

MWP

Ecological Impact Assessment
Port Road Housing Development

Portal Asset Holdings Ltd.

April 2024

Contents

1.	Introduction	1
1.1	Overview of the Proposed Development	1
1.2	Scope of Assessment	1
1.3	Statement of Competency	1
2.	Methodology.....	2
2.1	Legislation and published guidance.....	2
2.2	Zone of Influence (ZOI).....	2
2.3	Key Ecological Receptors (KERs)	3
2.4	Assessment Criteria	3
2.5	Desk-top Study.....	5
2.6	Field Surveys	6
3.	Details of Proposed Development	8
3.1	Site Location and Context	8
3.2	Characteristics of the Project.....	8
4.	Description of Existing Environment	12
4.1	Sites Designated for Biodiversity Conservation	12
4.2	Description of the Proposed Development Site.....	17
4.3	Habitats and Flora.....	21
4.4	Fauna.....	29
5.	Evaluation of Designated Sites as Ecological Receptors	35
6.	Evaluation of Habitats, Flora and Fauna as Key Ecological Receptors	37
6.1	Habitats	37
6.2	Rare and Protected Flora Species	37
6.3	Fauna.....	38
7.	Do-nothing Scenario	39
8.	Potential Impacts of the Project	39
8.1	Construction Phase.....	39
8.2	Operational Phase	40
9.	Assessment of Potentially Significant Effects.....	40
9.1	Construction Phase.....	40
9.2	Operational Phase	43
10.	Mitigation.....	44
10.1	Construction and Environmental Management Plan (CEMP)	44
10.2	Environmental Officer	45
10.3	General Protection of Water Quality during Construction.....	45
10.4	Protection of Bats	47
10.5	Protection of wild birds, their nests and eggs.....	48
10.6	Protection of Badger.....	48
10.7	General Protection of Fauna	49
10.8	Management of Invasive Species, Site Biosecurity	49
11.	Cumulative Impacts	50
11.1	Plans	50
11.2	Permitted and Proposed Developments in the Locality	50
11.3	Existing Land-use, On-going Activities and Water Quality	51
12.	Residual Effects	51
13.	Enhancement Opportunities.....	54
13.1	Landscaping.....	54
13.2	Other measures	55
14.	Conclusion	55
15.	References	56

Tables

Table 1. Criteria for assessing impact quality based on EPA (2022).....	4
Table 2. Criteria for assessing impact significance based on EPA (2022)	4
Table 3: Criteria for determining duration of effects based on EPA (2022)	4
Table 4. Natura 2000 sites within 15 km or the ZOI of the proposal	13
Table 5: Rare or protected plant species within 10km grid square V99	21
Table 6. Records of rare and protected terrestrial mammal species within the hectad V99	30
Table 7: Summary of bat activity recorded during walked transect survey	33
Table 8. Evaluation of habitats within the study area.....	37
Table 9. Evaluation of faunal species within the study area.....	38
Table 10. Construction phase effects potentially associated with the project	39
Table 11. Operational phase effects potentially associated with the project	40
Table 12. Potential impacts on faunal species identified as KERs during the construction phase and the significance of the impact	41
Table 13. Potential impacts on faunal species identified as KERs during the construction phase and the significance of the impact	52

Figures

Figure 1: Site location map.....	8
Figure 2: Construction phasing.....	9
Figure 3: Sustainable drainage plan	12
Figure 4: Natural 2000 sites within ZOI.....	14
Figure 5: NHA and pNHA sites within ZOI	17
Figure 6: Indicative development area excluding proposed works of Port Road and St Margarets Road.....	18
Figure 7: Course of the Deenagh River	19
Figure 8: Course of field boundary drain	20
Figure 9: Habitat map	28
Figure 10: Invasive alien plant species in the proposal site (September 2021)	29
Figure 11: Badger sett locations.....	31
Figure 12: Bat contacts recorded during transect survey.....	33

Appendices

Appendix 1 – An Bord Pleanála Order

Appendix 2 – NRA Ecological Evaluation

Appendix 3 – Badger Survey Report 2023

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
19554	6002	B	16/11/2021	MKy	PR	MKe	Final
19554	6002	C	15/08/2023	PR	KF	KF	Draft
19554	6002	D	24/08/2023	KF	KF	KF	Draft
19554	6002	E	21/04/2024	PR	KF	KF	Final

MWP, Engineering and Environmental Consultants

Address: Reen Point, Blennerville, Tralee, Kerry V92 X2TK

www.mwp.ie



1. Introduction

A Large-scale Residential Development (LRD) Planning Application is being lodged to Kerry County Council by Portal Asset Holdings Ltd. for a site at Port Road, Killarney, Co. Kerry. Malachy Walsh and Partners Engineering and Environmental Consultants (MWP) has been engaged by HW Planning to prepare an Ecological Impact Assessment (EclA) report on the proposed works to accompany the application.

In August 2022, An Bord Pleanála (ABP) refused permission for a previous application for this proposal [ABP-312987-22] on the grounds that it could not be concluded that the proposed development would not adversely affect the integrity the Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment SAC (000365) in view of the site's Conservation Objectives, specifically with regard to impacts on the foraging activities of the population of lesser horseshoe bat (*Rhinolophus hipposideros*) for which the site is selected. A copy of the board's Order [ABP-312987-22] is included in Appendix 1.

A new application has been prepared to address the grounds cited in the board's decision. A Screening for Appropriate Assessment report and Natura Impact Statement have been completed and will also be submitted as part of the application.

This report describes the existing biodiversity and ecological characteristics of the proposed development site..

1.1 Overview of the Proposed Development

The proposed development will consist of 224 no. units comprising 76 no. two storey houses (8 no. 2 bed units, 38 no. 3 bed units and 30 no 4 bed units), 52 no. duplexes over 3 no. storeys (14 no. 1 bed units, 26 no. 2 bed units and 12 no. 3 bed units) and 96 no. apartments in 3 no. 4 no. storey buildings (16 no. 1 bed units and 80 no. 2 bed units), and a 2 no. storey creche (334 sq. m). Ancillary site works include public and communal open spaces, hard and soft landscaping, the relocation/undergrounding of ESB powerlines, wastewater infrastructure including foul pumping station, surface water attenuation, water utility services, public lighting, bin stores, bicycle stores, ESB substation, and all associated site development works.

Vehicular access to the development will be via a new entrance from Port Road. The proposed development includes upgrade works to Port Road, a pedestrian connection to Millwood Estate, and improvements to the stormwater network on St. Margaret's Road, as part of enabling infrastructure for the project.

1.2 Scope of Assessment

- Identify and document protected habitats and species in the study area through desk top studies
- Undertake baseline ecological surveys at the site
- Evaluate the nature conservation importance of the ecological resources identified using a scientifically robust and objective methodology based on current National and International best practice guidelines
- Predict the potential direct, indirect and cumulative effects of the project on biodiversity
- Prescribe mitigation measures to prevent and minimise potential effects on biodiversity
- Identify habitats within the study area that can benefit from ecological management for the purpose of local biodiversity enhancement.

1.3 Statement of Competency

This EclA was prepared by Muiréad Kelly (BSc. MSc.) Senior Ecologist at Malachy Walsh and Partners (MWP). Muiréad has over ten years' experience in ecological surveying, ecological impact assessment and the appropriate assessment process. She has completed numerous ecological assessments for a wide variety of projects including for renewable energy projects, housing developments, industry and coastal projects. She is an experienced field ecologist and has a diverse ecological survey profile, including habitats and flora, mammals, birds and

terrestrial/aquatic invertebrates. She has held NPWS Licences for small mammal trapping, tape lure/endoscope bird surveys, disturbance of bats and Kerry slug and photographing wild animals.

It was updated by Patrick Ryan (BSc (Hons) Wildlife Biology). He has worked in professional consultancy for 13 years and has extensive experience of ecological impact assessments, drafting biodiversity chapters for EIA and Appropriate Assessment and, as author of the NIS, appeared as an Expert Witness at the An Bord Pleanála (ABP) Oral Hearing on the South Kerry Greenway (ABP reference: PL08 .302450) in October 2019.

2. Methodology

2.1 Legislation and published guidance

This assessment was undertaken with regard to the following publications:

- Guidelines on information to be contained in Environmental Impact Statements (EPA, 2022)
- Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland published by the Institute of Ecology and Environmental Management (CIEEM, 2022)
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009)

The following legislative framework was also considered:

- Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora;¹
- Council Directive 2009/147/EC on the conservation of wild birds;²
- Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy;³
- European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011), as amended;
- Planning and Development Act 2000, as amended;
- Wildlife Act 1976, as amended;
- Flora (Protection) Order, 2022⁴;
- European Communities (Quality of Salmonid Waters) Regulations, 1988⁵.

2.2 Zone of Influence (ZOI)

The study area for the project includes all lands within the red line boundary, as well as the adjacent habitats ecologically connected to them. The following were considered when identifying the potential ZOI at the initial stages of the project:

- The nature, size and location of the project.
- Identification of sensitive habitats and species in the study area.
- Identification of suitable habitats for high conservation value species within the study area, and extending away from the study area.
- Ecological connectivity between the project and the wider landscape.
- The sensitivities of the relevant key ecological receptors.
- Identification of potential effect pathways to key ecological receptors.
- Habitat connectivity and foraging ranges of fauna.

1 Hereinafter referred to as the Habitats Directive

2 Hereinafter referred to as the Birds Directive

3 Hereinafter referred to as the Water Framework Directive

4 S.I. No. 235 of 2022

5 S.I. No. 293/1988

2.3 Key Ecological Receptors (KERs)

A Key Ecological Receptor (KER) is defined in NRA (2009) as those ecological features, site, designated site, habitat, ecological feature, assemblage of species or individual protected species that occurs within the vicinity of a proposed project, upon which effects are likely and for which detailed assessment is required. KERs are taken to be those features that are evaluated as Locally Important (higher value) or higher (see **Section 2.4.1**). The significance of the ecological effects of the project was assessed on each of the KERs identified.

2.4 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.

2.4.1 Evaluation

The evaluation outlined in this report and the assessment of the effects of the proposed project follows methodologies set out in 'Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2022)' and 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (NRA, 2009).

These guidelines set out the context for the determination of value on a geographical basis with a hierarchy (International through to Local) assigned based on the importance of any particular ecological receptor. The guidelines provide a basis for determination of whether any particular site, habitat, or species is of importance on the following adapted scale:

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

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

The criteria used to evaluate the value of ecological resources has been included in **Appendix 2**. The value of habitats is assessed based on habitat condition, size, rarity, conservation and legal status. The value of fauna is assessed on biodiversity value, legal status and conservation status. Biodiversity value is based on its national distribution, abundance or rarity, and associated trends.

2.4.2 Impact Assessment

The significance of an effect is determined using the criteria provided in EPA (2022) for assessing impact. Professional judgement is used.

The criteria for assessing quality of effects and significance of effects are set out in **Table 1** and **Table 2**. The criteria used when quantifying the duration and frequency of the potential effects are provided in **Table 3**.

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	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 impact 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

Table 3: Criteria for determining duration of effects based on EPA (2022)

Duration	Definition
Momentary	Effects lasting from seconds to minutes.
Brief	Effects lasting less than a day.
Temporary	Effects lasting less than a year.
Short-term	Effects lasting 1 to 7 years.
Medium term	Effects lasting 7 to 15 years.
Long term	Effects lasting 15 to 60 years.
Permanent	Effects lasting over 60 years.
Reversible	Effects that can be undone, for example through remediation or restoration.
Frequency	How often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).

Where ecological effects were assessed to be potentially significant, mitigation measures were incorporated into the project design to remove or reduce the effects. The significance of the cumulative effects of the proposed project was also assessed by determining the ecological effects of the proposal in combination with other developments that have planning permission, that are under construction or are in existence in the area. The

cumulative impact with existing activities in the area is also considered. The significance of the residual effects after mitigation was then assessed.

2.5 Desk-top Study

A desktop study was carried out to collate and review available information and documentation relating to the biodiversity of the site and the geographical area extending away from it. The following publications, which include current best practice guidance, current scientific literature, up to-date data and data-sets were reviewed:

- OSI Aerial photography and 1:50,000 mapping.
- National Parks and Wildlife Service (NPWS) (website and on-line map viewer).
- National Biodiversity Data Centre (NBDC) (on-line map viewer).
- Teagasc soil area maps (NBDC website).
- Geological Survey Ireland (GSI) area maps.
- Environmental Protection Agency (EPA) water quality data.
- Southwestern River Basin District (SWRBD) datasets (Water Framework Directive).
- Water Framework Directive Cycle 2 datasets (online).
- BC Ireland.
- Kerry County Development Plan (2022-2028).
- Killarney Municipal District Local Area Plan (2018-2024).
- Killarney Municipal District Local Area Plan (2023-2029), draft out for consultation
- Killarney Town Development Plan 2009-2015 as extended and its associated Variations
- Review of records of plant species protected under the Flora (Protection) Order of 2022 and the Ireland Red List No: 10 Vascular Plants (Wyse Jackson *et al.*, 2016).
- Other information sources and reports footnoted or cited in the course of the report.

Project specific documents, submitted with this application, reviewed include:

- Pre-application Consultation Design Statement (Deady Gahan Architects, 2022)
- Engineering Design Report (MHL⁶, 2023)
- Public Lighting Design Assessment (MHL, 2023)
- Flood Risk Assessment (MWP, 2021)
- Traffic and Transportation Assessment (MHL, 2023)
- Tree Survey, report and drawings (Brady Shipman Martin, 2021)
- Landscape Design Report (Brady Shipman Martin, 2021)
- Construction Environmental Management Plan (MHL, 2021)
- Planning Drawings (MHL, 2023)
- Bat survey report, Port Road Killarney (Bat Eco Services, 2023)

2.5.1 Database Searches and Data Requests

The study area lies within the hectad⁷ V99. Species records available in this hectad was retrieved from the NBDC on-line database and reviewed. A data request for records of any rare or protected flora and fauna within the

⁶ MHL & Associates Ltd.

⁷ An area 10 km x 10 km square

10km grid square V99 was submitted to the National Parks and Wildlife Service (NPWS). The requested records were received on the 10th of September 2021 for an area encompassing 5 km around a centroid of the site.

The data received is incorporated into this report and was used to help inform the impact assessment in relation to the proposal.

2.5.2 Desk-top Review for Bats

A desktop review of publicly available relevant data was undertaken on the National Biodiversity Data Centre (NBDC) and National Parks & Wildlife Service (NPWS) websites. The National Biodiversity Data Centre was reviewed for relevant data, specifically i) existing species records for the 10km square in which the study site is located and ii) an indication of the relative importance of the wider landscape in which the study site is located, based on Model of Bat Landscapes for Ireland (Lundy *et al.*, 2011). In the latter, the index ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats.

The information collated from the the NBDC database search has been incorporated into this report and was used to help inform the impact assessment in relation to the proposal.

2.6 Field Surveys

The desk top study undertaken by MWP was supplemented by ecological surveys of the proposed development site to determine the scope of the ecological assessment. These field surveys included habitats, flora and fauna.

The ecological features of interest within and connected to the site were recorded and used to identify the KERs of the development. The following literature was referred to:

- Animal Tracks and Signs (Bang and Dahlstrom, 2006)
- Birds of Conservation Concern in Ireland 4: 2020 – 2026 (Gilbert *et al.*, 2021)
- Checklists of protected and threatened species in Ireland (Nelson, *et al.*, 2019)

The results of these surveys are provided in **Sections 4.3** and **4.4**, below.

2.6.1 Habitats, Flora and Fauna

Initial ecological surveys were undertaken in September 2018. Further surveys were undertaken in March 2019, and March, June, July, and September 2021. Surveys had regard 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 bounding the development site were categorised to Level 3 according to Fossitt (2000). Habitats occurring within the site were assessed for their potential suitability for terrestrial mammal species. Evidence of terrestrial mammals such as tracks, feeding signs, droppings and nests were searched for. Any bird species observed or heard calling during surveys were recorded. Any invasive alien plant species observed within the site during survey were also recorded. An invasive alien plant species survey was undertaken in September 2021.

Following surveys, a habitat map for the development site was prepared (see **Section 4.3**, below).

2.6.2 Badger

Targeted badger surveys were undertaken on various dates between 2018 and 2021 following guidance outlined in:

- Guidelines for the Treatment of Badgers prior to the Construction of National Roads Schemes (NRA, 2005).

- Surveying for Badgers: Good Practice Guidelines (Scottish Badgers, 2018).

These surveys and results are outlined in detail in **Appendix 3**.

The locations of the setts were surveyed in April 2024 to determine the current occupancy status.

2.6.3 Bats

The following surveys were undertaken, in September 2021, in view of guidance by Collins (2016):

- Daytime Visual Roost Inspections.
- Bat Activity Transect.

2.6.3.1 Daytime Visual Roost Inspections

The initial daytime search involved a methodical search from ground level of the trees within the site. Trees were visually examined using best practice techniques to identify suitable cracks/crevices and to locate droppings, urine and oily residue stains, scratch marks and the remains of insect prey (moth wings etc.) to identify Potential Roost Features (PRFs).

2.6.3.2 Bat Activity Transect

2.6.3.2.1 2021 Survey

A walked transect was undertaken along the internal perimeter of the site on the 23rd of September 2021, at dusk, between 19:00 and 21:00. Ultrasonic detection was carried out using Wildlife Acoustics full spectrum Echo Meter Touch 2 bat detectors. A contact (“bat pass”), as recorded in the results from these surveys, describes a bat observed by the surveyor. This contact can range from a commuter passing quickly to a foraging bat circling a feature lasting for several minutes. Bat contacts do not equate to numbers of bats as individual bats of the same species cannot be differentiated. A single bat continuously foraging in proximity to the detector can generate a large number of contacts in one night. In addition, variability occurs in the likelihood of detection between species. When several bats of the same species were encountered together, they were recorded under the one contact. A separate contact was recorded for each pass. A contact finished when the recorder assumes the bat is no longer present. The same bat may be recorded in several contacts throughout the night. This survey type cannot estimate abundance of bats, rather activity; the amount of uses bats make of an area/feature.

2.6.3.2.2 2023 Survey

In response to ABP’s assessment that it could not be concluded that the proposed development⁸ would not adversely affect the integrity the Killarney National Park, MacGillycuddy’s Reeks and Caragh River Catchment SAC (000365) in view of the site’s Conservation Objectives, specifically with regard to impacts on the foraging activities of the population of lesser horseshoe bats for which the SAC is selected, Bat Eco Services was commissioned to provide consultation in relation to the potential impact of the proposed development on said population. A series of surveys was undertaken, along the boundary of the Killarney National Park and the Port Road, to monitor the activity of that portion of said population roosting in Deenagh Lodge. Malachy Walsh & Associates undertook static surveillance while Bat Eco Services undertook additional bat surveys to supplement this static surveillance.

