MWP

Ecological Impact Assessment

Deer Park Large-scale Residential Development (LRD) off Park Road, Killarney, County Kerry.

Ross-Park Residential HS Limited

September 2026

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Appendix

Appendix 1 – Site Layout Plan

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
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1. Introduction

A planning application is being prepared for submission to Kerry County Council (KCC) by Ross-Park Ltd. (hereafter referred to as the Applicant) for a Large-Scale Residential Development (LRD) on lands at Ardshanavooly (townland), Deerpark, Killarney, County Kerry.

The proposed development will consist of the construction of 188 no. residential units, comprising 120 no. two-storey houses and 68 no. apartments. The houses will comprise 51 no. townhouse units (35 no. 3-bed and 16 no. 4-bed units), 50 no. semi-detached units (32 no. 3-bed and 18 no. 4-bed units) and 19 no. 2-bed mews houses. The apartments will be provided within two no. four-storey blocks and will comprise 36 no. 1-bed and 32 no. 2-bed units. The development will also include an ancillary crèche, landscaping and associated site development works. Ancillary works will include car parking, bicycle parking and bin storage facilities, one no. ESB substation, water services, drainage infrastructure and all associated site development works. Vehicular access will be provided via the proposed Killarney Strategic Links Project – Links Road A–C, part of which will be delivered by the proposed development. The design also provides for short- and longer-term future access arrangements reflecting the phased delivery of Links Road A–C, together with pedestrian and cycle infrastructure connecting to Friary Downs/the R876 to the south and to adjoining areas.

Malachy Walsh and Partners Engineering and Environmental Consultants (MWP) have been appointed by the Applicant to prepare this Ecological Impact Assessment (EcIA) in support of the planning application. The purpose of this report is to describe the existing ecological environment within the study area and to assess the likely significant effects of the proposed development on identified ecological receptors, in accordance with relevant legislation and best practice guidance.

This EcIA should be read in conjunction with other ecological assessments prepared for the proposed development, including the standalone Bat Survey Report and Appropriate Assessment documentation submitted as part of the planning application.

1.1 Scope of the Assessment

The scope of this Ecological Impact Assessment (EcIA) comprises the following key elements:

- to identify and describe habitats and species of ecological importance within the study area, informed by desk-based data collection and review of relevant ecological datasets;
- to undertake baseline ecological surveys of the proposed development site, proportionate to the scale and nature of the proposed works;
- to evaluate the nature conservation value of ecological receptors identified, using a scientifically robust and objective methodology in accordance with current national and international best practice guidance;
- to assess the potential for direct, indirect, secondary and cumulative ecological effects arising during the construction and operational phases of the proposed development;
- to identify and describe measures to avoid and mitigate adverse ecological effects and, where significant residual effects remain, identify appropriate compensation measures, where relevant; and
- to identify opportunities for site-specific biodiversity enhancement, where appropriate, in line with applicable planning and biodiversity policy objectives.

1.2 Statement of Competency

This Ecological Impact Assessment (EcIA) has been authored by Jennifer Snook, B.Sc. (Hons), DipHE, Ecologist, with Malachy Walsh and Partners (MWP). Jennifer has worked in the Irish ecological consultancy sector since 2022 and has extensive experience in the preparation of ecological reports and assessments, including Screening for Appropriate Assessment (Stage 1), Natura Impact Statements (Stage 2), Ecological Impact Assessments (EcIA), Invasive Species Management Plans, bird survey summary reports, and water quality assessments.

Jennifer is experienced in a wide range of ecological survey methodologies, including ornithology, terrestrial mammal surveys, habitat and botanical assessment, bat surveys, and aquatic surveys, and has undertaken ecological fieldwork for infrastructure, residential, energy, and environmental projects across Ireland. She is proficient in habitat classification using Fossitt (2000), in the identification and evaluation of Important Ecological Features (IEFs), and in the application of relevant ecological assessment guidance, including CIEEM, NPWS, EPA, and Bat Conservation Trust guidelines.

Jennifer holds a B.Sc. (Honours) in Wildlife Biology (Munster Technological University, 2023) and a Diploma of Higher Education in Business Management. She has completed extensive continuing professional development (CPD), including training in bat, bird, and badger survey methodologies; invasive species identification and management; biodiversity net gain; and watercourse assessment. Jennifer is a certified Native Woodland Conservation (NWC) Ecologist and is currently undertaking the ABC Level 2 Certificate in Arboriculture. She also holds Safe Pass and Manual Handling certification.

Baseline ecological information informing this assessment was derived from a programme of desk-based review and field surveys undertaken by suitably qualified ecologists with MWP. Survey work was carried out by Jennifer Snook, Maureen Kelliher, Fiona McKenna, Deirdre O'Brian, Rob Beer and Orla van der Noll, and included multi-disciplinary ecological walkover surveys, protected species surveys, and bat surveys. Bat survey methodologies and associated surveyor competencies are provided in the standalone Bat Survey Report (MWP Doc. No. 25123-ZZ-ZZZ-RP-MWP-EN-6010).

This report was reviewed by Orla van der Noll (MSc, BSc). Orla is an Ecologist at MWP with experience in consultancy since 2021. She has completed several ecological reports including screening for AA reports, Natura Impact Statements (NIS), and Ecological Impact Assessment (EcIA) reports for a range of projects across Ireland. Orla has strong ecological field survey skills, particularly in ornithology, bats (NPWS bat survey license (DER/BAT 2025-222)) and aquatics (electrofishing, freshwater pearl mussel *Margaritifera margaritifera* and white-clawed crayfish *Austropotamobius pallipes*). In 2020 she qualified with a first-class honours master's degree in Marine Biology from Bangor University in Wales, after graduating from University College Cork in 2018 with a Bachelors (Hons) degree in Ecology and Environmental Biology. She also holds a T-permit under the British Trust for Ornithology (BTO) ringing scheme in Ireland since 2022. Orla is registered with the Chartered Institute of Ecology and Environmental Management (CIEEM) as a Qualifying member, working towards an Associate membership.

2. Details of Proposed Development

2.1 Site Location and Context

The proposed development site is located within the townland of Ardshanavooly, approximately 550 m east of Killarney town centre and approximately 740 m northeast of Killarney National Park, County Kerry.

The study area comprises a managed agricultural field bounded by a combination of wall structures, hedgerows and fencing. Deerpark Retail Park adjoins the site to the east, with Deerpark Pitch and Putt located immediately

to the north. Residential housing is situated to the southeast, while additional agricultural fields occur to the northeast and northwest. Further residential development extends northwards from the site, with the Killarney Bypass (N22) located approximately 366 m to the north.

The proposed development comprises a residential development within this modified agricultural setting, immediately west of Deerpark Retail Park.

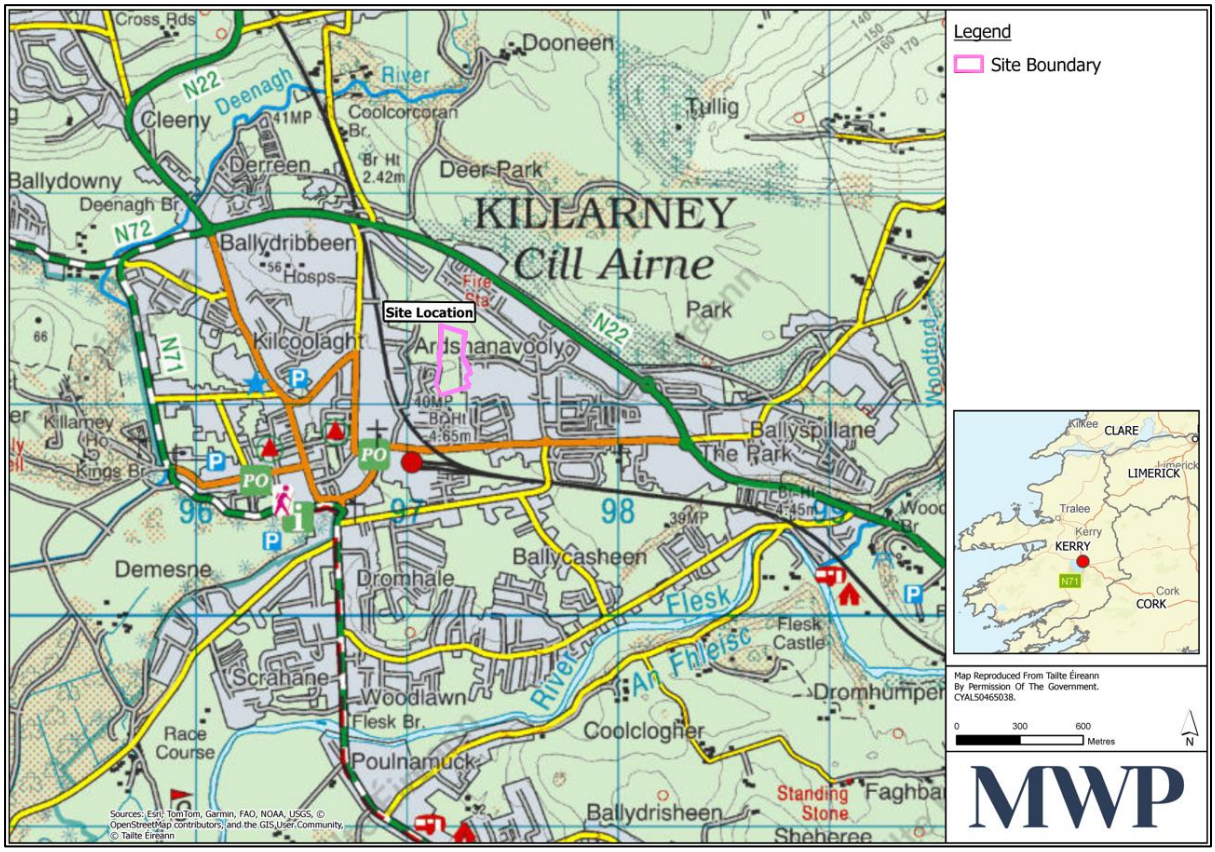


Figure 1. Location of proposed development site in Killarney town.

2.2 Overview of Project

The proposed development is located on a privately owned greenfield site extending to approximately 3.8 ha, which is currently managed predominantly as improved agricultural grassland and used for silage production.

The proposed development comprises a Large-Scale Residential Development consisting of 188 no. residential units, together with an ancillary crèche, landscaping and associated site development works. The residential component will include:

- 120 no. two-storey houses, comprising:
- 51 no. townhouse units, including 35 no. three-bedroom and 16 no. four-bedroom units
- 50 no. semi-detached units, including 32 no. three-bedroom and 18 no. four-bedroom units
- 19 no. two-bedroom mews houses
- 68 no. apartments within two no. four-storey blocks, comprising 36 no. one-bedroom and 32 no. two-bedroom units

Ancillary site works will include car parking, bicycle parking and bin storage facilities serving the apartment/courtyard apartment buildings and crèche, one no. ESB substation, landscaping, water services, drainage infrastructure and all associated site development works.

Vehicular access to the proposed development will be provided via the proposed Killarney Strategic Links Project – Links Road A–C, part of which will be delivered by the proposed development. The design includes short- and longer-term future access arrangements reflecting the phased delivery of Links Road A–C, together with pedestrian and cycle infrastructure connecting to/from Friary Downs/the R876 to the south and internally within the development and to adjoining areas.

2.3 Characteristics of the Project

The proposed development will comprise the following principal elements:

- Site preparation and clearance works, including localised vegetation clearance and topsoil stripping where required. Existing boundary hedgerows and treelines will be retained where practicable and incorporated into the final landscape design. Where tree or vegetation removal is required, this will be limited to that necessary to facilitate the proposed development. The three trees identified during the Preliminary Roost Assessment as having Moderate–High suitability for roosting bats are retained under the current proposals.
- Construction of 188 no. residential units, comprising 120 no. two-storey houses and 68 no. apartments within two no. four-storey blocks, together with an ancillary crèche.
- Provision of car parking, bicycle parking and bin storage facilities associated with the residential units, apartment buildings and crèche.
- Construction of internal roads, footpaths, pedestrian and cycle infrastructure and associated access arrangements.
- Provision of foul and surface water drainage infrastructure. Surface water will be managed through a Sustainable Drainage Systems (SuDS) treatment train incorporating measures including bioretention raingardens/tree pits, dry swales, attenuation storage and associated flow-control and treatment infrastructure.
- Provision of water services, public lighting, one no. ESB substation and associated utilities infrastructure.
- Provision of landscaped public open spaces and biodiversity enhancement measures, including native hedgerow planting, pollinator-focused groundcover, perennial and shrub planting, structurally diverse landscaping, raingardens and other nature-based landscape features.
- Vehicular access to the proposed development via the Killarney Strategic Links Project – Links Road A–C, part of which will be delivered by the proposed development. The design also includes short- and longer-term access arrangements reflecting the phased delivery of Links Road A–C, together with pedestrian and cycle connections to Friary Downs/the R876 and adjoining areas.

The site layout of the proposed development is shown in Appendix 1. Reference should also be made to the accompanying architectural, engineering, drainage and landscape drawings submitted as part of the planning application.

3. Methodology

3.1 Legislation and Published Guidance

This Ecological Impact Assessment (EcIA) has been undertaken in accordance with relevant national and international best practice guidance and within the context of the applicable legislative framework.

Guidance Documents

The assessment has been informed by the following key publications:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EIAR) (EPA, 2022)
- Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018, updated 2024)
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009)
- Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2011)
- A Guide to Habitats in Ireland (Fossitt, 2000)

Legislative Framework

The assessment has been undertaken with regard to the following legislation and statutory instruments:

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive)
- Directive 2009/147/EC on the Conservation of Wild Birds (Birds Directive) (codified version of Directive 79/409/EEC)
- Directive 2000/60/EC establishing a framework for Community action in the field of water policy (Water Framework Directive)
- European Communities (Birds and Natural Habitats) Regulations 2011–2023 (S.I. No. 477 of 2011, as amended)
- Planning and Development Act 2000 (as amended), together with the commenced provisions of the Planning and Development Act 2024
- Wildlife Act 1976–2023 (as amended)
- Flora (Protection) Order 2022 (S.I. No. 235 of 2022)
- European Communities (Quality of Salmonid Waters) Regulations 1988

Reference Literature and Data Sources

The following reference documents were consulted as part of the desk study and to inform field survey methodologies:

- Irish Wildlife Manuals No. 116: Checklists of Protected and Threatened Species in Ireland (Nelson et al., 2019), including subsequent updates
- Irish Red Data Book for Vascular Plants (Curtis & McGough, 1988)

- Review of Records of Plant Species Protected under the Flora (Protection) Order 2015 and the Irish Red Data Book (Wyse Jackson et al., 2016)
- Irish Red List: Terrestrial Mammals (Marnell et al., 2019)
- Irish Red List: Amphibians, Reptiles and Freshwater Fish (King et al., 2011)
- Birds of Conservation Concern in Ireland 2020–2026 (Gilbert et al., 2021)
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009a)
- Additional information sources and reports referenced throughout this document where relevant.

3.2 Important Ecological Features (IEFs)

Important Ecological Features (IEFs) are defined as ecological receptors that may be subject to effects arising from the proposed development and therefore require detailed consideration within the EcIA. These may include designated sites, habitats, ecological features, species assemblages, or individual protected or notable species occurring within the study area and its zone of influence.

For the purposes of this assessment, IEFs are taken to be those ecological features evaluated as having a conservation value of 'Locally Important (Higher Value)' or greater, in accordance with the valuation criteria outlined in the Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009a) (see Section 3.4.1).

The potential significance of ecological effects arising from the proposed development has been assessed in relation to each identified IEF.

3.3 Zone of Influence

The Zone of Influence (ZOI) is defined as the area over which ecological features may be subject to effects resulting from the proposed development and its associated activities. The extent of the ZOI varies depending on the nature, scale, and location of the project, as well as the sensitivity and mobility of ecological receptors.

