of interaction between any aspect of the Proposed Development and plans, permitted and proposed developments, EPA licenced facilities or other existing land-uses and on-going activities are not predicted (see **Table 5-24** below).

Table 5-24. Characterisation of Cumulative Effects (pre-mitigation) for Proposed Development

Other Activities	Characterisation of Effect			Confidence level
	Quality	Significance	Duration	
Plans	Neutral	Imperceptible	Long-term	Near certain
Permitted and proposed Development	Neutral	Slight to Moderate	Long-term	Near certain
EPA licenced facilities	Neutral	Imperceptible	Long-term	Near certain
Agriculture	Negative	Not significant	Long-term	Near certain
Peat Extraction	Negative	Not significant	Long-term	Near certain
Forestry	Negative	Not significant	Long-term	Near certain

[44] https://www.catchments.ie/significant-pressures-forestry/

5.5 Mitigation and Monitoring Measures

5.5.1 Mitigation by Design (Avoidance)

Consultation between the design team (Project Manager, Project Engineers, Project Architects and Project Ecologists) and the developer was conducted on an ongoing basis during the design phase in order to formulate a project design which would avoid, prevent and/or minimise any significant adverse ecological impacts, in so much as was practicably possible. Site design was carried out with cognisance to ecological features to minimise the impact of the Proposed Development on Biodiversity and minimise the footprint of the Proposed Development on more ecologically sensitive habitats. For example, a habitat constraints map was generated to ensure avoidance of ecologically sensitive habitat, namely the relatively botanically diverse strip of coastal grassland along the cliff-top of the headland. To avoid/minimise impacts on this area of habitat specifically, widening works to the existing Reenroe Cliff Walk are proposed to the landward side only to avoid the area between the cliff walk and the cliff edge.

5.5.2 Mitigation by Management

5.5.2.1 Construction Phase

5.5.2.1.1 *Construction and Environmental Management Plan (CEMP)*

A preliminary Construction Environmental Management Plan (CEMP) has been prepared to accompany the planning application. A detailed CEMP will be developed by the appointed contractor prior to construction works commencing. This will detail construction practices and environmental management measures which will be implemented to ensure that best practice measures are adhered to, with minimum impact on the surrounding environment. The contractor's detailed CEMP will ensure that the Proposed Development will be carried out in accordance with any planning conditions applicable.

All mitigation measures outlined in this document are to be incorporated into the final CEMP and implemented on-site. The CEMP will be submitted to Kerry County Council (KCC) for agreement and approval prior to the commencement of any construction activity.

The CEMP will include, but is not limited to, the following environmental controls:

- Water Quality/Sediment and Erosion Control
- Noise, Vibration, Dust and Air Control
- Management of Construction and Demolition Waste
- Fuel and Oils Management
- Management of Concrete, and
- Emergency Response Plan

The CEMP will take cognisance of the following Best Practice Guidance:

- CIRIA C692: Environmental Good Practice on Site, (Audus *et al.*, 2010)
- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (Masters-Williams *et al.*, 2001)
- CIRIA C753 – The SUDS Manual; CIRIA C698 – Site handbook for the construction of SUDS, and

- Bat Conservation Trust (2023). Guidance Note 08/23. Bats and Artificial Lighting at Night.

5.5.2.1.2 *Project Ecologist/Ecological Clerk of Works (ECoW)*

A suitably qualified and experienced Project Ecologist/ECoW will be employed during the construction phase of the project. Duties will include the review of all method statements, delivery of toolbox talks, undertaking of all required pre-construction surveys for protected species and monitoring of works throughout the construction phase to ensure that works are taking place in compliance with the CEMP and that the requirements of the Conditions of Planning and all environmental controls and EIAR mitigation is implemented in full. As part of toolbox talks, contractor staff and other site personnel, as relevant, will be made aware of the procedure to follow if a protected species or their resting or breeding site is encountered.

The appointed ECoW will be awarded a level of authority and will be allowed to stop construction activity if there is potential for adverse environmental effects other than those predicted and mitigated for in the EIAR. The appointed ECoW will have demonstrated professional experience in managing large-scale construction works affecting ecological receptors identified within the EIAR.

5.5.2.1.3 *General Protection of Water Quality*

Temporary Site Compound/Parking

- Parking will only take place within designated parking areas.
- The site compound including designated parking areas will be located at least 50 m from any watercourse/waterbody.
- A designated wash down area within the site compound will be used for cleaning of any equipment or plant, with the safe disposal of any contaminated water.

Construction Runoff and Sediment Control

Best practice mitigation measures will be implemented with regard to runoff and sediment control as follows:

- Erosion control, where runoff is prevented from flowing across exposed ground and becoming polluted, and sediment control, where runoff is slowed to allow suspended sediment to settle, are important elements in runoff and sediment control. Erosion and sediment controls are to be implemented prior to any site clearance works commencing.
- Clean water runoff will be intercepted and diverted away from construction site runoff to avoid cross-contamination of clean water with soiled water.
- All topsoil stripping close to sensitive areas will be carried out during periods of dry weather and all stockpiling will be kept as far as possible from surface water features.
- The area of exposed ground will be minimised. The amount of material excavated is to be kept to a minimum. Excavations will only be carried out following installation of appropriate sediment controls measures which will slow run-off and trap suspended sediment, particularly if working during prolonged wet weather or if working during an intense rainfall event.
- The drainage system will be inspected regularly during construction, in particular after heavy rainfall/storm events, to check for blockages/drainage issues. Where any drainage issues are identified, these will be addressed on the same day to ensure water quality protection.

Construction Wheel-wash Facilities

- Wheel wash facilities are to be provided at all entrances/exits for the site. All construction vehicles leaving or entering the site will be required to drive through these wheel wash areas.
- Runoff generated at the vehicle washdown area will discharge to the drainage system for treatment and attenuation.

Management of Fuel/Oil etc

The management of fuel/oil and other chemicals on site will have regard to the following elements:

- Chemicals will be bunded and where applicable, stored within double-skinned tanks/containers with the capacity to hold 110% of the volume of chemical contents. Ancillary equipment such as hoses and pipes will be contained within the bund. Bunds will be located on flat ground a minimum distance of 50 m from any watercourse or other water- conducting features, in a designated, secure, impermeable storage area.
- Measures will be implemented throughout the construction stage to prevent contamination of the soil from oil and/or petrol leakages. All plant will be regularly inspected for leaks to ensure it is fit for purpose. All taps, nozzles and valves will be fitted with a lock system that will be regularly checked for signs of damage.
- Where required, refuelling of plant on-site will only be carried out at a designated area within the site compound. Only designated trained operators will be authorised to refuel plant on site. Rigid and articulated vehicles will be fuelled off site as will all site vehicles (jeeps, cars and vans).
- Controls will be regularly inspected and maintained. Regular cleaning and servicing of bunds, gullies, pipe work, and oil interceptors will be carried out to ensure the system is operating at its optimum.
- Procedures and contingency plans will be set up to deal with emergency accidents or spills. An emergency spill kit containing oil boom and absorbers will be kept on site in the event of an accidental spill/emergency. All crews will be trained in the use of spill kit equipment. All emergency procedures and equipment will be in place prior to the commencement of any works.
- The Local Authority will be informed immediately of any spillage or pollution incident that may occur on-site during the construction phase.

Management of Concrete

There shall be a requirement for concrete works at the site. Wet concrete is silty and very alkaline (high pH). It is important to prevent concrete from entering the aquatic environment, including groundwater.

The following measures will be implemented during construction of the development:

- A designated trained operator, experienced in working with concrete will be employed during the concrete pouring phase. There shall be no pouring of concrete during extreme/prolonged rainfall.
- Any small volumes of incidental wash generated from cleaning hand tools, cement mixers or other plant, as required, will be trapped on-site to allow sediment to settle out and reach neutral pH before the clarified water is released and allowed to percolate to ground. Settled solids will need to be appropriately disposed of off-site.
- Washout of concrete trucks will not occur at the site. Washout of plant is to be carried out in designated, contained, impermeable areas.

5.5.2.1.4 *Management of Construction Waste*

- Appropriate storage of all non-hazardous and hazardous wastes on-site will be undertaken to minimise potential for environmental impacts.
- Dedicated bunded storage containers will be provided for hazardous wastes which may arise such as batteries, paints, oils, chemicals etc, if required.
- In the event that any buried waste or potentially contaminated material is encountered, this will be segregated from clean, inert material, and then tested and classified.
- In the unlikely event of hazardous material being encountered, it will be transported for treatment/recovery or disposal in suitable facilities.
- All wastes are to be removed from site by appropriate licenced waste contractors to suitable waste facilities.

5.5.2.1.5 *Storage of Materials*

- The storage of materials, spoil, containers, stockpiles and waste, however temporary, should follow best practice at all times and be restricted to designated areas only. Material stockpiles should be kept to a minimum size, and be located on impermeable bases, where necessary. Storage of materials will be located away from any temporary drains and moving plant, machinery and vehicles.

5.5.2.1.6 *Bio-security*

The following measures are recommended in relation to Site bio-security and reducing the risk of introduction or spread of invasive species within the area.

- Prior to being brought to Site, validation should be provided by all suppliers that construction plant, machinery and vehicles are free from invasive species. Similarly, certification is to be obtained from suppliers that all raw materials to be imported to Site including soil, fill, sand, gravel and landscaping materials are free from invasive species.
- All vehicles, machinery and equipment/tools are to arrive to site clean and steam washed. Visual inspections are to take place. All Personal Protective Equipment (PPE) brought to site is to be clean and dry with any attached vegetation or debris removed.
- A schedule of regular site inspections for invasive species is to be prepared and undertaken for the duration of the construction works. These inspections are to encompass the IAPS growing season for the duration of the construction works programme to monitor existing IAPS growth, identify any new IAPS stands, inspect materials storage areas and monitor implementation of IAPS management measures on-site, where required e.g., fencing, signage etc.
- Where there is a requirement for IAPS control areas, all vehicles, equipment/tools, footwear etc used in these areas will be thoroughly cleaned in a designated area once works in that area are complete to prevent spread of IAPS. The use of tracked machinery within IAPS infested areas is to be prohibited. The use of tracked machinery within close proximity of IAPS infested areas is to be strictly controlled. This should be undertaken with direction from the ECoW.

5.5.2.1.7 *Management of Alien Invasive Plant Species (IAPS)*

- The extents of IAPS infestations on-site are extremely limited and localised. A pre-construction survey for IAPS is to take place in advance of the commencement of site works to inspect existing stands of IAPS for new growth and identify any new stands which may have emerged in the intervening period.