⁸ ABP-31987-22

As these surveys did not include the PDS and as the purpose of the surveys was to inform the assessments required under the Habitats Directive which are included in the Natura Impact Statement submitted as part of the current application, they are not considered or assessed in this document.

3. Details of Proposed Development

3.1 Site Location and Context

The proposal comprises the construction of a residential development and all ancillary site development works, at Port Road, Killarney, Co. Kerry. The development site is located near Killarney town centre.

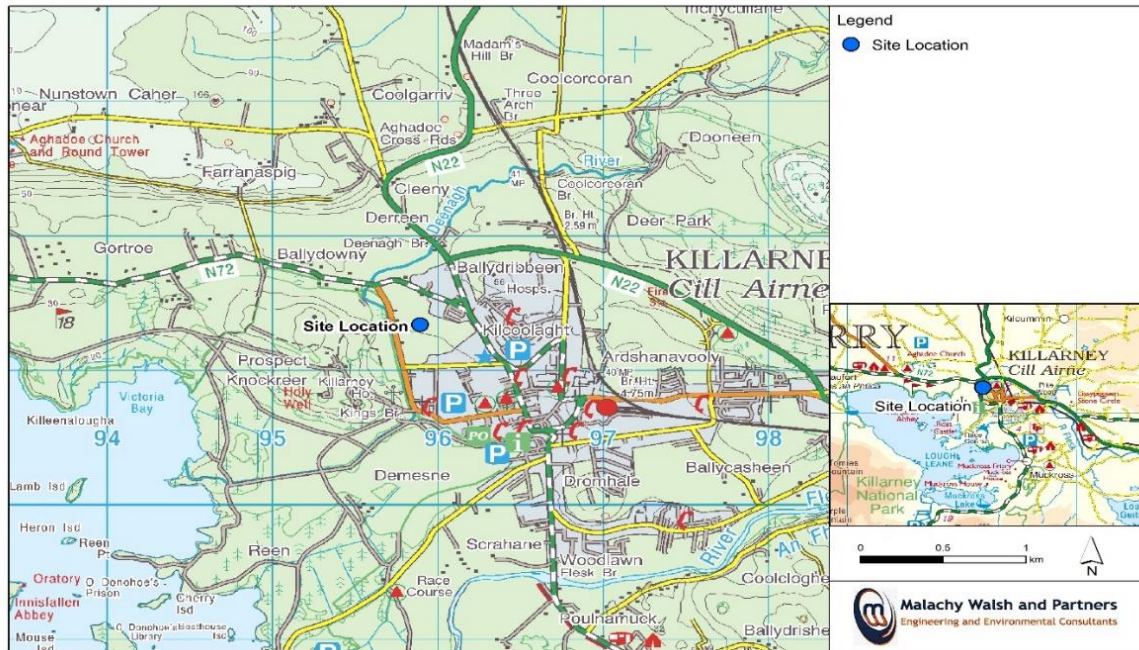


Figure 1: Site location map

The proposed development site comprises an agricultural grassland (greenfield) site that slopes from a highpoint in the northwest down to Port Road on the west, and to the southeast. Along the western boundary of the site is a connection to the R877 road. Also, along this boundary are the rear gardens of the Port Road Cottages. The northern and eastern boundaries of the site adjoin existing residential developments. The southern boundary adjoins the playing fields of Killarney Community College. The lands subject to the permitted development are unoccupied and undeveloped. Previously the site was used for the grazing of livestock as it once formed part of the Mercy Order farm and school. The existing land-uses in the vicinity of the subject site comprise primarily residential properties, with a number of local amenities in the form of a national school, two secondary schools, churches, a community hospital, and a nursing home (within 500 m).

A site access point is located in the northwestern corner of the site across the road from Killarney National Park. This serves the crèche initially and then connects into the residential aspect of the scheme. A footpath connecting the development to Port Road links the site with local bus routes and Killarney town centre ensuring that alternative modes of transport are provided as a substitute for the car.

3.2 Characteristics of the Project

The design approach directly relates to defining the existing natural features that exist on site and incorporating them into the scheme where possible to give the development a very distinctive quality that is unique to its

location. There are treelines and a stream within the PDS site that are proposed to be integrated into the scheme⁹. A detailed Landscaping Plan, which accompanies this planning application, has been developed incorporating high quality, usable spaces. Areas of high-quality existing vegetation have been preserved and existing sensitive areas have been identified and removed from the buildable area of the proposal.

3.2.1 Construction Phase

It is proposed to develop the site in three phases:

1. Phase 1: The total developable Phase 1 site is to contain 76 dwellings in total and the childcare facility. The Phase 1 site is envisaged to take approximately 15 months to complete fully.
2. Phase 2: The total developable Phase 2 site is to contain 52 Duplex Units and is envisaged to take 12 months to complete.
3. Phase 3: The total developable Phase 3 site is to contain 96 apartments inclusive of undercroft parking and is envisaged to take 15 months to complete.



Figure 2: Construction phasing

3.2.1.1 Site access

The proposed development will provide for a new vehicular access and pedestrian entrances onto Port Road, upgrades to Port Road comprising reduction in carriageway widths, provision of shared pedestrian/cycle path and uncontrolled pedestrian crossing, and a pedestrian connection to Millwood Estate. Construction site access will use the main access. A main spine road and connected local roads will connect the housing units on site while the main spine road will access the apartment blocks close to the northern site boundary.

⁹ As is an archaeological feature – a barrow.

3.2.1.2 Landscaping

For the most part existing hedgerow and trees will be maintained and protected at the main PD site with gaps to be filled with native species. Trees will be lost in the eastern field and around the site entrance with the removal of scrub and woodland. There will be selected removal of vegetation in the northern hedgerow and retained trees will be protected by temporary fencing during construction works. In an anti-clockwise direction from the proposed site entrance, the Landscaping Plan proposes to:

- strengthen the western site boundary between the site entrance and the rear of the cottages with planting a dense/tightly spaced strip of native species with oak (on the outside/boundary side and a mix of birch (*Betula* spp.) and Scots pine (*Pinus sylvestris*) inside.
- strengthen the western site boundary along the rear of the cottages and existing residential trees and hedgerow with planting a dense/tightly spaced strip of native species including birch, alder (*Alnus glutinosa*), oak and Scots pine.
- retain existing trees and hedgerow on the southern college fields boundary of the western field with planting of a few scattered birch.
- retain existing trees and hedgerow on the southern boundary of the eastern field and remove adjacent woodland and replace with planting of oak, birch and alder, mainly.
- remove hedge on eastern side of eastern field and replace with a 'Screen Planting' mix of holly (*Ilex aquifolium*), wild cherry (*Prunus avium*), dog rose (*Rosa canina*), blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*) and hazel (*Corylus avellana*) inside which a treeline mix of oak, birch, alder, wild cherry and Dutch elm (*Ulmus hollandica*) cultivar will be planted.
- remove hedge on northern side of eastern field and replace with a 'Native Hedgerow Planting Mix' mix of holly, blackthorn and hawthorn inside which a treeline mix of oak, birch, wild cherry and rowan (*Sorbus aucuparia*) will be planted.
- retain existing trees and hedgerow for the most part on the northern boundary of the western field and plant up gaps with oak, rowan and birch inside which some further planting of oak, birch and rowan will be done.

Further planting of native trees is proposed within the LRD associated with the housing units and green spaces. The area of hedgerow and oak trees separating the western and eastern fields will be retained. It is proposed to retain the existing wet grassland/marsh habitat where feasible near the southern boundary of the western field. Full details of the Landscaping Plan are provided in the Landscape Design Report and drawings accompany this application.

3.2.1.3 Water

The site will connect to an existing watermain at the entrance to the PD site. Kerry Central Regional Water Supply Scheme, which abstracts water from Lough Guitane and Owgariff River, supplies water to Killarney as well as other parts of Kerry. Lough Guitane via the Finow River flows into the Owgariff River before joining the River Flesk, which in turn flows into Lough Leane.

3.2.1.4 Stormwater management

Storm water management proposals for the site have been informed by the relevant standards and comply with best practice in terms of SuDS (Sustainable Urban Drainage Design) (MHL Engineering Report , 2023). Rainfall falling on roofs, paved areas, roads, soft landscaped/green areas will infiltrate to ground through a mix of gullies, permeable paving, soakaways and bioretention features (swales, catchpits, treepits and rain gardens) into a piped stormwater network. Green roofs, which are planted surfaces, will be incorporated into the proposed apartment blocks which will intercept rainfall before being discharged to the network. Underground attenuation and

associated flow control devices will restrict stormwater flows to greenfield runoff rates before being discharged via full retention Class 1 oil interceptors. Four underground attenuation tanks are proposed, the two northerly tanks, 1 and 2, will infiltrate to ground (with Tank 2 having overflow to Tank 3) while the two southerly tanks, 3 and 4, will discharge to the Folly stream, described in **Section 4.2**, below, via headwalls.

Flows from large rainfall events will bypass the bio-retention area and be conveyed directly to the sewer system. Stormwater entering bioretention features will also infiltrate to soils and groundwater. Infiltration storage to be provided up to the 100-year storm event allowing for 10% climate change.

According to the engineering report, regular maintenance of the flow control device will be required to remove any blockages, particularly in the wake of heavy rainfall events or local floods. It recommends that the petrol interceptors be fitted with an audible high-level silt and oil alarm for maintenance and safety purposes. Regular inspection and maintenance are recommended for the petrol interceptors.

3.2.1.5 Wastewater Management

The estimated DWF average from the PD is 9.635l/s. Uisce Éireann (UÉ) reviewed the applicants PD wastewater design in 2022 and based upon details concluded that the proposals were compliant with their code of practice. Once approved by UÉ the PD site will be connected to the existing foul sewer network, which is drained by gravity and flows into Killarney WWTP. Due to limited capacity in the existing foul/combined network in the local area, sections of surface water loading from the combined sewer along St. Margaret's Road will be removed from the combined system and assigned to a separate existing storm sewer network, which discharges directly to Lough Leane via the Deenagh River. This will alleviate current loading in the existing foul sewer network, thereby providing capacity for the site's generated foul flows. Works will be carried out by the developer.

On site wastewater infrastructure includes underground sewer lines and foul pumping station including 24-hour emergency storage.

3.2.1.6 Lighting

Residential lighting comprises streetlights and internal and external lighting from housing units and apartments. As part of this application, it is proposed to replace the existing public lighting heads/lanterns with LEDs along Port Road for the length of the proposed shared surface works between the site entrance and the junction at New Road.

3.2.1.7 Traffic

The AADT (Annual Average Daily Traffic) for Port Road has been approximated at 10,000 veh/day based on 2023 traffic counts. 1,100 veh/day will be generated by the PD.

3.2.2 Operational Phase

The site will be connected to the municipal foul network. The existing foul/combined network in the local area was identified at pre-planning stage as having limited capacity to accommodate emissions from the site. It has been agreed to remove sections of surface water loading from the combined sewer along St. Margaret's Road. This section of road will be removed from the combined system and assigned to a separate storm sewer line. The outcome of this will alleviate current loading in the existing foul network, thereby providing capacity for the site's generated foul flows. This proposal has been agreed with Kerry County Council (KCC) and Uisce Éireann.

The proposed Landscaping Plan will play a key role in helping to achieve green field runoff rates on the development. Car parking will be on permeable grasscrete material. A network of bioswales will be incorporated into streets and open spaces across the scheme. Surface water will be diverted into these features where it will percolate at a reduced rate into the ground. The bioswale features will include overflow pipes that will direct excess water to buried storage tanks in extreme weather events. These tanks will connect to a new outfall to the Folly stream at the southern boundary of the site. The development layout creates contiguous greenspaces, particularly at the centre and around the western and southern edge, that provide larger permeable surface area. The retention of existing trees supported by additional tree, hedgerow and shrub planting in these areas will increase evapotranspiration rates. Green roofs will be incorporated into the proposed apartment blocks which will intercept and slow the surface water run off rate at source. Soakaways will be incorporated in the gardens of the individual dwelling houses to contribute to take advantage of the permeability of the site.



Figure 3: Sustainable drainage plan

4. Description of Existing Environment

4.1 Sites Designated for Biodiversity Conservation

This section describes the sites designated for nature conservation, under Irish or EU legislation, that are considered to be within the ZOI of the proposal. In the case of this proposed development, sites within 15 km of the proposed development are considered to be within the ZOI. Information is provided on their features of conservation interest, the distance of each site from the proposed development, and whether it is considered that a source-receptor impact pathway exists between the proposed development and each designated site.

With regards to the nature of the project, it is considered that any sites beyond this zone are not likely to be subject to any impacts from the proposed works.

4.1.1 Sites of International Importance

4.1.1.1 Natura 2000 Sites

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats of wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (79/409/EEC) seeks to protect birds of special importance by the designation of Special Protected Areas (SPAs). It is the responsibility of each member state to designate SPAs and SACs, both of which form part of Natura 2000, a network of protected sites throughout the European Community. **Table 4** lists the Natura 2000 sites located within the ZOI of the proposal and includes each site’s qualifying features of conservation interest. The Natura 2000 sites are shown in **Figure 4**.

Table 4. Natura 2000 sites within 15 km or the ZOI of the proposal

Designated Site	Distance from subject site	Qualifying Features of Conservation Interest ¹⁰
Killarney National Park, MacGillycuddy’s Reeks and Caragh River Catchment SAC (000365)	100 m W	Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110] Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoeto-Nanojuncetea</i> [3130] Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260] Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010] European dry heaths [4030] Alpine and Boreal heaths [4060] <i>Juniperus communis</i> formations on heaths or calcareous grasslands [5130] Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] Blanket bogs (* if active bog) [7130] Depressions on peat substrates of the <i>Rhynchosporion</i> [7150] Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0]* <i>Taxus baccata</i> woods of the British Isles [91J0]* <i>Geomalacus maculosus</i> (Kerry Slug) [1024] <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel) [1029] <i>Euphydrias aurinia</i> (Marsh Fritillary) [1065] <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <i>Lampetra planeri</i> (Brook Lamprey) [1096] <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Salmo salar</i> (Salmon) [1106] <i>Rhinolophus hipposideros</i> (Lesser Horseshoe Bat) [1303] <i>Lutra lutra</i> (Otter) [1355] <i>Trichomanes speciosum</i> (Killarney Fern) [1421] <i>Najas flexilis</i> (Slender Naiad) [1833] <i>Alosa fallax killarnensis</i> (Killarney Shad) [5046]
Killarney National Park SPA (004038)	100 m W	Merlin (<i>Falco columbarius</i>) [A098] Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>) [A395]

¹⁰ Asterisk denotes a priority habitat as per the meaning given by Article 1(d) of the Habitats Directive denoting natural habitat types in danger of disappearance.

Designated Site	Distance from subject site	Qualifying Features of Conservation Interest ¹⁰
Sheheree (Ardagh) Bog SAC (000382)	3.7 km SE	Active raised bogs [7110]^ Degraded raised bogs still capable of natural regeneration [7120]
Castlemaine Harbour SAC (000343)	5 km N	Estuaries [1130] 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] <i>Salicornia</i> and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]* Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salicion arenariae</i>) [2170] Humid dune slacks [2190] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0]* <i>Petromyzon marinus</i> (Sea Lamprey) [1095] <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Salmo salar</i> (Salmon) [1106] <i>Lutra lutra</i> (Otter) [1355] <i>Petalophyllum ralfsii</i> (Petalwort) [1395]
Old Domestic Building Curraglass Wood SAC (002041)	15 km SE	<i>Rhinolophus hipposideros</i> (Lesser Horseshoe Bat) [1303]

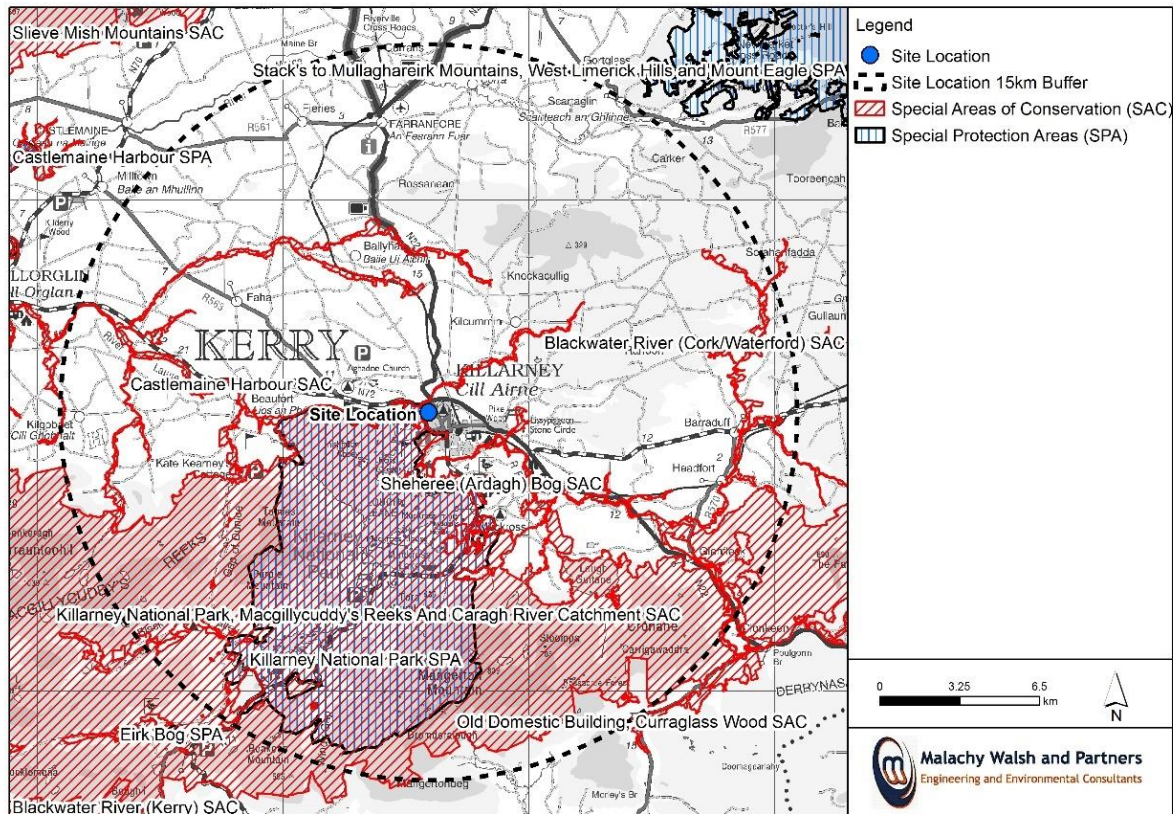


Figure 4: Natural 2000 sites within ZOI

4.1.1.2 Ramsar Sites

The Convention on Wetlands of International Importance especially as Waterfowl Habitat, more commonly known as the Ramsar Convention, was ratified by Ireland in 1984 and came into force for Ireland on 15th March 1985. Ireland presently has 45 sites designated as Wetlands of International Importance, with a surface area of 66,994 Ha.