Ecological features that may fall within the ZOI include habitats, species, and ecological processes upon which they depend. These may occur within or beyond the study area, as certain receptors can be affected indirectly through ecological connectivity, hydrological pathways, or species movement.

In determining the potential ZOI for this project, the following factors were considered:

- the nature, scale, and location of the proposed development
- sensitive habitats and species identified within the study area
- the presence of suitable habitats for species of conservation importance within and adjacent to the study area
- ecological connectivity between the site and the wider landscape
- the sensitivity of identified ecological receptors
- potential impact pathways between the proposed development and ecological receptors; and
- habitat connectivity and typical foraging ranges of mobile fauna

3.4 Assessment Criteria

This section outlines the criteria upon which evaluations of the importance of ecological features and the assessments of the ecological impact of the project on these features are made, referring to relevant legislation and guidelines.

3.4.1 Evaluation

The evaluation of ecological features and the assessment of potential effects have been undertaken in accordance with the methodologies set out in the Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018) and the Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009).

These guidelines provide a framework for assigning ecological value on a geographical scale, based on the importance of a receptor within a defined spatial context. Ecological features are evaluated using the following hierarchy:

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

The NRA (2009) guidelines set out the criteria by which each level of importance may be assigned. At the lower end of the scale, features of Local Importance (Lower Value) typically comprise widespread habitats and common species of limited conservation significance. At the upper end, features of International Importance include sites designated as part of the Natura 2000 network (Special Areas of Conservation and Special Protection Areas), or habitats and species of exceptional conservation importance.

The criteria used to evaluate the value of ecological receptors were informed by NRA (2009) and CIEEM (2018) guidance. In general:

- Habitats are evaluated based on condition, extent, rarity, conservation status, and legal protection; and
- Faunal species are evaluated based on biodiversity value, legal status, conservation status, distribution, and population trends.

For the purposes of this assessment, Important Ecological Features (IEFs) are defined as those receptors evaluated as Local Importance (Higher Value) or above, and for which detailed impact assessment is required. The significance of predicted ecological effects has been assessed in relation to each identified IEF.

3.4.2 Impact Assessment

The ecological significance of potential effects arising from the proposed development has been assessed in accordance with the Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018). CIEEM defines a ‘significant effect’ as one which either supports or undermines biodiversity conservation objectives for Important Ecological Features (IEFs) or for biodiversity in general.

Conservation objectives may be defined at a range of spatial scales, from international to local. An effect is considered significant where it results in a change to the conservation status of a habitat or species.

Significant effects may relate to changes in the structure and function of habitats or ecosystems, or to the conservation status of species and habitats, including changes in extent, abundance, distribution, or condition. CIEEM (2018) defines conservation status as follows:

- Habitats: Conservation status is determined by the sum of the influences acting on a habitat that may affect its extent, structure, functions, distribution, and typical species within a given geographical area.
- Species: Conservation status is determined by the sum of influences acting on a species that may affect its abundance and distribution within a given geographical area.

Where relevant, the significance of effects has been qualified with reference to an appropriate geographic scale.

EPA (2022) guidance was also considered in determining the quality and significance of predicted effects, supported by professional ecological judgement. The EPA criteria for assessing quality of effects and significance of effects are set out in Table 1 and Table 2, respectively.

Table 1. Criteria for assessing impact quality based on EPA (2022)

Quality of Effect	Criteria
Positive	A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral	No effects or effects that are imperceptible within normal bounds of variation or within the margin of forecasting error.
Negative/Adverse	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).

Table 2. Criteria for assessing effect significance based on EPA (2022)

Significance of Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences
Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends
Significant	An effect which, by its character, magnitude, duration or intensity significantly alters a sensitive aspect of the environment
Very significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment
Profound	An effect which obliterates sensitive characteristics

The following terminology is used when describing the duration and frequency of potential effects:

- Momentary: effects lasting from seconds to minutes
- Brief: effects lasting less than one day
- Temporary: effects lasting less than one year

- Short-term: effects lasting 1–7 years
- Medium-term: effects lasting 7–15 years
- Long-term: effects lasting 15–60 years
- Permanent: effects lasting more than 60 years
- Reversible: effects that can be undone through remediation or natural recovery
- Frequency: how often an effect will occur (e.g. once, rarely, occasionally, frequently, or continuously)

Where potentially significant ecological effects are identified, measures are considered in accordance with the mitigation hierarchy, with avoidance considered first, followed by measures to mitigate or reduce adverse effects. Residual effects are assessed following mitigation, and compensation is considered where significant negative residual effects remain.

Cumulative effects are also considered by examining the potential for the proposed development to interact with existing, permitted, or proposed developments and activities within the wider area.

3.5 Study Area

The study area comprises the lands within the red line boundary of the proposed development site, as shown in Figure 2, together with adjacent habitats and features where relevant to ecological connectivity and potential impact pathways.

The extent of the study area was defined to allow for the identification and assessment of ecological features both within the site and in the immediate surrounding environment that could be affected directly or indirectly by the proposed development.



Figure 2. Study area encompassing the proposed development site boundary.

3.6 Desktop Study

A desk-based study was undertaken to collate and review available information relating to the study area and the surrounding environment, including habitats, species, designated sites, and ecological resources that may be connected to the site.

The desk study involved a review of current best practice guidance, published scientific literature, and up-to-date spatial and ecological datasets. The following sources were consulted:

- Ordnance Survey Ireland (OSI) aerial photography and 1:50,000 mapping
- National Parks and Wildlife Service (NPWS) website and online map viewer
- National Biodiversity Data Centre (NBDC) online mapping resources and species records
- Teagasc soil maps (accessed via NBDC)
- Geological Survey Ireland (GSI) spatial datasets
- Environmental Protection Agency (EPA) water quality and environmental datasets
- Water Framework Directive datasets for the relevant river basin district
- Bat Conservation Ireland (BCIreland) datasets

- Kerry County Development Plan 2022–2028, including Variation No. 2 – Killarney Municipal District Settlements Plan[1]
- Records obtained from the NPWS Rare and Protected Species Database
- Review of records of plant species protected under the Flora (Protection) Order 2015 and the Irish Red Data Book (Wyse Jackson et al., 2016).

Additional information sources and reports are referenced throughout this document where relevant.

3.6.1 Database Searches and Data Requests

The study area lies within Ordnance Survey National Grid hectad V99. Site-specific information on species records within this hectad was obtained from the NBDC online database and reviewed as part of the desk study.

A data request for records of rare and protected flora and fauna within hectad V99 was submitted to the NPWS. A separate request for bat records within a 10 km radius of the study area was submitted to BCIreland[2].

Information received from the NBDC database search, together with records provided by NPWS and BCIreland, have been incorporated into this report and used to inform the baseline characterisation and subsequent impact assessment.

3.7 Field Surveys

The desk-based study was supplemented by multi-disciplinary ecological walkover surveys and targeted species surveys of the proposed development site, undertaken by MWP ecologists on multiple dates between September and October 2024, with additional targeted bat surveys carried out between May and August 2025.

Summaries of the survey methodologies employed are provided in the sections below.

3.7.1 Habitats and Flora

Habitat surveys were carried out with reference to Best Practice Guidance for Habitat Survey and Mapping (Smith *et al.*, 2011) and A Guide to Habitats in Ireland (Fossitt, 2000). Habitats within and immediately adjacent to the proposed development site were classified to Level 3 in accordance with Fossitt (2000).

In addition to habitat classification, habitats present within the study area were assessed for their suitability to support protected and notable terrestrial fauna species.

Following completion of field surveys, a habitat map of the development site was prepared (see Section 4.3.1).

[1] https://consult.kerrycoco.ie/en/consultation/proposed-variation-no-2-kerry-county-development-plan-2022-2028/chapter/proposed-variation-no-2-kerry-county-development-plan-2022-2028

[2] BCI stated: 'Provision of bat records does not constitute, and should not be construed as, consultation with BCI'.

3.7.2 Fauna

3.7.2.1 Non-volant Mammals

During multi-disciplinary ecological walkover surveys, habitats within the study area were systematically searched for evidence of terrestrial mammal activity such as prints, droppings, burrows, dens/setts, feeding signs and movement trails. Surveys were undertaken with reference to Animal Tracks and Signs (Bang & Dahlström, 2006).

Wildlife cameras were deployed at selected locations across the site in September 2024 under NPWS Licence No. 215/20220 to gather information on the presence and activity of terrestrial mammal species. Incidental records of other fauna, including bird species observed or heard during surveys, were also noted where relevant.

3.7.2.2 Bat Species

The following bat surveys were undertaken with reference to best practice guidance (Collins, 2023):

- Bat foraging and commuting habitat suitability assessment
- Preliminary Roost Assessments (PRAs)
    - Ground-level inspection of trees for potential roost features
- Night-time Bat Walkover Surveys (NBW)
- Passive Automated Bat Surveys (PABS)

Summaries of the bat survey methods undertaken within the study area are provided below. Further detail is available in the standalone Bat Survey Report (MWP Doc. No. 25123-ZZ-ZZZ-RP-MWP-EN-6010).

Bat Foraging and Commuting Habitat Evaluation

As part of the bat survey programme, linear habitat features within the study area, such as hedgerows and treelines, were assessed in terms of plant species composition, overall condition, structural diversity and degree of connectivity within the wider landscape to evaluate their potential suitability for foraging and commuting bats.

Each habitat feature was assigned a suitability rating of 'negligible', 'low', 'moderate' or 'high' in accordance with Collins (2023).

Preliminary Roost Assessment

A daytime Preliminary Roost Assessment (PRA) was undertaken on 7th May 2025. Trees within the study area were inspected from ground level for features with potential to support roosting bats, including cracks, cavities, splits, knot holes, loose bark and dense ivy cover. Evidence of bat activity, such as droppings, staining and feeding remains, was also searched for.

Each tree was assigned a suitability category of negligible, low, moderate or high for roosting bats in accordance with Collins (2023). No buildings or structures were present within the study area; therefore, the assessment focused on trees located along site boundaries.

Nighttime Bat Walkover Surveys (NBW)

Night-time bat walkover surveys were undertaken on 15th May, 16th June, 24th July and 26th August 2025 to observe bat behaviour across the study area, supplement data gathered from static detectors and allow a more detailed analysis of bat activity and habitat use.

The surveys involved walking predetermined transect routes around the study area, with stopping points at regular intervals (approximately every 200–250 m) to observe and record bat activity. Data were gathered on species presence, number of individuals, flight direction, flight behaviour, and associations with landscape features such as treelines and hedgerows.

Surveyors used hand-held bat detection equipment to record bat calls, including Batlogger M2 detectors and Wildlife Acoustics Echo Meter Touch 2 software on Samsung tablets. Night vision goggles (Nightfox) were also used to assist with visual observation and counting of individual bats.

In accordance with Collins (2023), surveys commenced approximately 20 minutes before sunset and continued for approximately 1.5–2 hours after sunset. For the purposes of this assessment, a bat pass refers to a bat detected acoustically and/or visually during the survey and may represent either a commuting individual passing through the study area or a foraging bat actively using habitat features.

Passive Automated Bat Surveys (PABS)

Ground-level static bat surveys were undertaken between May and August 2025 to capture seasonal variation in bat activity, in accordance with Collins (2023).

Three full-spectrum bio-acoustic recording units (Song Meter Mini) were deployed at pre-selected sampling locations across the study area to record bat activity and assess spatial and temporal patterns of site use. Detectors were deployed for five consecutive nights during each survey month.

Static detector locations were selected to sample habitat features with highest suitability for bat activity, including treelines, hedgerows and areas of scrub. Artificial lighting was also considered during placement, as the northern and eastern portions of the study area are influenced by light spill from street lighting along Dr Hans Liebherr Road and from adjacent commercial and residential areas.

3.7.2.3 Amphibians and Reptiles

Potential habitats suitable for amphibians and reptiles were assessed during the multi-disciplinary walkover surveys. Features such as damp grassland, boundary habitats, refugia, and areas with potential sheltering opportunities were examined for signs of activity.

Any incidental records of amphibians, reptiles, or invertebrate species observed during surveys were noted and incorporated into the baseline assessment.

3.7.2.4 Birds

During multi-disciplinary walkover surveys, all bird species observed or heard calling within the study area were recorded. Observations were made on an incidental basis while undertaking habitat and fauna surveys, with particular attention given to boundary habitats, treelines, and areas of scrub that may support nesting or foraging activity.

3.7.2.5 Invasive Alien Plant Species (IAPS)

The study area was assessed for the presence of invasive alien plant species (IAPS) during all site visits. Particular focus was placed on species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011–2023, as amended.

Any IAPS encountered were recorded and mapped and their extent and distribution noted to inform the baseline assessment.

4. Description of Existing Environment

4.1 General Site Description

The proposed development site measures approximately 3.8 ha and comprises an agricultural greenfield site within the townland of Ardshanavooly, approximately 550 metres east of Killarney town centre in County Kerry (**Figure 3**). The site is currently managed as agricultural grassland and is used for silage production.

The site is enclosed by a combination of hedgerows, treelines, and boundary features, with adjoining land uses including residential housing, commercial/retail development, and additional agricultural lands. Deerpark Retail Park is located immediately to the east, with established residential areas to the south and west. Further agricultural land occurs to the north and northeast.

The wider landscape comprises a mix of urban development, agricultural fields, transport infrastructure, and boundary vegetation, providing varying levels of ecological connectivity through hedgerows, treelines, and green spaces. The CORINE (2018) landcover data series indicates that landcover at the proposed development site is almost entirely classified as 'Pastures (231)' with just some slivers of the border categorised as 'Discontinuous urban fabric (112)' which extends southwards encompassing the suburban outskirts of the town before eventually transitioning to 'Continuous urban fabric (111)' within the town centre.



Figure 3. Aerial overview of proposed development site.

4.1.1 Hydrology

The proposed development site is located within the Laune–Maine–Dingle Bay Water Framework Directive (WFD) catchment (EPA Code: 22) and the Laune_SC_010 sub-catchment (EPA Code: 22_14). The Laune–Maine–Dingle Bay catchment encompasses the area drained by the Rivers Laune and Maine and includes all streams entering tidal waters between Glanearagh Head and Clogher Head in County Kerry, covering a total area of approximately 2,036 km².

The underlying aquifer in the area is classified by the Geological Survey Ireland as a Regionally Important Aquifer – Karstified (Diffuse)[3].

The Deenagh River (EPA Code: 22D01) and the Flesk River (EPA Code: 22F02) are located approximately 1.4 km to the west and 1.4 km to the south of the proposed development site, respectively (see **Figure 4**). Both rivers flow into Lough Leane, located to the southwest of the site, which ultimately drains northwest via the River Laune into Castlemaine Harbour.

No watercourses traverse the proposed development site and none occur within at least 1.4 km.