- A construction-stage IAPS management plan will be prepared and will incorporate the following management measures. The construction stage management plan should set out clear processes for the eradication, control and containment of each IAPS on-site and is to include a detailed implementation and treatment schedule (including initial and follow-up treatments) in light of the construction schedule and the prevailing IAPS conditions on-site at the time.
- Where any IAPS is identified within/adjacent to the works footprint, fencing and/or advisory signage is to be erected around stands (minimum 7 m buffer in the case of Japanese knotweed).
- No non-essential ground maintenance or any other ground disturbance should take place within IAPS fenced areas. Where works are required within/adjacent to infested areas, the appointed contractor is to develop and implement an appropriate method statement with regard to managing IAPS on-site and ensuring bio-security compliance. This should be done in consultation with a suitably qualified specialist. Under no circumstances is any IAPS plant or rhizome material to be cut, dug out or in any other way disturbed without the advice of a suitably qualified specialist.
- Where application of herbicides is required to treat IAPS on-site, the proximity of ecological receptors is to be taken into account. Herbicide use is to be minimised as much as possible and targeted to the specific IAPS. Where use of herbicides is required, non-residual, aquatic approved herbicides are to be used. Herbicides are not to be used in windy or foggy weather, during or preceding rainfall or where rainfall is forecast within 12 hours or during particularly cold weather to reduce risk of spray drift, run-off or poor plant uptake. Herbicides are to be applied strictly in accordance with the manufacturer's recommendations and by competent, experienced and licenced personnel registered as a Professional Pesticides User.
- Monitoring of control measures should be undertaken approximately six to eight weeks after treatment to determine success of measures used.
- Large areas of disturbed/bare soil should be mulched, where appropriate, and seeded/planted at the earliest opportunity with native species to stabilise the soil and deter any subsequent reinvasion. Planting should be carried out with regard to '*Horticulture Code of Good Practice: To prevent the introduction and spread of invasive non-native species* (Kelly, 2012).
- Where off-site removal of IAPS material or infested soil is required, then the relevant NPWS licence will be required to be procured in advance of removal of IAPS material off-site and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477). Off-site removal of such material will be undertaken in accordance with licence conditions.
- All management and control measures implemented on-site during the construction phase are to be carried out in accordance with best practice guidance as set out in '*The Management of Invasive Alien Plant Species on National Roads (GE-ENV-01104)*' TII (2020), '*The Management of Noxious Weeds and Non-native Invasive Species on National Roads*' NRA (2010), '*Best Practice Management Guidelines Rhododendron Rhododendron ponticum and Cherry Laurel Prunus laurocerasus'* Maguire, *et al*., (2008), '*Best Practice Management Guidelines Japanese Knotweed Fallopia japonica*' Kelly, *et al*., (2015) and '*Managing Japanese Knotweed on Development Sites: the Knotweed Code of Practice*' UK Environment Agency (2006).

5.5.2.1.8 *General Protection of Habitats*

- The area of proposed works will be kept to the minimum necessary to minimise disturbance to habitats and flora. Vegetation removal within the Site is to be minimised and be restricted to those areas of

vegetation which have been identified for removal (to be clearly marked by contractor staff prior to removal). Removal of vegetation from anywhere outside of marked areas will not be permitted.

- The footprint of the construction area, site compound and materials storage areas will be clearly marked out prior to commencement of works with reference to design drawings, under the supervision of the project engineer and appointed ecologist, so that it is visible to all contractor staff and machine operators.
- The extent of access for all construction plant and machinery is to be clearly marked out, in particular along the southern boundary of the Site to avoid impacts on more sensitive habitat, namely areas of 'Dry calcareous and neutral grassland habitat (GS1)', which have been identified along the cliff-top immediately adjacent to the Site boundary. A heavy machinery exclusion zone will be established using temporary stakes and signage, as required, to prevent encroachment by heavy machinery onto this habitat. This will be undertaken in consultation with the appointed ECoW. There shall be no side casting of material or any other construction-related activity within this area. All operatives will be made aware of this works exclusion zone.
- All operatives will be made aware of the immediate proximity of the Ballinskelligs Bay and Inny Estuary SAC to the Site as part of toolbox talks. Movement of construction plant/vehicles is to be minimised within the SAC boundary. Movement of plant and machinery is to be avoided on the 'shingle gravel and banks' habitat in the south of the proposed BEA. There shall be no side casting of material or any other construction-related activity within this area.

5.5.2.1.9 *General Protection of Fauna*

- Disturbance of fauna generally will be reduced by controlling the movement of construction vehicles and personnel.
- Construction materials and wastes are to be kept in designated areas to reduce risk of accidental injury/entrapment of any wildlife on-site.
- In accordance with Section 40 of the Wildlife Acts, vegetation removal, including tree removal, will be conducted outside of the restricted bird nesting period (March 1st to 31st August, inclusive). This will not only protect nesting birds, but a range of biodiversity.
- Where areas of dense vegetation are to be removed, such as within the conifer treeline, the ECoW will be present to oversee removal of vegetation and ensure any necessary mitigation measures are in place in the event that a previously unknown breeding or resting site of any protected mammal species is encountered during the works.
- Mammals and birds are mobile and so are expected to disperse from the area; however, young or hibernating animals are vulnerable to impacts during vegetation clearance. Prior to any vegetation clearance, the area will be checked by the ECoW to check for the presence of young or hibernating animals.
- Should any resting or breeding place of any protected species be discovered within the Site during the pre-construction or construction phases, the ECoW is to be informed immediately and the advice of NPWS sought. Any works in the area are to cease immediately and the area is to be cordoned off until the ECoW has authorised recommencement of works.
- All temporary construction lighting is to be switched off outside daylight hours. Construction lighting is to be directed inwards into the Site to reduce indirect alteration of adjacent habitats outside the Site and minimise nocturnal impacts on faunal species (see also **Section 5.5.2.1.10.6** in relation to construction lighting and bats).

- To reduce the level of night-time disturbance to nocturnal fauna, construction activities should be restricted to standard construction hours. Construction work will not take place outside of these hours unless in exceptional circumstances.

5.5.2.1.10 *Protection of Bats*

5.5.2.1.10.1 NPWS Derogation Licence

Several bat roosts have been identified within the Site. All bats and their roosts are afforded strict legal protection by both Irish and European law. It is an offence, under Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 to either deliberately disturb a bat, particularly during the period of breeding, rearing, hibernation and migration, or to damage or destroy a bat's breeding site or resting place (Marnell *et al*., 2022).

The Proposed Development comprises the complete renovation and refurbishment of the hotel building and surrounds, including demolition of some structural elements.

Due to the characteristics of the Proposed Development, including:

- the nature and scale of works proposed
- a permanent change in use of the building which will result in increased on-going disturbance
- and introduction/increase in artificial lighting in particular within, and also outside the building

and the locations of the bat roosts identified within the hotel, it is considered that retention of existing roosts within the hotel will not be feasible without adversely impacting on the breeding/resting places of bats and local bat populations.

Similarly, bats have been found to be using the derelict cottage for roosting. While no loss of roosts within the derelict cottage is proposed, this structure is proposed as an alternative roosting site for bats (see Section 5.5.2.1.10.2 below); therefore, disturbance of the roost or roosting bats within this structure could occur.

Therefore, a Derogation Licence, issued under Regulation 54 of the European Communities (Birds and Natural Habitats) Regulations 2011, is required to be granted prior to any works to the hotel or derelict cottage. This licence must be obtained from the DHLGH through NPWS in advance of any works taking place which would or potentially could disturb bats or their roosts. This licence is required irrespective of any requirement for planning consent, or otherwise.

The specified reason for the Derogation Licence application, as listed in Regulation 54 of the 2011 Regulations, is:

a. *In the interests of protecting wild flora and fauna and conserving natural habitats.*

Annex IV species must be maintained at Favourable Conservation Status or restored to favourable status if this is not the case. CIEEM (2018) states that the 'conservation status' for a species '*is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area*'. In relation to the potential granting of a derogation licence, consideration is given as to whether granting of a licence would be detrimental to the maintenance of the populations of the species in question at a favourable conservation status in their natural range (Regulation 54(2)). If a derogation licence is likely to have a significant negative effect on the population concerned (or the prospects of this population) or is likely to have a significant negative effect at the biogeographical level within Ireland, then a derogation licence cannot be considered. Information on the abundance, distribution and conservation status of individual bat species recorded at the site are provided in the species profiles in Appendix 5-2 of Volume 3 of the EIAR.

Construction and operational phase mitigation measures, designed to remove or reduce predicted impacts on bats as a result of the Proposed Development, are detailed in the following sections (Section 5.5.2.1.10.2 to 5.5.2.1.10.7, and Section 5.5.2.2.1). A monitoring programme is also included (Section 5.5.3). With the full and proper implementation of these measures, it is considered that the actions permitted by the Derogation Licence being applied for will not be detrimental to the maintenance of the populations of any bat species at their respective favourable conservation status in their natural ranges, as required under Section 54(2) of the 2011 Regulations.

The Derogation Licence will be applied for in conjunction with the submission of the planning application for the Proposed Development. Activities requiring a Derogation Licence may only proceed once the licence has been granted and will be subject to any conditions attached.

5.5.2.1.10.2 Provision of Alternative Roost-sites (Derelict Cottage)

The proposal will result in the loss of a number of identified bat roosts as a result of renovation of the hotel structure. Marnell *et el*., (2022) outlines guidelines in relation to proportionate mitigation depending on impacts and roost status. On the basis of the potential roosts of most conservation significance identified within the Site, as per Marnell *et al*., (2022), comprising common pipistrelle hibernation roosts and potentially a common pipistrelle maternity roost (all considered of 'Moderate' conservation significance, see Section 5.3.14.3 above), Marnell *et al*., (2022) recommends that mitigation comprises '*timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred*'.

In relation to the lesser horseshoe bat day/night roost identified within the Middle Tower comprising 'Small numbers of rarer species. Not a maternity site' (also of 'Moderate' conservation significance, see Section 5.3.14.3 above), Marnell *et al*., (2022) recommends the '*provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements'*. Therefore, bearing the above in mind, alternative roosts are proposed for common pipistrelle and lesser horseshoe bat in line with recommendations in Marnell *et al*., (2022).

It is proposed to utilise the derelict cottage located within the Site to provide alternative roosting sites for bats. The principal function of this structure as a proposed alternative roost site will be to mitigate for loss of common pipistrelle and lesser horseshoe bat 'moderate significance' bat roosts associated with the Proposed Development. While providing principally for these species, it will also aim to accommodate/provide roosting habitat for other bat species recorded on-site, such as soprano pipistrelle, to reduce impacts on local bat populations.

Very low numbers of bats were determined to be using the derelict cottage for roosting. While no loss of roost(s) within the derelict cottage is proposed, this structure is proposed as an alternative roosting site for bats and will require some level of renovation works; therefore, disturbance of the roost or roosting bats within this structure could occur. On this basis, works to this structure will therefore require a Derogation Licence to be granted through NPWS in advance of any works taking place which would or potentially could disturb bats or their roosts. Refer to Section 5.5.2.1.10.1 above.

Rationale for Proposal

While encompassed within the Site, this existing structure does not form part of the Proposed Development for planning consent. As it is fully within the ownership and control of the Applicant, the structure can be 'set aside' for bats on a permanent basis. The baseline surveys have determined that bats already use the structure, at least to some degree. It is considered that, with some structural improvements to stabilise the building, and the incorporation of additional planting/landscaping (see Section 5.5.2.1.10.7 below) to improve habitat connectivity

and a bat-sensitive lighting strategy (see Section 5.5.2.1.10.6 and 5.5.2.2.1) the structures suitability for roosting bats can be improved.

Baseline Ambient Data

Marnell *et al*., (2022) recommends a '*more or less like-for-like replacement'* in terms of an alternative roost. In light of this guidance, temperate dataloggers will be installed at three proposed locations (proposed hotel middle tower – second-floor landing, hotel bedroom block – first floor bedroom and within the derelict cottage) to acquire baseline data on ambient conditions within the structures important for bats, primarily temperature and humidity. Typically, during winter, for example, bats hibernate in suitable sites including buildings that offer temperatures of 5 or 6 °C (Aughney *et al*., 2008). It is the intention that these dataloggers are installed at the earliest opportunity (estimated May 2024) and left in-situ to capture seasonal variation in baseline conditions.

The baseline data across the three proposed sampling locations will be used to inform the approach to works to the derelict cottage. The aim of this process will be to ensure that the ambient conditions within the derelict cottage (alternative roost) replicate the baseline ambient conditions within the hotel structure as much as possible, taking into account any seasonal fluctuations, to improve roosting suitability for bats within the cottage. Where discrepancies are noted, modifications will be made to the cottage to try and adjust ambient conditions accordingly, to be undertaken under the direction and guidance of the appointed ecologist in consultation with the appointed contractor. The temperature datalogger will remain in-situ within the derelict cottage until the end of the monitoring period (see Section 5.5.3.3 below).