There are no Ramsar sites within the ZOI.

4.1.1.3 Important Bird and Biodiversity Areas

The Important Bird and Biodiversity Areas (IBAs) Programme, overseen by Birdlife International, aims to identify, conserve and protect those areas throughout the world considered to be of the greatest significance to bird populations¹¹. Bird Life International has produced a compendium of Important Bird Areas (IBAs) in Europe. The IBA programme of BirdWatch Ireland is a worldwide initiative aimed at identifying and protecting a network of critical sites of importance for birds. There are 105 IBA's on the island of Ireland in which the majority support wintering water birds.

There are no IBA sites within the ZOI.

4.1.2 Sites of National Importance

4.1.2.1 Natural Heritage Area (NHA)

The basic designation for wildlife is the Natural Heritage Area (NHA). This is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection Under the Wildlife Amendment Act (2000) , NHAs are legally protected from damage from the date they are formally proposed for designation.

There is one NHA site within the ZOI of the proposed development. This site, Anna More Bog NHA (000333) which is designated for the protection 'Peatlands', specifically a raised bog, is situated approximately 4 km south of Castleisland some 14.5 km to the north of the proposed development site.

- Anna More Bog NHA (000333)

The location of the Anna More Bog NHA (000333) is shown in **Figure 5**.

4.1.3 Other Sites of Significance for Wildlife and Habitats

4.1.3.1 National Parks

International Union for the Conservation of Nature (IUCN) recommended that all governments agree to reserve the term 'National Park' to areas sharing the following characteristics:

- Where one or several ecosystems are not materially altered by human exploitation and occupation; where plant and animal species, geomorphological sites and habitats are of special scientific, educational and recreational interest or which contain a natural landscape of great beauty;

¹¹ Available at: <http://www.birdlife.org/worldwide/programmes/important-bird-and-biodiversity-areas-ibas>

- Where the highest competent authority of the country has taken steps to prevent or eliminate as soon as possible exploitation or occupation in the whole area and to enforce effectively the respect of ecological, geomorphological or aesthetic features which have led to its establishment;
- Where visitors are allowed to enter, under special conditions, for inspirational, educational, cultural and recreational purposes.

Killarney National Park has been designated as a Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organisation (UNESCO).

4.1.3.2 Proposed National Heritage Areas

There are 630 proposed NHAs (pNHAs), which were published on a non-statutory basis in 1995 but have not since been statutorily proposed or designated. These sites are of significance for wildlife and habitats. Prior to statutory designation, pNHAs are subject to limited protection, in the form of:

- Forest Service requirement for NPWS approval before they will pay afforestation grants on pNHA lands
- Recognition of the ecological value of pNHAs by Planning and Licencing Authorities.

Unlike NHA sites, pNHA sites do not have any formally declared or published qualifying features. However, in many instances their site boundaries are encompassed within sites of National or International importance. As a result, they fall within the remit of the legal protections afforded to sites with higher designation. There are 4 pNHA sites within the ZOI. These are:

- Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment pNHA.
- Sheheree (Ardagh) Bog pNHA.
- Doo Loughs pNHA.
- Old Domestic Building Curraglass Wood pNHA.

The locations of these pNHA sites are shown in **Figure 5**.

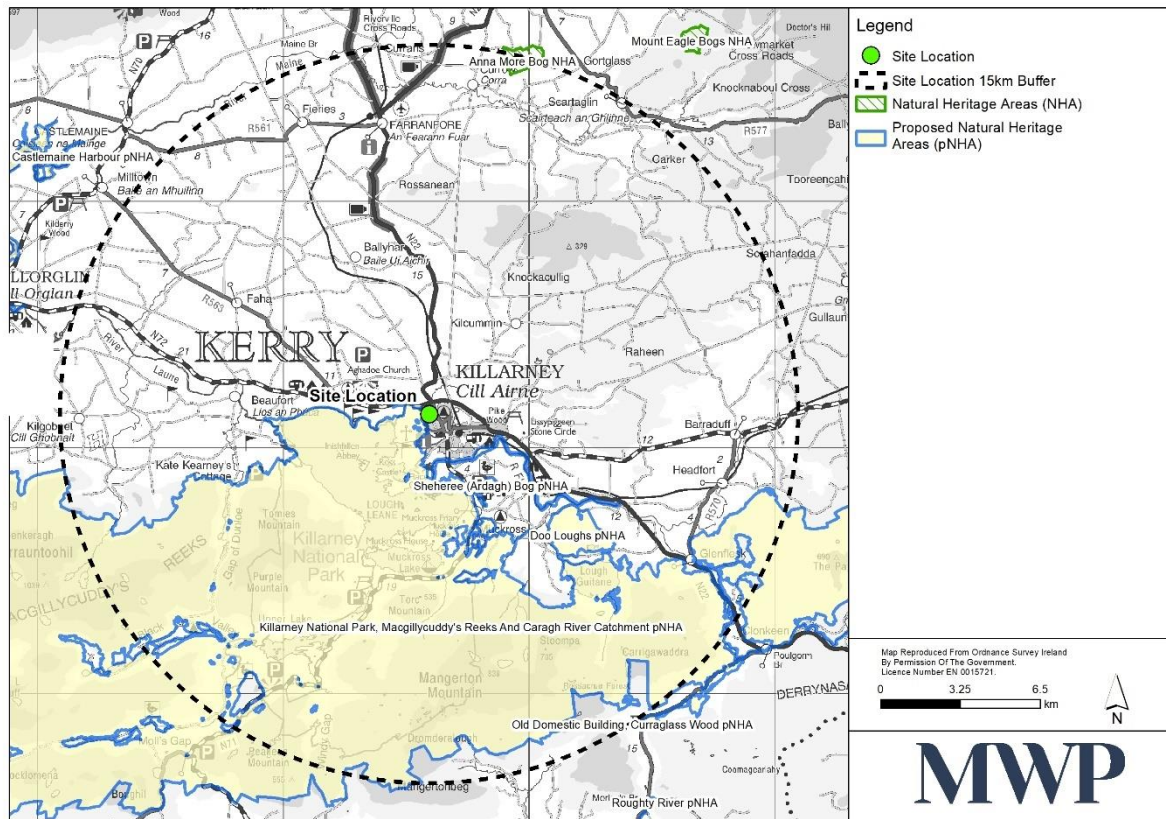


Figure 5: NHA and pNHA sites within ZOI

4.2 Description of the Proposed Development Site

The proposed development site is located in a built-up residential area on the outskirts of Killarney town. The Killarney National Park is located to the west of the site and is separated from the proposed development site by Port Road (R877) and the Port Road Cottages.

The predominant CORINE (2018)¹² landcover at the proposed development site is classed as 'Artificial Surfaces/Urban fabric' and the site is currently zoned by KCC for residential development. The majority of the proposed development site is underlain by Bioclastic cherty grey limestone from the Dirtoge Limestone Formation. The south-eastern most section is underlain by Bedded bioclastic limestone from the Cloonagh Limestone Formation. Soil at the proposed development site is categorised as poorly deep well drained mineral (mainly basic). Subsoils are classed as 'Limestone till (Carboniferous)'¹³.

¹² Co-ordinated information on the Environment – data series established by the European Community

¹³ [GSI Mapper](#)



Figure 6: Indicative development area excluding proposed works of Port Road and St Margarets Road

The main PD site is dominated by agricultural grassland supporting some wildflower species. Areas of scrub occur in the west of the western field, and separately in the eastern field. A wet grassland/marsh habitat occurs in a low lying area to the south, near the stream. Mature hedgerow and treelines occur along the site boundary supporting a variety of native trees and a strip of mature willow woodland is present along the stream corridor. The northern part of the subject site is generally flat with the terrain lowering towards a water course at the southern boundary which denotes the Inch and Coolagreen townlands border (see **Figure 8**). This field boundary drain, known locally as the Folly stream, has little to no habitat value for fish or other aquatic species. It is not connected to, or tributary of, any natural watercourse and comprises a shallow, shaded, slow moving, and ephemeral drain, with a heavy silt and mud substrate. The channel originates within the PDS, to the east of Port Road and approximately 400 metres north of New Road. OSI Historic 6"14 map layer15 show this drain extending south to what is now the Killarney Plaza Hotel and it does not appear on the surface beyond this point. The last 350 metres is now covered over, and it flows into a culvert about 250 m to the south of New Street, where it joins the municipal combined storm and sewer network which is directed to the Killarney WWTP at Ross Road. The total exposed length is now 650 metres16.

During the various surveys, detailed in **Section 2.6**, the channel along the southern boundary was either dry or had extremely low flow. The vegetation present within the channel and on the embankments were terrestrial, not aquatic, and included Harts-tongue fern (*Asplenium scolopendrium*) and holly, indicating a lack of continuous flow. The substrate was predominantly silt and mud. The stream appears to be ephemeral and dependent on rainfall and associated run-off from its catchment for flow. The Folly stream is of no value to fish or aquatic species as it is not connected to a river network and does not have the physical or biological requirements to sustain populations of aquatic fauna.

14 From the period 1829 to 1834

15 <https://webapps.geohive.ie/mapviewer/index.html>

16 MWP (2014) Flood Level Assessment New Road

The trees along the boundaries are not suitable for roosting lesser horseshoe bats, a species which has a low dependence on trees as roosting sites (Kelleher *et al.*, 2006) and the site is sub-optimal for foraging lesser horseshoe bat. A small stand of mature specimen oak trees divides the main PD site into two areas – a western field and an eastern. The southern boundary of the site is outlined by mature specimen trees most of which are located outside of the site boundary on the neighboring college lands. A mix of trees and scrub to the rear of residential gardens form a substantial landscape along the western boundary. A mixed fragmented hedgerow forms along the northern field boundaries of both fields and the eastern boundary of the western field. In addition to oak, tree species recorded include hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*), ash (*Fraxinus excelsior*), holly (*Ilex aquifolium*), rowan (*Sorbus aucuparia*), blackthorn (*Prunus spinosa*) and birch (*Betula* spp.).

The proposed development site is located within the ‘Laune-Maine-Dingle Bay’ Water Framework Directive (WFD) catchment (Code: 22) and the Deenagh_SC_010 sub-catchment (Code: 22_1). This catchment includes the area drained by the Rivers Laune and Maine and all streams entering tidal water between Glanearagh Head and Clogher Head, Co. Kerry, draining a total area of 2,036 km². The Deenagh River is located 100 m to the west on the opposite side of the R877/Port Road and within the Killarney National Park, MacGillycuddy’s Reeks and Caragh River Catchment SAC (000365) (see **Figure 7**). There are no watercourses within the site that drain to the Deenagh. The river channel is situated below the level of the road, is delineated by a high embankment of trees and concrete walls and is separated from the road by a stone wall and footpath on the western side of the R877 (see **Photograph 1**). The proposed development site is further separated from the river by the Port Road Cottages which are located between the western boundary of the site and the R877/Port Road.

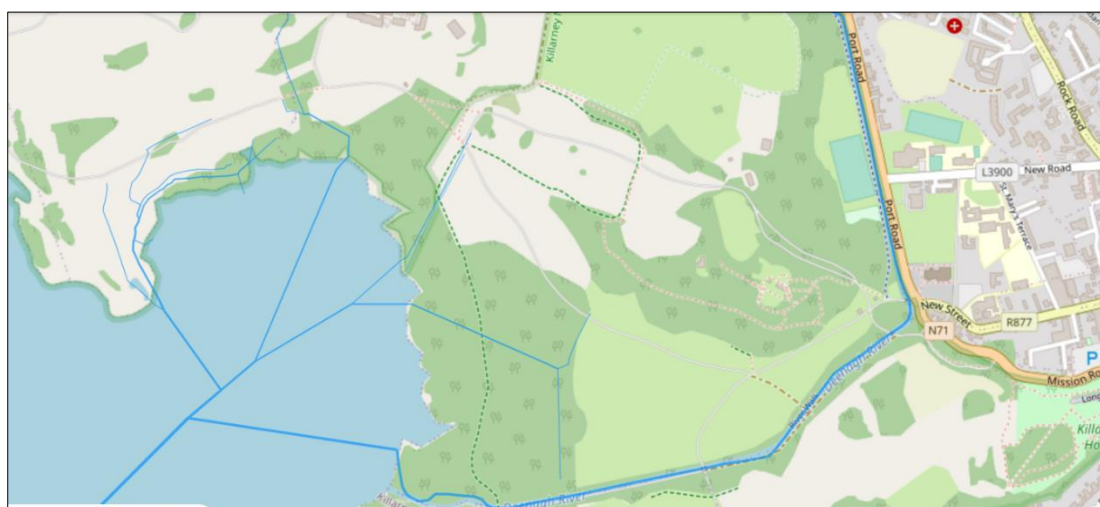


Figure 7: Course of the Deenagh River



Photograph 1: R877 Port Road facing south, with eastern bank of Deenagh River on RHS of image

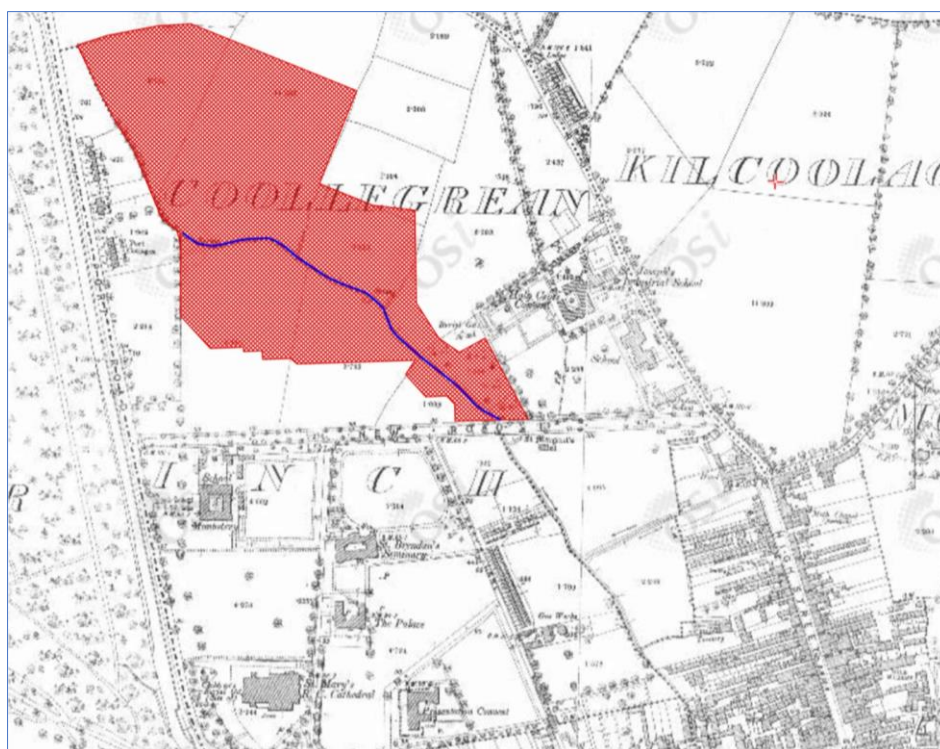


Figure 8: Course of field boundary drain

In the Flood Risk Assessment (FRA), submitted as part of the application, the PDS is identified as not being within Flood Zone A or B¹⁷ and is outside of the Deenagh River Flood Plain. The Folly stream channel capacity exceeds the 1% AEP Flow rate, and the stream will be able to accommodate this flow without overtopping the stream banks.

¹⁷ Moderate probability of flooding, between 1% and 0.1% from rivers and between 0.5% and 0.1% from coastal/ tidal.

4.3 Habitats and Flora

4.3.1 Desk top

4.3.1.1 Records of Rare and Protected Flora

The study area lies within Ordnance Survey National 10 km grid square V99. Searches of the databases available at the NPWS and the NBDC for flora species of conservation interest were carried out. Four Flora Protection Order species have been recorded within the 10 km grid square V99; pennyroyal (*Mentha pulegium*), betony (*Stachys officinalis*), slender naiad (*Najas flexilis*) and Killarney fern (*Trichomanes speciosum*). Slender naiad is an aquatic plant which is wholly associated with Lough Leane where it occurs within the 10 km grid square V99. Pennyroyal and Killarney fern records are historical dating from between 1600-1929. There are more recent records of betony at Muckross, and Mahony’s Point, both >3 km from the site. The habitat types within the subject site, described in **Section 4.3.2.1**, are considered unsuitable for all of these species, as outlined in **Table 5**.

Table 5: Rare or protected plant species within 10km grid square V99

Species	Level of protection	Habitat requirement ¹⁸
Pennyroyal <i>Mentha pulegium</i>	Irish Red Data Book (1988) IUCN = Endangered; IRDB = (Vulnerable) RI 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 <i>Najas flexilis</i>	Irish Red Data Book (1988) IUCN = Endangered; IRDB = (Least Concern) 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 <i>Stachys officinalis</i>	Irish Red Data Book (1988) IUCN = Endangered; IRDB = (Least Concern) Flora Protection Order Species Red Data List (2016) = Least Concern	Open woods, hedges and grasslands.
Killarney fern <i>Trichomanes speciosum</i>	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.

¹⁸ Preston *et. al*, (2002)

4.3.2 Site Survey

During ecological surveys at the site, no rare/protected flora was observed. Therefore, it can be concluded that there are no rare and protected flora at the site which could be impacted by the proposed housing development.

4.3.2.1 Habitats Recorded

4.3.2.1.1 BL3 Buildings and artificial surfaces

The Port Road (R877) and St. Margaret's Road and their associated pathways are classified as BL3 Buildings and artificial surfaces.



Photograph 2. BL3 habitat

4.3.2.1.2 BL1 Stone walls and other stonework

This habitat type is present in the form of a stone wall which delineates the western boundary of the site that adjoins the eastern footpath of the Port Road.