[3] Further information available at https://gis.epa.ie/EPAMaps/. [Accessed 16/02/2026]

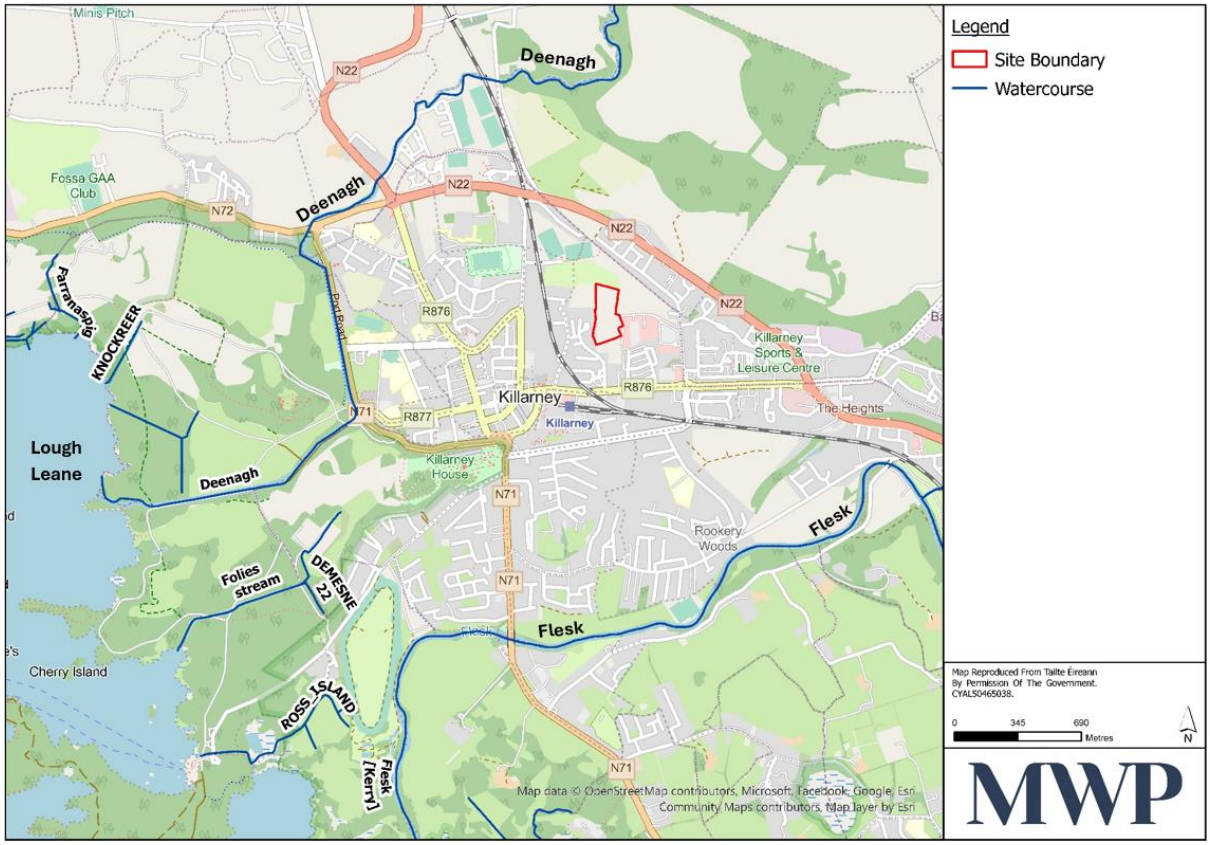


Figure 4. Watercourses nearest the proposed development site.

4.2 Designated Sites

This section describes the designated sites considered to fall within the Zone of Influence (ZOI) of the proposed development, including their qualifying interests, approximate distance from the study area, and an assessment of whether a potential source–receptor pathway exists.

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are designated under the EU Habitats Directive (92/43/EEC) and the EU Birds Directive (2009/147/EC), respectively. SACs are designated for the protection of Annex I habitats and Annex II species, while SPAs are designated for the protection of wild birds and their habitats. Together, SACs and SPAs form part of the Natura 2000 network of protected sites across the European Union.

In accordance with the precautionary principle, Natura 2000 sites were identified and reviewed to determine whether they fall within the likely Zone of Influence of the proposed development. This was based on potential ecological connectivity and the presence of possible impact pathways, including hydrological, terrestrial and species movement links. Sites identified as having potential connectivity were carried forward for further assessment.

4.2.1 Sites of International Importance

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and species of wild fauna and flora through the designation of Special Areas of Conservation (SACs). The Birds Directive (2009/147/EC) seeks to protect bird species of conservation importance through the designation of Special Protection Areas (SPAs). It is the

responsibility of each European Union (EU) Member State to designate SACs and SPAs, which together form part of the Natura 2000 network of protected sites across the European Union.

The Natura 2000 sites considered to fall within the likely Zone of Influence (ZOI) of the proposed development are shown in **Figure 5. Table 3** lists those sites identified as having potential ecological connectivity to the study area and provides their qualifying interests.

Table 3. Natura 2000 sites located within the potential ZOI

Designated Site	Distance from subject area	Qualifying Features of Conservation Interest (QI's)
Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment SAC 000365	Approx. 0.8km southwest of subject site	• 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] • 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] • *Geomalacus maculosus* (Kerry Slug) [1024] • *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029] • *Euphydryas aurinia* (Marsh Fritillary) [1065] • *Petromyzon marinus* (Sea Lamprey) [1095] • *Lampetra planeri* (Brook Lamprey) [1096] • *Lampetra fluviatilis* (River Lamprey) [1099] • *Salmo salar* (Salmon) [1106] • *Rhinolophus hipposideros* (Lesser Horseshoe Bat) [1303] • *Lutra lutra* (Otter) [1355] • *Trichomanes speciosum* (Killarney Fern) [1421] • *Najas flexilis* (Slender Naiad) [1833] • *Alosa fallax killarnensis* (Killarney Shad) [5046]
Killarney National Park SPA 004038	Approx. 0.8km southwest	• Merlin (*Falco columbarius*) [A098] • Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395]
Sheheree (Ardagh) Bog SAC 000382	Approx. 2.5km southeast	• Active raised bogs [7110] • Degraded raised bogs still capable of natural regeneration [7120]
Castlemaine Harbour SAC 000343	Approx. 5.3km northwest	• Estuaries [1130]

Designated Site	Distance from subject area	Qualifying Features of Conservation Interest (QI's)
		• Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Perennial vegetation of stony banks [1220] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • *Salicornia* and other annuals colonising mud and sand [1310] • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] • Mediterranean salt meadows (*Juncetalia maritimi*) [1410] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] • Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) [2170] • Humid dune slacks [2190] • Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae)* [91E0] • *Petromyzon marinus* (Sea Lamprey) [1095] • *Lampetra fluviatilis* (River Lamprey) [1099] • *Salmo salar* (Salmon) [1106] • *Lutra lutra* (Otter) [1355] • *Petalophyllum ralfsii* (Petalwort) [1395]
Old Domestic Building, Curraglass Wood SAC 002041	Approx 14km southeast	• *Rhinolophus hipposideros* (Lesser Horseshoe Bat) [1303]

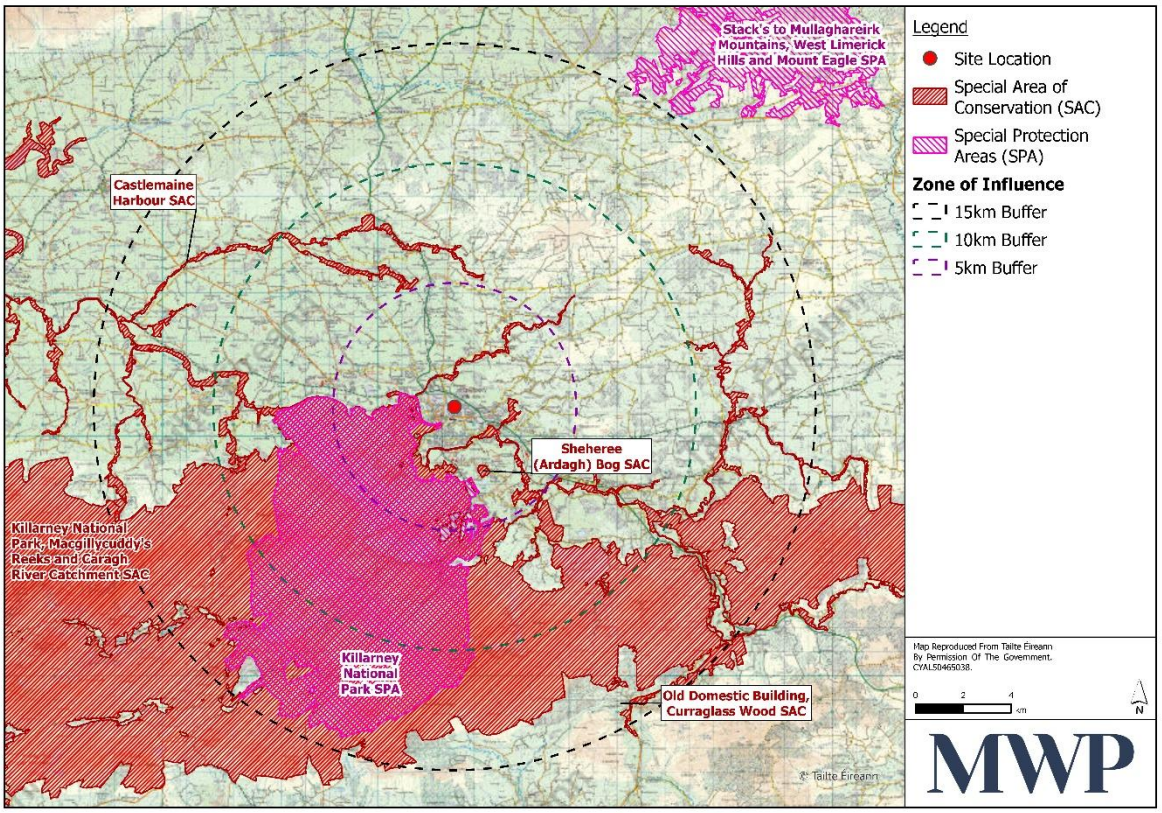


Figure 5. Natura 2000 sites within ZOI.

4.2.2 Sites of National Importance

In Ireland, sites of national importance include Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs). NHAs are designated under national legislation for the protection of habitats and species of national conservation importance. Proposed NHAs (pNHAs) are sites identified as being of national ecological significance; while the Wildlife (Amendment) Act 2000 has been enacted, many pNHAs do not yet have full statutory protection pending completion of the consultation process with landowners.

Table 4 lists the NHAs and pNHAs considered to fall within the likely Zone of Influence (ZOI) of the proposed development and includes their features of ecological interest. Their location is shown in Figure 6.

Table 4. Designated sites of national importance within ZOI of the proposal.

Designated Site	Distance from subject site	Features of Interest
Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment pNHA 000365	Approx. 1.3 km west	• 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]

Designated Site	Distance from subject site	Features of Interest
		• Alpine and Boreal heaths [4060] • *Juniperus communis* formations on heaths or calcareous grasslands [5130] • 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] • *Geomalacus maculosus* (Kerry Slug) [1024] • *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029] • *Euphydryas aurinia* (Marsh Fritillary) [1065] • *Petromyzon marinus* (Sea Lamprey) [1095] • *Lampetra planeri* (Brook Lamprey) [1096] • *Lampetra fluviatilis* (River Lamprey) [1099] • *Salmo salar* (Salmon) [1106] • *Rhinolophus hipposideros* (Lesser Horseshoe Bat) [1303] • *Lutra lutra* (Otter) [1355] • *Trichomanes speciosum* (Killarney Fern) [1421] • *Najas flexilis* (Slender Naiad) [1833] • *Alosa fallax killarnensis* (Killarney Shad) [5046]
Sheheree (Ardagh) Bog pNHA 000382	Approx. 2.5 km southeast	• Active raised bogs [7110] • Degraded raised bogs still capable of natural regeneration [7120]
Doo Loughs pNHA 000350	Approx. 5.4 km southeast	• Historical feeding site for Greenland White-fronted goose (Annex I of the EU Birds Directive)
Anna More Bog NHA 000333	14.3 km north	• Peatlands [4]

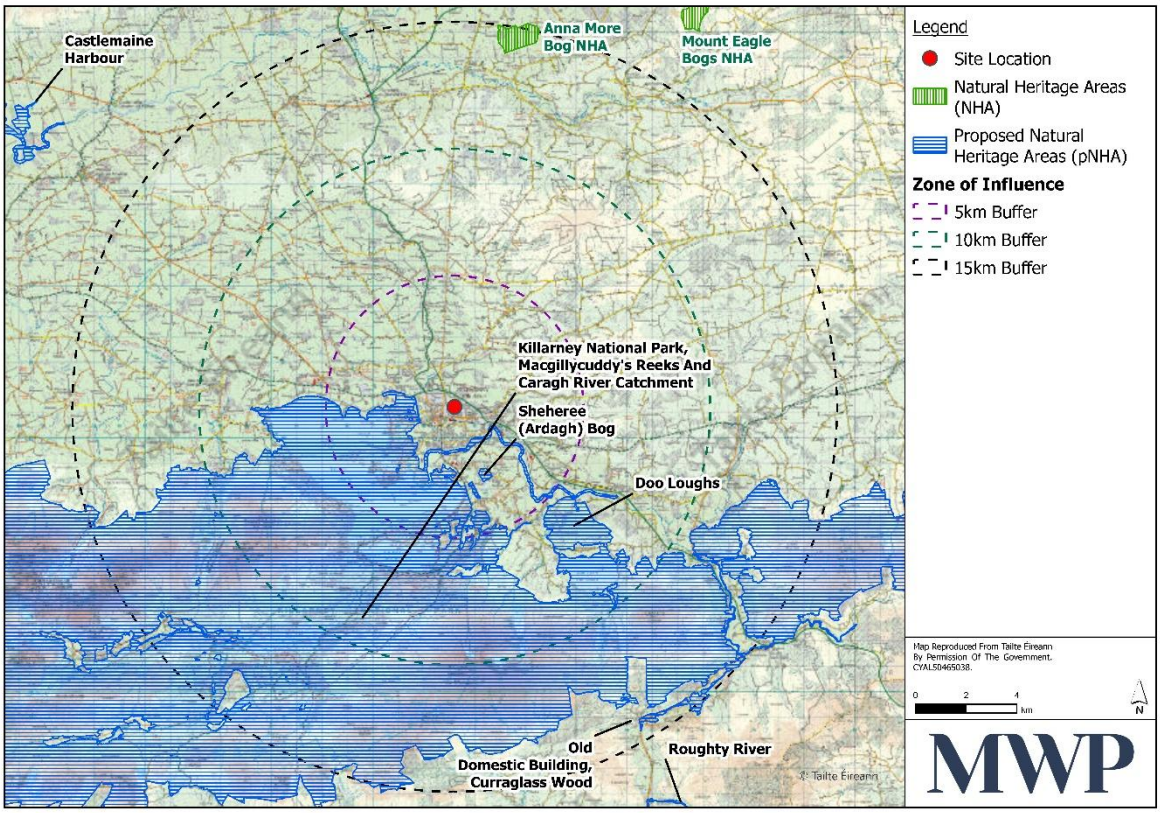


Figure 6. Sites of National Importance within the ZOI

4.2.3 Other Designated Sites

The Convention on Wetlands of International Importance, especially as Waterfowl Habitat (the Ramsar Convention), was ratified by Ireland in 1984 and came into force on 15th March 1985. Ireland currently has 45 sites designated as Wetlands of International Importance, covering a total area of approximately 66,994 ha. No Ramsar sites were identified within the likely Zone of Influence (ZOI) of the proposed development.

The Important Bird and Biodiversity Areas (IBA) Programme, overseen by BirdLife International and supported nationally by BirdWatch Ireland, aims to identify and protect sites of international significance for bird populations. There are 105 IBAs identified on the island of Ireland, the majority of which support important populations of wintering waterbirds. No IBAs are located within the potential ZOI of the proposed development.

4.3 Habitats and Flora

4.3.1 Desk Study

A review of available habitat mapping from the NPWS indicated that lands within the study area are not mapped as supporting Annex I habitats under the Habitats Directive (based on available Article 17 datasets). A review of

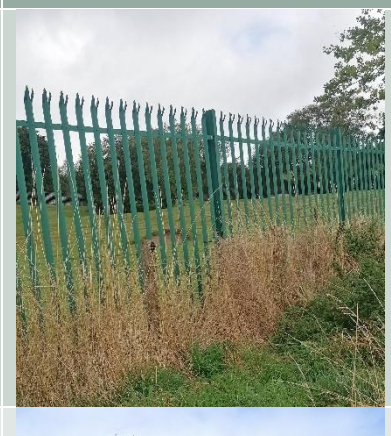
the NBDC[4] habitat mapping layer also indicated that no habitats within the study area are mapped to Fossitt (2000) classification level.

4.3.2 Field Study Results

All habitats recorded within the study area were classified in accordance with A Guide to Habitats in Ireland (Fossitt, 2000).