Approach to Works at Derelict Cottage

It is noted that the cottage is in poor structural condition currently and that further deterioration is likely to occur in the period of time which elapses prior to any renovation works to the cottage. The focus of any renovation works to the derelict cottage will be simply to stabilise the building and safeguard its structural integrity, while creating similar roosting conditions as to the hotel interior to provide a 'more or less like-for-like' replacement roost. Works to this structure do not form part of the Proposed Development for planning consent but will require a Derogation Licence as presence of roosting bats has been identified.

The approach to any structural works to the cottage will be informed by site investigations prior to works commencing in consultation with the contractor/structural engineer and appointed ecologist. The following general mitigation measures are proposed in relation to works to the derelict cottage to make it suitable as an alternative roosting site for bats and minimise impacts on any bats occurring.

- Prior to any works commencing, toolbox talks, as required, will be given by the appointed ecologist to contractor staff to explain the general approach to works and what to do in the event that bats are encountered. The appointed ecologist will remain on-site during works.
- Externally, part of the original stonework of the east gable wall is visible where render has fallen away. It is proposed to remove all external render from the building to restore the original natural stone finish which will provide additional crevices and increase the availability of potential roosting habitat to bats.
- Where re-pointing of stonework is required for structural stability, this will be undertaken by hand only once all crevices have been thoroughly inspected by the appointed ecologist with the use of an endoscope and have been confirmed free of bats. In this case, crevices can be temporarily packed with bubble-wrap to keep them free of bats until pointing work is undertaken. In the event that bats are encountered, crevices will be marked for retention with wildlife-friendly paint. Where re-pointing is not required to stabilise stonework, it will be left as. This will maximise potential roosting crevices available to bats.

- Where required, roof slates will be removed carefully by hand. Any vegetation growth will be removed. Roof repairs will comprise natural slate. If roofing felt is required, then traditional hessian reinforced bitumen felt membrane is to be used, rather than more modern breathable roof membrane.
- Any rotten timberwork at risk of disintegrating will be removed. In the event that any roof timbers require to be replaced, or any other new timber is required, then pre-treated timber will be used (timber treatment products used to be non-toxic to bats). There are multiple timber-treatment products which are considered suitable for use in or near bat roosts[45]. Any necessary timber treatment operations e.g. within roof spaces, should be carried out during the winter months - November to March in accordance with Aughney *et al*., (2008).
- Both the rear and front doors of the building are completely missing. Both doors will be replaced with secure, wooden doors. It is proposed that only one of these doors be used for access going forward (for roost monitoring purposes, to be kept locked otherwise), and the other is left permanently closed.
- There are several windows in the building, all of which are of timber window frame construction (poor condition) and with glazing missing. To the front, there are two ground-floor and three first-floor windows, and to the rear one first-floor window. There is also a small window at first-floor level on the eastern gable wall. To minimise light penetration and draughts within the building interior, and help retain heat, reduce noise and visual disturbance, and deter unwanted human activity, all windows on the ground-floor will be closed up permanently.
- It is proposed that the first-floor window openings to the rear and on the gable wall, and possibly one of the windows to the front, will be retained as roost access points. These window surrounds are to be replaced with wooden frames (appropriately treated) and left unglazed. Internally, partition boxes, open at one side, will be constructed around these roost access points using plywood sheeting painted black (using non-toxic paint). These partitions will limit light spill from the window openings into the interior of the building while allowing bats to freely enter the building. The remaining two windows to the front of the building will be permanently sealed, again to limit the level of light and wind within the building's interior and reduce noise disturbance.
- Where predators could potentially access window openings by climbing stonework etc, access points will be made predator-proof using either sheets of smooth steel attached securely to the external walls around window openings or purpose-built 'tilt-trays' which prevent access by predators.
- Prior to all works, including to windows and doors, stonework, roofing etc., any gaps and crevices, such as around door and window surrounds, stonework, timber framework etc., are to be thoroughly checked by the ecologist using an endoscope and torch to ensure that crevices are free of bats.
- In the event that any bats are discovered during any aspect of the works, they will be carefully caught using gloves, cloth or a box, kept safely and released outside, preferably at dusk, on the same day.
- Internally, all debris, rubbish etc. on the floor at ground-level will be removed. The existing damaged guttering and drainage pipes on the building's exterior will be removed and replaced.
- To increase the availability of suitable bat-roosting habitat at the derelict cottage, bat-boxes are to be installed on both the interior and exterior faces of the building (minimum total 10 no.). These should be positioned between 3-5 m (minimum 3 m) off the ground, preferably close to the eaves and in sunny but

[45] https://www.gov.uk/government/publications/bat-roosts-insecticides-and-timber-treatments/timber-treatment-products-suitable-for-use-in-or-near-bat-roosts; https://data.jncc.gov.uk/data/e5888ae1-3306-4f17-9441-51a5f4dc416a/Batwork-manual-3rd-edn.pdf

sheltered locations. Installation of bat-boxes at the structure should follow BCIreland guidance[46]. For example, timber boxes can be used internally; however, Woodcrete boxes are recommended for external positions. Boxes of Woodcrete construction are more durable and long-lasting, while also having better thermal properties for bats, over timber.

- Externally, boxes facing in different directions (roughly south) to provide a range of temperature conditions are recommended to be installed. For example, boxes facing from south-east to south-west to allow the sun to fall on each box for part of the day. Boxes are to be securely attached to the structure and are not to be positioned directly over any doors or windows. In-line with BCIreland recommendations, self-cleaning boxes should be used (designed so that any bat droppings fall out the bottom removing the need for yearly cleaning out)[47]. All boxes, in particular Woodcrete boxes due to their weight, are to be checked periodically to ensure that attachments to walls remain secure.
- The large pile of boulders which is located to the rear of the building will be removed to facilitate planting in the vicinity of the structure and increase vegetation cover to support foraging and commuting bats.
- Measures in relation to 'bat-friendly' landscaping and lighting in the vicinity of the derelict cottage are outlined in **Sections 5.5.2.1.10.6, 5.5.2.1.10.7** and **5.5.2.2.1** below. Monitoring is discussed in **Section 5.5.3.3** below.

Proposed Timeline

Autumn and spring periods are typically best to undertake construction/roofing works as they are outside the breeding season, bat numbers are likely reduced, and any bats present will still be active enough to leave unharmed if disturbed. These periods also avoid the bat hibernation period when bats are especially vulnerable. It is considered that the derelict cottage could potentially be used by over-wintering bats due to the multitude of deep crevices available. Due to the presence of nesting jackdaw and starling within the derelict cottage, it is therefore recommended that any works to the cottage are undertaken in autumn (September, October and November) and/or early spring (March) (outside the bat and main bird breeding season, and the bat hibernation period).

For the types of roosts being lost within the hotel, Marnell *et al*., (2022) states that '*Bats not to be left without a roost and must be given time to find the replacement'.* Works necessary to provide suitable conditions ('*more or less like-for-like replacement'*) within the derelict cottage to provide alternative roost-sites for bats must be completed before any disturbance of the roosts within the hotel can take place. It is recommended that works to provide suitable alternative roosting habitat within the cottage take place at least several months in advance of an anticipated project start date on-site (once the required Derogation Licence has been granted to allow works). This will maximise the length of time available to bats to find the alternative roost and allow sufficient time to make any changes required with regard to achieving the necessary suitable, as discussed above.

5.5.2.1.10.3 Pre-construction Surveys

Pre-construction surveys, including presence/absence surveys, as required, of all structures and trees considered to have any potential to accommodate roosting bats are to be carried out at the Site in advance of construction commencing.

[46] https://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf
[47] https://www.batconservationireland.org/wp-content/uploads/2022/07/The-Beginners-Guide-to-Bat-Boxes.pdf

Physical inspections of potential roost features (PRFs) in trees to be felled, using endoscope and high-powered torch, and/or dusk/dawn surveys, will be undertaken by a bat specialist/suitably qualified ecologist to determine if roosts are present. If any period of time elapses, further surveys are to be undertaken by the ecologist immediately in advance of tree-felling to ensure that roosting bats are not present. Prior to any structures being demolished, physical inspections and emergence/re-entry surveys, as required, will be undertaken.

The purpose of these surveys is to:

- determine the current locations and characteristics of roosts in the period prior to commencement on-site to establish if the baseline conditions reported herein remain valid, given the length of time which may potentially elapse between completion of baseline surveys and reporting and commencement of construction activity and the degree to which bat species can typically vary in their usage of roost habitat features, and
- ensure that the mitigation measures remain adequate to avoid or reduce predicted impacts on bats.

This will ensure that any changes in Site context in relation to suitability for bats will be highlighted and that any additional mitigation measures which are then required are applied. In the event that previously unknown bat roosts are identified within the Site, best-practice mitigation will be recommended by the appointed ecologist in consultation with KCC and NPWS.

5.5.2.1.10.4 General Approach to Hotel Renovation Works

Baseline surveys have found bats to be using parts of the hotel during both the summer and winter months. Assuming planning permission is granted, construction of the Proposed Development is scheduled to commence in January 2025. Phase 1 of the development (estimated 18 months duration) includes refurbishment of the hotel, along with other elements of the development.

On this basis, it is recommended that construction works to the hotel do not commence until after the main hibernation period to minimise impacts on bats. Hotel renovation works should therefore commence in spring (March/April), prior to the breeding season, when bat numbers are likely to be lower. In the event that the project starts later in the year than anticipated, e.g., summer, it is recommended that the breeding season for bats (May to August) is avoided to reduce impacts, with works instead commencing in the autumn (September/October), prior to the start of the hibernation period.

Due to the large scale of the hotel building, the presence of confirmed roosts, the abundance of potential roost sites, and the degree to which bats can move through the various components of the building as a result of unsealed windows, areas of structural damage etc, the general approach will be to systematically preclude bats from each room/area prior to works starting. This will entail the appointed ecologist undertaking visual inspections of each room for bats, including all cracks, crevices etc., after which these and all room entry points (open doorways/windows) can be 'closed' with temporary bubble-wrap and/or coverings, such as hessian, heavy-duty plastic sheeting or similar, securely fastened to prevent bats from entering. Similarly, exposed walls should be checked for presence of bats, after which any crevices can be temporarily packed with bubble-wrap and/or the area of wall covered with hessian or other temporary covering, to prevent bats from entering before and during works. It is important that bat presence throughout the building is regularly monitored during works to ensure that bats have not re-gained access to any part of the building's interior. Regular inspections of all areas should be undertaken and any signs of bat activity searched for.

Specific measures in relation to demolition, including removal of blockwork, suspended ceilings or sub-floor materials, roof works etc. will need to be drawn up by the appointed contractor in consultation with the appointed ecologist. Specific measures in relation to exclusion procedures for either confirmed or suspected roost locations within the building will need to be drawn up. Works at these locations will need to be carefully planned to

minimise potential impacts on any roosting bats which may be present. Where roosting bats are expected to be present, relevant rooms/areas can be closed off, using temporary means, as outlined above, following dusk, to minimise the chances of bats being present. The appointed ecologist should supervise such works, in particular at confirmed or suspected roost locations, and be on hand in the event that bats are discovered.

Any accumulations of ivy growing on structures are to be carefully removed in the autumn months under the supervision of the appointed ecologist and left on the ground for 24 hours to allow any residing bats to exit safely.

Using the above approaches, the likelihood of bats being present within the hotel throughout the works will be reduced. If bats, or signs of bats are found, during works, works are to cease in the area until the appointed ecologist has advised how to proceed and/or undertaken removal of bats, in which case they will be carefully relocated to the alternative roost-site (cottage).