Photograph 3: BL1 habitat

4.3.2.1.3 GA1 Improved agricultural grassland

The large field in the middle of the site is classified as GA1 improved agricultural grassland which is occasionally fertilized and cut. In the past this field was grazed by cattle and had been cut once or twice a year for management. During the walkover survey on the 24th of September 2018, the grass had been recently cut for silage. During more recent surveys in 2021, vegetation had become rank and there appeared to be little management in the intervening years. Species associated with dry calcareous and neutral grasslands were more apparent during these surveys in margins of the field i.e., yarrow (*Achillea millefolium*), knapweed (*Centaurea nigra*) and birds-foot trefoil (*Lotus corniculatus*). However, overall, this habitat type has low species diversity, with perennial ryegrass (*Lolium* spp.), *Poa* grass species, timothy (*Phleum pratense*), creeping buttercup (*Ranunculus repens*), dandelion (*Taraxacum* spp.), nettles (*Urtica dioica*) and docks (*Rumex* spp.) being the dominant species recorded.



Photograph 4: GA1 habitat

4.3.2.1.4 WS1 Scrub

An elevated stand of dense scrub occurs to the north-west of the site comprising dense bramble interspersed with some gorse. An overgrown areas of previously disturbed ground with evidence of dumped construction material occurs to the south-east of the site. This area has become recolonised by grasses, some dense pockets of bramble occur within the area, and a number of young willow trees were observed to the south of the area. An embankment of gorse also occurs in this area. A number of small stands of Japanese knotweed (*Fallopia japonica*), were recorded here, probably introduced to this location from discarded/dumped material brought into the site. Other invasive alien species noted in this section of the site were montbretia (*Crocossmia X crocosmiflora*) and butterfly bush (*Buddleja davidii*). The dense areas of gorse are unmanaged, thus diminishing potential value for nesting birds and other wildlife. Owing to the dense nature of these stands, gorse appears to be out-competing other grasses and plants in these areas.



Photograph 5: WS1 habitat to the north-west (bramble)



Photograph 6: ' WS1 habitat to the south-east (bramble-willow-gorse with Japanese knotweed)

4.3.2.1.5 GS4 Wet grassland/GM1 Marsh

This habitat occurs along the south of the site at the lowest level of the agricultural field. The Folly stream flows eastwards to the south of this habitat. The wet-grassland/marsh is not particularly species-rich with yellow iris (*Iris pseudacorus*) dominating the herb component and water-mint (*Mentha aquatica*), meadowsweet (*Filipendula ulmaria*) and purple loosestrife (*Lythrum salicaria*) abundant. Creeping bent (*Agrostis stolonifera*) and

rushes (*Juncus* spp.) were also abundant in the drier areas further from the stream. Willow trees have matured and encroached into the western and eastern extremities of this habitat. The wet grassland/marsh habitat appears to be the result of the drainage conditions on-site, as the land falls towards this area from the north of the site, ultimately draining to the Folly stream beyond.



Photograph 7: 'GS4/GM1 habitat mosaic

4.3.2.1.6 WL1 Hedgerows/WL2 Treelines

Mature hedgerows occur all around the site. This habitat is in various states of management with some obvious signs of degradation along the northern boundary (non-native) hedge. The hedgerow boundary to the east of the large field was the most mature with species including hawthorn, hazel, ash, holly, rowan, blackthorn, and ivy showing no signs of recent management or degradation. The southern boundary of the site is delineated by a mature tree line comprising mature oaks, ash, and sycamore. A stand of conifer/broadleaf trees occur to the west of the site associated with the dwelling houses and include *Leylandii*, pine, ash, and silver birch. Ash and elm trees occur just inside the site entrance at Port Road. Mature ash and oaks, holly and rowan are associated with the hedgerows bounding the site to the north and east. It is proposed to retain hedgerows and tree lines restricting felling to those trees of poor condition. It is proposed to enhance these habitats through additional planting of native species to improve cover and condition.



Photograph 8: 'WL1/WL2 habitat mosaic



Photograph 9: WN5 habitat

4.3.2.1.7 WN5 Riparian woodland

A linear strip of mature willow (*Salix* spp.) woodland associated with the stream corridor occurs to the south-east of the site. This habitat is best described as riparian woodland, though it is relatively species poor. The herbaceous layer is sparse, dominated by ivy (*Hedera helix*), yellow flag iris and sycamore saplings with little else present in the deeply shaded habitat. This habitat continues towards New Road. Mature willows are the dominant species here with some sycamore (*Acer pseudoplatanus*) also present. Young willows and sycamore are self-seeding and have expanded northwards from the stream bank. While there will be removal of willow and sycamore, predominantly immature trees, the denser area of riparian willow woodland adjacent to the stream will be retained.

4.3.2.1.8 FW2 Depositing/lowland river

During surveys, the Folly stream channel along the southern boundary was either dry or had extremely low flow. The vegetation present within the channel and on the embankments were terrestrial, not aquatic, and included hearts-tongue fern and holly, indicating a lack of continuous flow. The substrate was silt and mud predominantly. The Folly stream is a small, modified, culverted watercourse which does not appear on the surface beyond Killarney town. The stream appears to be ephemeral and dependent on rainfall and associated run-off from its catchment for flow. The ecological value of the stream is very low, owing to its isolated nature, compounded by the dense overgrowth and lack of light penetration. Furthermore, as the stream is culverted downstream, eventually joining the underground sewer network, there is no ecological connection and therefore the stream is not considered to be of value to fish or otter. It's ecological attributes more resembled a drainage ditch; as it is not a permanent watercourse capable of supporting aquatic life; It is not a tributary of any natural watercourse; and it has no upstream component.



Photograph 10: FW2 habitat

4.3.2.1.9 Other habitats

There is a track through the south-eastern section of the site which skirts the perimeter of the scrub and woodland habitats. It has been classified as 'exposed sand gravel or till (ED1)'. The end of this track has been encroached upon by grass species and owing to the topography is quite wet, it has been classified as grassland (GA1/GS4).

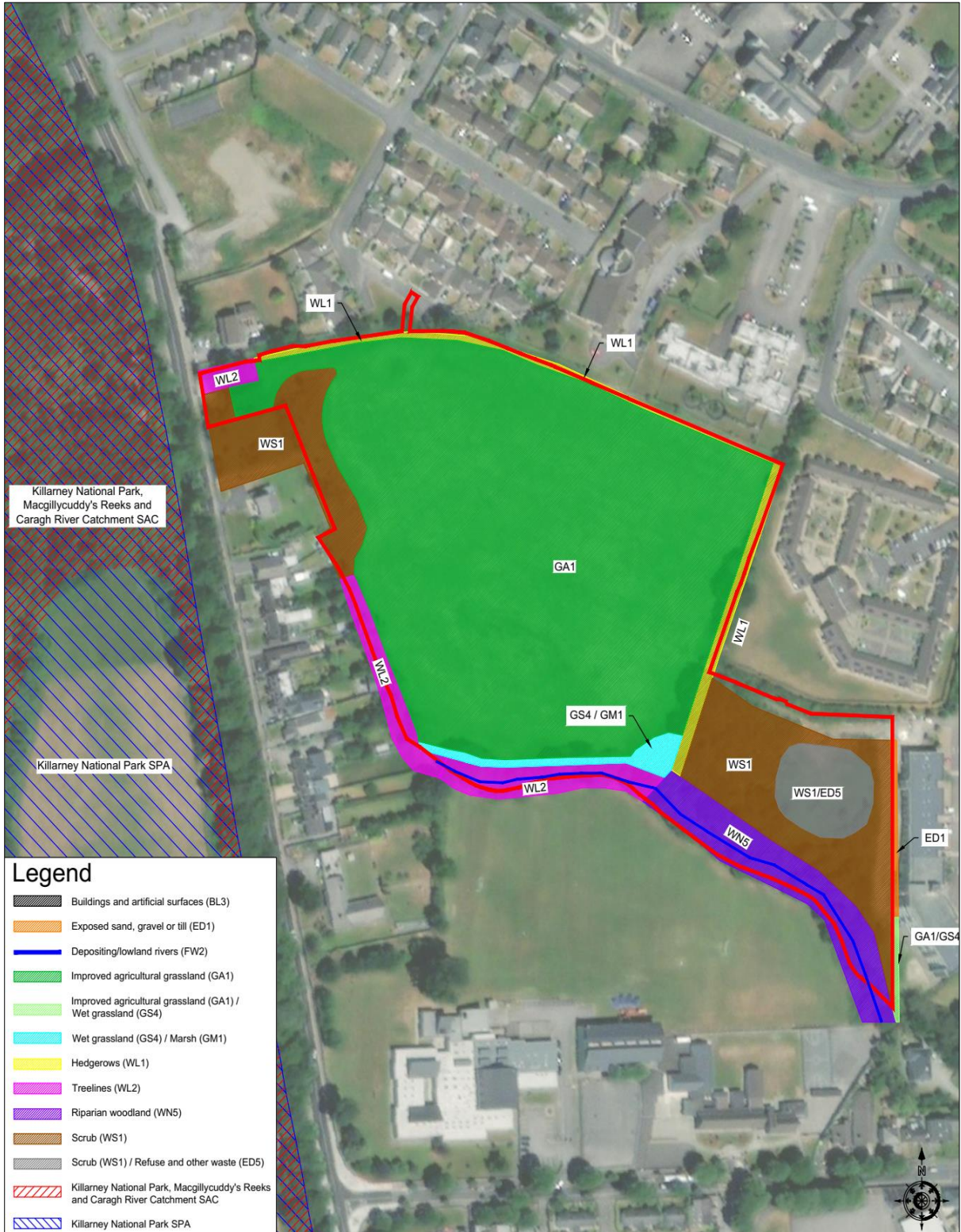


Figure 9: Habitat map

4.3.3 Invasive non-native Plant Species

Three invasive non-native plant species listed in the European Communities (Birds and Natural Habitats) Regulations (2011-2021) are present in an area of previously disturbed ground the south-eastern section of the site as illustrated in **Figure 10**. These are Japanese knotweed (*Fallopia japonica*), montbretia (*Crocsmia X crocosmiflora*) and butterfly bush (*Buddleja davidii*) with montbretia also occurring at the site entrance to the west. These invasive species will be eradicated and controlled within the site before the commencement of construction by deep burial in the northern section of the site. It is noted that between 2018 and 2021, the location and extent of invasive alien plant species did not change significantly.

The necessary control and mitigation measures are outlined in **Section 10.8**.



Figure 10: Invasive alien plant species in the proposal site (September 2021)

4.4 Fauna

4.4.1 Desktop

4.4.1.1 Non-volant Mammals

NBDC species lists, and distribution maps generated on-line, and data received from NPWS were examined to assess the distribution of rare and protected terrestrial mammal species within the hectad V99. **Table 6**, below, lists protected mammal species which have been previously recorded and summarises their legal and conservation statuses in Ireland with regards to national and international legislation, and the most recent Irish Red List for Mammals (Marnell *et. al*, 2019). All the species listed are considered to be of Least Concern good status which reflects the fact that Ireland’s mammal fauna is in good status (Marnell *et. al*, 2019) and the fact that

almost 60% of mammals were deemed to be in favourable conservation status and none were found to be in bad status (NPWS, 2019).

Table 6. Records of rare and protected terrestrial mammal species within the hectad V99

Species	Distribution	Conservation/Legal Status ¹¹
Hedgehog <i>Erinaceus europaeus</i>	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Irish stoat <i>Mustela erminea</i>	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Otter <i>Lutra lutra</i>	Throughout Ireland	Irish Red Data Book: 'Least Concern'; EU Habitats Directive Annex II and IV; Wildlife Acts; CITES Appendix 1
Red squirrel <i>Sciurus vulgaris</i>	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Pygmy shrew <i>Sorex minutus</i>	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Badger <i>Meles meles</i>	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts
Pine marten <i>Martes martes</i>	Throughout Ireland	Irish Red Data Book: 'Least Concern'; EU Habitats Directive [92/43/EEC] Annex V; Wildlife Acts
Irish hare <i>Lepus timidus</i> subsp. <i>hibernicus</i>	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts; EU Habitats Directive Annex V
Red deer <i>Cervus elaphus</i>	Throughout Ireland	Irish Red Data Book: 'Least Concern'; Wildlife Acts

NBDC species lists generated on-line were also examined to assess the distribution of invasive terrestrial mammal species within the hectad V99. The following invasive species have been recorded; American mink (*Mustela vison*), bank vole (*Myodes glareolus*), coypu (*Myocastor coypus*), European rabbit (*Oryctolagus cuniculus*), sika deer (*Cervus nippon*), and brown rat (*Rattus norvegicus*).

4.4.2 Site Survey

There was evidence of terrestrial mammal foraging and commuting activity within the site, including fox runs, rabbit droppings and badger snuffle holes. The area was thoroughly searched for breeding sites; an active badger sett was identified in the mature hedgerow/tree line that separates the western and south-eastern sections of the site. There was extensive evidence of commuting and foraging at the site boundaries, which suggests that badgers are going into adjoining lands to forage. Subsequent surveys identified one main sett and three outlier setts in the boundaries of the site. The main sett was the only sett with signs of recent badger activity. The outlier setts appear to be used by foxes and rabbits as evidenced by runs and droppings. It is considered that the site and the adjoining lands are the territory of a breeding badger pair. It is not proposed to remove any of the vegetation from the site boundaries thus it is not proposed to destroy any of the badger setts.

The 2024 survey confirmed that the main sett is still very much active .9 entrances were recorded, all of which appeared to be in active use. There was significant evidence of foraging at, and in the area extending away from, the general location and all entrances were connected by well-used paths. Spoil heaps at the main sett were large, well-worn and several included freshly excavated soil and a latrine was located c. 3 m from one entrance. While

growth in the surrounding vegetation prevented examination of the outlier setts, one large latrine was recorded at the general location of Outlier sett 3.

Refer to **Appendix 3** for details of badger surveys and results. Badgers are protected under the Wildlife Act 1976, as amended and, therefore, the management and protection of this sett is required. The necessary mitigation measures are outlined in **Section 10.6**.



Figure 11: Badger sett locations

4.4.2.1 DAU Submission on previous Port Road SHD Application Ref ABP-312987-22

Badger populations across the island of Ireland remain stable, widespread and abundant, with a Red List Status of 'Least Concern' (Marnell et al., 2019)¹⁹. Recent population estimates for the species have ranged from 84,000 individuals (Sleeman et al., 2009)²⁰ to as many as 100,000 individuals across the island of Ireland (Byrne et al., 2024).

¹⁹ Marnell, F., Looney, D. and Lawton, C. (2019). Ireland Red List No. 12: Terrestrial Mammals. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.

²⁰ Byrne, A.W., Allen, A., Ciuti, S., Gormley, E., Kelly, D.J., Marks, N.J., Marples, N.M., Menzies, F., Montgomery, I., Newman, C. and O'Hagan, M. (2023). Badger ecology, bovine tuberculosis, and population management: lessons from the island of Ireland. *Transboundary and emerging diseases*, 2024.

While county by county population estimates are not available, in light of the stability of the national population, the Red List Status of Least Concern, and the Slight or Moderate impacts predicted in Tables 12 and 13, the potential impact on the sett at the PDS and associated habitats is viewed as insignificant regionally.

Consultation on the occupancy status of the sett, with NWPS staff locally, did not raise any concerns.

4.4.3 Bats

4.4.3.1 Desktop

The following species have previously been recorded in the 10km square (V99) in which the site is located:

- 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*)

The overall bat suitability index value (44.78) according to 'Model of Bat Landscapes for Ireland' (Lundy *et al.*, 2011) suggests the landscape in which the proposed site is located is of moderate suitability for bats in general.

4.4.3.2 Survey Results

Daytime Visual Roost Inspections

There are no buildings or structures in the proposal site which could be used as a bat roost. The trees within the site are considered to have low²¹ suitability for roosting bats.

Bat Activity Transects

The site is considered to have moderate²¹ suitability for foraging and commuting bats owing to the boundary trees and hedgerows which provide foraging habitat and connection to the wider landscape. The inner perimeter (boundaries) of the site was walked twice during the course of the transect survey. Owing to inaccessibility, the stream and riparian habitat to the south-east were not walked. However, the during the survey the surveyor walked close to this area, and it is considered any that bats present would have been recorded. The first contact was recorded at 19.52, c. 20 minutes after sunset. In total two species were recorded foraging at mature trees along the boundaries of the site; Common pipistrelle and Soprano pipistrelle, and one species was recorded commuting over the site; Leisler’s bat. The locations of bat activity are illustrated in the figure below, where each brown dot represent a bat contact. **Table 7** details the time of each bat contact and the activity observed by the surveyor.



Figure 12: Bat contacts recorded during transect survey

Table 7: Summary of bat activity recorded during walked transect survey

Contact no.	Species	Time of contact	Location/notes
1	Leisler’s bat	19.52	Commuting eastwards over trees/woodland at SE of site
2	Leisler’s bat	19.57	Commuting eastwards over trees, scrub at SE of site
3	Leisler’s bat	20.01	Commuting eastwards over trees at E boundary
4	Leisler’s bat	20.02	Commuting east over trees at E boundary

²¹ Table 4.1 Collins (2023)

Contact no.	Species	Time of contact	Location/notes
5	Soprano pipistrelle	20.03	Foraging over trees at E boundary
6	Common pipistrelle	20.06	Foraging over trees at NE boundary
7	Common pipistrelle	20.07	Foraging over trees at NE boundary (same individual as no. 6)
8	Common pipistrelle	20.13	Foraging over trees at N boundary
9	Soprano pipistrelle	20.21	Foraging over trees at S boundary
10	Nathusius' pipistrelle	20.22	Foraging over trees at S boundary
11	Soprano pipistrelle	20.23	Foraging over trees at S boundary (same individual as no. 9)
12	Common pipistrelle	20.28	Foraging and commuting over E hedgerow
13	Common pipistrelle	20.30	Foraging and commuting over E treeline (same individual as no.12)

Overall, the bat activity level at the site was low. Bats were not recorded emerging from trees, which corresponds with the conclusion of the roost survey. Pipistrelle species and Leisler's bat are the most commonly occurring species therefore their presence on site is not unexpected. The absence of other bat species is notable and corresponds with the results of the desk top study, and the bats previously recorded in V99. The bat species recorded exhibited typical behaviour for the species, i.e., Leisler's bats tend to fly high over trees as they are commuting, whereas pipistrelle species tend to forage as they commute.

4.4.4 Birds, Fish, Amphibians, Reptiles and Invertebrates

Reviews of the species list generated via the NBDC on-line mapping tool and data received from NPWS for rare and protected bird species were carried out. A wide variety of bird species, including some species of conservation concern, have been previously recorded within the hectad V99. These species are considered typical of the habitats in the general vicinity of the subject site and the surrounding area.