Table 5 lists the habitats identified, together with their location and a description of their key characteristics.

Table 5. Habitats recorded at the Proposed Development Site

Habitat Code Category	Habitat Description	
[BL3] Buildings and Artificial Surfaces		Linear hardstanding and built structures occur along the northern and eastern boundaries of the proposed development site, associated with the adjacent retail park. This habitat comprises concrete surfaces, fencing, lighting infrastructure and disturbed ground. Vegetation is sparse and largely confined to ruderal species occurring along margins and fence lines. Habitat is of low ecological value with limited suitability for flora and fauna.
[WL1] Hedgerow		Linear hedgerows occur along sections of the study area boundary and are composed of a mix of native woody species. The hedgerows are generally intact and moderately dense, providing structural connectivity across the landscape. Ground flora is typical of improved agricultural field margins and includes grasses and common ruderal species. These features provide potential nesting habitat for birds and foraging/commuting corridors for mammals and bats.

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

Habitat Code Category	Habitat Description	
[WL2] Treelines		Treelines are present along field boundaries and consist of mature and semi-mature trees of varying species and age classes. These features contribute to local landscape structure and provide shelter, nesting opportunities for birds, and potential commuting routes for bats. The understorey is limited in places due to agricultural management. A Preliminary Roost Assessment identified that the majority of trees were of negligible to low suitability for roosting bats. Three mature boundary trees (Trees 1, 6 and 7 within the Bat Assessment and Survey Report) were identified as having moderate to high suitability for roosting bats. No evidence of bat roosting was recorded during surveys. The locations of these trees have been reviewed against the current development proposals and none of the three trees identified as having moderate to high bat roost suitability are proposed for removal.
[GA1] Improved Agricultural Grassland		The majority of the study area comprises improved agricultural grassland managed for silage production. The sward is species-poor and dominated by perennial ryegrass and other agricultural grasses, with occasional common herbaceous species. Regular cutting and fertiliser application have resulted in low botanical diversity. This habitat is of low ecological value but may provide foraging opportunities for common bird and mammal species.
[WS1] Scrub		Small areas of scrub are present along field edges and boundaries, consisting of scattered shrubs and bramble-dominated patches. These areas provide structural diversity within the otherwise open agricultural landscape and offer potential nesting habitat for birds, as well as cover for small mammals.



Figure 7: Map of habitats recorded at the proposed development site (categorised according to Fossitt, 2000).

4.3.3 Rare and Protected Flora

4.3.3.1 Desk Study

The study area lies within Ordnance Survey 10 km grid square V99. Database searches of the National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) were undertaken to identify records of rare or protected flora within this grid square.

Four species listed under the Flora (Protection) Order have been recorded within grid square V99: pennyroyal (*Mentha pulegium*), betony (*Stachys officinalis*), slender naiad (*Najas flexilis*) and Killarney fern (*Trichomanes speciosum*).

Slender naiad is an aquatic species associated with freshwater lakes and is linked to Lough Leane within the wider grid square. Pennyroyal and Killarney fern records are historical in nature, dating from between 1600 and 1929. More recent records of betony have been recorded at Muckross and Mahony's Point, both located over 3km from the study area.

The habitats present within the study area are considered unsuitable for these species based on their known ecological requirements. A summary of these species and their habitat preferences is provided in Table 6.

Table 6. Rare or protected plant species previously recorded within 10km grid square V99

Species	Level of protection	Habitat requirement[5]
Pennyroyal *Mentha pulegium*	Irish Red Data Book (1988) IUCN[6] = Endangered; IRDB[7] = (Vulnerable) ROI[8] Protected Species **Flora Protection Order Species** Red Data List (2016) = Endangered	Damp sandy places occasional in Counties Kerry and Cork; very rare elsewhere.
Slender naiad *Najas flexilis*	Irish Red Data Book (1988) IUCN = Endangered; IRDB = (Rare) **Flora Protection Order Species** Red Data List (2016) = Least Concern	Freshwater aquatic plant. Still or slow-moving waters. Neutral to basic rivers or lakes.
Betony *Stachys officinalis*	Irish Red Data Book (1988) IUCN = Endangered; IRDB = (Vulnerable) **Flora Protection Order Species** Red Data List (2016) = Near Threatened	Open woods, hedges and grasslands.
Killarney fern *Trichomanes speciosum*	Irish Red Data Book (1988) IUCN = Endangered; IRDB = (Least Concern) **Flora Protection Order Species** Red Data List (2016) = Least Concern	Occurs near waterfalls, damp rocks, in crevices and beneath overhanging rocks, in dark, humid sheltered locations.

4.3.3.2 Field Survey Results

No rare or protected plant species were recorded within the study area during the field surveys. This is consistent with the habitats present, which are predominantly improved agricultural grassland and managed field boundaries that are generally unsuitable for species listed under the Flora (Protection) Order.

4.4 Fauna

4.4.1 Mammals (excluding bats)

4.4.1.1 Desk-top Study

NBDC species lists and online distribution maps, together with data received from the National Parks and Wildlife Service (NPWS) [9], were reviewed to assess the distribution of protected terrestrial mammal species within hectad V99.

[5] Preston *et. al*, (2002)

[6] IUCN = International Union for Conservation of Nature

[7] IRDB = The Irish Red Data Book; https://www.npws.ie/sites/default/files/publications/pdf/Curtis_1988_PlantsRedBook.pdf [Accessed 16/02/2025]

[8] Republic of Ireland

[9] https://www.npws.ie/sites/default/files/publications/pdf/Red%20List%20No.%2012%20Mammals.pdf

Table 7 lists mammal species previously recorded within this hectad and summarises their conservation and legal status in Ireland with reference to national legislation, the EU Habitats Directive, and the most recent Irish Red List for Terrestrial Mammals (Marnell et al., 2019).

Table 7. NBDC records of terrestrial mammal species within the hectad V99

Common Name	Distribution	Conservation/Legal Status
Hedgehog *Erinaceus europaeus*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Irish stoat *Mustela erminea*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Otter *Lutra lutra*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; EU Habitats Directive Annex II and IV; Wildlife Acts; CITES
Red squirrel *Sciurus vulgaris*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Pygmy shrew *Sorex minutus*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Badger *Meles meles*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Pine marten *Martes martes*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; EU Habitats Directive [92/43/EEC] Annex V; Wildlife Acts
Irish hare *Lepus timidus* subsp. *Hibernica*	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts; EU Habitats Directive Annex V
Red deer *Cervus elaphus*	Widespread	Irish Red Data Book: 'Least Concern'; Wildlife Acts

4.4.1.2 Field Survey Results

Evidence of non-volant (land-based) mammals was recorded during the ecological walkover surveys of the study area. Mammal trails were noted along the perimeter of the study area, particularly to the southeast, southwest and north, leading to and from adjacent scrub and hedgerow habitats.

Trail cameras were deployed at locations to the northeast and southeast of the study area. Footage from both cameras confirmed the presence of fox and badger within the study area.

4.4.2 Bats

4.4.2.1 Desk-top Study

The following bat species have previously been recorded within the 10km grid square (V99) in which the study area is located, based on records from the NBDC and NPWS:

- Brown long-eared bat (*Plecotus auritus*)
- Daubenton's bat (*Myotis daubentonii*)
- Leisler's bat (*Nyctalus leisleri*)
- Lesser horseshoe bat (*Rhinolophus hipposideros*)
- Natterer's bat (*Myotis nattereri*)
- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Whiskered bat (*Myotis mystacinus*)

Bat Habitat Suitability Index (BHSI)

The National Biodiversity Data Centre's online mapping system includes a Bat Habitat Suitability Index (BHSI) layer derived from the analysis presented in Models of Bat Landscapes for Ireland (Lundy et al., 2011). The index ranges from 0 to 100, with 0 representing least suitable habitat and 100 representing most suitable habitat for bats. Suitability scores are provided for individual species as well as an overall combined suitability index.

As the dataset is mapped at a 2km grid square resolution, multiple ratings may be associated with a search area extending beyond a single grid square. The overall bat suitability index value for the area surrounding the study area is 36.11/100, indicating low to moderate suitability for bats at the landscape scale. This score likely reflects the proximity of Killarney National Park, which provides extensive high-quality foraging and commuting habitat within the wider landscape.

Bat Conservations Ireland (BCI)

A review of roost site data provided by Bat Conservation Ireland confirmed that there are no known bat roosts recorded within the study area. A total of 15 roost sites are recorded within a 10km radius of the approximate centre point of the study area, indicating that bat activity is well established in the wider area.

Additional information

Previous bat surveys were undertaken along the Deenagh River to the southwest and north of the study area in 2023 (Dr Tina Aughney) and 2024 (Kerry County Council). The 2023 surveys indicated that part of the lesser horseshoe bat population associated with a local roost approximately 1.3 km from the study area uses the Deenagh River as a commuting and foraging corridor.

This roost, known as the "Tea House" roost, is located within the Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment SAC (Site Code: 000365), for which lesser horseshoe bat is a Qualifying Interest. The roost is identified within the SAC Conservation Objectives documentation (NPWS Bat Site Code 296). Follow-up surveys undertaken in 2024 confirmed continued use of the Deenagh River corridor by lesser horseshoe bats further upstream.

While the study area itself is not directly connected to this corridor, the records confirm that lesser horseshoe bats are present within the wider landscape.

4.4.2.2 Survey Results

The survey results discussed in the sections below are summarised from the Bat Survey Report (MWP Doc. No. 25123-ZZ-ZZZ-RP-MWP-EN-6010).

Bat Foraging and Commuting Habitat

The study area is dominated by improved agricultural grassland, which is open and exposed and therefore offers limited suitability for bat foraging. The principal bat-relevant features are the treelines and intermittent hedgerows along the northern, western and parts of the southern site boundaries, which provide sheltered edge habitat and potential commuting routes.

These boundary features extend into the surrounding suburban landscape and contribute to local connectivity, including links towards areas associated with known lesser horseshoe bat roost grid squares within the wider Killarney area. In contrast, the eastern and southeastern boundaries interface with residential development, a retail complex and illuminated areas, which reduce their functional value for light-sensitive bat species.

Overall, the site is considered to provide low suitability for foraging within the open grassland interior, with moderate suitability for commuting and foraging concentrated along the treeline and hedgerow boundaries. The study area forms part of a wider network of agricultural and suburban habitats used intermittently by common bat species but does not represent key habitat supporting a local bat population.

Preliminary Roost Assessment

A Preliminary Roost Assessment (PRA) of trees within the study area was undertaken to identify potential bat roost features that could be directly or indirectly affected by the proposed development.

No bats, confirmed roosts, or evidence of bat use (e.g. droppings, staining, feeding remains) were recorded during the inspections. Three mature boundary trees were identified as having moderate to high suitability for roosting bats: Tree 1, a mature ash; Tree 6, a mature oak; and Tree 7, a mature ash. The tree numbering used within the Bat Assessment and Survey Report is independent of the arboricultural numbering shown on the development drawings. The mapped locations of Trees 1, 6 and 7 have been reviewed against the current proposals and none are proposed for removal.

The locations of Trees 1, 6 and 7, identified as having moderate to high bat roost suitability during the PRA, are shown in **Figure 7.**

Nighttime Bat Walkover (NBW)

During the NBW surveys, common pipistrelle and soprano pipistrelle were the most frequently recorded species. Activity was concentrated along hedgerows and treelines, particularly along treeline and hedgerow features to the north of the study area, including areas immediately adjacent to the red line boundary.

Leisler's bat was also recorded on a number of occasions, albeit at lower activity levels. Brown long-eared bat and Myotis spp. were recorded less frequently during the surveys, indicating occasional use of boundary habitats for commuting and foraging.

Passive Automated Bat Surveys (PABS)

Static bat detectors were deployed during May, June, July, and August 2025 for five consecutive nights per month, in accordance with Bat Conservation Trust survey guidelines (Collins, 2023), to capture seasonal variation in bat activity. Static detector locations were selected to sample habitat features with highest suitability for bat activity, including treelines and hedgerows. A total of 12,202 bat passes were recorded over the deployment period.

Common pipistrelle (*Pipistrellus pipistrellus*) dominated activity, accounting for 80.19% of all recorded passes, with lower levels of activity from Leisler's bat (*Nyctalus leisleri*) and soprano pipistrelle (*Pipistrellus pygmaeus*), and occasional activity from other species. All species recorded, with their combined total percentage passes, are as follows:

- Common pipistrelle 9,784 passes (80.19%)

- Leisler's bat 1,095 passes (8.97%)
- Soprano pipistrelle 1,002 passes (8.21%)
- *Myotis* spp. 72 passes (0.59%)
- Brown long-eared bat (*Plecotus auritus)* – 94 passes (0.77%)
- Nathusius' pipistrelle (*Pipistrellus nathusii*) – 23 passes (0.19%)
- Lesser horseshoe bat (*Rhinolophus hipposideros*)– 1 pass (0.01%)

In addition to the above, calls that could not be reliably assigned to species or genus level during the PAB surveys are as follows:

- Unidentified (NoID) – 131 passes (1.07%)

This assemblage is typical of semi-urban and agricultural landscapes in Ireland and is dominated by widespread and common generalist species. Activity was concentrated along boundary treelines and hedgerows, with limited use of the open grassland interior. The study area is therefore considered to provide low suitability for foraging overall, with localised moderate suitability associated with linear boundary features.

Calls attributed to Myotis spp. could not be reliably identified to species level based on sonogram analysis and are therefore presented at genus level only, in accordance with standard practice[10] (Aughney et al., 2018).

The number and proportion of bat passes recorded for each species during the survey period are presented in Table 7. Bat Habitat Suitability Index (BHSI) ratings for each species recorded during surveys are also presented in Table 7, providing an indication of habitat suitability for each species within the wider landscape (Lundy et al., 2011).

A single pass of lesser horseshoe bat was recorded during static surveys, indicating occasional use of the wider landscape. However, the extremely low level of activity recorded, combined with the absence of suitable roosting habitat within the study area and the lack of functional connectivity to the Deenagh River corridor, indicates that the study area does not represent core habitat for this species.

Given the absence of direct habitat connectivity between the study area and the Deenagh River corridor, and the extremely low level of activity recorded during surveys, the study area is not considered to form part of the core foraging or commuting habitat associated with the Killarney National Park SAC lesser horseshoe bat population.

Table 7. Percentage of bat passes recorded and associated BHSI ratings

Species	% of total of all bat calls recorded	BHSI Rating (out of 100)
Common pipistrelle	80.19%	37
Leisler's bat	8.97%	39
Soprano pipistrelle	8.21%	39

[10] Because sonograms of *Myotis* species cannot reliably be identified to species level based on acoustic analysis alone, bat passes attributed to this genus are presented as *Myotis* spp., in accordance with standard practice (Aughney et al., 2018).

Myotis species	0.59%	29–36*
Brown long-eared bat	0.77%	52
Nathusius' pipistrelle	0.19%	16
Lesser Horseshoe	0.01%	42



Figure 8. Locations of Trees Identified as Having Moderate–High Bat Roost Suitability during the Preliminary Roost Assessment

4.4.3 Birds, Amphibians, Reptiles and Invertebrates

4.4.3.1 Desk-top Study

Birds

A review of species lists generated using the NBDC online mapping tool, together with data received from NPWS for rare and protected bird species, was undertaken. A wide variety of bird species, including several species of conservation concern, have been previously recorded within hectad V99. These species are considered typical of the habitats present in the general vicinity of the study area and the wider landscape.

Amphibians

NPWS and NBDC records within V99 include common frog (*Rana temporaria*) and smooth newt (*Lissotriton vulgaris*). Common frog has a widespread distribution throughout Ireland. Smooth newt is also widespread but locally distributed. Both species are amphibious, breeding in freshwater habitats and utilising damp grassland, woodland, marsh and scrub for foraging and shelter.