Prior to any works commencing, a detailed work plan involving both the appointed contractor and the appointed ecologist will be required to be drawn up. This will be done in consultation with NPWS and in-line with any Derogation Licence conditions. The work plan will set out the approach to be taken and specific measures with regard to site preparation works, clearance and demolition works, and construction and renovation works which may affect bat roosts within the existing hotel structure, and will be tailored, as required, with regard to specific construction works/activities required. The work plan will also be informed by the results of the pre-construction surveys to ensure that the approach to works will be undertaken in such a way as to minimise impacts on bats.

Prior to any works commencing, toolbox talks will be given by the appointed ecologist to contractor staff to explain the general approach to works and outline any specific areas of sensitivity/measures required. Toolbox talks should be given to new contractor staff arriving to site, as required (on an 'as needed' basis). As part of toolbox talks, staff will be informed by the ecologist of the procedure to follow in the event that a bat is discovered, and the ecologist is not present.

5.5.2.1.10.5 General Approach to Tree-felling

On a precautionary basis, all tree-felling is to be conducted in a manner sensitive to bats, and in accordance with NRA (2005). Trees are to be felled between September and early November to reduce the potential for disturbance of roosting bats. Tree felling will be completed by Mid-November at the latest because bats roosting in trees are highly vulnerable to disturbance during their hibernation period (November – April).

Where trees are considered to have any potential for roosting bats, the appointed ecologist is to oversee felling in the event that bats are discovered. In this case, the procedure for dealing with any bats found will be as for general construction works, as discussed above. As a precaution, once felled, trees will be left intact on-site for a minimum 24 hours prior to disposal to allow any bats which may be present to leave. Any accumulations of ivy growing on trees are to be carefully removed in the autumn months under the supervision of the bat specialist/suitably qualified ecologist and left on the ground for 24 hours to allow any residing bats to exit safely.

5.5.2.1.10.6 Construction Lighting

Appropriate lighting will be employed during the construction phase to minimise impacts on local bat populations. Use of lighting will be minimised and avoided, where possible. Construction lighting will be targeted to minimise/avoid light spill to enable the retention of dark-corridor connectivity within the landscape for commuting bats.

Construction phase lighting for the proposed development is to conform to the following guidelines which are to be strictly implemented throughout the construction phase:

- Bat Conservation Trust (2023). Guidance Note GN08/23. Bats and Artificial Lighting at Night. Bat Conservation Trust and Institution of Lighting Professionals.

- Bats & Lighting. Guidance Notes for: Planners, engineers, architects and developers (BCI, 2010).

Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The BCT Lighting Guidelines (BCT, 2023) are to be followed with regard to the selection and use of luminaires. All temporary lighting used throughout the Site, other than any lighting required for Health and Safety (H&S), will be switched off after construction hours as a means of reducing light pollution/ensuring that there is no unnecessary residual lighting during hours of darkness. Any external security lighting will be set on motion-sensors and short (1 min) timers. The H&S lighting will be cowled towards the centre of compound areas. Light spillage onto retained perimeter hedgerows/treelines is to be avoided. Lighting will be reviewed and audited for implementation throughout the construction period by the appointed Ecologist.

5.5.2.1.10.7 Landscaping for Bats

The Landscaping proposal for the Proposed Development includes targeted planting for bats within the Site. This comprises planting in the immediate vicinity of the cottage (native trees and shrubs) which will extend north-eastwards along the main internal access road to connect with the existing treeline.

This planting will replace improved and semi-improved grassland, providing enhanced foraging habitat within the vicinity of the alternative roost-site (cottage), will provide enhanced shelter to the structure from coastal winds, and will help to attenuate artificial light and visual/noise disturbance. This proposed planting will form a strong, continuous, vegetated corridor between the cottage and the existing treeline, along which bats can commute and forage and improve connectivity between the roost and higher-value foraging/commuting habitats both on and off-site.

Furthermore, the Landscaping proposal for the Site has incorporated 'bat-friendly' and 'pollinator-friendly' planting schemes throughout, with a strong focus on native species, where considered suitable for exposed, coastal locations, as native species support higher insect life for bats and other fauna. For example, the proposed planting schedule includes native and/or pollinator-friendly species such as holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*), rowan (*Sorbus aucuparia*), Scots pine (*Pinus sylvestris*), willow (*Salix cinerea*), broom (*Cytisus scoparius*), blackthorn (*Prunus spinosa*), sea holly (*Eryngium* spp.), hemp agrimony (*Eupatorium cannabinum*), heather (*Calluna vulgaris*), hebe (*Hebe* spp.), lavender (*Lavendula angustifolia*) and purple top (*Verbena bonariensis*), all of which are listed by Bat Conservation Ireland or the Bat Conservation Trust as being flora species of value to bats[48].

Refer to the **Landscape Design Rationale** and **Overall Landscape Master Plan** for this planning application for more information.

5.5.2.1.11 *Protection of Chough*

Provision of Alternative Nesting Habitat

Development of the hotel will result in the loss of a nest-site for breeding chough. This nest-site was successful in both the 2022 and 2023 breeding seasons, as recorded during baseline surveys. This breeding pair are considered

[48] https://www.batconservationireland.org/wp-content/uploads/2022/07/Gardening-For-Bats.pdf https://cdn.bats.org.uk/uploads/pdf/Resources/Encouraging-Bats.pdf?v=1646658894&_gl=1*1r867ep*_ga*ODUxNTY2MjQ1LjE2OTEwNTk4Mzk.*_ga_G28378TB9V*MTcxMTQ3MTgzNC42LjAuMTcxMTQ3MTg0My4wLjAuMA.. https://cdn.bats.org.uk/uploads/pdf/Resources/Stars_of_the_Night.pdf?v=1541085354&_gl=1*11pfs9n*_ga*ODUxNTY2MjQ1LjE2OTEwNTk4Mzk.*_ga_G28378TB9V*MTcxMTQ3MTgzNC42LjAuMTcxMTQ3MTg0My4wLjAuMA

to be of County Importance (see **Section 5.3.14.3** above). To mitigate for loss of this nest-site within the hotel building, the provision of alternative nesting sites for chough are proposed. The following paragraphs outline how successful such alternative nest sites can be, and measures for the Site.

Chough nest shelters, containing a nesting platform, are designed to provide a nest site, close to an area of suitable habitat[49]. The widespread use of artificial nest shelters/boxes/platforms for chough is well-documented in Ireland, the United Kingdom and further afield. Uptake of artificial nest-boxes or ledges by breeding chough has been found to be successful, with various conservation and research projects on-going. In Ireland, the NPWS is currently undertaking a conservation research project in County Cork which aims to understand the changing nesting habits of chough in the area, as in recent years NPWS have observed an apparent trend seeing pairs moving from more traditional coastal nesting sites to inland locations, nesting in old buildings such as cattle sheds, haybarns and derelict structures.

As part of the project, NPWS is erecting chough nest-boxes at several locations. NPWS have been providing on-line livestream camera footage of two currently active chough nest-sites since late January/early February 2024. One of these locations comprises a purpose-built nest box located in a barn in West Cork. This pair have nested in this nest-box for a number of years, successfully fledging young most years[50]. **Figure 5-12** below shows screen grabs (dated 10th and 11th April 2024) from the livestream of this location where one of the pair can be seen sitting on eggs inside the nest-box. As of 25th April 2024, five chicks had successfully hatched at this nest-box site.

The most recent national chough census found that during the 2021 census almost a third of all nest locations were recorded from man-made structures (Norfolk and Siriwardena, 2024)[51]. In Wales, chough nest-boxes haven been installed at various coastal sites as part of a chough conservation initiative. Within a few years of commencement, just over two thirds of the artificial sites were being used and as of 2008, a total of 22 artificial nest-sites had proven successful in producing fledglings[52]. Other more recent UK based chough conservation projects in both Kent and Cornwall have successfully utilised chough nesting and roost boxes[53]. Use of chough nest-box measures also form part of various agri-environmental schemes in the UK. For example, schemes in Scotland[54], Wales and the Isle of Man all include use of nest-boxes/platforms as part of measures recommended for chough (Norfolk and Siriwardena, 2024).

[49] https://www.ruralpayments.org/topics/all-schemes/agri-environment-climate-scheme/management-options-and-capital-items/creation-of-chough-nest-shelter/guidance-for-creation-of-chough-nest-shelter/
[50] https://www.npws.ie/news/nestflix-and-chill-new-live-stream-nature-lovers-npws
[51] Available at https://www.nature.scot/doc/naturescot-research-report-1291-review-chough-management-between-populations-comparison-biotic-and
[52] Nest-boxes, new homes for choughs - Birds on the edgeBirds on the edge; http://s571014022.websitehome.co.uk/wp-content/uploads/2015/11/nextboxes.pdf
[53] Chough Info Pack | Kent Wildlife Trust; https://chough.org/nest-cams-2024-now-live
[54] https://www.ruralpayments.org/topics/all-schemes/agri-environment-climate-scheme/management-options-and-capital-items/creation-of-chough-nest-shelter/

Figure 5-12. Screen-shots from a livestream camera on an NPWS chough nest-box in west Cork currently occupied by a breeding pair (Source and credit to: https://www.npws.ie/news/nestflix-and-chill-new-live-stream-nature-lovers-npws)

To mitigate for loss of the existing chough nest-site within the hotel, it is proposed to install alternative suitable nesting habitat for this pair within their territory. To maximise the chance of successful uptake of the proposed alternative nesting-habitat by chough, it is proposed to install two different types of artificial nest, to be installed at separate locations within the Applicant's lands.

Within the Proposed Development site, it is proposed to install a chough nesting box on the hotel (see **Figure 5-13** below). This will be installed at a suitable location somewhere on top or towards the top of the building. For example, on the hotel bedroom block roof, the roof of the hotel tower or at the top of the hotel tower beneath the overhanging eaves of the tower roof. The proposed nest-box at the hotel is to be installed in the location selected as soon as is practicably possible once relevant works in that section of the hotel are complete.

There are several important factors which should be considered with regard to design and siting of chough nest-boxes generally. These include installation of the nest-box at a sufficient height above ground, avoidance of direct sunlight and ensuring sufficient shade to prevent overheating[55]. Installation of the nest-box beneath the eaves of the roof tower would provide shade and shelter. Alternatively, installation of the nest-box on either the hotel bedroom block roof or tower roof could be facilitated by providing some form of roofing/shelter over the nest-box to ensure sufficient shade. A gap should be left between the top of the nest-box and the shelter roof to allow sufficient airflow and prevent over-heating. Adults may also roost in shelters at other times of year[56], therefore, it is considered that the nest-box may also provide an alternative winter roosting site for chough on-site. Installation of a chough nest-box at the hotel would provide an alternative nest-site within close proximity of both the current nest-site and winter roost-site, which would likely increase chance of uptake by the resident pair on-site.