During the on-site survey, the following bird species were recorded; blackbird (*Turdus merula*), song thrush (*Turdus philomelos*), wren (*Troglodytes troglodytes*), chaffinch (*Fringilla coelebs*), redpoll (*Carduelis flammea cabaret*), goldcrest (*Regulus regulus*), pied wagtail (*Motacilla alba*), coal tit (*Periparus ater*), wood pigeon (*Columba palumbus*), snipe (*Gallinago gallinago*), hooded crow (*Corvus cornix*), jackdaw (*Corvus monedula*) and rook (*Corvus frugilegus*). Overall, the habitats occurring within the site and surrounds are of moderate to high ecological value for birds. The scrub and wooded areas in general are suitable for local populations of nesting birds. Snipe was flushed from the agricultural field on one occasion in March 2021. This species nor other ground nesting birds, is not considered to breed within the site.

Brown/sea trout (*Salmo trutta*), Atlantic salmon (*Salmo salar*), Arctic charr (*Salvelinus alpinus*), European eel (*Anguilla anguilla*), twaite shad (*Alosa fallax*), have all been recorded in V99. Most of these species are associated with the nearby Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment SAC, and are located within its lakes and rivers. The Folly stream is of no value to fish or aquatic species as it is not connected to a river network and does not have the physical or biological requirements to sustain populations of aquatic fauna.

NBDC records within V99 exist for common frog (*Rana temporaria*), smooth newt (*Lissotriton vulgaris*) and common lizard (*Zootoca vivipara*), although none of these species were recorded on-site. Common frog has a

widespread distribution in Ireland. Smooth newt is widespread in Ireland but locally distributed. Newts and frogs are amphibious, breeding in freshwater and utilising woodland, damp grassland, marsh and scrub for foraging. The habitats within the proposed development site are considered suitable for either species.

Common lizards are primarily found in areas of bog, heath, coastline and along the fringes of coniferous woodland, but may also occupy other habitats, such as non-intensive grassland, gardens and built-up areas (NRA, 2008). The habitats within the proposed development site are considered suitable for this species.

NBDC records from the hectad indicate documented records for butterflies and moths (Lepidoptera), beetles (Coleoptera), bees (Hymenoptera) and other terrestrial invertebrate groups. The habitats within the proposed development site are considered suitable for these species.

5. Evaluation of Designated Sites as Ecological Receptors

5.1.1 Sites of International Importance

A screening for Appropriate Assessment report has been undertaken to determine whether the project, alone or in combination with other plans or projects, is likely to result in significant effects on Natura 2000 sites considered to be within the ZOI of the project in view of the sites' Conservation Objectives. This screening report concluded that significant effects on these Natura 2000 sites as a result of the project can be excluded:

- Killarney National Park SPA (004038)
- Sheheree (Ardagh) Bog SAC (000382)
- Castlemaine Harbour SAC (000343)
- Old Domestic Building Curraglass Wood SAC (002041)

With regard to the remaining site, namely the Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment SAC (000365), the screening determined that an appropriate assessment of the PD was required, as it could not be excluded, based on objective information, that the PD, individually or in combination with other plans or projects, would not have a significant effect on the Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment SAC (000365) an SAC, in view of the site's conservation objectives. In this regard see also **Section 1** and **Appendix 1**.

In light of this determination a Natura Impact Statement (NIS) has been prepared. The NIS comprises a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications (ecological effects) for the SAC in the view of the conservation objectives of the site. The aim of the assessment is to provide a sufficient level of information to KCC on which to base their appropriate assessment of the PD. Additionally, mitigation measures to avoid or reduce ecological effects were considered.

Notwithstanding that these Natura 2000 sites have been selected as KER; in light of the conclusions of the screening report, and bearing in mind that a Natura Impact Statement is available, and because the completion of the AA decision making process is a reserved competence of KCC, or on appeal, ABP, these Natura 2000 sites will not be considered further in this EclA.

5.1.2 Sites of National Importance

With regard to the nationally designated site identified to be within the zone of potential impact influence of the project, namely Anna More Bog NHA, it is considered that due to the intervening distance between this site and the subject site (see **Table 4** above), and the absence of a potential impact pathway significant effects on this site

as a result of the proposal are not envisaged. This site is therefore not considered to comprise a KER of the project and will not be considered further in this evaluation.

5.1.3 Other Sites of Significance for Wildlife and Habitats

5.1.3.1 National Parks

5.1.3.1.1 Killarney National Park

Killarney National Park is encompassed within the eponymous SAC²². It is considered, therefore, that potential impacts on the National Park arising from the project have been fully considered as part of the NIS. Therefore, the National Park will not be considered further in this evaluation.

5.1.3.2 Proposed National Heritage Areas

There are 4 pNHA sites within the ZOI. These are:

- Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment pNHA.
- Sheheree (Ardagh) Bog pNHA.
- Doo Loughs pNHA.
- Old Domestic Building Curraglass Wood pNHA.

As outlined previously, in **Section 4.1.3.2**, pNHA sites do not have any formally declared or published qualifying features and, prior to statutory designation, pNHAs are subject to limited protection.

5.1.3.2.1 Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment pNHA.

The Killarney National Park, MacGillycuddy's Reeks and Caragh River Catchment pNHA is encompassed within the eponymous SAC. It is considered that potential impacts on this pNHA arising from the project have been fully considered as part of the NIS. Therefore, this pNHA will not be considered further in this evaluation.

5.1.3.2.2 Sheheree (Ardagh) Bog pNHA & Old Domestic Building Curraglass Wood pNHA.

This pNHA site is encompassed within Sheheree (Ardagh) Bog SAC (000382) The screening report concluded that significant effects on these Natura 2000 sites as a result of the project can be excluded. As a result, it is considered that potential impacts on the pNHA site arising from the project have been fully considered as part of the screening. The pNHA will not be considered further in this evaluation.

5.1.3.2.3 Doo Loughs pNHA

This pNHA drains, via the Finnow and Finlough rivers, to the River Flesk. It is not, therefore, downstream of the proposed development site. It is concluded that, due to the absence of a potential impact pathway, significant effects on this site as a result of the proposal are not foreseeable. This pNHA is not, therefore, considered to comprise a KER of the project and will not be considered further in this evaluation.

5.1.3.2.4 Old Domestic Building Curraglass Wood pNHA.

This pNHA site is encompassed within Old Domestic Building Curraglass Wood SAC (002041). The screening report concluded that significant effects on these Natura 2000 sites as a result of the project can be excluded. As a result, it is considered that potential impacts on the pNHA site arising from the project have been fully considered as part of the screening. The pNHA site will not be considered further in this evaluation.

²² <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0000365#5>

6. Evaluation of Habitats, Flora and Fauna as Key Ecological Receptors

The habitats and associated flora, fauna and other ecological features or resources identified in **Section 4.3** and **4.4** are now evaluated using the evaluation criteria described in **Section 2.4.1**.

On the basis of these evaluations an assessment will then be made as to which of these habitats or species are considered key ecological receptors (KERs) that may be impacted upon by the project i.e. which habitat or species has potential to be significantly impacted during the construction or operational phase of the proposed project (see **Table 8** and **Table 9**, below).

6.1 Habitats

Table 8 presents an evaluation of the importance value of the habitats identified within the receiving environment of the proposed development, and rationale for inclusion, or exclusion as a KER.

Table 8. Evaluation of habitats within the study area

Habitat type	Ecological value relative to study area (NRA, 2009)	Key Ecological Receptor (Y/N)	Rationale
Buildings and artificial surfaces (BL3)	N/A	No	Artificial habitat of limited biodiversity value.
Stone wall (BL1)	Local importance (lower value)	Yes	Relatively little lichen and vegetation cover. Dilapidated state. Of some value to biodiversity such as bryophytes, invertebrates and flora. Precautionary principal.
Improved agricultural grassland (GA1)	Local importance (higher value)	Yes	Modified but recently unmanaged habitat. Relatively species poor. Of local biodiversity value to badger, small mammals, birds, reptiles, amphibians and invertebrates.
Scrub (WS1)	Local importance (higher value)	Yes	Successional habitat, limited in biodiversity potential. Of local biodiversity value to birds, invertebrates and bats.
Wet grassland/Marsh (GS4/GM1)	Local importance (higher value)	Yes	Modified but recently unmanaged habitat. Relatively species poor. Of local biodiversity value to badger, birds, bats, reptiles, amphibians and invertebrates.
Hedgerows (WL1) Treelines (WL2)	Local importance (higher value)	Yes	Mature in some locations. Non-native to the north and south-east. Of local biodiversity value to badger, other mammals, bats, birds and invertebrates.
Riparian woodland (WN5)	Local importance (higher value)	Yes	Limited habitat with a non-native component. Of local biodiversity value to badger, other mammals, birds, bats and invertebrates.
Lowland stream (FW2)	Local importance (lower value)	Yes	Heavily shaded and silted stream with low flow. Not connection to a broader riverine network. Low local biodiversity value for invertebrates and amphibians. Ecologically linked to marsh and riparian woodland habitats. Precautionary principal.

6.2 Rare and Protected Flora Species

No rare and protected plant species were recorded during the ecological surveys. The habitats which occur are not considered suitable for the vast majority of the species identified during the desk top study, described in **Section 4.3.1**, above, and which have been recorded in the hectad V99. Therefore, none of these species are considered to be likely KERs for the project and will not, therefore, be considered further in this evaluation.

6.3 Fauna

Table 9 presents an evaluation of the faunal species identified within the receiving environment of the proposed development as KER.

Table 9. Evaluation of faunal species within the study area

Species	Ecological value relative to study area (NRA, 2009)	Description at the site	Key Ecological Receptor (Y/N)	Rationale
Hedgehog <i>Erinaceus europaeus</i>	Local importance (higher value)	Not recorded during surveys.	Yes	Precautionary principle. No evidence of this species recorded within the site; however, potentially suitable habitat occurs, and records exist in the general area.
Irish stoat <i>Mustela erminea</i>	Local importance (higher value)	Not recorded during surveys.	Yes	Precautionary principal. No evidence of this species recorded within the site. No records from the area. Habitats considered suitable.
Otter <i>Lutra lutra</i>	Local importance (lower value)	Not recorded during surveys.	No	No evidence of this species recorded within the site. No records from the area. Habitats not considered suitable.
Red squirrel <i>Sciurus vulgaris</i>	Local importance (higher value)	Not recorded during surveys.	Yes	Precautionary principal. No evidence of this species recorded within the site. Records from the area. Habitats within the site considered suitable.
Pygmy shrew <i>Sorex minutus</i>	Local importance (higher value)	Not recorded during surveys.	Yes	Precautionary principal. No evidence of this species recorded within the site; however, potentially suitable habitat occurs.
Badger <i>Meles meles</i>	Local importance (higher value)	Breeding and feeding evidence recorded during surveys.	Yes	Evidence of this species recorded within the site. Records from the area. Habitats considered suitable.
Pine marten <i>Martes martes</i>	Local importance (higher value)	Not recorded during surveys.	Yes	Precautionary principal. No evidence of this species recorded within the site. Records from the area. Habitats within the site considered suitable.
Irish hare <i>Lepus timidus</i> subsp. <i>Hibernica</i>	Local importance (lower value)	Not recorded during surveys.	No	No evidence of this species recorded within the site. No records from the area. Habitats within the site not considered suitable.
Red deer <i>Cervus elaphus</i>	Local importance (lower value)	Not recorded during surveys.	Yes	Precautionary principal. No evidence of this species recorded within the site. Records

Species	Ecological value relative to study area (NRA, 2009)	Description at the site	Key Ecological Receptor (Y/N)	Rationale
				from the area. Habitats within considered suitable.
Birds	Local importance (higher value)	Bird species typical of habitats occurring recorded during the survey.	Yes	Habitats within the site of local value to birds. Habitats provide potential foraging and breeding habitat for a range of species, including raptors, passerines, pigeons and corvids.
Amphibians and Reptiles	Local importance (higher value)	Not recorded during surveys.	Yes	Precautionary principal. No evidence recorded within the site. Records from the area. Habitats within the site considered suitable.
Bats	Local importance (higher value)	Three species (Leisler's bat, soprano pipistrelle and common pipistrelle) recorded foraging/commuting during surveys.	Yes	Foraging and commuting recorded in low levels. Records for the area. Habitats suitable.

7. Do-nothing Scenario

The proposed development site comprises a greenfield site in the middle of a built-up urban area.

If the proposed development does not progress beyond the planning application stage, it is likely that habitats will be managed through grazing/silage cutting. Scrub and hedges would likely be managed to maintain access. Local populations of birds, mammals and other fauna would continue to use the habitats in the site.

8. Potential Impacts of the Project

There is potential for the proposed development to impact on the natural environment (habitats, flora, fauna and water quality). This section will identify the ecological impacts of the construction and operational phases of the proposed development on the local natural environment. For the project, the construction phase is likely to have the most potential for effects on biodiversity.

The potential impacts of the proposed project were considered and assessed to ensure that all effects on KERs are adequately addressed and no significant residual effects are likely to remain following the implementation of mitigation measures, and best practice construction methodology.

8.1 Construction Phase

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

Table 10. Construction phase effects potentially associated with the project

Construction Phase Effect	Source
Direct habitat loss and alteration	Construction of temporary site compound, felling of trees/vegetation clearance, excavations for structure foundations, ancillary site development works, landscaping

Construction Phase Effect	Source
	and installation of services. Construction works also pose a risk of spreading of invasive species
Indirect surface or ground water quality effects/Indirect habitat alteration	Construction phase run-off/connection to existing storm network. Sediment/pollutant laden run-off may arise from exposed areas during groundworks and excavations, from material storage areas or from construction vehicles/plant. On-site temporary toilets and washing facilities. Leaching of fuels/oils etc to groundwater in the event of accidental spillage.
Direct species disturbance/displacement	Increased activity and human presence, noise/vibration/lighting/vegetation clearance associated with construction works.

8.2 Operational Phase

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

Table 11. Operational phase effects potentially associated with the project

Operational Phase Effect	Source
Indirect surface water quality effects/Indirect habitat alteration	Via storm water/waste water discharges to the public system which could lead to secondary effects such as alteration of aquatic habitat.
Direct/indirect species disturbance/displacement	Due to increased habitat loss, lighting/noise, indirect water quality effects, indirect impacts on prey biomass, indirect alteration of foraging, breeding or commuting habitat.

9. Assessment of Potentially Significant Effects

9.1 Construction Phase

9.1.1 Direct habitat loss/alteration

The habitats occurring within the subject site comprise mainly disturbed or managed habitats which are considered to be of ecological value on a local scale; which were evaluated as ‘Local importance (lower to higher value)’ and thus are considered to comprise KERS for the project (refer to Table 8, above).

The WL1 Hedgerows, WL2 Treelines, and GS4 Wet grassland/GM1 Marsh habitats will only require modest intervention, which will consist of removing a small number of trees of poor condition. These habitats will be retained and enhanced with native planting, which will have a **long-term slight positive effect on a local scale**.

The loss of the BL1 Stone walls and other stonework, GA1 Improved agricultural grassland, and WS1 Scrub habitats to facilitate the development will have a **permanent moderate negative effect on a local scale**.

There will be a loss of riparian woodland habitat where it has begun to expand through self-seeding to the north of the stream, in the south-eastern section of the site. A number of willows and sycamores will be removed to facilitate the construction of apartments in this location. However, the main spine of the riparian woodland habitat will be retained. The loss of riparian woodland habitat will have a **permanent slight negative effect on a local scale**.

9.1.2 Impacts to water quality/Indirect habitat alteration

As described in the preceding sections, the Folly stream is the only watercourse draining the proposal site. The Folly stream is not an ecologically valuable watercourse. It is not directly connected to any other downstream stream, river or lake. Because the Folly stream connects to the municipal sewer network, which is connected to the Killarney WWTP, it is, in effect, a component of the urban waste water network and a conduit to it. Therefore, potential impacts to water quality in the Folly stream will be a **short-term not significant negative effect on a very localised scale**. It is not envisaged that potential water quality effects will cause indirect habitat alteration to any ecologically valuable aquatic habitats in the locality.

9.1.3 Impacts to faunal species

The following table (Table 12) describes the potential construction phase effects on faunal KERS at the proposed development site, and the significance of the impact.

In terms of potentially significant disturbance/displacement of species, it is considered that habitat loss, noise and increased human activity required for construction of the development have the most potential for disturbance/displacement effects to faunal KERS. Mobile species, such as birds, frogs, newts, lizards and mammals (excluding badgers) are expected to temporarily leave the area once works begin owing to noise and human activity.

Table 12. Potential impacts on faunal species identified as KERs during the construction phase and the significance of the impact

KER	Ecological value relative to study area	Unmitigated Impacts	Significance of unmitigated impacts (NRA, 2009 and EPA, 2022)
Hedgehog	Local importance (higher value)	No evidence of hedgehog on-site. There will be loss of areas of potentially suitable habitat for hedgehog; most notably the scrub habitat. This will be off set to a degree through landscaping and planting. Hedgerow and treeline boundaries will be retained and enhanced.	Potential habitat effects on hedgehog assessed as Short-term Moderate Negative effects .
		Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity.	Potential direct disturbance/displacement effects on hedgehog assessed as Short-term Not Significant Negative effects .
Irish Stoat	Local importance (higher value)	No evidence of Irish stoat on-site. Species not strongly associated with sparse natural habitats in heavily urbanised areas. Higher value habitats available in the Killarney National Park. There will be loss of potentially suitable habitat for Irish stoat; however, this will be off set through landscaping and planting. Hedgerow and treeline boundaries will be retained and enhanced.	Potential habitat effects on Irish stoat assessed as Short-term Slight Negative effects .
		Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity.	Potential direct disturbance/displacement effects on Irish stoat assessed as Short-term Not Significant Negative effects .
Red squirrel	Local importance	No evidence of red squirrel on-site. Species not strongly associated with sparse natural habitats in heavily urbanised areas. Higher value habitats available in the Killarney	Potential habitat effects on red squirrel assessed as Short-term Slight Negative effects .