Reptiles

Records within V99 indicate the presence of common lizard (*Zootoca vivipara*). This species is typically associated with bog, heath, coastal habitats and the fringes of coniferous woodland, but may also occur in other habitats such as rough grassland, gardens and built-up areas (NRA, 2008).

Invertebrates

NBDC records from the hectad include marsh fritillary (*Euphydryas aurinia*), which is listed on Annex II of the EU Habitats Directive. Additional records for butterflies and moths (*Lepidoptera*), beetles (*Coleoptera*), bees (*Hymenoptera*) and other terrestrial invertebrate groups also occur within V99.

Freshwater Pearl Mussel (Margaritifera margaritifera)

NPWS records show that the proposed development lies within a catchment identified as a sensitive area for the Freshwater Pearl Mussel (*Margaritifera margaritifera*), an Annex II and Annex V species. However, no NBDC records for the species exist within the hectad V99 and there is no suitable habitat for aquatic species within the proposed development site as there are no suitable watercourses or waterbodies present onsite.

4.4.3.2 Field Results

Birds

During site visits, the following bird species were recorded: blackbird (*Turdus merula*), song thrush (*Turdus philomelos*), wren (*Troglodytes troglodytes*), chaffinch (*Fringilla coelebs*), pied wagtail (*Motacilla alba*), wood pigeon (*Columba palumbus*), hooded crow (*Corvus cornix),* jackdaw (*Corvus monedula*), magpie (*Pica pica)* and rook (*Corvus frugilegus*). Scrub, hedgerows and treelines within the study area provide suitable nesting habitat for common bird species.

Amphibians

No frogs or newts were encountered during site visits. As noted previously, these species are amphibious, breeding in freshwater habitats and utilising woodland, damp grassland, marsh and scrub for foraging. Of these habitat types, scrub is the only habitat present within the study area and is limited in extent.

Reptiles

Common lizard was not recorded during site visits. While this species can occur in built-up areas and gardens, suitable habitat within the study area is limited.

Invertebrates

Marsh fritillary was not recorded during site visits. The larval foodplant, devil's-bit scabious (*Succisa pratensis*), was not recorded within the study area and habitats present are not considered suitable for this species.

No other notable invertebrate species were recorded. However, habitats within the study area may support common species of butterflies and moths, beetles, bees and other terrestrial invertebrate groups.

4.5 Non-native/Invasive

4.5.1 Desk-top Study

Searches of the NBDC online database were undertaken to identify records of non-native and invasive species within hectad V99. Species recorded within this hectad are listed in Table 7, together with their NBDC impact classification and whether they are included on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

A number of the species identified are listed on the Third Schedule, which includes invasive alien species subject to legal restrictions relating to their introduction, dispersal, and spread.

Table 8. NBDC Records for Invasive Species within 10km grid square V99

Common Name	Level of Impact	Listed under the Third Schedule
Conifer		
Douglas Fir *Pseudotsuga menziesii*	Medium Impact Invasive Species	No
Sycamore *Acer pseudoplatanus*	Medium Impact Invasive Species	No
Flowering plant		
Canadian Waterweed *Elodea canadensis*	High Impact Invasive Species	No
Japanese Knotweed *Fallopia japonica*	High Impact Invasive Species	Yes
Sycamore *Acer pseudoplatanus*	Medium Impact Invasive Species	No
Canadian Fleabane *Conyza canadensis*	Medium Impact Invasive Species	No
Cherry Laurel *Prunus laurocerasus*	High Impact Invasive Species	No
Rhododendron *Rhododendron ponticum*	High Impact Invasive Species	Yes
Butterfly-bush *Buddleja davidii*	Medium Impact Invasive Species	No
Himalayan Honeysuckle *Leycesteria formosa*	High Impact Invasive Species	No
Salmonberry *Rubus spectabilis*	Medium Impact Invasive Species	Yes
Traveller's-joy *Clematis vitalba*	Medium Impact Invasive Species	No
Invertebrates		
Harlequin Ladybird *Harmonia axyridis*	High Impact Invasive Species	Yes
New Zealand flatworm *Arthurdendyus triangulatus*	High Impact Invasive Species	No
Common Garden Snail *Cornu aspersum*	Medium Impact Invasive Species	No
Jenkins' Spire Snail *Potamopyrgus antipodarum*	Medium Impact Invasive Species	No
Keeled Slug *Tandonia sowerbyi*	Medium Impact Invasive Species	No
Terrestrial mammal		

Common Name	Level of Impact	Listed under the Third Schedule
American Mink *Mustela vison*	High Impact Invasive Species	Yes
Bank Vole *Myodes glareolus*	Medium Impact Invasive Species	No
Brown Rat *Rattus norvegicus*	High Impact Invasive Species	Yes - Offshore islands only
Coypu *Myocastor coypus*	High Impact Invasive Species	Yes
European Rabbit *Oryctolagus cuniculus*	Medium Impact Invasive Species	No
Sika Deer *Cervus nippon*	High Impact Invasive Species	Yes

4.5.2 Field Survey Results

All non-native and invasive species recorded within the study area during field surveys are described below. Locations of recorded infestations are shown in **Table 9** and **Figure 8.**

Flora

Invasive plant species recorded within the study area are presented in **Table 9**, together with a description of the infestation, ITM coordinates, level of impact, and Third Schedule status.

Fauna

No invasive fauna species were observed during ecological walkover surveys of the study area.

Table 9. Invasive plant species recorded on site

Species		Description of infestation	Coordinates (ITM) X	Y	Level of impact	Listed under the Third Schedule[11]
Butterfly Bush *Buddleja davidii*		Occurs in small, scattered patches along the site boundary, primarily associated with disturbed ground and fence lines. Individual plants and small clumps recorded at multiple locations. No large continuous stands present.	497125 497134 497135 497136 497262	591129 591228 591231 591241 591264	Medium	No
Cherry laurel *Prunus laurocerasus*		Dense, established stand located along the western boundary, forming a continuous linear thicket adjacent to boundary walls and scrub habitats. Locally dominant in this area.	497262	591252	High	No

[11] S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011 - https://www.irishstatutebook.ie/eli/2011/si/477/made/en/print



Figure 9. Location of Recorded Invasive Species

5. Evaluation of Designated Sites as Ecological Receptors

5.1 Sites of National Importance

A total of four sites of national importance were identified during the desk study as being located within the Zone of Influence (ZOI) of the proposed development. These comprise three proposed Natural Heritage Areas (pNHAs) and one Natural Heritage Area (NHA):

- Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment pNHA
- Sheheree (Ardagh) Bog pNHA
- Doo Loughs pNHA
- Anna More Bog NHA

Doo Loughs pNHA and Anna More Bog NHA are located at a considerable distance from the study area, with no hydrological connectivity or other identifiable ecological pathways linking them to the proposed development. These sites are therefore not considered likely to be affected and are not assessed further in this evaluation.

Sheheree (Ardagh) Bog pNHA overlaps spatially with Sheheree (Ardagh) Bog SAC. The potential for impacts on this SAC has been fully assessed in the Screening for Appropriate Assessment and Natura Impact Statement prepared for the proposed development, which concluded that no significant effects are predicted. As the pNHA

designation relates to the same ecological resource, no additional impacts on Sheheree (Ardagh) Bog pNHA are anticipated. This site is therefore not considered further in this evaluation.

Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment pNHA is encompassed within the boundary of Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment SAC. Potential impacts on this area have been comprehensively assessed within the NIS. On this basis, and in the absence of additional impact pathways specific to the pNHA designation, this site is not considered further in this evaluation.

6. Identification and Evaluation of Habitats, Flora and Fauna as Important Ecological Features (IEF)

The habitats, flora, fauna and other ecological resources identified in Sections 4.3 to 4.5 were evaluated to determine their conservation importance at a local, county, national or international level, in accordance with the criteria outlined in Section 3.4.

Following this evaluation, ecological receptors considered to be of Local Importance (higher value) or greater were identified as Important Ecological Features (IEFs). These are the features that have the potential to be affected by the proposed development and therefore require detailed assessment of potential impacts during the construction and operational phases.

The outcome of this process is presented in Tables 10 and 11, which identify those habitats and species that qualify as IEFs and provide the rationale for their inclusion or exclusion.

6.1 Habitats

Table 10 presents an evaluation of the ecological value of the habitats identified within the receiving environment of the study area and provides the rationale for their inclusion or exclusion as Important Ecological Features.

Table 10. Evaluation of habitats within the study area

Habitat Code and Type	Ecological value relative to study area (NRA, 2009)	IEF (Y/N)	Rationale
Buildings and Artificial Surfaces **[BL3]**	Local importance (lower value)	**No**	Artificial habitat of negligible ecological value.
Hedgerow **[WL1]**	Local importance (higher value)	**Yes**	Of local biodiversity value to mammals, bats, birds and invertebrates.
Treeline **[WL2]**	Local importance (higher value)	**Yes**	Of local biodiversity value to mammals, bats, birds and invertebrates.
Scrub **[WS1]**	Local importance (lower value)	**No**	Occurs in small, scattered patches and is not a dominant habitat within the study area. Of local biodiversity value for birds, small mammals and invertebrates.
Improved Agricultural Grassland **[GA1]**	Local importance (lower value)	**No**	Modified and managed habitat. Relatively species poor. May provide limited foraging opportunities for some bird and invertebrate species.

6.2 Rare and Protected Flora Species

No rare or protected plant species were recorded during the ecological surveys. The habitats present within the study area are generally not considered suitable for the majority of rare and protected plant species listed in the NBDC and NPWS databases for hectad V99.

On this basis, none of the species outlined in Section 4.3 are considered to comprise Important Ecological Features (IEFs) in the context of the proposed development and will not be considered further in this evaluation.

6.3 Fauna

The following table (Table 11) presents an evaluation of the ecological value of the faunal species identified within the receiving environment of the proposed development and provides the rationale for their inclusion or exclusion as Important Ecological Features (IEFs).

Table 11. Evaluation of faunal species within the study area

Species	Ecological value relative to study area (NRA, 2009)	IEF (Y/N)	Rationale
Hedgehog *Erinaceus europaeus*	Local importance (higher value)	Yes	No evidence recorded within the site. Species recorded within the wider hectad. Habitats considered suitable. Precautionary principle.
Irish stoat *Mustela erminea hibernica*	Local importance (higher value)	No	No evidence recorded within the site. Species recorded within the wider hectad. Habitats considered sub-optimal for residency and foraging.
Otter *Lutra lutra*	Local importance (lower value)	No	No evidence recorded within the site. Species recorded within the wider hectad. No suitable aquatic habitat present within the study area; therefore, use is considered unlikely.
Red squirrel *Sciurus vulgaris*	Local importance (higher value)	Yes	No evidence of this species recorded within the site. Species recorded within the wider hectad. Habitats considered suboptimal. Precautionary principle.
Pygmy shrew *Sorex minutus*	Local importance (higher value)	Yes	No evidence of this species recorded within the site. Species recorded within the wider hectad. Habitats considered suitable. Precautionary principle.
Badger *Meles meles*	Local importance (lower value)	Yes	Badger confirmed present within the study area based on latrines, paths and trail camera footage. The study area is used for foraging. Although no sett was recorded, badgers are a protected species and the site forms part of their foraging territory.
Pine marten *Martes martes*	Local importance (higher value)	Yes	No evidence of this species recorded within the site. Species recorded within the wider hectad. Large mature trees considered suitable. Precautionary principle.
Irish hare *Lepus timidus* subsp. *Hibernica*	Local importance (lower value)	No	No evidence of this species recorded within the site. No records from the area. Habitats within the site not considered suitable.
Red deer *Cervus elaphus*	Local importance (lower value)	No	No evidence of this species recorded within the site. Species recorded within the wider hectad. Habitats within the site not considered suitable.
Bats (all)	Local importance (higher value)	Yes	Several species of bat, including lesser horseshoe, recorded using the site for foraging/commuting. Suitable bat roosting habitats identified on site, including foraging and commuting habitats. Records from the area.

Species	Ecological value relative to study area (NRA, 2009)	IEF (Y/N)	Rationale
			Bats are evaluated as an Important Ecological Feature of Local Importance (Higher Value), due to their legal protection under the Wildlife Acts and Habitats Directive, and their use of treelines and hedgerows within the study area for commuting and foraging.
Birds	Local importance (higher value)	**Yes**	Habitats within and surrounding the proposed development site of value as breeding and foraging habitat for a wide range of bird species.
Amphibians	Local importance (higher value)	**Yes**	No evidence recorded within the site. Records from the area. Habitats within the site considered suitable. Precautionary principle.
Reptiles	Local importance (higher value)	**No**	No evidence recorded within the site. Records from the area. Habitats within the site not considered suitable.
Invertebrates	Local importance (lower value)	**No**	Marsh fritillary is the only protected invertebrate for which records exist within the hectad V99. Neither this species nor its food source were recorded during surveys within the site. Habitats within the site not considered suitable.
Freshwater pearl mussel (*Margaritifera margaritifera*)	International importance	No	No direct hydrological connection between the proposed development site and nearby freshwater pearl mussel population.

7. Do-nothing Scenario

The study area is currently dominated by improved agricultural grassland managed for silage production. Semi-natural habitats are limited in extent and occur primarily as hedgerows, treelines forming field boundaries, and small areas of scrub.

In the absence of the proposed development, it is expected that current agricultural management practices would continue. These activities typically involve periodic cutting, reseeding and fertiliser application, which maintain the grassland in a species-poor condition and limit natural succession.

Under a do-nothing scenario, hedgerows, treelines and scrub habitats would likely persist with routine maintenance, continuing to provide localised foraging and nesting habitat for common fauna such as birds, small mammals and bats. No significant enhancement or restoration of habitats would be anticipated, and the overall ecological character of the study area would remain largely unchanged in the medium to long term.

8. Potential Impacts of the Project

This section identifies and evaluates the potential ecological impacts associated with the construction and operational phases of the proposed development on the receiving environment.

For this project, the construction phase is considered to have the greatest potential to give rise to ecological effects, primarily due to habitat disturbance, vegetation clearance, increased human activity, and associated noise, vibration and lighting.

Potential impacts have been identified with reference to the Important Ecological Features (IEFs) described in Section 6. These impacts are assessed in terms of their nature, extent, duration and reversibility. Where relevant,

appropriate mitigation measures and best practice construction methodologies are outlined in later sections to avoid, reduce or offset adverse effects.

8.1 Construction Phase

The construction phase effects associated with the proposed development may include the following:

Table 12. Construction phase effects potentially associated with the project

Construction Phase Effect	Source
Habitat loss/alteration	Vegetation clearance and removal of hedgerows/treelines (where required); construction of temporary site compound; excavations for foundations; movement of machinery; installation of services; landscaping and ground levelling.
Indirect water quality effects	Sediment- or pollutant-laden run-off from exposed ground during excavations and earthworks; runoff from material storage areas; accidental spillages/leaching of fuels, oils or cement; discharge to existing surface water drainage network; risk of spread of invasive species via soil movement and machinery.
Direct species disturbance/displacement	Increased human presence; noise, vibration and artificial lighting during site clearance and construction; vegetation removal affecting resting, nesting and foraging areas; general construction activity.
Indirect species disturbance / displacement	Reduction in habitat quality through disturbance; loss or alteration of foraging/commuting areas; impacts on prey availability; disturbance via changes in local hydrology or water quality.
Habitat fragmentation / connectivity	Temporary or permanent interruption of linear features (e.g. hedgerows/treelines) that function as movement corridors; reduced connectivity for commuting bats, birds and small mammals during site clearance and construction.