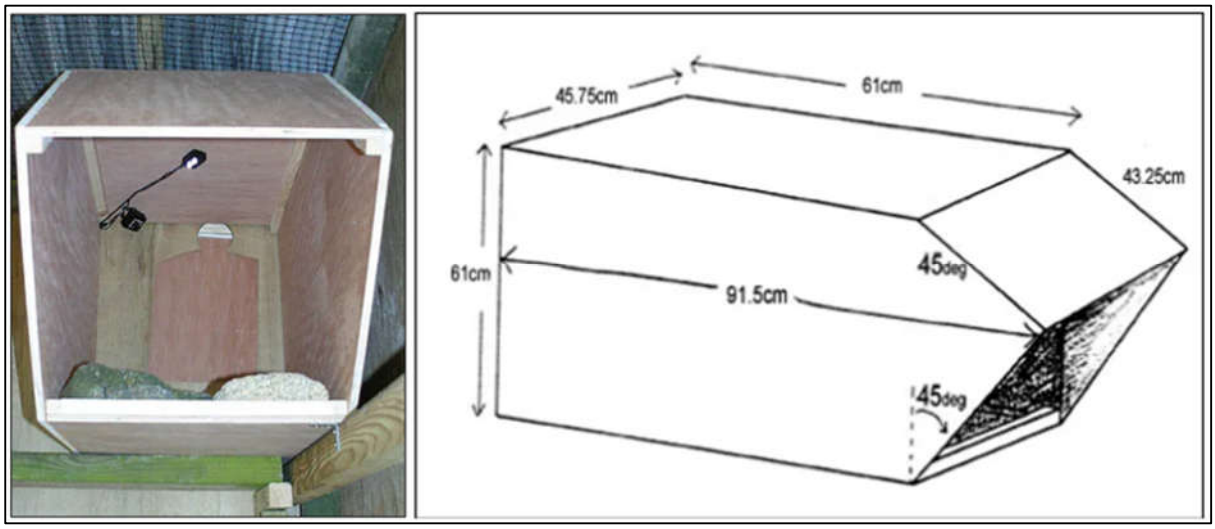

Figure 5-13. Example of a chough nest-box (left) showing construction material and overall appearance. Recommended design and dimensions for a chough nest-box (right). Source: https://chough.org/nest-boxes

The nest box is designed to mimic a natural cavity and incorporates a natural overhang effect by having a downward facing entrance (see **Figure 5-13** above). Boxes can be made of 12millimetre exterior plywood – marine

[55] https://chough.org/nest-boxes
[56] https://www.ruralpayments.org/topics/all-schemes/agri-environment-climate-scheme/management-options-and-capital-items/creation-of-chough-nest-shelter/guidance-for-creation-of-chough-nest-shelter/

plywood is preferable, or Ecosheet©, a recycled plastic boarding[57]. One or two large rocks approximately 10 centimetres tall should be placed in the front of the box. This provides a good perching point for the adults, and juveniles almost ready to fledge, and also forms a barrier for the nest to be built against and prevent chicks from falling out when young. Suitable nesting materials, including a variety of size twigs, heather, fern fronds, moss, lichens, teased sheep wool and horsehair for the nest lining can be provided somewhere close by for choughs to use for nest-building[58]. The boxes need to be checked each year as they do suffer from being exposed to the sea air (see **Section 5.5.3.1** below).

It is proposed that a second alternative chough nest/roost-site is provided at a suitable location elsewhere within the Applicant's lands which encompass a large area of coastal grassland extending eastwards from the Proposed Development site. Here, due to a lack of either manmade or suitable natural structures to which a nest-box could be attached, it is proposed that a chough nesting platform be constructed (see example in **Figure 5-14** below). Again, adequate height and shade, and deterrence of interference, will be important considerations in the design of the nesting platform. Although this example shown below depicts a nest-platform being used in an aviary situation, this could easily be adapted as required to be used in a natural setting. Advantages of locating a chough nesting-platform within the general area outlined above include proximity to the current nest and winter roost-site at the hotel without being too close, availability of foraging habitat in the surrounding and wider area, and a location within lands under the ownership and control of the Applicant.

The alternative chough nesting-sites proposed (nest-box and nest-platform, both discussed above) would be available to either the resident pair occurring on-site or potentially another breeding pair. Availability of both artificial nest design options and locations will increase the chance of successful uptake by chough. Final design and siting of both options will be undertaken by the appointed ecologist in consultation with NPWS. Measures are also proposed in relation to monitoring for chough (see **Section 5.5.3.1** below).

[57] http://www.birdsontheedge.org/2014/12/23/nest-boxes-new-homes-for-choughs/
[58] https://chough.org/nest-boxes

Figure 5-14. Example of a chough nest-platform/shelter showing general design and construction materials (Source: https://www.zoochat.com/community/media/red-billed-chough-nesting-box-and-shelter-2021-02-14.519435/)

5.5.2.1.12 *Protection of Other Breeding Birds*

A bird box scheme comprising artificial nest boxes will be installed to provide alternative nesting habitat for species currently nesting in the hotel (starlings, swallows, and jackdaw). For example, the maintenance building in the north-east corner of the Site has been identified as a suitable location to accommodate nest-boxes for swallow. Nest-boxes are also to be installed in other suitable locations, such as on walls and trees within the Site, either retained or newly planted. A minimum of 20 No. bird boxes are to be installed within the Site. Installation of the nest box scheme, including the final number and location of boxes to be installed, is to be undertaken under the direction of the appointed ECoW and following guidance by BirdWatch Ireland.

5.5.2.1.13 *Protection of Otter*

A pre-construction survey for otter should be undertaken prior to the commencement of any works as per best-practice guidance set out in NRA (2008) in relation to construction works and otter. The purpose of the pre-construction survey is to identify any changes within the Site. The survey should be undertaken no more than 10-12 months in advance of construction. The survey should be supplemented by an additional survey immediately prior to site works commencing if more than four weeks have elapsed since the initial pre-construction survey.

In the event of an otter breeding/resting place being discovered within or in proximity of the Site, all construction activity and site works will be undertaken in accordance with NRA (2008). Implementation of best-practice guidelines for otter will be overseen by the appointed ECoW.

5.5.2.1.14 *Protection of Badger*

A pre-construction survey for badger should be undertaken prior to the commencement of any works as per best-practice guidance set out in NRA (2006b) in relation to construction works and badger. The purpose of the pre-construction survey is to identify any changes within the Site. The survey should be undertaken no more than 10-

12 months in advance of construction. The survey should be supplemented by an additional survey immediately prior to site works commencing if more than four weeks have elapsed since the initial pre-construction survey.

In the event of a badger breeding/resting place being discovered within or in proximity of the Site, all construction activity and site works will be undertaken in accordance with NRA (2006b). Implementation of best-practice guidelines for badger will be overseen by the appointed ECoW.

5.5.2.1.15 *Protection of Amphibians*

Amphibian surveys will be carried out by a suitably qualified ecologist in advance of construction works. These surveys will focus on breeding areas confirmed to be used or with the potential to be used by breeding amphibians. Methodology for frog surveys will follow Reid *et al*. (2013). In the event that there is a requirement to disturb breeding frogs, frog spawn and/or spawning habitat, then the relevant licence will be required from NPWS, prior to removal of frogs and/or spawn by the appointed ecologist to an alternative suitable location nearby.

5.5.2.2 Operational Phase

The following operational phase mitigation measures are recommended with regard to the Proposed Development.

5.5.2.2.1 *Protection of Bats (Lighting Plan)*

Bats (and other species, such as some birds) are sensitive to lighting, and vary in their degree of tolerance of artificial light. Certain bat species, such as lesser horseshoe bat and brown long-eared, both recorded on-site, are sensitive to light. The Proposed Development site is currently devoid of any form of artificial light; therefore, it is vital that the operational lighting proposal is sensitive to bats and other fauna and use of artificial light is minimised to minimise impacts on bats. Potential impacts to bats and other fauna have been taken into consideration at design stage with regard to the operational phase Lighting Plan which is proposed for the development.

It is imperative that illumination of any part of the cottage, in particular roost access points, and surrounding vegetation is avoided to facilitate bats travelling to and from the roost. Regarding bats and the Lighting Plan, particular consideration has been given to the area in the vicinity of the cottage, the proposed vegetated corridor extending north-east from the cottage, and the existing treeline and road-side vegetation further north-east with which proposed planting will link. The proposal has been designed to avoid light-spill onto these particular areas and be minimised as much as practicably possible elsewhere throughout the site. This will ensure that, in relation to the existing treeline and roadside vegetation extending north, this ‘dark corridor’ is retained.

Specific measures to avoid unnecessary external artificial lighting and minimise the incidence of light spill from the Proposed Development onto adjacent areas once operational have been incorporated into the proposed Lighting Plan to reduce potential impacts.

The following guidelines, taken from the Bat Conservation Trust 2023 ‘Guidance Note 08/23’, have been incorporated into the proposed Lighting Plan for the development. The Lighting Plan is to follow these guidelines.

- LED luminaires to be used due to the fact that they are highly directional, sharp cut-off, lower intensity, good colour rendition and dimming capability.
- All luminaires used to lack UV elements to reduce impact. Metal halide, compact fluorescent sources should not be used.
- A warm white light source ((<2700 Kelvins) is to be adopted to reduce the blue light component).

- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights will be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards. The shortest column height allowed will be used where possible.
- Only luminaires with a negligible or zero upward light ratio and with good optical control will be used.
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output and increased upward light scatter from surfaces. Therefore, they should only be considered in specific cases where these issues can be resolved.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

Lighting for bats will also serve to reduce impacts on other light-sensitive fauna such as avian species which migrate, forage or are otherwise active at night/during low light conditions.

5.5.2.2.2 *Biodiversity Signage*

Signage is to be erected at various locations to include along the Reenroe Cliff Walk and in the proposed BEA to highlight the presence of more sensitive habitats, including the species-rich coastal grassland ('Dry calcareous and neutral grassland') which occurs between the walking trail and the cliff edge around much of the headland and the 'Shingle and gravel bank habitat' at the upper shore of Inny Strand. Signage will also be erected in relation to fauna, including coastal species which could or are likely to occur in the vicinity of the development, such as chough, waders and waterbirds. The purpose of this signage is to encourage visitors to the area to be cognisant of the sensitive nature of coastal habitats to impacts, such as from trampling and erosion, which can negatively impact upon coastal habitats and flora. Signage should also educate visitors as to the sensitivity of bird species to disturbance, in particular during certain periods, such as breeding, or when foraging or roosting on-land (see **Figure 5-15** below for an example of signage). Signage will direct visitors to the area to keep dogs on leads and follow 'Leave No Trace' principles.

Figure 5-15. Example of signage being used for breeding chough at a conservation project in Cornwall, UK[59]

5.5.2.2.3 *Protection of Water Quality during Operation*

Surface and Foul Water Network

- For the SuDS strategy to work as designed it is important that the entire drainage system is well maintained. It will be the responsibility of the site management team to ensure the drainage system is maintained. The recommended programme of maintenance for the proposed storm water network and foul water network will be adhered to. Refer to **Chapter 7** Water of the **EIAR**.

5.5.3 Monitoring

5.5.3.1 Chough

Regular monitoring of the chough nest-boxes/platforms is to be carried out to check for signs of wear or damage. At a minimum, chough nest-boxes/platforms are to be checked on an annual basis and any necessary repairs undertaken for a minimum 2 year period.

A chough breeding season survey is to be undertaken by a suitably qualified ecologist to assess breeding activity and determine the outcome of the nests, as relevant. This is to be undertaken at both artificial nest locations for a minimum 2 year period following installation. Summary reports, outlining findings as above, are to be submitted to NPWS and KCC on an annual basis during this 2 year monitoring period.

5.5.3.2 Alien Invasive Plant Species (IAPS)

Invasive species will continue to be monitored, and where required, managed throughout the operational phase, in accordance with the construction-stage IAPS management plan.

[59] Source: https://www.flickr.com/photos/shirokazan/8938783079/in/photostream/)

5.5.3.3 Bats

As per Marnell *et al.*, (2022), monitoring of the alternative roost-site (cottage) will take place for a two year period and will be undertaken by a suitably-qualified ecologist. The temperature data logger installed within the cottage will be left in-situ throughout this monitoring period.

Monitoring will comprise the following summer surveys in each year:

- static monitoring undertaken over 5 nights in each of June, July and August and,
- two dusk emergence surveys undertaken between May and August.

As part of monitoring, any mitigation measures implemented as part of the cottage renovation will be evaluated for effectiveness. This will inform the need for any changes or additional measures which may be required.

Bat boxes installed will be inspected within one year of erection. Seasonal daytime inspections of bat boxes using an endoscope/thermal imagery scope will be undertaken once in summertime (excluding mid-June to mid-August when females with dependant young may be present) to monitor usage and once in wintertime to assess general wear and tear and carry out cleaning (only necessary where self-cleaning models are not used). This will be undertaken by a licensed bat-handler. Monitoring of bat boxes is to continue for a two-year period. Any boxes remaining unused after 1 year will be relocated in accordance with NRA, (2005). The bat box scheme is to be registered with Bat Conservation Ireland.