KER	Ecological value relative to study area	Unmitigated Impacts	Significance of unmitigated impacts (NRA, 2009 and EPA, 2022)
	(higher value)	National Park. There will be loss of potentially suitable habitat for Red squirrel; however, this will be off set through landscaping and planting. Hedgerow and treeline boundaries will be retained and enhanced. Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity.	Potential direct disturbance/ displacement effects on red squirrel assessed as Short-term Not Significant Negative effects .
Pygmy shrew	Local importance (higher value)	No evidence of pygmy shrew on-site. There will be loss of potentially suitable habitat for pygmy shrew; however, this will be off set to a degree through landscaping and planting. Hedgerow and treeline boundaries will be retained and enhanced. Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity.	Potential habitat effects on pygmy shrew assessed as Short-term Moderate Negative effects . Potential direct disturbance/ displacement effects on pygmy shrew assessed as Short-term Not Significant Negative effects .
Badger	Local importance (higher value)	There was evidence of badger on-site. There will be loss of suitable foraging habitat for badger i.e., the agricultural grassland field; however, landscaping and planting will provide some foraging habitat in the green spaces and biodiversity areas. Access to adjacent foraging habitats will be maintained to the north-east and south. Hedgerow and treeline boundaries will be retained and enhanced. Direct disturbance and/or displacement effects could potentially ensue as a result of excavations, increased noise, lighting and human activity.	Potential habitat effects on badger assessed as Medium-term Moderate Negative effects . Potential direct disturbance/ displacement effects on badger assessed as Short-term Moderate Negative effects .
Pine marten	Local importance (higher value)	There was no evidence of pine marten on-site. Species not strongly associated with sparse natural habitats in heavily urbanised areas. Higher value habitats available in the Killarney National Park. There will be loss of potentially suitable habitat for Pine marten; however, this will be off set through landscaping and planting. Hedgerow and treeline boundaries will be retained and enhanced. Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity.	Potential habitat effects on pine marten assessed as Short-term Slight Negative effects . Potential direct disturbance/ displacement effects on pine marten assessed as Short-term Not Significant Negative effects .
Red deer	Local importance	There was no evidence of red deer on-site. Species not strongly associated with sparse natural habitats in heavily urbanised areas. Higher value habitats available in the	Potential habitat effects on red deer assessed as Short-term Slight Negative effects .

KER	Ecological value relative to study area	Unmitigated Impacts	Significance of unmitigated impacts (NRA, 2009 and EPA, 2022)
	(higher value)	Killarney National Park. There will be loss of potentially suitable habitat for Red deer. Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity.	Potential direct disturbance/displacement effects on red deer assessed as Short-term Not Significant Negative effects .
Birds	Local importance (higher value)	There will be loss of potentially suitable nesting/foraging habitat for birds including some mature trees; however, this will be off set to a degree through landscaping and planting. Hedgerow and treeline boundaries will be retained and enhanced. Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity.	Potential habitat effects on birds assessed as Short-term Moderate Negative effects . Potential direct disturbance/displacement effects on birds assessed as Short-term Not Significant Negative Effects .
Amphibians/ Reptiles	Local importance (higher value)	There will be loss of potentially suitable habitat for frogs, newts and lizards; however, this will be off set to a degree through landscaping and planting. Hedgerow and treeline boundaries will be retained and enhanced. Wet grassland/marsh habitat will be retained and enhanced. Direct disturbance and/or displacement effects could potentially ensue as a result of increased noise, lighting and human activity.	Potential habitat effects on amphibians and reptiles assessed as Short-term Moderate Negative effects . Potential direct disturbance/displacement effects on amphibians and reptiles assessed as Short-term Not Significant Negative effects .
Bats	Local importance (higher value)	A low level of bat activity (foraging and commuting) recorded on-site. Species not strongly associated with sparse natural habitats in heavily urbanised areas. Higher value habitats available in the Killarney National Park. There will be loss of potentially suitable habitat for bats; however, this will be off set through landscaping and planting. Hedgerow and treeline boundaries will be retained and enhanced. Direct/indirect disturbance/displacement effects on bats could potentially ensue via noise/lighting disturbance.	Potential habitat effects on bats assessed as Short-term Moderate Negative effects . Potential direct/indirect effects on bats assessed as Short-term Not Significant Negative effects .

9.2 Operational Phase

9.2.1 Impacts to water quality/Indirect habitat alteration

The proposal site will be connected directly to the municipal foul and storm water networks and, as a consequence, no outflow to any natural water body will occur, thereby, precluding direct or indirect water quality impacts. The WWTP has adequate capacity to service the proposed development and is currently operating below its population equivalent (p.e.) design. The WWTP is currently in compliance with its Emission Limit Values

(ELVs)²³. Storm water will be primarily dealt with on-site through a landscape-based approach to attenuation, which will keep discharges at greenfield rates. The site is not at risk from flooding. During heavy rainfall events, storm water will be stored in on-site attenuation tanks, which will discharge to the Folly stream.

Potential impacts to water quality in the Folly stream will have a **brief imperceptible neutral effect on a local scale**.

9.2.2 Impacts to faunal species

During the operational phase, there is likely to be some disturbance to terrestrial mammals and birds owing to increased noise, traffic and human activity associated with the change of land use in the site. With regard to terrestrial mammals, it is expected that human activity will be greatest during the day with relatively low levels at night, during which time many mammal species are more active. However, overall, the degree of activity within the site will increase from existing levels, while the amount of available suitable habitat will decrease.

It is considered that the potential disturbance or displacement impacts to mammals and birds as a result of the operational phase of the proposed development will be **Long-term, Moderate Negative Effects on a local scale**.

The increase in human activity (noise and light levels) as a result of the proposed development during operation will impact the local badger and bat populations in particular.

Mitigation measures presented in **Sections 10.4** and **10.6**, below, will protect the badger and bat populations.

10. Mitigation

10.1 Construction and Environmental Management Plan (CEMP)

A CEMP will be developed and implemented by the appointed contractor before commencing work on-site. The CEMP will manage the environmental commitments of the project. The implementation of proposed mitigation measures, as well as the monitoring and supervision of these measures, will be managed through the CEMP. Mitigation measures will be monitored for compliance in-line with the requirements of the Planning Consent.

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

- CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- CIRIA C648 – Control of Water Pollution from Linear Construction Projects: Technical Guidance.
- CIRIA C753 – The SUDS Manual.
- CIRIA C698 – Site handbook for the construction of SUDS.
- CIRIA C741D: Environmental Good Practice on Site.

The CEMP will also include the following elements:

- Noise, Vibration, Dust and Air Control Plan.
- Construction and Demolition Waste Management Plan.
- Water Quality/Sediment and Erosion Control Plan.
- Fuel Management Plan.
- Emergency Response Plan (in the event of a spill of chemical, fuel or other hazardous wastes, a fire, or non-compliance incident with any permit or license issues).
- Invasive Plant Species Management Plan.

²³ Killarney WWTP D0037-01 Annual Environmental Report (2020)

10.2 Environmental Officer

Regular routine inspections of construction activity will be carried out by contractor staff to ensure all controls to prevent environmental impact are in place. Only suitably trained staff will undertake environmental inspections at the site.

10.3 General Protection of Water Quality during Construction

The contractor will appoint a suitably qualified person to oversee the implementation of general measures for the prevention of pollution to the aquatic environment. The following best practice measures will be put in place to avoid or minimise negative effects to water quality as a result of the project during the construction phase.

10.3.1 Site Compound

- Adequate parking facilities will be made available within the Construction Compound for all site workers during the course of construction.
- A designated wash down area within the Contractor's compound will be used for cleaning of any equipment or plant, with the safe disposal of any contaminated water.

10.3.2 Excavated Materials, Soil and Surface Water Management

- Measures will be implemented throughout the construction stage to reduce and attenuate site run-off and protect the existing drainage network from excessive silt load.
- Topsoil on-site will be preserved where possible. All topsoil stripping will be scheduled to be carried out during dry weather and all stockpiling will be kept as far away as possible from the Folly stream.
- To reduce potential increases in flows into the existing drainage system during construction, the period of exposure of bare areas and uncontrolled runoff will be limited as much as possible. Early covering/seeding/planting of exposed surfaces will be undertaken once opened areas have been reinstated.
- Excavated material will be deposited in designated material deposition areas.
- The scheme drainage system will be inspected daily during construction, or after storm events, to check for blockages/drainage issues. Where any drainage issues are identified, these will be addressed on the same day to ensure water quality protection.

10.3.3 Dewatering of Excavations

- The contractor shall develop an appropriate dewatering scheme to keep the basement/excavations free from water and ensure the quality of water leaving site is high.
- Any excavations that need to be pumped clear of groundwater will be pumped to a settlement tank with sufficient retention time before the water is allowed to discharge to the drainage network. Water will only be discharged following treatment.
- Discharge of water will be regularly monitored visually for hydrocarbon sheen and suspended solids.

10.3.4 Storage of Construction Materials

- Construction materials will only be stored in designated material storage areas.
- Material stockpiles will be kept to a minimum size. Material stockpiles will be stored away from watercourses and drains, on an impermeable base and away from moving plant and machinery.

10.3.5 Storage of Fuels/Oils and other Hazardous Materials

- The storage of oils, chemicals and hydraulic fluids is to take place in secure, designated areas within the site compound.
- All fuels and chemicals will be bunded, and where applicable, stored within double skinned tanks/containers with the capacity to hold 110% of the volume of chemicals and fuels contents.
- Bunds will be located on flat ground a minimum distance of 50m from the Folly stream.
- Spill kits will be kept on site at all times and all staff trained in their appropriate use.

10.3.6 Refuelling of Construction Plant

- All plant will be refuelled at designated refuelling locations within the site compound. Rigid and articulated vehicles will be fuelled off site as will all site vehicles (jeeps, cars and vans).
- Designated fuel filling points will have appropriate oil and petrol interceptors to provide protection from accidental spills.
- Only designated trained and competent operatives will be authorised to refuel plant on site.
- All plant used will be regularly inspected for leaks and fitness for purpose.

10.3.7 Spill Control Measures

- Measures will be implemented throughout the construction stage to prevent contamination of the soil and drainage network from oil and petrol leakages.
- Spill kit containment equipment will be stored at all work areas for use in the event of an emergency. The contents of the spill kit will be replenished if used and they will be checked on a scheduled basis during environmental inspections and audits. All crews will be trained in the use of spill kit equipment.
- An Emergency Response Plan will be implemented in the event of any environmental incidents such as spillage of oil/fuel during the construction/operational phase of the project.
- All emergency procedures and equipment will be in place prior to the commencement of any works.
- The local authority will be informed immediately of any spillage or pollution incident that may occur on-site during the construction phase.

10.3.8 Use of Concrete

- Wet concrete is silty and very alkaline (high pH) and can have a serious effect on watercourses and aquatic life if ingress occurs. Concrete will not enter site water.

- Pouring of cementitious materials will be carried out in the dry. A designated trained operator, experienced in working with concrete, will be employed during any concrete pouring.
- The use of concrete close to drainage features will be carefully controlled to avoid spillage.
- Washout of mixing trucks and plant is to be carried out in designated, contained, impermeable areas.
- Any small volumes of incidental wash generated from cleaning hand tools, cement mixers or other plant, will be trapped on-site to allow sediment to settle out and reach neutral pH before clarified water is released to the drainage network or allowed to percolate into the ground. Settled solids will need to be appropriately disposed of off-site.

10.3.9 Construction Wheel-wash Facilities

- Wheel wash facilities are to be provided at all entrances/exits for the site. All construction vehicles leaving site will be required to drive through these wheel wash areas.
- The wheel wash area will be cleaned regularly so as to avoid build-up of residue.
- Vehicle washdown water will discharge to the drainage system for treatment and attenuation.

10.3.10 Weather/Flood Risk

- The works will only commence when a suitable weather window is forecast and in agreement with the relevant local authority representative.

10.4 Protection of Bats

The following measures are recommended for the protection of the local bat populations.

10.4.1 Removal of Vegetation

It is an offence, under Section 40 (1) (a) of the Wildlife Act 1976, as amended, for any person to cut, grub, burn or otherwise destroy, during the period beginning on the 1st day of March and ending on the 31st day of August, any vegetation growing on any land not then cultivated. Accordingly, all removal of vegetation, including any trees proposed for removal, will be undertaken in full compliance with the provisions of Section 40.

Trees will be removed in line with best conservation practice; this will entail removing them in sections and stages starting from the top, each section will be left on the ground for a minimum of 48 hours to ensure bats can escape the tree.

10.4.2 Lighting

The PD will include a lighting design plan derived from the Public Lighting Design Assessment submitted with the application which will take cognisance of Bat Conservation Trust (2018). Guidance Note 08/18. Bats and Artificial Lighting in the UK - Bats and the Built Environment Series and Espey, B. (2020). Public Lighting recommendations, a document prepared for the Road Management Office.

In general, artificial light creates a barrier to commuting bats and it can also result in roosts being abandoned therefore onsite lighting will be avoided close to site boundaries, particularly the mature hedgerow and treelines to the south and east of the site. Where absolutely necessary, directional lighting (i.e., lighting which only shines downwards on targeted areas and not nearby commuting/foraging

habitats) will be used to prevent overspill. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvers and shields to direct the light to the intended area only. LEDs will be used, as these emit minimal ultra-violet light; and white and blue wavelengths will be avoided, with wavelength <4,200 kelvin being preferred.

10.5 Protection of wild birds, their nests and eggs.

Wild birds and their nests and eggs, other than wild birds of the species mentioned in the Third Schedule to this Act, are protected by Section 19 of the Wildlife Act 1976, as amended, and the enforcement procedures are laid out in Section 22. Accordingly, all removal of vegetation likely to support nesting birds, including any trees, or hedgerows, proposed for removal, will be undertaken in compliance with Section 22.

10.6 Protection of Badger

Under Section 20 of the Wildlife Act 1976, as amended, badger is a species protected by the provisions of Section 23 of the Act. Accordingly, all works will be conducted in compliance with the provisions of Section 23.

10.6.1 Pre-construction

Prior to commencement of enabling works or construction works, a badger survey will be undertaken at the site. This will determine the activity levels of badger on the site and will identify the activity status of each sett.

10.6.2 Construction

General measures are outlined below.

- It is recommended to demarcate exclusion zones around the badger setts prior to commencement of construction. The badger breeding season extends from December to June, during which time the maximum exclusion zone of 50 m will be established around active setts. Outside of the breeding season the exclusion zone can be reduced to 30 m.
- Works within the exclusion zones will be supervised by a Project Ecologist. The Project Ecologist will be awarded a level of authority and will be able to stop construction activity if there is a potential for ecological impact.
- Lighter machinery and hand clearance will be used within 10 -20 m of the active badger setts. Heavy machinery within 30 m of the setts will be avoided in so far as possible. Where heavy machinery is required within the 30 m exclusion zone, it will be supervised by the project ecologist. A soft start approach will be applied.
- Noise barriers (plywood sheeting or temporary wall) will be installed between the active sett entrances and the works.
- All contractors/operators on site will be made fully aware of the procedures pertaining to the badger setts on site and provisions for same will be made in the CEMP.
- All site offices and depots will be sited at least 50 m away from the setts.
- No work will be undertaken at night, to avoid contact with badgers and to reduce the need for artificial lighting. Works in the exclusion zone of the badger setts will be timed to start 2 hours after sunrise and end one hour before sunset.
- Any excavations over 1 m deep will be covered at night to prevent animals falling into them.
- Existing hedgerow vegetation around the badger setts will be retained and enhanced as per the landscape plan.

- Additional screening of the main sett will be provided, as per NPWS recommendation, by planting native shrubs along the sett protection buffer lines as shown on the landscape plan drawing. The area within these buffers lines will be designated a 'no works area'.
- Lighting design will be sensitive to the badger sett and to site boundaries – lighting will be directed away from the setts and away from the southern boundaries of the site.
- At least 30 cm clearance height beneath proposed boundary fencing will be maintained to allow unrestricted access and movement for resident badgers.

10.7 General Protection of Fauna

- Construction materials and wastes are to be kept in designated areas to reduce risk of accidental injury/entrapment of any wildlife on-site.
- All temporary construction lighting will be turned off after daylight hours.
- Protection of wild animals (other than birds). All works will be carried out in compliance with the provisions of Section 23 of the Wildlife Act 1976, as amended.
- Should the breeding place of any protected wild animal be discovered within the site during construction works, works will cease immediately, the area will be cordoned off and the advice of NPWS sought.

10.7.1 Landscaping

It is recommended to provide continuous cover of native trees, hedges, shrubs, flowers and grasses around the perimeter of the development site in order to provide shelter, foraging and commuting habitat and to maintain connectivity throughout the landscape for fauna.

Landscaping will provide for the reuse of soils and native seed bank available in the site. Additional landscaping and planting will include native species of local and county scale only.

It is recommended to store the stones from the stone wall habitat for use in new site boundaries where possible.

Full details of the Landscaping Plan are provided in the Landscape Design Report and drawings accompany this application

10.7.2 Signage and display boards

It is recommended to establish speed limits/speed reducing measures at locations within the development which will interact with wildlife corridors e.g., the access road leading to the apartments blocks.

It is recommended to erect signage on internal roads and cycleways giving way to animals crossing.

It is recommended to erect educational display boards in landscaped and biodiversity areas to identify pollinators and associated plants.

10.8 Management of Invasive Species, Site Biosecurity

- Construction personnel involved in works will be trained in basic invasive species prevention and management measures.
- Vehicles, machinery, equipment/tools and PPE will arrive to site clean.

- Invasive species management methodologies and plans outlining Best Available Techniques (BAT) will be sourced from current best practice and will have regard to 'The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads' (NRA 2010).
- Management and treatment of any invasive plant species found on-site i.e. Japanese knotweed, montbretia and buddleia will be overseen by a suitably experienced and qualified person. Best-practise protocols will be implemented as per the Invasive Plant Species Management Plan to ensure the proper removal and disposal of the plant(s) in question.
- In the event that the use of pesticides/herbicides is required, these will be applied strictly in accordance with the manufacturer's recommendations, by a registered Professional Pesticides User, and fully in compliance with the European Communities (Sustainable Use of Pesticides) Regulations, 2012, (S.I. 155 of 2012).

11. Cumulative Impacts

11.1 Plans

With regards to the potential for cumulative or in-combination effects the Kerry County Development Plan (2022-2028), Killarney Municipal District Local Area Plan (2018-2024)²⁴, Killarney Municipal District Local Area Plan (2023-2029) pre-draft, and Killarney Town Development Plan 2009-2015²⁴ were considered.

In general, County/Town Development Plans and Local Area Plans have a range of environmental and natural heritage policy safeguards in place. These safeguards to protect the natural environment will also apply to the proposal described in this report. No significant cumulative impacts are predicted with the, aforementioned, Plans.