8.2 Operational Phase

The operational phase effects associated with the proposed development are considered to be/may comprise the following:

Table 13. Operational phase effects potentially associated with the project

Operational Phase Effect	Source
Habitat loss / alteration	Permanent loss and modification of habitats within the development footprint due to the presence of residential buildings, roads, parking areas, lighting and landscaped areas; ongoing garden management and amenity use.
Indirect water quality effects	Surface water runoff from roofs, roads and hardstanding areas managed via an on-site Sustainable Drainage System (SuDS) incorporating attenuation and controlled discharge, with potential for minor long-term inputs of pollutants associated with residential use.
Direct species disturbance / displacement	Increased human activity, domestic pets, vehicle movements, noise and artificial lighting associated with residential occupation; routine maintenance of landscaped areas.
Indirect species disturbance / displacement	Alteration of foraging and commuting behaviour due to lighting spill, increased disturbance and reduced habitat quality; potential reduction in prey availability; disturbance from ongoing human presence.

Operational Phase Effect	Source
Direct/indirect species disturbance/displacement	Due to ongoing human presence, domestic activity, vehicle movements, artificial lighting and noise. Indirect effects may include alteration of foraging, commuting and breeding behaviour, and changes in prey availability.
Habitat fragmentation / connectivity	Permanent introduction of built structures, boundary treatments and lighting which may reduce connectivity of linear features used by bats, birds and small mammals and create localised barrier effects.

9. Assessment of Potentially Significant Effects

9.1 Potential Habitat Loss/Alteration Impacts

The habitats occurring within the study area comprise predominantly managed or modified habitats of local ecological value. Hedgerow (WL1) and Treeline (WL2) habitats were evaluated as being of Local Importance (higher value) and are therefore identified as Important Ecological Features (IEFs) for the purposes of this assessment (refer to Table 10).

During the construction phase, works such as vegetation clearance, site preparation, installation of services and construction of infrastructure have the potential to result in the localised removal or alteration of boundary habitats. Existing hedgerows and treelines will be retained where practicable and incorporated into the final landscape design, with removal limited to areas necessary to facilitate the proposed development. As hedgerows and treelines provide local ecological connectivity and foraging and nesting habitat for birds, bats and small mammals, any loss or modification may result in localised impacts on these ecological receptors.

Other habitats present within the study area, including improved agricultural grassland (GA1), scrub (WS1) and buildings and artificial surfaces (BL3), were evaluated as being of Local Importance (lower value) and are not considered IEFs. While some loss or alteration of these habitats may occur during construction, the ecological significance of effects on these habitat types is expected to be low due to their managed nature, limited extent and widespread occurrence in the surrounding landscape.

9.2 Invasive Alien Plant Species (IAPS)

Construction activities have the potential to facilitate the introduction and/or spread of invasive alien plant species (IAPS) through soil disturbance, vegetation clearance and the movement of plant, machinery and materials. Equipment, vehicles, tools, footwear and imported soil or fill can act as vectors for the transfer of viable seed, rhizome fragments or contaminated soil.

In the absence of appropriate controls, construction works could result in the localised introduction or spread of IAPS within the study area. This risk is increased where ground disturbance occurs and where materials are imported to site. The establishment of IAPS could, over time, alter habitat composition and reduce the ecological value of affected areas through competition with native flora.

Based on the current baseline, the potential for IAPS introduction or spread during the construction phase is considered to represent a Medium-term, Moderate, Negative effect, due to the potential for localised habitat degradation and the management effort that may be required should infestations become established.

9.3 Potential Impacts to Water Quality

There are no watercourses, drains or surface water features located within the study area. The nearest water feature is the Deenagh River, located approximately 1.5 km west of the study area at its closest point. No direct hydrological connection between the study area and the Deenagh River has been identified.

During the construction phase, potential water-quality effects could arise through accidental release of fuels, oils, concrete, sediments or other construction-related pollutants. In the absence of a direct surface-water pathway to an aquatic receptor, the likelihood of pollutants reaching ecologically sensitive aquatic habitat is considered low. Potential construction-phase effects on water quality are therefore considered **Temporary to Short-term, Slight, Negative effects** in the absence of mitigation.

The operational drainage strategy is described in the Drainage Impact Report, Residential Development, Deerpark, Killarney (MWP Doc. No. 25123-ZZ-ZZZ-RP-MWP-CE-6011, Rev. 1, September 2026). Foul wastewater will be conveyed via a gravity sewer and discharged to the existing Uisce Éireann 225 mm foul sewer located to the south of the study area along Friary Downs Road, subject to the infrastructure upgrades identified by Uisce Éireann in the Confirmation of Feasibility.

Surface water will be managed on site through a Sustainable Drainage Systems (SuDS) management train designed to mimic pre-development drainage conditions and promote infiltration to ground. Site investigations identified good infiltration characteristics within the underlying soils. The proposed SuDS measures include bioretention raingardens/tree pits, dry swales, Class 1 bypass petrol interceptors and sub-surface attenuation storage systems. Surface water from roofs, roads and other hardstanding areas will be collected, treated and attenuated prior to infiltration to ground.

The attenuation system has been designed to accommodate the 1 in 100-year storm event plus a 20% climate change allowance, and the Drainage Impact Report includes inspection and maintenance requirements for the drainage and SuDS infrastructure.

On this basis, significant operational effects on water quality or downstream aquatic ecological receptors are not predicted.

9.4 Potential Impacts to Faunal Species

The following table (**Table 14**) describes the potential construction phase effects on faunal IEFs at the proposed development site and characterises the significance of these unmitigated impacts.

Table 14. Potential impacts on faunal species identified during the construction phase and the significance of the impact

Species	Ecological value[12]	Unmitigated Impacts	Significance of unmitigated impacts (NRA, 2009 and EPA, 2017)
Hedgehog, pygmy shrew, red squirrel, pine marten	Local importance (higher value)	<u>Habitat Loss</u> There will be some loss of areas of potentially suitable habitat for these species as a result of vegetation clearance and ground disturbance. However, no records or direct evidence of these species were identified within the study area during field surveys. The study area is relatively disturbed and managed in character, and similar suitable	Potential habitat effects assessed as **Permanent, Slight, Negative effects.**

[12] Relative to study area (NRA, 2009a)

Species	Ecological value[12]	Unmitigated Impacts	Significance of unmitigated impacts (NRA, 2009 and EPA, 2017)
		habitats are widely available in the surrounding landscape. Habitat loss associated with the proposed development is therefore unlikely to be significant at a local population level. Disturbance/Displacement/Injury/Mortality Direct and indirect disturbance and/or displacement may occur during construction as a result of increased noise, lighting, human activity, vegetation clearance and machinery movement. There is also a low risk of accidental injury or mortality during site clearance works.	Potential disturbance/displacement effects assessed as Temporary to **Short-term, Slight, Negative effects.**
Bats	Local importance (higher value)	Habitat Loss Bat activity (foraging and commuting) was recorded within the study area, primarily associated with hedgerows and treelines. Construction will result in the loss of a limited extent of potentially suitable foraging habitat, including areas of improved grassland and small patches of scrub. However, higher quality foraging and commuting habitat is available within the wider landscape, and boundary habitats provide continued connectivity beyond the site. The three trees identified during the PRA as having Moderate–High bat roost suitability are retained under the current proposals; therefore, no direct loss of these potential roost features is anticipated. Disturbance/Displacement Direct and indirect disturbance to bats may occur during construction due to increased noise, lighting and human activity. Temporary disruption to foraging and commuting behaviour may occur in areas closest to works.	Potential habitat effects on bats assessed as **Permanent, not significant, Negative effects.** Potential direct/indirect effects on bats assessed as **Temporary to Short-term, Slight, Negative effects.**
Birds	Local importance (higher value)	Habitat Loss Construction will result in the loss and/or alteration of areas of suitable breeding, nesting, resting and foraging habitat for a range of bird species, including hedgerows, treelines, scrub and grassland. Bird species recorded on site are common and widespread, and the habitats affected are well represented in the surrounding landscape. Disturbance/Displacement Direct and indirect disturbance and displacement may occur due to increased noise, lighting and human presence during construction. Birds present within the study area are likely to temporarily avoid the site during periods of intensive activity and utilise suitable habitats in the surrounding area.	Habitat loss/alteration effects assessed as **Permanent, Slight, Negative effects.** Potential disturbance/ displacement effects on birds assessed as **Temporary to Short-term, Slight, Negative Effects**.
Amphibians, Reptiles	Local importance (higher value)	Habitat Loss The study area does not contain features suitable for amphibian breeding, such as ponds or standing water. Some minor loss of potential foraging habitat (e.g. scrub and grassland) may occur during site clearance. Similar habitats are widely available in the surrounding area. Disturbance/Displacement	Potential habitat loss/alteration effects assessed as **Permanent, Not significant, Negative effects.** Potential disturbance/ displacement effects on

Species	Ecological value[12]	Unmitigated Impacts	Significance of unmitigated impacts (NRA, 2009 and EPA, 2017)
		Direct and indirect disturbance and displacement may occur as a result of increased noise, vibration, lighting and human activity during construction. Any individuals present are likely to disperse into adjacent suitable habitats.	amphibians/reptiles assessed as **Temporary to Short-term, Slight, Negative Effects.**

9.5 Potential Operational Phase Impacts to Faunal Species

During the operational phase, some level of disturbance to terrestrial mammals and birds may occur due to increased human presence, traffic movements, domestic activity, lighting and noise associated with the change in land use from agricultural grassland to residential development.

Human activity within the study area will increase compared with existing baseline conditions, and the extent and character of some existing habitats will change through the introduction of buildings, roads, gardens and landscaped public open spaces. With regard to terrestrial mammals, activity levels within the development are likely to be highest during daylight hours, with comparatively lower levels at night when many mammal species are most active. However, the overall intensity of disturbance within the site will increase relative to the current agricultural use.

Potential effects on volant and non-volant mammals and birds during the operational phase may include localised disturbance, displacement and behavioural changes associated with noise, lighting, increased human presence and domestic pets. Given the availability of similar habitats in the surrounding landscape and the local-scale value of the identified receptors, these effects are expected to be limited in extent.

Overall, potential disturbance or displacement impacts to mammals and birds during the operational phase are assessed as **Long-term, Slight Negative Effects** at a local scale.

10. Mitigation

10.1 Ecological/Environmental Clerk of Works (ECoW)

A suitably qualified and experienced Ecological Clerk of Works (ECoW) will be appointed for the duration of the construction phase and will report to the Project Manager. The ECoW will oversee the implementation of ecological mitigation measures and environmental protection procedures throughout the works.

The ECoW will be responsible for:

- Delivering toolbox talks to site personnel on ecological sensitivities and relevant legal obligations
- Undertaking pre-commencement checks for protected species where appropriate (e.g. nesting birds, mammals)
- Advising the contractor on ecological issues arising during construction
- Recommending appropriate actions should previously unrecorded ecological features be encountered
- Liaising with statutory authorities where required

A pre-commencement walkover survey will be undertaken by the ECoW to verify current site conditions, confirm the absence of newly established ecological constraints, and ensure that the mitigation measures outlined in this report remain appropriate prior to the start of works.

10.2 Pre-Construction Surveys

Prior to the commencement of works, a number of pre-construction ecological checks and surveys may be required to confirm baseline conditions remain unchanged and to ensure compliance with wildlife legislation. These surveys are intended to identify any newly established ecological constraints and ensure that mitigation measures remain appropriate prior to the commencement of construction activities.

- If vegetation clearance or ground disturbance is proposed between March and August (inclusive), pre-clearance checks for nesting birds will be undertaken by the ECoW no more than 48 hours prior to works commencing.
- Pre-commencement checks for protected mammals will be carried out where appropriate within areas of suitable habitat prior to the start of works.
- Should any active nests, resting sites or other evidence of protected species be identified, an appropriate buffer zone will be established and maintained until the feature is no longer in use and works can proceed in accordance with ecological advice.
- Where trees proposed for removal, pruning or crown reduction are identified during detailed design, they shall be subject to arboricultural assessment by a suitably qualified arborist and ecological review prior to the commencement of works. The three trees identified during the Preliminary Roost Assessment as having Moderate–High suitability for roosting bats (Trees 1, 6 and 7 within the Bat Assessment and Survey Report) are retained under the current proposals. Should subsequent detailed design require removal, pruning, crown reduction or other works capable of affecting these trees, further ecological assessment and, where necessary, additional bat survey shall be undertaken in accordance with Collins (2023) and current NPWS requirements. Any works requiring derogation licensing shall not proceed until the appropriate licence has been obtained.

10.3 General Protection of Fauna and Habitats

The following measures will be implemented during the construction phase to minimise disturbance to fauna, protect retained habitats, and maintain ecological connectivity within and adjacent to the study area. These measures are intended to safeguard ecological features identified during the ecological surveys and to ensure compliance with relevant wildlife legislation and best practice guidance.

- The working area, including access routes, storage areas and construction compounds, will be clearly demarcated using fencing or barrier tape to prevent unnecessary encroachment into retained habitats.
- All works will be confined within the minimum footprint necessary for construction activities.
- Vegetation removal will be minimised and restricted to that required to facilitate construction.
- Construction lighting (if required) will be directional, of low intensity, and designed to minimise light spill into adjacent hedgerows, treelines and scrub to reduce disturbance to wildlife, including bats.
- Excavations will be covered overnight or fitted with escape ramps to prevent accidental entrapment of mammals and other fauna.
- Removal of vegetation with potential to support nesting birds will be undertaken outside the main bird breeding season (March to August inclusive), where possible. Where this is not feasible, pre-clearance nesting bird checks will be completed by a suitably qualified ecologist no more than 48 hours prior to works. If an active nest is identified, an appropriate buffer will be established and maintained until nesting activity has ceased.

- Where existing mature hedgerows are retained along the site boundary, these shall be protected during construction and retained as ecological corridors where practicable. Where boundary fencing is required adjacent to retained hedgerows, wildlife-friendly fencing such as weld mesh fencing shall be used, where feasible, to avoid unnecessary fragmentation of habitat and maintain the ecological value of retained boundary features. Where suitable boundary fencing is proposed, wildlife-permeable details, such as approximately 130 × 130 mm gaps at ground level, should be incorporated where feasible to facilitate movement of hedgehog and other small fauna. Fencing will be installed sensitively to avoid root damage and encroachment into retained hedgerows, with vegetation protection measures implemented during construction. This approach will maintain permeability for wildlife movement while providing an appropriate and durable boundary treatment for the proposed development. Existing hedgerows shall be managed using low-intensity maintenance practices and unnecessary herbicide application within retained vegetated margins shall be avoided.
- Any recommendations arising from arboricultural assessment relating to tree retention, protection, pruning or removal shall be reviewed from an ecological perspective and incorporated into the final construction methodology, where relevant. Existing mature boundary trees and hedgerows shall be retained where practicable, and appropriate protection measures shall be implemented during construction to avoid unnecessary impacts on retained habitats and ecological connectivity.
- Lighting shall be designed in accordance with Bat Conservation Trust Guidance Note 08/23 (2023). Lighting shall be directed away from retained treelines, hedgerows and ecological corridors, and light spill onto retained boundary vegetation shall be minimised where practicable. Trees 1, 6 and 7 identified during the Preliminary Roost Assessment as having Moderate–High bat roost suitability are retained under the current development proposals and shall be protected during construction. Should future design amendments require works affecting any of these trees, the requirements set out in Section 10.2 shall apply.

10.4 Pollution Prevention and Biosecurity

- Refuelling of plant and machinery will take place in a designated area on stable ground, with spill kits readily available.
- Drip trays will be used under stationary plant and during refuelling operations.
- All fuels, oils and hazardous substances will be stored in secure, bunded areas in accordance with best practice guidance.
- If concrete is used, washout will occur only in designated impermeable areas to prevent contamination of soils and surface water drainage infrastructure.
- All plant and equipment brought to site will be clean and free of soil, vegetation and debris to reduce the risk of introducing or spreading invasive species.
- All plant and equipment entering and leaving the site will be checked and cleaned of soil and organic material where necessary. Disinfection of footwear and small tools will be undertaken using Virkon (or equivalent) in accordance with current biosecurity guidance.
- Any accidental spills will be contained and cleaned up immediately using appropriate spill response materials.