Annual monitoring reports for bats will be prepared by a suitably qualified ecologist and submitted to KCC and NPWS for the duration of the monitoring period.

5.6 Residual Effects

Residual impacts are impacts that remain, once mitigation has been implemented or, impacts that cannot be mitigated. Provided that the ecological mitigation measures outlined in Section 05.5.2 above are implemented in full, it is considered that the effects on IEFs from potential construction and operational impacts would be avoided, reduced and mitigated sufficiently to ensure that no likely significant residual effects remain. It is considered that the receiving environment within the Proposed Development site has the capacity to accommodate the Proposed Development without significant effects on habitats and faunal features discussed in this chapter. A summary of the unmitigated effects of the construction and operational phases, including mitigation and residual effects, of the Proposed Development are detailed in Table 5-25 below.

Table 5-25. Summary Table of Effects

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Habitats								
CONSTRUCTION PHASE								
Habitat Loss								
Improved agricultural grassland (GA1) in mosaic with Wet grassland (GS4)	Negative, Not significant, Localised, Permanent, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Permanent	Direct	Likely
Wet grassland (GS4)	Negative, Not significant, Localised, Permanent, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Permanent	Direct	Likely
Scrub (WS1)	Negative, Not significant, Localised, Permanent, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Permanent	Direct	Likely
Buildings and artificial surfaces (BL3)	Negative, Not significant, Localised, Permanent, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Permanent	Direct	Likely
Dry neutral and calcareous grassland (GS1)	Negative, Not significant, Localised, Permanent, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Permanent	Direct	Likely
Shingle and gravel banks (CB1)	Neutral, Localised, Permanent, Likely	No mitigation needed.	Neutral	N/a	Localised	Permanent	N/a	Likely
Sand shores (LS2)	Neutral, Localised, Permanent, Likely	No mitigation needed.	Neutral	N/a	Localised	Permanent	N/a	Likely
Habitat Alteration/Disturbance								

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Improved agricultural grassland (GA1) in mosaic with Wet grassland (GS4)	Negative, Not significant, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.6, 5.5.2.1.7, 5.5.2.1.8	Negative	Imperceptible	Localised	Temporary to Short-term	Direct and Indirect	Likely
Wet grassland (GS4)	Negative, Not significant, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.6, 5.5.2.1.7, 5.5.2.1.8	Negative	Imperceptible	Localised	Temporary to Short-term	Direct and Indirect	Likely
Scrub (WS1)	Negative, Not significant, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.6, 5.5.2.1.7, 5.5.2.1.8	Negative	Imperceptible	Localised	Temporary to Short-term	Direct and Indirect	Likely
Buildings and artificial surfaces (BL3)	Negative, Not significant, Localised, Short-term, Direct and Indirect, Likely	No mitigation needed.	Negative	Not significant	Localised	Short-term	Direct and Indirect	Likely
Dry neutral and calcareous grassland (GS1)	Negative, Moderate, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.6, 5.5.2.1.7, 5.5.2.1.8	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Shingle and gravel banks (CB1)	Negative, Slight, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.6, 5.5.2.1.8	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Sand shores (LS2)	Negative, Slight, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.6, 5.5.2.1.8	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Presence of IAPS								
Habitats	Negative, Moderate, Localised, Medium-term, Indirect, Likely	Sections 5.5.2.1.6, 5.5.2.1.7	Negative	Not significant	Localised	Medium-term	Indirect	Likely
OPERATIONAL PHASE								
Habitat Alteration/Disturbance								
Improved agricultural grassland (GA1) in mosaic with Wet grassland (GS4)	Negative, Not significant, Localised, Long-term, Direct and Indirect, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Wet grassland (GS4)	Negative, Not significant, Localised, Long-term, Direct and Indirect, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Scrub (WS1)	Negative, Not significant, Localised, Long-term, Direct and Indirect, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Buildings and artificial surfaces (BL3)	Neutral, Localised, Permanent, Likely	No mitigation needed.	Neutral	N/a	Localised	Permanent	N/a	Likely
Dry neutral and calcareous grassland (GS1)	Negative, Slight, Localised, Long-term, Direct and Indirect, Likely	Section 5.5.2.2.2	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Shingle and gravel banks (CB1)	Negative, Not significant, Localised, Long-term, Direct and Indirect, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Sand shores (LS2)	Negative, Not significant, Localised,	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
	Long-term, Direct and Indirect, Likely							
Mammals (excl. bats)								
CONSTRUCTION PHASE								
Habitat Loss								
Hedgehog	Negative, Not significant, Localised, Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Imperceptible	Localised	Short-term	Direct	Likely
Badger	Negative, Not significant, Localised, Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9, 5.5.2.1.14	Negative	Imperceptible	Localised	Short-term	Direct	Likely
Pygmy shrew	Negative, Not significant, Localised, Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Imperceptible	Localised	Short-term	Direct	Likely
Irish stoat	Negative, Not significant, Localised, Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Imperceptible	Localised	Short-term	Direct	Likely
Irish hare	Negative, Slight, Localised, Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Not significant	Localised	Short-term	Direct	Likely
Otter	Negative, Not significant, Localised, Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9, 5.5.2.1.13	Negative	Imperceptible	Localised	Short-term	Direct	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Pine marten	Negative, Not significant, Localised, Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Imperceptible	Localised	Short-term	Direct	Likely
Seals	Neutral, Localised, Short-term, Likely	No mitigation needed.	Neutral	N/a	Localised	Short-term	N/a	Likely
Cetaceans	Neutral, Localised, Short-term, Likely	No mitigation needed.	Neutral	N/a	Localised	Short-term	N/a	Likely
Disturbance/Displacement								
Hedgehog	Negative, Not significant, Localised, Temporary to Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Imperceptible	Localised	Temporary to Short-term	Direct	Likely
Badger	Negative, Not significant, Localised, Temporary to Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9, 5.5.2.1.14	Negative	Imperceptible	Localised	Temporary to Short-term	Direct	Likely
Pygmy shrew	Negative, Not significant, Localised, Temporary to Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Imperceptible	Localised	Temporary to Short-term	Direct	Likely
Irish stoat	Negative, Not significant, Localised, Temporary to Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Imperceptible	Localised	Temporary to Short-term	Direct	Likely
Irish hare	Negative, Slight, Localised, Temporary to Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Otter	Negative, Not significant to Slight, Localised, Temporary to Short-term, Direct and Indirect, Likely	Section 5.5.2.1.3, 5.5.2.1.8, 5.5.2.1.9, 5.5.2.1.13	Negative	Imperceptible to Not significant	Localised	Temporary to Short-term	Direct and indirect	Likely
Pine marten	Negative, Not significant, Localised, Temporary to Short-term, Direct, Likely	Section 5.5.2.1.8, 5.5.2.1.9	Negative	Imperceptible	Localised	Temporary to Short-term	Direct	Likely
Seals	Negative, Not significant, Localised, Temporary to Short-term, Direct and indirect, Likely	Section 5.5.2.1.3	Negative	Imperceptible	Localised	Temporary to Short-term	Direct and indirect	Likely
Cetaceans	Negative, Not significant, Localised, Temporary to Short-term, Indirect, Unlikely	Section 5.5.2.1.3	Negative	Imperceptible	Localised	Temporary to Short-term	Indirect	Unlikely
OPERATIONAL PHASE								
Disturbance/Displacement								
Hedgehog	Negative, Not significant, Localised, Long-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely
Badger	Negative, Not significant, Localised, Long-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely
Pygmy shrew	Negative, Not significant, Localised,	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
	Long-term, Direct, Likely							
Irish stoat	Negative, Not significant, Localised, Long-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely
Irish hare	Negative, Slight, Localised, Long-term, Direct, Likely	Section 5.5.2.2.1	Negative	Not significant	Localised	Long-term	Direct	Likely
Otter	Negative, Not significant to Slight, Localised, Long-term, Direct and Indirect, Likely	Section 5.5.2.2.1, 5.5.2.2.5	Negative	Imperceptible	Localised	Long-term	Direct and Indirect	Likely
Pine marten	Negative, Not significant, Localised, Long-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely
Seals	Negative, Not significant to Imperceptible, Localised, Long-term, Direct and Indirect, Likely	Section 5.5.2.2.3	Negative	Imperceptible	Localised	Long-term	Direct and Indirect	Likely
Cetaceans	Negative, Imperceptible, Localised, Long-term, Indirect, Likely	Section 5.5.2.2.3	Negative	Imperceptible	Localised	Long-term	Indirect	Likely
Bats								
CONSTRUCTION PHASE								
Loss/Disturbance of Roosts/Roosting Bats								

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Common pipistrelle (low conservation significance roosts)	Negative, Slight, Localised, Permanent, Direct and Indirect, Likely	Sections 5.5.2.1.10.2 to 5.5.2.1.10.6	Negative	Imperceptible	Localised	Permanent	Direct and Indirect	Likely
Common pipistrelle (moderate conservation significance roosts)	Negative, Moderate, Localised, Permanent, Direct and Indirect, Likely	Sections 5.5.2.1.10.2 to 5.5.2.1.10.6	Negative	Slight	Localised	Permanent	Direct and Indirect	Likely
Soprano pipistrelle (low conservation significance roosts)	Negative, Slight, Localised, Permanent, Direct and Indirect, Likely	Sections 5.5.2.1.10.2 to 5.5.2.1.10.6	Negative	Imperceptible	Localised	Permanent	Direct and Indirect	Likely
Lesser horseshoe bat (moderate conservation significance roosts)	Negative, Moderate, Localised, Permanent, Direct and Indirect, Likely	Sections 5.5.2.1.10.2 to 5.5.2.1.10.4, 5.5.2.1.10.6	Negative	Slight	Localised	Permanent	Direct and Indirect	Likely
Myotis sp. (moderate conservation significance roosts)	Negative, Moderate, Localised, Permanent, Direct and Indirect, Likely	Sections 5.5.2.1.10.2 to 5.5.2.1.10.6	Negative	Slight	Localised	Permanent	Direct and Indirect	Likely
Disturbance/Displacement (noise, human activity, lighting)								
All bats	Negative, Slight to Moderate, Localised, Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.10.2 to 5.5.2.1.10.6	Negative	Imperceptible to Slight	Localised	Short-term	Direct and Indirect	Likely
Habitat Loss/Fragmentation								
All bats	Negative, Slight, Localised, Permanent, Direct and Indirect, Likely	Section 5.5.1.1.10.7	Positive	Slight	Localised	Permanent	Direct and Indirect	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
OPERATIONAL PHASE								
Disturbance/Displacement (noise/human activity)								
All bats	Negative, Slight, Localised, Long-term, Direct and Indirect, Likely	Section 5.5.2.1.10.7, 5.5.2.2.2	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Disturbance/Displacement (lighting)								
All bats	Negative, Moderate to Significant, Localised, Long-term, Direct and Indirect, Likely	Section 5.5.2.1.10.7, 5.5.2.2.1	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Birds								
CONSTRUCTION PHASE								
Loss of Chough Breeding Site	Negative, Significant, Localised and Regional, Medium-term, Direct, Likely	Section 5.5.2.1.11	Negative	Slight	Localised and Regional	Medium-term	Direct	Likely
Loss of Chough Winter Roost Site	Negative, Moderate, Localised and Regional, Medium-term, Direct, Likely	Section 5.5.2.1.11	Negative	Slight	Localised and Regional	Medium-term	Direct	Likely
Deplacement of Chough from Territory	Negative, Moderate, Localised and Regional, Medium-term, Direct, Likely	Section 5.5.2.1.11	Negative	Slight	Localised and Regional	Medium-term	Direct	Likely
Loss of Foraging/Resting Habitat								