11.2 Permitted and Proposed Developments in the Locality

A search of Kerry County Council's online planning enquiry system for recent granted or on-going planning applications located within the vicinity of the proposed development site was undertaken. These pertain primarily to construction, alteration and modification of existing houses/dwellings, as well as construction of the following adjacent developments. Developments in the vicinity of the proposal include construction, alteration, extension, and retention of private and community residences including:

- Planning Ref No. 19813: Planning approval granted to the Kerry Education and Training Board (for the development of an ASD unit in lands located to the south of the proposal site, within the grounds of the Killarney Community College.
- Planning Ref. No. 23267: Planning approval to construct staff accommodation on the grounds of the existing Lake Hotel on Muckross Road comprising of 4 detached single storey units, each individual unit consists of 4 single bedrooms and 1 double bedroom, and all associated site works at a location approximately 3 km to the south.
- Planning Ref. No. 23305: An application to construct 9 dwelling houses with all associated site works adjacent to the north of this application's proposed site entrance off Port Road.
- Planning Ref. No. 23523: Planning approval to demolish existing garage and boiler house, construct a two-storey granny flat with link corridor at both levels, and construct a double garage and all associated site works at a location approximately 200 m to the northwest.

²⁴ Now lapsed

With regard to cumulative species disturbance/displacement impacts to bats, birds, amphibians, reptiles and mammals due to increased light levels, noise and habitat loss, implementation of the recommended mitigation measures, as outlined in **Section 10**, above, will avoid any significant residual disturbance/displacement effects. In the case of badgers, it is noted that there will be a cumulative loss of foraging habitat for the resident badgers, should these developments proceed in combination with the proposal. This habitat loss cannot be mitigated; therefore, the cumulative loss of foraging habitat will be a **long-term moderate negative effect on the resident population**.

11.3 Existing Land-use, On-going Activities and Water Quality

The proposal site is within the Deenagh sub-catchment 22_1, however, as outlined in **Section 4.2**, above, and as illustrated in **Figure 8**, site does not drain to the Deenagh River. Treated foul and storm water from the site will ultimately discharge via the Killarney WWTP, to Ross Bay, Lough Leane.

Lough Leane, including Ross Bay, is a nutrient sensitive area²⁵ designated by the EPA. Nutrient sensitive areas are those waterbodies listed in accordance with the Urban Waste Water Treatment (UWWT) Directive 91/271/EEC on Urban Waste Water Treatment and S.I. 254 / 2001, S.I. 440/2004 and S.I. 48/2010. In the latest Cycle of WFD Risk Assessment²⁶, Lough Leane is assessed separately to Ross Bay. The water quality of Ross Bay is *unassigned*, and the WFD Risk for Ross Bay is *under review*. The water quality of Lough Leane is assigned as *good*, and *not at risk*.

The current pressures on the receiving water body – Ross Bay, include emissions from the combined sewer during extreme weather events. The proposed works on St. Margaret’s Road will alleviate the pressure on the local system at the proposal site, by removing sections of surface water loading from the combined sewer along St. Margaret’s Road. This will alleviate current loading in the existing foul network, thereby providing capacity for the site’s generated foul flows.

Uisce Éireann has upgraded the treatment processes in a number of settlements identified in the Kerry County Development Plan, including Killarney. The settlement of Killarney has been identified as one of the settlements within the County Development Plan as being capable of accommodating residential development. The supply of residential zoned land in the County Development Plan is focused in areas where infrastructure has been invested in and capacity is currently available²⁷.

The WWTP has the capacity to service the project and is currently treating a population equivalent (p.e.) below that which it is designed to treat. The WWTP treats waste water to a tertiary standard which includes N&P removal. Storm water emissions from the site will predominantly infiltrate on-site, with attenuated storm water flows, which will not include N & P loads, being discharged only during extreme weather events. Because Killarney WWTP has the capacity and the infrastructure capable of meeting the demands of the population targets of the County Development Plan and the residential zones identified, the treated emissions from the site will not interact cumulatively with the existing land-use and on-going activities in the catchment to cause significant water quality effects.

12. Residual Effects

Residual effects are from impacts that remain, once mitigation has been implemented or, impacts that cannot be mitigated.

²⁵ [Register of Protected Areas - Nutrient Sensitive Areas - Datasets - data.gov.ie](#) [accessed 08/11/2021]

²⁶ Laune-Maine-Dingle Bay Catchment Assessment 2010- 2015 (HA 22) [accessed 08/11/2021]

²⁷ Kerry County Development Plan (2015-2021)

Table 13, below, provides a summary of the predicted residual effects for the KERS identified which are the most ecologically valuable at the site.

Table 13. Potential impacts on faunal species identified as KERS during the construction phase and the significance of the impact

KER	Construction phase effects (without mitigation)	Operational phase effects (without mitigation)	Mitigation measures	Residual effects
Hedgehog	Potential habitat effects on hedgehog assessed as Short-term Moderate Negative effects .	Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects	CEMP	Potential residual habitat effects assessed as Long-term Slight Negative effects .
	Potential direct disturbance/displacement effects on hedgehog assessed as Short-term Not Significant Negative effects .		Compliance with Wildlife Acts regarding vegetation removal Landscaping Best practice	Potential residual disturbance/displacement effects assessed as Temporary to Short-term Not Significant Negative effects . No significant residual effects.
Irish stoat	Potential habitat effects on Irish stoat assessed as Short-term Slight Negative effects .	Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects	CEMP	Potential residual habitat effects assessed as Long-term Slight Negative effects .
	Potential direct disturbance/displacement effects on Irish stoat assessed as Short-term Not Significant Negative effects .		Compliance with Wildlife Acts regarding vegetation removal Landscaping Best practice	Potential residual disturbance/displacement effects assessed as Temporary to Short-term Not Significant Negative effects . No significant residual effects.
Red squirrel	Potential habitat effects on red squirrel assessed as Short-term Slight Negative effects .	Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects	CEMP	Potential residual habitat effects assessed as Long-term Slight Negative effects .
	Potential direct disturbance/displacement effects on red squirrel assessed as Short-term Not Significant Negative effects .		Compliance with Wildlife Acts regarding vegetation removal Landscaping Best practice	Potential residual disturbance/displacement effects assessed as Temporary to Short-term Not Significant Negative effects . No significant residual effects.
Pygmy shrew	Potential habitat effects on pygmy shrew assessed as Short-term Moderate Negative effects .	Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects	CEMP	Potential residual habitat effects assessed as Long-term Slight Negative effects .
			Compliance with Wildlife Acts regarding vegetation removal	Potential residual disturbance/displacement effects assessed as Temporary to Short-

KER	Construction phase effects (without mitigation)	Operational phase effects (without mitigation)	Mitigation measures	Residual effects
	Potential direct disturbance/ displacement effects on pygmy shrew assessed as Short-term Not Significant Negative effects.		Landscaping Best practice	term Not Significant Negative effects. No significant residual effects.
Badger	Potential habitat effects on badger assessed as Medium-term Moderate Negative effects. Potential direct disturbance/ displacement effects on badger assessed as Short-term Moderate Negative effects.	Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects	CEMP Compliance with Wildlife Acts regarding vegetation removal and disturbance Exclusion zones Supervision of works Landscaping Best practice	Potential residual habitat effects assessed as Long-term Slight Negative effects. Potential residual disturbance/displacement effects assessed as Temporary to Short-term Slight Negative effects. Potential residual cumulative effects assessed as Long-term Moderate Negative effects. No significant residual effects.
Pine marten	Potential habitat effects on pine marten assessed as Short-term Slight Negative effects. Potential direct disturbance/ displacement effects on pine marten assessed as Short-term Not Significant Negative effects.	Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects	CEMP Compliance with Wildlife Acts regarding vegetation removal Landscaping Best practice	Potential residual habitat effects assessed as Long-term Slight Negative effects. Potential residual disturbance/displacement effects assessed as Temporary to Short-term Not Significant Negative effects. No significant residual effects.
Red deer	Potential habitat effects on red deer assessed as Short-term Slight Negative effects. Potential direct disturbance/ displacement effects on red deer assessed as Short-term Not Significant Negative effects.	Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects	CEMP Compliance with Wildlife Acts regarding vegetation removal Landscaping Best practice	Potential residual habitat effects assessed as Long-term Slight Negative effects. Potential residual disturbance/displacement effects assessed as Temporary to Short-term Not Significant Negative effects. No significant residual effects.

KER	Construction phase effects (without mitigation)	Operational phase effects (without mitigation)	Mitigation measures	Residual effects
	Significant Negative effects.			
Birds	<p>Potential habitat effects on birds assessed as Short-term Moderate Negative effects.</p> <p>Potential direct disturbance/displacement effects on birds assessed as Short-term Not Significant Negative Effects.</p>	<p>Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects</p>	<p>CEMP</p> <p>Compliance with Wildlife Acts regarding vegetation removal</p> <p>Landscaping</p> <p>Best practice</p>	<p>Potential residual habitat effects assessed as Long-term Slight Negative effects.</p> <p>Potential residual disturbance/displacement effects assessed as Temporary to Short-term Not Significant Negative effects.</p> <p>No significant residual effects.</p>
Amphibians/reptiles	<p>Potential habitat effects on amphibians and reptiles assessed as Short-term Moderate Negative effects.</p> <p>Potential direct disturbance/displacement effects amphibians and reptiles assessed as Short-term Not Significant Negative effects.</p>	<p>Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects</p>	<p>CEMP</p> <p>Compliance with Wildlife Acts regarding vegetation removal</p> <p>Landscaping</p> <p>Best practice</p>	<p>Potential residual habitat effects assessed as Long-term Slight Negative effects.</p> <p>Potential residual disturbance/displacement effects assessed as Temporary to Short-term Not Significant Negative effects.</p> <p>No significant residual effects.</p>
Bats	<p>Potential habitat effects on bats assessed as Short-term Moderate Negative effects.</p> <p>Potential direct/indirect effects on bats assessed as Short-term Not Significant Negative effects.</p>	<p>Potential disturbance or displacement impacts assessed as Long-term, Moderate Negative Effects</p>	<p>CEMP</p> <p>Compliance with Wildlife Acts regarding vegetation removal</p> <p>Lighting measures</p> <p>Landscaping</p> <p>Best practice</p>	<p>Potential residual habitat effects assessed as Long-term Slight Negative effects.</p> <p>Potential residual disturbance/displacement effects assessed as Temporary to Short-term Slight Negative effects.</p> <p>No significant residual effects.</p>

13. Enhancement Opportunities

13.1 Landscaping

Extensive soft landscaping is proposed as part of the project. Planting of mature and semi-mature trees, amenity planting and hedgerows will enhance biodiversity by providing valuable habitat for a wide variety of fauna, of

value within an urban environment. The proposed planting will compensate for loss of low-value semi-natural habitat within the site.

It is recommended that native tree, shrub and plant species are utilised as much as possible as part of site landscaping. The planting list will incorporate a diverse range of pollinator/bee-friendly tree/plant species as much as possible to support local biodiversity. Pollinator-friendly, native tree species include willow, hawthorn, blackthorn and wild cherry.

It is recommended that the All-Ireland Pollinator Plan 2021-2025 is incorporated where possible.

13.2 Other measures

Swift boxes can be installed on appropriate houses within the site.

14. Conclusion

Residual impacts on biodiversity including impacts to designated sites, habitats, flora, fauna and water quality are not considered significant provided best practice methodologies and mitigation measures are employed during the construction and operational phases.

Provided that the proposed project is constructed and operated in accordance with the design, best practice and mitigation that is described within this application, significant effects on KERS are not anticipated at any geographical scale.

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

15. References

- Bang, P., & Dahlstrom, P. (2006). *Animal Tracks and Signs*. Oxford University Press, Oxford.
- Bat Conservation Trust (BCT) (2018). *Guidance Note 08/18: Bats and artificial lighting in the UK (Bats and the Built Environment Series)*. Bat Conservation Trust & Institution of Lighting Professionals London & Rugby.
- Chartered Institute for Ecology and Environmental Management (CIEEM) (2022). *Guidelines for Ecological Impact Assessment in the United Kingdom Version 1.2*. Chartered Institute for Ecology and Environmental Management, Romsey.
- Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.
- Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edn). The Bat Conservation Trust, London.
- Environmental Protection Agency (EPA) (2022). *Guidelines on information to be contained in Environmental Impact Statements*. Environmental Protection Agency, Wexford.
- Espey, B. (2020). *Public Lighting Recommendations*. A document prepared for the Road Management Office. By Prof. Brian Espey, School of Physics, Trinity College Dublin on behalf of the Dark Sky Ireland group.
- Fossitt, J. A. (2000). *A Guide to Habitats in Ireland*. The Heritage Council, Kilkenny.
- Gilbert, G., Stanbury, A. & Lewis, L. (2021). Birds of Conservation Concern in Ireland 4: 2020 - 2026. *Irish Birds*, **43**, pp. 1-22
- Kelleher, C. & Marnell, F. (2006). Bat Mitigation Guidelines for Ireland. *Irish Wildlife Manuals*, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.
- Lundy, M.G., Aughney, T., Montgomery, Wl., Roche, N. (2011). *Landscape conservation for Irish bats & species specific roosting characteristics*. Bat Conservation Ireland.
- Marnell, F., Looney, D. & Lawton, C. (2019). *Ireland Red List No. 12: Terrestrial Mammals*. National Parks and Wildlife Service, Department of the Culture, Heritage and the Gaeltacht, Dublin, Ireland.
- National Parks and Wildlife Service (NPWS). (2019) *The status of EU protected habitats and species in Ireland. Volume 3. Species assessments*. National Parks & Wildlife Service, Department of Culture, Heritage & the Gaeltacht. Dublin, Ireland.
- Nelson, B., Cummins, S., Fay, L., Jeffrey, R., Kelly, S., Kingston, N., Lockhart, N., Marnell, F., Tierney, D. and Wyse Jackson, M. (2019). Checklists of protected and threatened species in Ireland. *Irish Wildlife Manuals*. No. 116. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
- National Roads Authority²⁸ (NRA) (2005). *Guidelines for the Treatment of Badgers prior to the Construction of National Roads Schemes*. National Roads Authority, Dublin

²⁸ Now known as Transport Infrastructure Ireland

NRA (2008). *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*. National Roads Authority, Dublin.

NRA (2009). *Guidelines for Assessment of Ecological Impacts of National Roads Schemes*. National Roads Authority, Dublin.

NRA (2010). *Guidelines on the Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads*. National Roads Authority, Dublin.

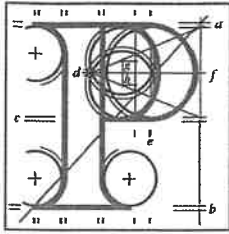
Scottish Badgers (2018). *Surveying for Badgers: Good Practice Guidelines*. Version 1. Scottish Badgers, Forfar

Smith, G., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011). *Best Practice Guidance for Habitat Survey and Mapping*, Kilkenny, Ireland: The Heritage Council.

Wyse Jackson, M., FitzPatrick, Ú., Cole, E., Jebb, M., McFerran, D., Sheehy Skeffington, M. & Wright, M. (2016) *Ireland Red List No. 10: Vascular Plants*. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin, Ireland.

Appendix 1

ABP Order



An
Bord
Pleanála

Board Order
ABP-312987-22

Planning and Development Acts 2000 to 2021

Planning Authority: Kerry County Council

Application for permission under section 4 of the Planning and Development (Housing) and Residential Tenancies Act 2016, as amended, in accordance with plans and particulars, lodged with An Bord Pleanála on the 11th day of March 2022 by Portal Asset Holdings Limited care of HW Planning of 5 Joyce House, Barrack Square, Ballincollig, County Cork.

Proposed Development comprises of the following:

The construction of a residential development of 228 number residential units with ancillary two storey crèche, landscaping, road improvements, pedestrian and cycleways, storm water upgrades and associated site development works.

- (a) The proposed development makes provision for 76 number houses comprising of:
- eight number two storey two-bed semi-detached,
 - 28 number two storey three-bed townhouses,
 - 10 number two storey three-bed semi-detached,
 - 30 number two storey four-bed semi-detached.
- (b) The proposed development includes 152 number apartments and duplexes to be provided as follows:
- Block 1 (seven number two-bed and three number two-bed over three storeys),

- Block 2 (three number two-bed and three number two-bed over three storeys),
 - Block 3 (four number 1-bed, 10 number two-bed and six number three-bed over three storeys),
 - Block 4 (10 number one-bed and 10 number two-bed over three storeys),
 - Block J (32 number two-bed over four storeys),
 - Block K (16 no. one-bed apartments and 16 number two-bed apartments over four storeys)
 - Block L (32 number two-bed apartments over four storeys).
- (c) The proposed development will provide for a new vehicular access and pedestrian entrances onto Port Road, upgrades to Port Road comprising reduction in carriageway widths, provision of shared pedestrian and bicycle path and uncontrolled pedestrian crossing, and a pedestrian connection to Millwood Estate.
- (d) It is proposed to upgrade the stormwater network on Saint Margaret's Road (approximately 140 metres north of the main development site) to support the development.
- (e) Ancillary infrastructure development works will include relocation and undergrounding of electricity supply board powerlines, wastewater infrastructure including foul pumping station, surface water attenuation, water utility services, public lighting, bin stores, bicycle stores, electricity supply board substation, and all associated site development works all located at Port Road and Saint Margaret's Road, Coollegrean, Inch, Knockreer, Ardnamweelt, Derreen, Killarney, County Kerry.

Decision

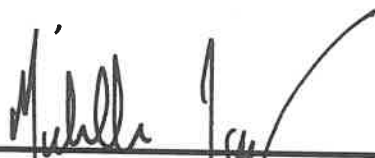
Refuse permission for the above proposed development based on the reasons and considerations under and subject to the conditions set out below.

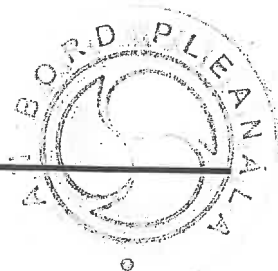
Reasons and Considerations

Having regard to the proximity of the subject site to the Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment candidate Special Area of Conservation (Site Code: 000365) it is considered that:

The proposed development may result in increased artificial lighting generated at both the construction and operational phases of the development and that may impact on Lesser Horseshoe Bats that commute along routes to the west of the Port Road and Deenagh River. The submitted Appropriate Assessment Screening Report does not provide sufficient scientific reasoning to clearly eliminate the likelihood of significant adverse effects.

In view of the site's Conservation Objectives and qualifying interests, the applicant has failed through the submitted Appropriate Assessment Screening Report to demonstrate that the proposed development would not adversely affect the integrity of a European Site and it is considered that the proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.


Michelle Fagan
Member of An Bord Pleanála
duly authorised to authenticate
the seal of the Board.