10.5 Invasive Species Management

No Third Schedule invasive alien plant species were recorded within the study area during ecological surveys. However, butterfly bush (*Buddleja davidii*) and cherry laurel (*Prunus laurocerasus*) were recorded within the study area. These species are not listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011–2023 (as amended).

Should any Third Schedule invasive alien species be identified during construction, works will cease in the affected area and an appropriate management response will be implemented. Measures will also be undertaken, where necessary, to avoid the inadvertent spread of non-native invasive plant material already present within the study area during vegetation clearance, soil disturbance or movement of plant and machinery.

Any required control measures will be undertaken in accordance with NRA (2010) *Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads* and Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations 2011–2023 (as amended), which prohibit the introduction and spread of listed species.

10.6 General Management of Construction Waste and Storage of Materials

- All construction waste will be segregated and removed from the study area by a licensed contractor for disposal or recycling at an authorised facility
- Sanitary facilities will be maintained by a licensed provider, with effluent removed off-site
- Storage of fuels, oils and chemicals will be within appropriately bunded areas providing 110% secondary containment capacity
- Any concrete, cement or grouting materials will be stored and mixed in designated impermeable areas, and washout will not be permitted on bare ground
- Vehicular and machinery movements will be restricted to established access routes and hardstanding areas, where feasible
- The working area will be clearly demarcated to prevent unnecessary encroachment onto adjacent habitats
- All plant and machinery will be checked for leaks and fitness for purpose prior to mobilisation and maintained in good working order
- Spill response equipment (e.g. absorbent granules, booms, pads) will be held on site and available for immediate deployment in the event of an accidental spill
- Refuelling will only be undertaken by trained personnel in designated areas, with appropriate pollution prevention measures in place.

10.7 Post-Construction Review

On completion of the works, the Ecological Clerk of Works (ECoW) will undertake a site inspection to confirm that mitigation and environmental protection measures have been implemented. Any outstanding ecological issues identified will be recorded and communicated to the Project Manager, and a record of compliance will be retained.

10.8 Compensation and Enhancement Measures

In addition to the mitigation measures outlined above, the proposed development incorporates a range of biodiversity enhancement measures designed to support ecological function and contribute to local green infrastructure within the study area. In accordance with the objectives of the Kerry County Development Plan 2022–2028 (as varied), the proposed development seeks to retain and enhance ecological features through habitat retention, native planting, provision of nesting and roosting opportunities for fauna, and the maintenance of ecological connectivity across the site.

The proposed layout has been designed to retain key boundary hedgerows and treelines identified during ecological and bat surveys. These retained habitat features provide ecological connectivity and support local bird, bat and invertebrate populations. New landscape planting and public open spaces will complement retained habitats and contribute to the long-term provision of ecological corridors throughout the development. Biodiversity enhancement measures will be delivered in conjunction with the final landscape proposals for the site and will incorporate principles of native species planting, pollinator-friendly landscaping, integrated biodiversity features and sensitive lighting design. These measures are intended to provide long-term ecological benefits within an urban/suburban setting while supporting local biodiversity and habitat connectivity.

The Landscape Master Plan (Drawing No. 24353-1-101) incorporates retained and proposed vegetation, native hedgerow planting, pollinator-focused planting, raingardens, swales, permeable surfaces and other landscape and biodiversity features which complement the ecological measures set out below.

10.8.1 Habitat Retention and Ecological Connectivity

The proposed layout has been designed to retain key boundary hedgerows and treelines identified during ecological and bat surveys. These features provide ecological connectivity and support local bird, bat, invertebrate and small mammal populations. New landscape planting and public open spaces will complement retained vegetation and contribute to the long-term provision of ecological corridors throughout the development. Retained boundary vegetation will continue to provide foraging, commuting and shelter opportunities for wildlife and contribute to local green infrastructure networks.

Biodiversity enhancement measures will be informed by recognised best practice guidance including the All-Ireland Pollinator Plan, relevant National Biodiversity Action Plan objectives, and guidance on native species planting and green infrastructure. Native planting proposals will, where practicable, utilise species appropriate to the local landscape character and ecological context of the study area, while pollinator-friendly planting will seek to provide season-long nectar and pollen resources for insects.

Enhancement opportunities include:

- Retention of existing boundary hedgerows and treelines where practicable to maintain ecological connectivity and habitat continuity
- Retention of boundary vegetation identified during ecological and bat surveys as providing foraging, commuting and shelter opportunities for wildlife
- Retention and reinforcement of habitat linkages between retained boundary vegetation and newly landscaped areas to support ecological connectivity throughout the site
- Maintenance of bat foraging and commuting habitat through the retention of linear habitat features and associated vegetation identified during bat surveys
- Integration of public open spaces with retained habitats to strengthen ecological connectivity throughout the development

- Planting of native tree and shrub species within open spaces and along internal roads to supplement retained habitats
- Creation of structurally diverse green spaces incorporating trees, shrubs and grassland areas to support birds, bats, invertebrates and small mammals
- Integration of green infrastructure through retained boundary vegetation, landscaped open spaces and new native planting

Collectively, these measures will assist in maintaining ecological connectivity across the study area and support the continued movement of wildlife between retained habitats and the wider surrounding landscape.

10.8.2 Native Planting and Pollinator Resources

Biodiversity enhancement measures will be integrated into the final landscape design through the use of native tree and shrub species, pollinator-friendly planting and structurally diverse landscaping. Planting schemes should, where practicable, utilise species of local provenance and incorporate nectar-rich native and non-invasive ornamental species consistent with the principles of the All-Ireland Pollinator Plan and relevant native planting guidance. These measures will contribute to habitat diversity, improve ecological resilience and provide additional foraging, nesting and shelter opportunities for wildlife. Native planting and pollinator-friendly landscaping will be incorporated throughout landscaped areas and public open spaces to provide long-term ecological benefits and support local biodiversity.

Enhancement opportunities include:

- Incorporation of native tree and shrub species throughout landscaped areas and public open spaces to provide habitat, shelter and foraging opportunities for wildlife
- Use of pollinator-friendly planting schemes incorporating nectar-rich native and non-invasive ornamental species to provide seasonal food resources for bees, butterflies and other pollinating insects
- Inclusion of species that provide berries, seeds and other food resources for birds and small mammals where appropriate
- Creation of structurally diverse planting areas incorporating trees, shrubs, grassland and flowering species to increase habitat heterogeneity and ecological resilience
- Utilisation of species of local provenance where practicable to support local ecological character and biodiversity value
- Integration of native planting within public open spaces, boundary treatments and landscaped corridors to strengthen ecological connectivity throughout the site
- Provision of year-round habitat resources through the use of complementary planting species with varying flowering, fruiting and structural characteristics

Collectively, these measures will contribute to habitat diversity, support pollinator populations and enhance the ecological value of the development over the long term.

10.8.3 Integrated Nesting and Roosting Features

The proposed development will incorporate integrated biodiversity features where feasible to provide additional nesting and roosting opportunities for wildlife within the study area. Such measures may include integrated bat roosting features, integrated bird nesting features and appropriately located swift nesting bricks. The incorporation of integrated nesting and roosting features is consistent with current best practice guidance and local biodiversity objectives and will contribute to enhancing biodiversity within the development. The final

number, specification and location of such features will be determined during detailed design and integrated with the final architectural and landscape proposals.

Enhancement opportunities include:

- Installation of integrated bat roosting features, such as bat bricks, bat tubes or equivalent structures, within suitable buildings where feasible
- Installation of integrated bird nesting features within suitable buildings and retained mature trees where appropriate to provide nesting opportunities for common urban and suburban bird species
- Incorporation of appropriately located swift nesting bricks within suitable buildings to provide additional nesting opportunities for swifts and support local biodiversity objectives
- Selection and placement of nesting and roosting features in locations that minimise disturbance and maximise their long-term ecological value
- Integration of biodiversity features within the overall site design to ensure compatibility with landscaping, lighting and building maintenance requirements
- Consideration of a variety of nesting and roosting feature types to support a range of bird and bat species likely to utilise the surrounding landscape

Collectively, these measures will increase the availability of nesting and roosting opportunities within the development and contribute positively to local biodiversity and ecological resilience over the long term.

10.8.4 Sensitive Lighting and Dark Corridors

Sensitive lighting design will be implemented in accordance with Bat Conservation Trust Guidance Note 08/23: Bats and Artificial Lighting at Night (BCT, 2023). Lighting has the potential to affect commuting and foraging bats through the illumination of hedgerows, treelines and other vegetated habitat features. Accordingly, lighting associated with the proposed development will be designed to minimise light spill onto retained boundary vegetation and maintain the ecological function of habitats identified during bat surveys.

Bat surveys undertaken within the study area identified boundary hedgerows and treelines, particularly along the northern and north-western boundaries, as providing important foraging and commuting habitat for bats. Where practicable, these features will be retained and integrated within the final landscape design. Appropriate lighting design will assist in maintaining ecological connectivity, retaining the functionality of identified bat commuting and foraging habitats, and reducing disturbance to nocturnal fauna.

Enhancement opportunities include:

- Implementation of lighting design in accordance with Bat Conservation Trust Guidance Note 08/23: Bats and Artificial Lighting at Night (BCT, 2023)
- Minimisation of light spill onto retained hedgerows, treelines and other vegetated boundary features used by commuting and foraging bats
- Direction of external lighting away from retained boundary vegetation and ecological corridors where practicable
- Retention of habitat features identified during bat surveys as supporting bat foraging and commuting activity
- Integration of lighting design with retained vegetation and landscape planting to support ecological connectivity throughout the site
- Use of appropriately directed and shielded luminaires where external lighting is required to reduce unnecessary illumination of sensitive ecological features

Collectively, these measures will assist in maintaining the ecological function of retained habitats, support continued wildlife movement through the study area and minimise disturbance to nocturnal fauna.

Sensitive lighting design will be implemented in accordance with Bat Conservation Trust Guidance Note 08/23: *Bats and Artificial Lighting at Night* (BCT, 2023). Lighting will be designed to minimise illumination of retained hedgerows and treelines, particularly along the northern and north-western boundaries identified during bat surveys as the principal commuting and foraging features within the study area.

11. Cumulative Impacts

Cumulative impacts arise from incremental changes caused by past, present, or reasonably foreseeable future actions acting together with the proposed development. According to the 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."

Assessment of in-combination effects requires consideration of the types of impacts that may arise from the proposed development alongside those from other sources in the existing environment, which together may affect the structure and function of ecological receptors, including Natura 2000 sites (EC, 2001).

European Commission guidance on Article 6 of the Habitats Directive (EC, 2001) states that the phrase "in combination with other plans or projects" refers to the cumulative effects of plans or projects that are currently under consideration together with the effects of existing or proposed projects or plans.

Relevant plans and projects have been identified and reviewed to determine whether, in combination with the proposed development, they could give rise to significant cumulative impacts on ecological features.

11.1 Plans

A review of relevant national, regional and local plans and policies was undertaken to identify any projects, land use objectives or environmental protection measures that could give rise to cumulative ecological effects in combination with the proposed development. The key documents considered included the Kerry County Development Plan 2022–2028, including Variation No. 2 – Killarney Municipal District Settlements Plan, the All-Ireland Pollinator Plan and relevant national and local biodiversity strategies.

These plans and policies promote sustainable development, protection and enhancement of ecological networks, biodiversity conservation and responsible land-use planning within the county. The proposed development is located within an area identified for continued settlement and compatible land use, and no objectives were identified that would conflict with the principle of residential development within the study area from an ecological perspective.

No projects or land-use objectives identified within these plans were considered likely to interact with the proposed development in a manner that would give rise to significant cumulative ecological effects. The proposed development is located within an already modified landscape and will not result in the loss of habitats of high ecological value. Accordingly, significant cumulative effects on ecological receptors arising from the interaction of the proposed development with the relevant plans and policies are not anticipated.

11.2 Permitted and Proposed Developments in the Locality

A search of Kerry County Council's online planning enquiry system was undertaken on 21st September 2026 to identify granted and/or ongoing planning applications within the vicinity of the study area that could give rise to in-combination ecological effects. The review focused on developments permitted within the last five years, together with any larger-scale proposals that could potentially contribute to cumulative impacts on habitats, species, or ecological processes.

Relevant planning applications identified during this review are summarised in Table 15. The information presented reflects records available at the time of the search and may be subject to change as new applications are submitted or determined.

Table 15. List of granted and/or on-going planning applications within the vicinity of the proposed development site

Application No.	Applicant	Location	Proposed Development	Status
2660718	Wrightwood Development Ltd.	Ardshanavooly Killarney Co. Kerry V93 V08F	Large-Scale Residential Development comprising 123 no. dwellings, including 16 no. 1-bed apartments, 6 no. 2-bed apartments, 11 no. 1-bed duplex apartments, 11 no. 2-bed duplex maisonettes, 28 no. 2-bed duplex apartments, 28 no. 3-bed duplex maisonettes and 23 no. 3-bed terraced houses, in buildings ranging from 2 to 4 storeys. The development also includes: • 139 no. surface car parking spaces, including car-share, visitor and accessible spaces • 272 no. bicycle parking spaces • approximately 3,600 m² of public open space, including pocket parks, amenity landscape areas, play space, lawns, kickabout areas, picnic areas and seating • approximately 956 m² of communal external open space, including seating areas, nature trails and amenity grass lawns • approximately 1,790 m² of environmental open space, including landscape buffers and the protection and enhancement of existing hedgerows and trees • new vehicular, pedestrian and cyclist access from the existing estate road adjoining the site to the south • associated internal roads and footpaths, ESB infrastructure, external lighting, drainage works, hard and soft landscaping, boundary treatments, communal bin stores and ancillary site-development works	KCC Decision due: 24/09/2026
20241	Wrightwood Development Ltd.	Ardshanavooly, Park Road	Erect 2 no. semi-detached dwellings and all associated site works.	Permitted: 20/08/20

Application No.	Applicant	Location	Proposed Development	Status
KCC: 20766 ABP: 309948	Pauline Lyne	Ardshanavooly, Park Road	Construct family flat extension onto existing guesthouse; permission to retain two private bedrooms in attic space of guesthouse and all site development works.	KCC Granted: 18/03/21 Appealed: 15/04/21 ABP Granted: 04/08/21
21952	Marie Kissane O'Connor	No. 92 Ardshanavooly, Killarney	Retain vehicular entrance and parking area to front of house and retention permission for extension to front and an extension to the rear upper floor.	Granted: 15/11/21
211007	Ciara Fleming	No. 80 Ardshanavooly	Construct single storey extension to front of existing dwelling and ancillary site works.	Granted: 30/11/21
211297	Mary Mangan	Ardshanavooly	Construct a single-storey extension to the front and rear of existing dwelling house.	Granted: 21/02/22
211160	Tesco Ireland Ltd.	Ardshanavooly, Deerpark Road	Retain click and collect signage in the existing Tesco car park; construction of a sheltered canopy (c. 50sq.m) in existing car park to provide 2 no. dedicated click and collect spaces for the existing Tesco, pedestrian crossing; site development works.	Granted: 04/05/22
22610	Brendan & Martina Kelleher	Fair Hill, Ardshanavooly	Construct new single storey dwelling house; planning permission to widen existing entrance for new access to new dwelling house; all site development works.	Granted 13/01/23
22605	Brendan & Martina Kelleher	Fair Hill, Ardshanavooly	Retain existing B&B premises within revised site boundaries. Retain permission for changes to existing B&B. Planning to amalgamate guest bedrooms 3 and 4 into one guest bedroom.	Granted 17/01/23
KCC: 22454 ABP: 314150	Aldi Stores (Ireland) Limited	Ardshanavooly, Killarney	Retention of amendment to opening hours to: 0900 to 2200 Monday to Friday and 0900 to 2100 on Saturdays, Sundays and Public Holidays and to no restrictions on delivery hours.	KCC Granted: 27/06/22 Appealed: 25/07/22 ABP Granted: 28/11/23
2360106	Tim Lyne	Site A, Deerpark Road, Killarney	Planning permission to construct two-storey building for office use and financial/professional services, and all ancillary site works at Site A at Deerpark Road.	Granted: 27/08/24
2460491	The Platform ICAV	Deerpark Retail Park	Change from retail/offices to medical/wellness centre; associated elevational changes.	Granted: 15/10/24
24320	Wrightwood Developments Ltd.	Ardshanavooly, Park Road	Change carpark and bin storage to 2 no. one-bedroom apartments and 1 no. one-bedroom accessible apartment; installation of pitched roof between apartments 5 and 6 relocation of window on 1st floor to side elevation of apartment no.11; previously granted under 23/991.	Granted: 30/10/24