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Chough	Negative, Slight, Localised, Medium-term, Direct, Likely	No mitigation needed.	Negative	Slight	Localised	Medium-term	Direct	Likely
Waders found to be associated with the Site	Negative, Not significant, Localised, Short-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Short-term	Direct	Likely
Other waders recorded in vicinity of the Site and Waders generally	Negative, Not significant, Localised, Short-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Short-term	Direct	Likely
Gulls	Negative, Not significant, Localised, Short-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Short-term	Direct	Likely
Raptors	Negative, Not significant, Localised, Short-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Short-term	Direct	Likely
Other Corvids and Passerines	Negative, Not significant, Localised, Short-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Short-term	Direct	Likely
Seabirds	Neutral, Localised, Permanent, Likely	No mitigation needed.	Neutral	N/a	Localised	Permanent	N/a	Likely
Ducks, Geese and Other Waterbirds	Negative, Not significant, Localised, Short-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Short-term	Direct	Likely
Loss of Breeding Habitat								
Other Corvids and Passerines	Negative, Slight to Moderate, Localised,	Sections 5.5.2.1.12	Negative	Not significant	Localised	Short-term	Direct	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
	Short-term, Direct, Likely							
Disturbance/Displacement (noise/human presence/water quality)								
Chough	Negative, Slight, Localised, Temporary to Short-term, Direct, Likely	Section 5.5.2.1.11	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Waders found to be associated with the Site	Negative, Slight, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.3, 5.5.2.1.9	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Other waders recorded in vicinity of the Site and Waders generally	Negative, Slight, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.3, 5.5.2.1.9	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Gulls	Negative, Not significant to Slight, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.3, 5.5.2.1.9	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Raptors	Negative, Not significant, Localised, Temporary to Short-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Other Corvids and Passerines	Negative, Not significant, Localised, Temporary to Short-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Seabirds	Negative, Not significant to Slight, Localised, Temporary to Short-term, Direct and Indirect, Likely	Section 5.5.2.1.3	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Ducks, Geese and Other Waterbirds	Negative, Not significant to Slight, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.3, 5.5.2.1.9	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
OPERATIONAL PHASE								
Disturbance/Displacement (noise and human activity)								
Chough	Negative, Slight, Localised, Long-term, Direct, Likely	Section 5.5.2.2.2	Negative	Slight	Localised	Long-term	Direct	Likely
Waders	Negative, Slight, Localised, Long-term, Direct, Likely	Section 5.5.2.2.2	Negative	Slight	Localised	Long-term	Direct	Likely
Gulls	Negative, Not significant, Localised, Long-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely
Raptors	Negative, Not significant, Localised, Long-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely
Other Corvids and Passerines	Negative, Not significant, Localised,	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
	Long-term, Direct, Likely							
Seabirds	Negative, Not significant, Localised, Long-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely
Ducks, Geese and Other Waterbirds	Negative, Not significant, Localised, Long-term, Direct, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct	Likely
Disturbance/Displacement (increased artificial light)								
Avian species which migrate, forage or are otherwise active at night/during low light conditions	Negative, Slight to Moderate, Localised, Long-term, Indirect, Likely	Sections 5.5.2.2.1	Negative	Not significant	Localised	Long-term	Direct	Likely
Disturbance/Displacement (water quality)								
Marine and coastal species, and other IEFs	Negative, Imperceptible, Localised, Long-term, Indirect, Likely	Section 5.5.2.2.3	Negative	Imperceptible	Localised	Long-term	Indirect	Likely
Reptiles and Amphibians								
CONSTRUCTION PHASE								
Habitat Loss/Alteration								
Common frog	Negative, Not significant to Slight, Localised, Short-term, Direct, Likely	Sections 5.5.2.1.3, 5.5.2.1.8 5.5.2.1.9	Negative	Not significant	Localised	Short-term	Direct	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Smooth newt	Negative, Not significant to Slight, Localised, Short-term, Direct, Likely	Sections 5.5.2.1.3, 5.5.2.1.8 5.5.2.1.9	Negative	Not significant	Localised	Short-term	Direct	Likely
Common lizard	Negative, Not significant, Localised, Short-term, Direct, Likely	Sections 5.5.2.1.8 5.5.2.1.9	Negative	Imperceptible	Localised	Short-term	Direct	Likely
Disturbance/Displacement (noise/human activity)								
Common frog	Negative, Not significant to Slight, Localised, Temporary to Short-term, Direct, Likely	Sections 5.5.2.1.9, 5.5.2.1.15	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Smooth newt	Negative, Not significant, Localised, Temporary to Short-term, Direct, Likely	Sections 5.5.2.1.9 5.5.2.1.15	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Common lizard	Negative, Not significant, Localised, Temporary to Short-term, Direct, Likely	Section 5.5.2.1.9	Negative	Not significant	Localised	Temporary to Short-term	Direct	Likely
Disturbance/Displacement (water quality)								
Common frog	Negative, Moderate, Localised, Temporary to Short-term, Indirect, Likely	Section 5.5.2.1.3	Negative	Not significant	Localised	Temporary to Short-term	Indirect	Likely
Smooth newt	Negative, Moderate, Localised, Temporary to Short-term, Indirect, Likely	Section 5.5.2.1.3	Negative	Not significant	Localised	Temporary to Short-term	Indirect	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
OPERATIONAL PHASE								
Disturbance/Displacement (noise/lighting/human activity)								
Common frog	Negative, Not significant, Localised, Long-term Direct and Indirect, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Smooth newt	Negative, Not significant, Localised, Long-term Direct and Indirect, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Common lizard	Negative, Not significant, Localised, Long-term Direct and Indirect, Likely	No mitigation needed.	Negative	Not significant	Localised	Long-term	Direct and Indirect	Likely
Disturbance/Displacement (water quality)								
Common frog	Negative, Not significant, Localised, Long-term Indirect, Likely	Section 5.5.2.2.3	Negative	Imperceptible	Localised	Long-term	Indirect	Likely
Smooth newt	Negative, Not significant, Localised, Long-term Indirect, Likely	Section 5.5.2.2.3	Negative	Imperceptible	Localised	Long-term	Indirect	Likely
Freshwater macro-invertebrates								
CONSTRUCTION PHASE								
Habitat Loss/Alteration	Negative, Not significant, Localised, Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.8 5.5.2.1.9	Negative	Imperceptible	Localised	Short-term	Direct and Indirect	Likely

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Disturbance/Displacement	Negative, Slight, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.3, 5.5.2.18, 5.5.2.1.9	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
OPERATIONAL PHASE								
Disturbance/Displacement	Negative, Not significant, Long-term, Indirect, Likely	Section 5.5.2.2.3	Negative	Imperceptible	Localised	Long-term	Indirect	Likely
Terrestrial macro-invertebrates								
CONSTRUCTION PHASE								
Habitat Loss/Alteration	Negative, Not significant, Localised, Temporary, Direct and Indirect, Likely	Sections 5.5.2.1.8 5.5.2.1.9	Negative	Imperceptible	Localised	Temporary	Direct and Indirect	Likely
Disturbance/Displacement	Negative, Not significant, Localised, Temporary to Short-term, Direct and Indirect, Likely	Sections 5.5.2.1.8 5.5.2.1.9	Negative	Imperceptible	Localised	Temporary to Short-term	Direct and Indirect	Likely
OPERATIONAL PHASE								
Disturbance/Displacement	Negative, Imperceptible, Localised, Long-term, Direct and Indirect, Likely	No mitigation needed.	Negative	Imperceptible	Localised	Long-term	Direct and Indirect	Likely
Water Quality								
CONSTRUCTION PHASE								
Construction Activity (run-off or ingress of silt, pollutants, nutrients etc)								

EFFECT (PRE-MITIGATION)	PRE-MITIGATION RATING	MITIGATION MEASURES	RESIDUAL EFFECT (POST-MITIGATION)					
			QUALITY OF EFFECT	SIGNIFICANCE	SPATIAL EXTENT	DURATION	OTHER RELEVANT CRITERIA	LIKELIHOOD
Surface water quality (existing drainage network)	Negative, Moderate, Localised, Temporary to Short-term, Direct and Indirect, Likely	Section 5.5.2.1.3 to 5.5.2.1.5	Negative	Not significant	Localised	Temporary to Short-term	Direct and Indirect	Likely
Marine water quality	Negative, Moderate, Localised, Temporary, Direct and Indirect, Unlikely	Section 5.5.2.1.3 to 5.5.2.1.5	Negative	Not significant	Localised	Temporary	Direct and Indirect	Unlikely
OPERATIONAL PHASE								
Management of Stormwater	Negative, Imperceptible, Localised, Long-term, Direct and Indirect, Likely	Section 5.5.2.2.3	Negative	Imperceptible	Localised	Long-term	Direct and Indirect	Likely
Management of Wastewater								
Surface water quality (existing drainage network)	Negative, Not significant, Localised, Long-term, Direct and Indirect, Likely	Section 5.5.2.2.3	Negative	Imperceptible	Localised	Long-term	Direct and Indirect	Likely
Marine water quality	Negative, Not significant, Localised, Long-term, Direct and Indirect, Likely	Section 5.5.2.2.3	Negative	Imperceptible	Localised	Long-term	Direct and Indirect	Likely

5.7 Enhancement

A detailed Biodiversity Enhancement Plan (BEP) aimed at achieving biodiversity net gain as a result of the Proposed Development has been prepared and will be implemented under the guidance of the appointed ECoW. The BEP proposes enhancement measures in relation to biodiversity within the Site (see **Section 5.7.1** below). In addition to proposed measures within the Site, an adjacent area of land, which is under the control and ownership of the Applicant, is proposed as a targeted Biodiversity Enhancement Area (BEA) (see **Figure 5-1** above and **Section 5.7.2** below).

The area of the Applicant's lands which were initially under consideration for potential biodiversity enhancement measures was previously larger than the area ultimately proposed as it was decided to focus on the area of the Applicant's lands closest to the Proposed Development site. However, it is noted that the there is an opportunity to expand the habitat enhancement area within the Applicant's wider landholding subject to receiving planning permission for the proposal.

The BEP is included in **Appendix 5-7** of **Volume 3** of the **EIAR** and details all proposed management and enhancement measures in relation to habitats and species. There follows a summary of the enhancement measures which are proposed to increase the biodiversity value of the Site and proposed BEA.

5.7.1 Proposed Enhancement Measures for the Proposed Development Site

This section outlines the proposed biodiversity enhancement measures in relation to the Site.

5.7.1.1 Bird Box Scheme

To further enhance the Site for birds, a bird box scheme comprising artificial nest boxes will be installed to provide additional nesting habitat for birds. Different bird box designs are available to accommodate a wide variety of species such as swift, swallow, starling, blue tit (*Cyanistes caeruleus*), great tit (*Parus major*) and robin (*Erithacus rubecula*). It is proposed that a minimum of 10 No. bird boxes are installed within the Site on structures and trees, as appropriate. Installation of the nest box scheme, including the final number and location of boxes to be installed, is to be undertaken under the direction of the appointed ECoW.

5.7.1.2 Bat Box Scheme

To enhance the Site for bats, bat boxes will be erected on suitable trees within the Site. The scheme will comprise a mix of bat-box designs to attract a variety of bat species such as common pipistrelle, soprano pipistrelle, Leisler's bat and brown long-eared bat, all of which were recorded within the Site during baseline surveys. A minimum of 20 no. bat boxes are to be installed. Design and installation of the bat box scheme will be overseen by the appointed ecologist and will follow BCIreland guidance[60].