Dated this 22nd day of August 2022

Appendix 2

NRA Ecological Evaluation Table

Examples of valuation at different geographical scales (Source NRA, 2009¹)

International Importance	<p>'European Site' including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA) or proposed Special Area of Conservation. Proposed Special Protection Area (pSPA).</p> <p>Site that fulfils the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended).</p> <p>Features essential to maintaining the coherence of the Natura 2000 Network.¹</p> <p>Site containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive.</p> <p>Resident or regularly occurring populations (assessed to be important at the national level)² of the following:</p> <p>Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or</p> <p>Species of animal and plants listed in Annex II and/or IV of the Habitats Directive.</p> <p>Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971).</p> <p>World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972).</p> <p>Biosphere Reserve (UNESCO Man & The Biosphere Programme).</p> <p>Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979).</p> <p>Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979).</p> <p>Biogenetic Reserve under the Council of Europe.</p> <p>European Diploma Site under the Council of Europe.</p> <p>Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).³</p>
National Importance	<p>Site designated or proposed as a Natural Heritage Area (NHA).</p> <p>Statutory Nature Reserve.</p> <p>Refuge for Fauna and Flora protected under the Wildlife Acts.</p> <p>National Park.</p> <p>Undesignated site fulfilling the criteria for designation as a Natural Heritage Area (NHA); Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Act; and/or a National Park.</p> <p>Resident or regularly occurring populations (assessed to be important at the national level)⁴ of the following:</p> <p>Species protected under the Wildlife Acts; and/or</p> <p>Species listed on the relevant Red Data list.</p> <p>Site containing 'viable areas'⁵ of the habitat types listed in Annex I of the Habitats Directive.</p>

¹ See Articles 3 and 10 of the Habitats Directive.

² It is suggested that, in general, 1% of the national population of such species qualifies as an internationally important population. However, a smaller population may qualify as internationally important where the population forms a critical part of a wider population or the species is at a critical phase of its life cycle.

³ Note that such waters are designated based on these waters' capabilities of supporting salmon (*Salmo salar*), trout (*Salmo trutta*), char (*Salvelinus*) and whitefish (*Coregonus*).

⁴ It is suggested that, in general, 1% of the national population of such species qualifies as a nationally important population. However, a smaller population may qualify as nationally important where the population forms a critical part of a wider population or the species is at a critical phase of its life cycle.

⁵ A 'viable area' is defined as an area of a habitat that, given the particular characteristics of that habitat, was of a sufficient size and shape, such that its integrity (in terms of species composition, and ecological processes and function) would be maintained in the face of stochastic change (for example, as a result of climatic variation).

¹ NRA (2009). Environmental Assessment and Construction Guidelines. Published by the National Roads Authority.

County Importance	<p>Area of Special Amenity.⁶</p> <p>Area subject to a Tree Preservation Order.</p> <p>Area of High Amenity, or equivalent, designated under the County Development Plan.</p> <p>Resident or regularly occurring populations (assessed to be important at the County level)⁷ of the following:</p> <p>Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;</p> <p>Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;</p> <p>Species protected under the Wildlife Acts; and/or</p> <p>Species listed on the relevant Red Data list.</p> <p>Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance.</p> <p>County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified in the National or Local BAP,⁸ if this has been prepared.</p> <p>Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county.</p> <p>Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.</p>
Locally Important (higher level)	<p>Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared;</p> <p>Resident or regularly occurring populations (assessed to be important at the Local level)⁹ of the following:</p> <p>Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;</p> <p>Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;</p> <p>Species protected under the Wildlife Acts; and/or</p> <p>Species listed on the relevant Red Data list.</p> <p>Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality;</p> <p>Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value</p>
Locally Important (lower level)	<p>Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;</p> <p>Sites or features containing non-native species that are of some importance in maintaining habitat links.</p>

⁶ It should be noted that whilst areas such as Areas of Special Amenity, areas subject to a Tree Preservation Order and Areas of High Amenity are often designated on the basis of their ecological value, they may also be designated for other reasons, such as their amenity or recreational value. Therefore, it should not be automatically assumed that such sites are of County importance from an ecological perspective.

⁷ It is suggested that, in general, 1% of the County population of such species qualifies as a County important population. However, a smaller population may qualify as County important where the population forms a critical part of a wider population or the species is at a critical phase of its life cycle.

⁸ BAP: Biodiversity Action Plan

⁹ It is suggested that, in general, 1% of the local population of such species qualifies as a locally important population. However, a smaller population may qualify as locally important where the population forms a critical part of a wider population or the species is at a critical phase of its life cycle.

Appendix 3

Badger Survey Report

MWP

Badger Survey Report
Port Road Housing Development
Killarney, Co. Kerry

Portal Asset Holdings Ltd.

November 2021

Contents

1. Introduction	3
1.1 Site location and context.....	3
1.2 Relative legislation and guidelines	4
2. Methodology.....	5
2.1 Baseline ecological surveys	5
2.2 Targeted badger surveys	6
3. Results	7
4. Mitigation measures.....	11
4.1 Pre-construction	12
4.2 Construction.....	12

Tables

Table 1. Badger sett classification (Scottish Badgers, 2018).....	7
Table 2: Type and activity status of setts recorded in the site	7

Figures

Figure 1: Aerial map of the proposed development site	4
Figure 2: Site location map	4
Figure 3: Badger setts in Port Road Housing Development site.....	8

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
19554	6003	A	04-11-2021	MKy	HD	MKe	FINAL

MWP, Engineering and Environmental Consultants

Address: Reen Point, Blennerville, Tralee, Co. Kerry. V92 X2TK

www.mwp.ie



1. Introduction

During ecological baseline surveys at a proposed housing development site in Killarney, an active badger sett was identified within a hedgerow bounding an agricultural field. Malachy Walsh and Partners (MWP) conducted further ecological surveys to determine the current extent of badger activity at the site and to recommend appropriate mitigation measures to reduce potential construction phase and operation phase impacts to badgers.

This report outlines the results of surveys undertaken and recommends mitigation measures for the treatment of the badger setts within the proposed development site. The implementation of any mitigation measures for badger setts will be subject to a grant of a Section 23 (5) (d) Wildlife Licence and grant of planning for the development.

1.1 Site location and context

The site occupies a greenfield site that slopes from a highpoint in the northwest down to Port Road on the west, and to the southeast. The Folly stream flows along the southern boundary east to New Road, where it is culverted. Along the western boundary of the site is a connection to the N71 road. Also along this boundary is the rear gardens of the Port Road Cottages. The site is bounded by hedgerows and treelines with riparian habitats including marsh and woodland located to the south and south-east along the Folly stream. The southeastern section of the site is densely vegetated bramble-gorse-willow scrub, on land previously used as a construction compound for adjacent residential developments. The northern and eastern boundaries of the site adjoin existing residential developments and the Killarney Community Hospital. The southern boundary adjoins the playing fields of Killarney Community College. The lands subject to the permitted development are unoccupied and undeveloped. Previously the site was used for the grazing of livestock as it once formed part of the Mercy Order farm and school.



Figure 1: Aerial map of the proposed development site

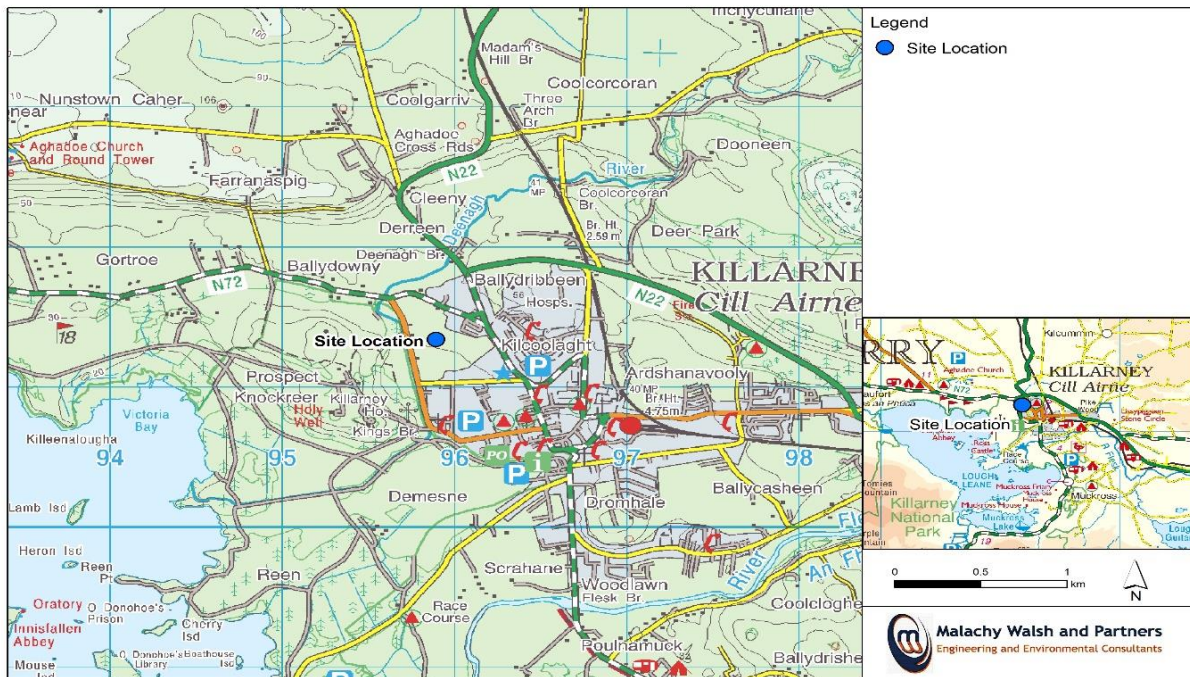


Figure 2: Site location map

1.2 Relative legislation and guidelines

Badgers and their setts are protected under the provisions of the Wildlife Act, 1976, and the Wildlife Amendment Act, 2000. It is an offence to intentionally kill or injure a protected species or to wilfully interfere with or destroy the breeding site or resting place of a protected wild animal.

Section 23 (5)(d) of the Wildlife Act 1976, as amended, states that ‘any person who wilfully interferes with or destroys the breeding place or resting place of any protected wild animal, shall be guilty of an offence’.

The National Roads Authority (NRA) has produced a guidance document for badgers titled ‘Guidelines for the Treatment of Badgers prior to the Construction of National Roads Schemes’ (NRA, 2005). The mitigation measures and proposed approach to the treatment of badgers outlined in this report are based on this guidance document.

2. Methodology

2.1 Baseline ecological surveys

On the 24th September 2018 during the initial ecological site walkover, a number of tracks were observed in the agricultural field, most notably around its eastern and northern perimeter. A badger sett was identified in the boundary hedgerow located between the agricultural field and the scrub habitat to the south-east. The sett is located within an earth embankment between mature hedgerow to the west and scrub habitat to the east. Five entrances were noted in this location in 2018. White hairs were observed on a barbed wire fence that runs along the hedgerow from north to south. The areas around the hedgerow were monitored over three consecutive nights between October 1st and 4th 2018 using a wildlife camera. Two badgers were confirmed to be actively using the site. The sett was recorded as a main sett.



Plate 1: Hedgerow with main badger sett - located between the agricultural field to the west and the scrub to the southeast.

2.2 Targeted badger surveys

Subsequent badger activity monitoring was carried out in March 2019 as per Harris *et al*, (1989) and NRA (2009) *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*. Several tracks were observed within the field and hedgerow/embankment associated with the sett, as well as several snuffle holes within the field, along the field margins and close to the sett.



Plate 2: Snuffle holes in field

Further monitoring of the site was carried out in March, June, July and September 2021. The site boundaries were thoroughly searched for the presence of additional setts. Surveys had regard to the following guidance documents for badger:

- 'Guidelines for the Treatment of Badgers prior to the Construction of National Roads Schemes' (NRA, 2005)
- 'Surveying for Badgers: Good Practice Guidelines' (Scottish Badgers, 2018)
- 'Best Practice Badger Survey Guidance Note' (SNH)

Current activity at the main sett was evidenced by new digging at a previously unused sett entrance to the west of the hedgerow. In addition to the five sett entrances recorded in 2018 three additional entrances were noted at the main sett beneath the hedgerow in 2021. A further two entrances were located away from the main sett, closer to the Folly stream, but still within the same hedgerow. These two entrances appeared to be abandoned for some time and were being used by rabbits in 2021. Of the eight identified entrances at the main sett, only four were deemed to be active in 2021. Bedding material and footprints were observed as were several tracks leading from these entrances into the adjacent habitats. Tracks were recorded throughout the agricultural field.



Plate 3: New entrance at main sett in 2021

Wildlife cameras were deployed in June 2021 at certain site boundaries to identify the commuting routes of the badgers. Owing to privacy concerns, cameras were not deployed at the south-western boundary close to the Port Road Cottages (private dwellings). However, owing to the presence of tracks it is considered that badgers do commute and forage in the gardens of these dwellings. Badgers were recorded commuting to the adjacent Holy Cross Daycare Centre to the north-east and towards the southern boundary of the site. Subsequent searches of these boundaries identified well-worn tracks through the hedgerows and earth banks at these locations. Two additional derelict setts were recorded on the southern earth embankment of the Folly stream, between the site and the ETB school. These setts were not recently used and were compromised by tree roots and dense vegetation which had blocked the entrances (see plates in Section 3).

Based on the results of the surveys, each sett was given a preliminary classification as either a Main sett, Annexe sett, Subsidiary sett or Outlier sett, with regard to Scottish Badgers, (2018) (see **Table 1** below). While the types of categories seem clear cut, classification can be difficult in the field.

Table 1. Badger sett classification (Scottish Badgers, 2018)

Sett Type	Definition
Main	Several holes with large spoil heaps and obvious paths emanating from and between sett entrances.
Annexe	Normally less than 150m from main sett, comprising several holes. May not be in use all the time, even if main sett is very active.
Subsidiary	Usually at least 50m from main sett with no obvious paths connecting to other setts. May only be used intermittently.
Outlier	Little spoil outside holes. No obvious paths connecting to other setts and only used sporadically. May be used by foxes and rabbits.

In terms of level of activity, each sett entrance was classified according to its degree of usage; well-used (WU), partially-used (PU), or disused (D). Well used entrances were considered to be those with fresh spoil (recently excavated material) and/or bedding outside, as well as other recent signs of activity such as droppings/latrines, defined trails, fresh prints etc. Entrances were considered partially used if vegetation was growing in or around the entrance (but not within the tunnel) and there were no signs of recent/regular usage or activity. Entrances were considered disused if the entrance had collapsed, was blocked by human intervention, was overgrown, had debris/vegetation within/around the hole, or if the entrance appeared as if it had not been used for a considerable amount of time.

3. Results

Four (4 no.) badger setts were identified during surveys in the Port Road site between 2018 and 2021. Activity was recorded at the main sett only (Sett no. 1) during all surveys. There was no evidence of use or recent badger activity at any of the other setts (Sett no. 2 to 4). Table 2 describes the setts and activity status recorded during surveys. Figure 3 shows the locations of the badger setts recorded in the site. Photographs of the setts and entrances are provided below. The site is considered the territory of an actively breeding pair.

Table 2: Type and activity status of setts recorded in the site

Sett number	No. of entrances	Activity status	Sett type	Notes
1	8	2 WU 4 PU 2 D	Main	Fresh digging at largest sett entrances. 2 sett entrances completely covered with leaves and debris. 4 sett entrances partially covered, but with some degree of recent activity

Sett number	No. of entrances	Activity status	Sett type	Notes
				noted during surveys; old bedding, footprints, tracks.
2	2	2 D	Outlier	Rabbit droppings recorded at both sett entrances. Slightly covered with leaves and debris. Cobwebs recorded at one entrance.
3	1	1PU	Outlier	No signs of recent activity. Partially concealed behind holly tree. Old tracks recorded leading from this sett to the landholding to the south.
4	1	1D	Outlier	Tree root growing inside this sett entrance partially blocking entrance. No recent signs of activity.



Figure 3: Badger setts in Port Road Housing Development site



WU entrance



WU entrance



PU entrance



PU entrance



PU entrance



PU entrance



D entrance



D entrance

Plate 4: Main sett entrances and activity status



D entrance



D entrance

Plate 5: Sett no. 2 entrances and activity status



D entrance



D entrance

Plate 6: Sett no. 3 & 4, entrances, and activity status

4. Mitigation measures

All badger setts will be protected and retained through the project design and landscaping which are accentuated by an ecological approach. In that regard, the existing field boundaries, and wooded areas where

the setts have been identified will be retained. Connectivity will be maintained around the site and between the site and surrounding habitats including the Killarney National Park.

4.1 Pre-construction

Prior to commencement of enabling works or construction works, a badger survey will be undertaken at the site. This will determine the current activity levels of badger on the site and will identify the activity status of each sett.

4.2 Construction

The National Roads Authority (NRA) produced a guidance document for Badgers, titled, '*Guidelines for the treatment of Badgers prior to the construction of national roads schemes*' (NRA, 2005). A Wildlife Licence will be required for construction work within 50m of a badger sett under Section 23 (5) (d) of the Wildlife Licence. The following recommended measures to be undertaken at the Port Road site are in line with this guidance document;

1. It is recommended to demarcate exclusion zones around the badger setts prior to commencement of construction. The badger breeding season extends from December to June, during which time the maximum exclusion zone of 50m will be established around active setts. Outside of the breeding season the exclusion zone can be reduced to 30m.
2. Works within the exclusion zones will be supervised by a Project Ecologist.
3. Lighter machinery and hand clearance will be used within 10m-20m of the active badger setts. Heavy machinery within 30m of the setts will be avoided in so far as possible. Where heavy machinery is required within the 30m exclusion zone, it will be supervised by the project ecologist. A soft start approach will be applied.
4. Noise barriers (plywood sheeting or temporary wall) will be installed between the active sett entrances and the works.
5. All contractors/operators on site will be made fully aware of the procedures pertaining to the badger setts on site and provisions for same will be made in the CEMP.
6. All site offices and depots will be sited at least 50m away from the setts.
7. No work will be undertaken at night, to avoid contact with badgers and to reduce the need for artificial lighting. Works in the exclusion zone of the badger setts will be timed to start 2 hours after sunrise and end one hour before sunset.
8. Any excavations over 1 metre deep will be covered at night to prevent animals falling into them.
9. Existing hedgerow vegetation around the badger setts will be retained and enhanced as per the landscape plan.

10. Additional screening of the main sett will be provided, as per NPWS recommendation, by planting native shrubs along the sett protection buffer lines and will be shown on landscape plan drawings. The area within these buffers lines will be designated a 'no works area'.
11. Lighting design will be sensitive to the badger sett and to site boundaries – lighting will be directed away from the setts and away from the boundaries of the site.
12. At least 30cm clearance height beneath proposed boundary fencing will be maintained to allow unrestricted access and movement for resident badgers.