Application No.	Applicant	Location	Proposed Development	Status
KCC: 2460523 ABP: 321077	Tim Lyne	Park Road, Killarney	Demolish existing dwelling house/outbuildings; construct two new detached dwellings, and all associated site works.	KCC Granted: 27/09/24 Appealed: 18/10/24 ACP grant: 02/09/25
23991	Wrightwood Developments Ltd.	Ardshanavooly, Park Road	(a) construct childrens creche, (b) planning permission to construct 14 in number 1 bedroom and 2 in number 2 bedroom apartments, (c) new access road, parking and all associated site works within revised site boundaries	Granted: 15/12/23
2560467	Michael Hegarty	Countess Shopping Centre Park Road Killarney V93XK52 Avenue	Planning permission for (A) a change of use of existing singular retail unit to 2 no. units. Unit 1 a Café/Restaurant without takeaway facilities and unit 2 a Restaurant with ancillary takeaway facilities and (B) to carry out alterations to existing front façade at Countess Shopping Centre, Park Road, Killarney, Co. Kerry.	Granted 2025-07-28
21332	Octavius Property Company Limited	Ballycasheen Park Road Killarney Co Kerry Ballycasheen	(1) change use of 18 no. apartments in block a from existing use as holiday apartments to use as residential apartments. (11)provision of a bin and bicycle storage with ancillary storage area for residents (111)provision of ground level private amenity spaces for ground level apartments with associated hard and soft landscaping works to include for provision of a communal open space area and associated site works	granted, conditional 24/05/2021
20706	Octavius Property Company	Blocks A,B And D Hotel Killarney Park Road And Cork Road Killarney, Co Kerry Ballycashen	change of use of 18 no. apartments in blocks a, 15no. apartments in block b and 15 no. apartments in block d from existing use as holiday apartments to use as residential apartments	Granted, 2020-09-30
ACP 318509	KPH Construction & Development Ltd.	Upper Park Road, Killarney, Co. Kerry	LRD. Construction of 143 houses, 106 apartments, creche and all associated site development works. A Natura Impact Statement (NIS) has been submitted with this application.	Granted: 21/03/24

11.3 Existing Land-use and On-going Activities

The study area is located within an established suburban environment characterised by continuous and discontinuous urban fabric, residential housing estates, commercial premises (including Deerpark Shopping Centre), local schools and managed agricultural lands.

Current activities in the locality are typical of a built-up residential setting and include routine traffic movements, commercial operations, recreational use of green spaces and general urban disturbance.

In this context, the proposed residential development represents a continuation of existing land use patterns and is not expected to give rise to significant cumulative ecological effects when considered alongside ongoing activities in the surrounding area.

11.4 EPA Licenced Facilities

The EPA's online mapping and licensing datasets[13] were reviewed to identify any licensed facilities within the vicinity of the study area that could give rise to cumulative ecological effects. The datasets consulted included:

- Integrated Pollution Control (IPC) and Industrial Emissions Licence (IEL) facilities
- Emission to Air and Emission to Water point datasets
- Waste facility permits and licences
- Urban Wastewater Treatment Plant locations and discharge points
- Section 4 discharge records

The review identified a small number of EPA licensed or registered facilities within the wider Killarney area. These are summarised in **Table 16** below and include wastewater treatment infrastructure and waste management facilities located several kilometres from the study area.

A review of historic EPA licensing records also identified one historic IPC/IEL-related record located approximately 1.3km east of the study area at Park Road, Killarney (Sara Lee (Ireland) Ltd.). The licence associated with this facility has since been surrendered and is no longer active, and the associated emission point records relate only to this historic activity.

No active IEL, IPC, waste licensed facilities or Section 4 discharge records were identified within the immediate vicinity of the study area that are considered likely to interact with the proposed development.

Given the distance from the study area, the surrendered licence status of the historic facility, and the absence of any hydrological or ecological connectivity, no pathway for significant cumulative ecological effects between EPA licensed/registered facilities and the proposed development has been identified.

Table 16. EPA Licensed / Registered Facilities

Name	Active License Type	Active License No.	Location relative to PDS
Killarney UWWT	Urban Wastewater	D0037-01	Approximately 1.6 km west
Liebherr Container Cranes Limited	IPC	P0146-02	Approximately 3.8 km north-west
Killarney Waste Disposal	Waste	W0217-02	Approximately 4 km north
Coolcaslagh Transfer Station	Waste	W0072-01	Approximately 7 km north-east

[13] https://gis.epa.ie/EPAMaps/

11.5 In-Combination and Cumulative Impact Assessment

In accordance with CIEEM (2018) guidance and EPA (2022) requirements, a review of potential in-combination effects has been undertaken. This assessment considers the potential cumulative influence of the proposed residential development together with other relevant plans, projects and ongoing activities within the surrounding area.

The following sources of potential in-combination effects were reviewed:

- Granted and/or ongoing planning applications in the locality (refer to Table 15), including residential, commercial and infrastructural developments.
- EPA-licensed facilities (refer to Section 11.4), including historic and regulated industrial activities.
- Existing land use and ongoing activities (Section 11.3), including urban development, commercial activity, and agricultural practices.
- Local authority plans and policies, including the Kerry County Development Plan 2022–2028, including Variation No. 2 – Killarney Municipal District Settlements Plan.

Each of these components was evaluated in the context of:

- The nature and scale of the proposed development, comprising a residential development on lands currently in agricultural use within an already urbanised setting.
- The limited extent of habitat loss, primarily involving improved grassland of local ecological value, with retention of boundary features such as hedgerows and treelines where feasible.
- The limited direct ecological connectivity between the study area and sensitive habitats or designated sites, together with the indirect wastewater pathway identified through Killarney UWWTP.
- The implementation of standard best practice construction measures to protect biodiversity and prevent pollution or disturbance (Section 10).

Particular consideration has been given to the proposed Ardshanavooly LRD (Planning Ref. 2660718), located approximately 0.06 km from the study area in the adjoining lands. Given the proximity and similar residential nature of the two developments, there is potential for cumulative effects where construction programmes overlap. Potential pathways include temporary increases in construction traffic, noise, dust, lighting and human activity, together with concurrent vegetation clearance, habitat disturbance and increased pressure on local drainage and wastewater infrastructure.

Ecologically, the principal potential cumulative effects relate to disturbance of mobile fauna, temporary reduction in local habitat availability, effects on ecological connectivity through boundary vegetation, and potential indirect water-quality effects. These pathways are considered limited by the modified suburban/agricultural context of both sites, the retention and reinforcement of boundary vegetation where practicable, the incorporation of landscape planting and SuDS measures, and implementation of construction-phase environmental controls.

The proposed development will connect to the public foul sewer network, and the Water Framework Directive assessment identifies a tenuous indirect pathway to downstream surface waters through additional loading of Killarney UWWTP and subsequent treated discharge. This pathway is therefore considered cumulatively with other residential development in the locality, including the Ardshanavooly LRD. The proposed development is subject to Uisce Éireann connection requirements and associated infrastructure upgrades, while surface water will be managed separately through the on-site SuDS treatment train. On this basis, significant cumulative effects on downstream aquatic ecological receptors are not predicted.

Where construction of the proposed development and the Ardshanavooly LRD occurs concurrently, cumulative disturbance effects are expected to be temporary and localised. Subject to implementation of the respective construction environmental management measures and appropriate coordination between adjoining construction sites where required, significant cumulative ecological effects are not anticipated.

The study area is located within a built-up suburban environment characterised by established residential development, commercial uses, road infrastructure, and managed agricultural lands. These existing pressures form the baseline ecological context of the site. The proposed development represents a continuation of this established land-use pattern and is not considered likely to introduce new or intensified pressures that would act cumulatively on ecological receptors.

Taking account of the scale, duration and nature of the proposed works, the limited direct ecological connectivity to sensitive habitats or designated sites, and the indirect wastewater pathway identified through Killarney UWWTP, potential cumulative pathways have been identified; however, having regard to their nature, scale, duration and the environmental controls incorporated into the respective developments, they are not considered likely to result in significant cumulative ecological effects.

Accordingly, no likely significant cumulative or in-combination ecological effects are predicted to arise as a result of the proposed development, either alone or in combination with other plans or projects in the area.

12. Residual Effects

Residual effects are those that remain following the implementation of proposed avoidance, minimisation, and best-practice measures, or impacts for which no further mitigation is feasible. For the proposed residential development at Deerpark, residual effects are predicted to be limited in scale and duration given:

- the relatively small and localised development footprint
- the predominance of habitats of local ecological value within the study area
- the retention, where feasible, of boundary features such as hedgerows and treelines
- the implementation of standard environmental protection and good practice construction measures outlined in Section 10

Table 17 summarises the predicted residual effects on the Important Ecological Features (IEFs) identified as being of the highest ecological value within the study area.

Table 17. Summary of predicted residual effects on IEFs

IEFs	Construction phase effects (without mitigation)	Operational phase effects (without mitigation)	Mitigation measures	Residual effects
Hedgerows and treelines	Potential habitat effects: **Permanent, Slight, Negative effects**. Potential disturbance/displacement effects:	No significant operational phase impacts predicted.	• Pre-construction ECoW checks • Clear delineation of working areas • Retention of boundary vegetation where feasible	Residual habitat effects assessed as **Permanent, Slight, Negative.** Residual disturbance/displacement effects assessed as **Short-**

IEFs	Construction phase effects (without mitigation)	Operational phase effects (without mitigation)	Mitigation measures	Residual effects
	Temporary, Slight, Negative Effects.		• Vegetation clearance minimised and controlled • Nesting bird checks where required	**term, Not Significant, Negative.** **No significant residual effects.**
Hedgehog, Red squirrel, Pygmy shrew, Pine marten, Badger	Potential habitat effects: **Permanent, Slight, Negative effects** Potential disturbance/ displacement effects: **Short-term, Slight, Negative Effects** due to noise, human presence, and vibration.	No significant operational phase impacts predicted.	• Pre-construction walkover by ECoW • Controlled vegetation clearance • Excavations covered overnight or fitted with escape ramps • Works confined to minimum footprint	Residual habitat effects assessed as **Permanent, Not Significant, Negative.** Residual disturbance/displacement effects assessed as **Short-term, Not Significant, Negative.** **No significant residual effects.**
Bats (foraging/commuting)	Potential habitat effects: **Permanent, not significant, Negative effects** Potential disturbance/displacement effects: **Temporary, Slight, Negative effects**	Potential low-level disturbance from residential lighting; assessed as **Slight**.	• Retention and protection of Trees 1, 6 and 7 identified as having Moderate–High bat roost suitability • Retention of boundary treelines and hedgerows where practicable • Sensitive lighting design in accordance with BCT Guidance Note 08/23 • Directional, low-spill construction and operational lighting • Minimisation of vegetation clearance and maintenance of ecological connectivity	Residual habitat effects assessed as **Permanent, Not Significant, Negative.** Residual disturbance/displacement effects assessed as **Short-term, Not Significant, Negative.** **No significant residual effects.**

IEFs	Construction phase effects (without mitigation)	Operational phase effects (without mitigation)	Mitigation measures	Residual effects
Breeding and foraging birds	Potential habitat effects: **Permanent, Slight, Negative effects** Potential disturbance/displacement effects: **Temporary to Short-term, Slight, Negative Effects**	Low-level ongoing disturbance associated with residential activity; **Not Significant.**	Pre-clearance nesting bird surveys (March–August inclusive) • Habitat retention where feasible • Vegetation removal minimised	Residual habitat effects assessed as **Permanent, Slight, Negative.** Residual disturbance/displacement effects assessed as **Short-term, Not Significant, Negative.** **No significant residual effects.**
Amphibians	Potential habitat effects: **Permanent, Not Significant, Negative effects** Potential disturbance/displacement effects: **Temporary to Short-term, Slight, Negative Effects.**	No significant operational phase impacts predicted.	• Controlled ground disturbance • Excavations managed to prevent wildlife entrapment • Habitat disturbance minimised	Residual habitat effects assessed as **Permanent, Not Significant, Negative.** Residual disturbance/displacement effects assessed as **Short-term, Not Significant, Negative.** **No significant residual Effects.**

13. Conclusion

The proposed Large-Scale Residential Development at Ardshanavooly, Killarney will involve the construction of 188 residential units, together with associated infrastructure, internal roads and access works associated with the phased delivery of the Killarney Strategic Links Project – Links Road A–C, public open space, drainage, lighting and landscaping works.

The ecological assessment identified a number of Important Ecological Features (IEFs) of local importance within and adjacent to the study area, including:

- Hedgerows and treelines (WL1, WL2)
- Bats (foraging/commuting)
- Breeding birds
- Small terrestrial mammals (precautionary basis)
- Amphibians (precautionary basis)

The majority of habitats within the site are of low ecological value, comprising managed agricultural grassland and artificial surfaces. No rare or protected flora species were recorded. Butterfly bush and cherry laurel were recorded within the study area; however, no Third Schedule invasive alien plant species were identified during field surveys.

Construction phase effects will primarily relate to:

- Localised habitat loss and alteration
- Disturbance to fauna from noise, lighting and human activity
- Temporary displacement of mobile species
- Minor fragmentation of boundary habitats

These effects are predicted to be:

- Localised in extent
- Short-term to permanent in duration (depending on the receptor)
- Slight and negative in magnitude

The implementation of the avoidance and mitigation measures set out in this EcIA, including ecological supervision, pre-construction checks, pollution prevention measures, protection of retained habitats, sensitive lighting design, biosecurity protocols and the incorporation of drainage and landscape measures, will minimise risks to ecological receptors.

Following mitigation, residual effects on Important Ecological Features are predicted to be:

- Neutral to slight negative at a local scale
- Not significant in ecological terms

Operational phase effects are expected to be limited. While there will be a permanent change in land use from agricultural grassland to residential development, retained boundary vegetation, native and pollinator-focused landscaping, biodiversity enhancement measures and the incorporation of an infiltration-based SuDS treatment train will reduce potential effects on ecological connectivity and water quality taking into acccount:

- Ecological connectivity at a local scale will largely be maintained
- Remaining habitats will continue to provide foraging and commuting opportunities for common species
- No significant long-term operational impacts are anticipated

A review of plans, projects and activities in the wider area identified potential cumulative pathways associated with nearby residential development, particularly the adjoining Ardshanavooly LRD, including overlapping construction disturbance, habitat alteration, traffic, lighting and potential water-quality effects. An indirect wastewater pathway associated with additional loading to Killarney UWWTP was also considered. Having regard to the nature and scale of these pathways, the environmental controls incorporated into the proposed development and the measures set out in this EcIA, significant cumulative or in-combination ecological effects are not predicted.

Overall, taking account of:

- the local ecological context
- the limited ecological value of the majority of on-site habitats

- the retention and protection of key boundary habitats and the three trees identified as having Moderate–High bat roost suitability
- the absence of designated sites within the development footprint
- the avoidance, mitigation, drainage, landscape and biodiversity measures incorporated into the proposed development
- the assessment of potential cumulative and in-combination effects

the proposed development is not predicted to result in significant adverse effects on identified ecological receptors.

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Appendix 1

Site Layout Plan


Legend
Site Boundary
Building
Internal Building Layout
Site Layout
Deerpark Road
Dennehy's Boreen
Arlington Heights
Map Reproduced From Tailte Eireann By Permission Of The Government. CYAL50465038.
0
35
70
Metres
N
MWP