5.7.1.3 General Landscaping Opportunities to Enhance the Site for Biodiversity

Extensive soft landscaping is proposed as part of the proposed development. Planting of mature and semi-mature trees, hedgerow, meadow and amenity and ornamental planting will enhance the site for biodiversity by providing valuable habitat (foraging, breeding and commuting/shelter) for a wide variety of fauna, within an area generally low in cover of tall vegetation.

The Landscaping proposal for the proposed development site has incorporated 'bat-friendly' and 'pollinator-friendly' planting schemes throughout, with a strong focus on native species as native species support higher

[60] https://www.batconservationireland.org/wp-content/uploads/2013/09/Leaflet_3_batboxes.pdf; https://www.batconservationireland.org/wp-content/uploads/2015/05/BCIrelandGuidelines_BatBoxes.pdf

insect life for bats and other fauna. The Landscaping proposal has had regard to the All-Ireland Pollinator Plan[61], Bat Conservation Ireland/Bat Conservation Trust guidance[62] for preferred plant species.

Supplementary planting bounding the local beach access road in the north-east corner of the site is proposed. Here, proposed planting of native hedgerow (of approx. 130 m length) adjacent to the existing roadside vegetation (comprising scattered willow on an earth bank) will supplement and enhance this existing linear feature in terms of foraging/commuting suitability for bats, while improving connectivity and continuity with habitats in the wider landscape.

It is noted that an extensive network of new native/pollinator-friendly hedgerow (comprising native screen hedging and pollinator hedging to include species such as holly, broom (*Cytisus scoparius*), blackthorn (*Prunus spinosa*) and willow (*Salix cinerea*), of combined total 6.85 km in length, is proposed, in addition to inclusion of pollinator-friendly shrubs, perennials and groundcover. Approximately 85 additional trees to include native species such as holly (*Ilex aquifolium*), hawthorn (*Crataegus monogyna*), rowan (*Sorbus aucuparia*), Scots pine (*Pinus sylvestris*) and whitebeam (*Sorbus aria*) and an area of meadow grassland (to be maintained with differential mowing regime) (approximately 1.42 hectares in area) are also proposed as part of landscaping proposals.

These elements of the landscaping plan will substantially increase the availability of linear and other habitat features within the site of higher value to both foraging and commuting bats, in the context of the areas of relatively lower value improved/semi-improved grassland habitats which will be lost.

Refer to the **Landscape Design Rationale** and **Overall Landscape Master Plan** for this planning application for more information.

5.7.1.4 Pollinator-friendly Management of the Site

Pollinator-friendly management of green spaces and other managed areas will be implemented at the Site during the operational phase of the Proposed Development. This should have regard to 'All-Ireland Pollinator Plan' guidance[63].

5.7.1.5 Biodiversity Signage

Informative biodiversity signage will be erected in suitable locations throughout the Site where the public can easily access them, such as within amenity/landscaped areas or at various points around the headland. These should provide information to readers about the wildlife-friendly habitat management practices which are being implemented on the Site to enhance the biodiversity value of the area, such as the bird box scheme and use of pollinator-friendly planting. The NBDC has various signage available e.g., 'Managed for Wildlife', 'Pollinator-friendly Zone' etc, which can be installed at appropriate locations.

Signage should also describe the general biodiversity of the Site and surrounding area, including Ballinskelligs Bay, with illustrations and background information on key species, floral or faunal groups. Signage could include information on, for example, the bird and marine life of the bay, highlighting species of interest in the locality, to promote knowledge-sharing and appreciation of biodiversity and the local environment amongst visitors to the area.

Refer to the BEP included in **Appendix 5-7** of **Volume 3** of the **EIAR** for more information.

[61] https://pollinators.ie/resources/
[62] https://www.batconservationireland.org/wp-content/uploads/2022/07/Gardening-For-Bats.pdf; https://cdn.bats.org.uk/uploads/pdf/Resources/Encouraging-Bats.pdf; https://cdn.bats.org.uk/uploads/pdf/Resources/Stars_of_the_Night
[63] AIPP-Business-Guide-2023-WEB-1.pdf (pollinators.ie)

5.7.2 Proposed Enhancement Measures for the targeted Biodiversity Enhancement Area (BEA)

The targeted BEA (8.4 Ha) will be set aside specifically for long-term biodiversity enhancement, to be achieved through a range of measures which will strive to increase habitat heterogeneity and mosaics of vegetation types and structures to enhance this area for flora and fauna. This section outlines the range of biodiversity enhancement measures which are proposed in relation to the targeted BEA.

5.7.2.1 Management of Existing Artificial Drainage Network

The proposed BEA has been impacted by an artificial drainage network which has likely affected the extent and condition of wetland habitats in this area. The ecological value of this area will be enhanced by precluding any future on-going maintenance of existing drainage channels and the creation of any new drainage channels in this area to allow for the development of a more diverse floral and faunal community within the proposed BEA.

5.7.2.2 Management of Perimeter Ditches for Birds and Other Wildlife

Where management of existing open perimeter ditches along the western and northern boundary of the proposed BEA is required, these will be managed to improve value for wildlife. Where ditch vegetation requires cutting, this is to be undertaken outside the bird nesting period (which comprises 1st March to 31st August, inclusive) to avoid disturbing breeding birds.

5.7.2.3 Habitat Enhancement for Chough

An area of coastal grassland encompassed within the Applicant's land holding and comprising the southern section of the proposed BEA (1.5 Ha) will be maintained and managed for chough on a permanent basis as a 'chough habitat management area'. Specific measures relating to management of livestock, including during particularly sensitive periods i.e., during breeding, will be implemented to enhance this area for chough and provide optimal chough foraging habitat conditions throughout the year based on the specific ecological requirements of this species.

5.7.2.4 Habitat Enhancement for Marsh Fritillary Butterfly

Although marsh fritillary was not recorded on-site, following Habitat Condition Assessments for this species, two field areas within the proposed BEA were found to comprise potentially suitable habitat, although 'under-grazed'. It is considered that these areas of the proposed BEA (total combined area of 7.4 Ha) could be enhanced for this species through aappropriate grazing management to improve habitat suitability. Extensive grazing with cattle, ideally between the months of May and September, will be undertaken in this area. Sheep are generally unsuitable, as they eat the scabious plants and produce too 'tight' a sward. The stocking level and grazing period should be adjusted, as required, to maximise availability of favourable habitat conditions[64].

5.7.2.5 Habitat Enhancement for Wall Butterfly and Other Insects

During baseline invertebrate surveys within the proposed BEA, a single wall butterfly was recorded. This species, once distributed across Ireland, is now in severe decline, and is classified as 'Endangered' in Ireland. The area within the proposed BEA will be enhanced for wall butterfly by maintaining/promoting unimproved grassland without fertiliser enrichment, and conserving suitable larval and adult foodplants within the area. The majority of the species required for this butterfly's life cycle can usually be found within a meadow site managed for pollinators.

[64] Marsh Fritillary - Managing grassland_0.pdf (butterfly-conservation.org)

Bare ground is important for butterflies, moths and other species as it provides localised areas of warmth in which they can bask, as well as providing suitable areas of habitat in which plants can germinate at reduced risk of being outcompeted by more vigorous species. Patches of bare and stony ground will be maintained/created to provide suitable basking areas for butterflies and moths. These features, known as butterfly banks and scrapes, will be created within the proposed BEA. These will benefit wall butterfly and a wide variety of other butterflies and moths, as well as other insects, such as beetles, bees and wasps.

5.7.2.6 Biodiversity-friendly Livestock Measures

Livestock grazing plays a key role in maintaining many species-rich habitats by controlling more competitive species and preventing scrub encroachment and successional development. An appropriate grazing regime is crucial to maintaining diversity in plant and invertebrate communities, which in turn supports other fauna. Extensive grazing can be used to develop and maintain habitat mosaics and can also be used to remove nutrients from areas of land which may have been subjected to nutrient inputs as part of historic or current land management practices.

The advice of a qualified farm advisor will be sought in advance of the implementation of the BEP with regard to the appropriate stock type, levels and seasonal grazing patterns for the BEA, with respect to an extensive grazing regime. Use of either organic or non-organic fertilisers and insecticides will be prohibited. Use of herbicides will generally be prohibited, except in the case of occurrence of noxious weeds. Use of persistent animal treatments on stock will be avoided within the BEA as these leave residues in animal dung for extended periods which adversely impact on soil invertebrates, which are an important prey resource for a variety of fauna. Burning will be prohibited within the BEA. Where any vegetation is required to be removed, cut or otherwise disturbed, this will be undertaken strictly outside the bird nesting season (1st March to 31st August, inclusive).

Appropriate fencing of the 'An Rinn Rua' watercourse which forms part of the eastern boundary of the proposed BEA is to be installed. The purpose of this is to prevent livestock damage of channel margins, reduce erosion and protect/support riparian vegetation which will help to stabilise the riverbank and support the formation of a vegetated riparian zone. Fencing of retained drainage ditches throughout the proposed BEA (to minimum 1.5 m from top of bank of channel) will be undertaken. This will prevent livestock poaching around drainage features (in field drains) and reduce run-off of manure and other nutrients into channels. Fencing of existing reedbed wetland habitat will prevent livestock damage to habitat margins and vegetation and reduce poaching and nutrient inputs.

5.7.2.7 Bird Box Scheme

The hedgerows which will be planted along the western boundary of the proposed BEA as part of the Landscaping Proposal for the Proposed Development will enhance the value of the proposed BEA for nesting birds. To further enhance the proposed BEA for birds, a bird box scheme comprising artificial nest boxes (minimum 5 No.) will be installed at appropriate locations to provide additional nesting habitat for a variety of species, under the direction of the appointed ECoW.

5.7.2.8 Bat Box Scheme

A bat-box scheme will be implemented within the proposed BEA to enhance the value of this area by providing additional roost-sites. Bat-boxes (minimum 5 No.) will be erected in suitable habitat within the proposed BEA under the direction of the appointed ecologist.

5.7.2.9 Log/Wood Piles

Creation of log/wood piles (minimum 3 no.) within the proposed BEA will provide additional habitat and shelter for a variety of species, including insects, frogs, birds and small mammals, including hibernating hedgehog. These

will incorporate locally-sourced natural and native materials comprising different sized logs/branches with bark intact.

5.7.2.10 General Tidy Up

Any areas of domestic, industrial or farm litter, wastes or refuse, rubble, rock, spoil or similar materials, and sheep carcasses/remains within the proposed BEA and which disturb the natural environment will be removed to further enhance the biodiversity value of the area.

5.7.2.11 General Biodiversity Signage

Appropriate informative/educational signage will be erected in suitable locations where the public can easily access them, such as the existing Inny Strand car park along the southern edge of the proposed BEA adjoining the shoreline or along the Emlagh Loop walking trail which traverses the proposed BEA. These should provide overview information on the measures being employed within the BEA to benefit biodiversity with illustrations and background information on key species. Information could also be included on risk of potential disturbance of birds and other fauna within the BEA by dogs and a request to members of the public accessing the area to keep dogs on leads/under control at all times and adhere to 'Leave No Trace'/ 'Ná Fág Lorg' principles[65].

Refer to the BEP included in **Appendix 5-7** of **Volume 3** of the **EIAR** for more information.

5.8 Conclusion

Provided that the Proposed Development is constructed and operated in accordance with the design, best practice and mitigation measures stipulated, significant residual effects on biodiversity are not anticipated on any Important Ecological Feature (IEF) at any scale.

The application of mitigation and protection measures throughout the construction and operational phases will ensure that no significant residual impacts will arise from the project, either alone or in combination with other plans or projects.

The Applicant is committed to the mitigation, monitoring and enhancement measures set out in this assessment. The Applicant will engage fully with the planning authority, with input from a professional ecologist to deliver biodiversity net gain at the Proposed Development site through a monitoring programme.

[65] Home - Leave No Trace Ireland

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