PROPOSED LARGE-SCALE RESIDENTIAL DEVELOPMENT ON LANDS AT SOUTHGREEN, CO. KILDARE

Ecological Impact Assessment Report

Pousterle Limited

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1 INTRODUCTION

DNV was commissioned by Brock McClure on behalf of Pousterle Limited to undertake an Ecological Impact Assessment (EcIA) entitled 'Southgreen LRD' on lands at Southgreen, Co. Kildare, hereafter referred to as 'Proposed Development' or 'Site,' when referring to the application Site area. The Development forms Phase 2 of a larger masterplan for the Site.

This EcIA assesses the potential effects of the Proposed Development on habitats and species; particularly those protected by national and international legislation or considered to be of particular nature conservation importance on or adjacent to the Site. This report will describe the ecology of the Site, with emphasis on habitats, flora and fauna, and will assesses the potential effects of the Construction and Operational Phases of the Proposed Development on these ecological receptors. The report follows Guidelines for Ecological Impact Assessment in the UK and Ireland, by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) and supplemented by the National Roads Authority (2009) guidelines for Assessment of Ecological Impacts of National Road Schemes.

The purpose of this EcIA is to:

- Set out the methodologies used to inform the assessment.
- Identify Key Ecological Receptors (KERs) within the Zone of Influence (ZOI).
- Assess the impacts from the Proposed Development on the KERs and the resulting significant effects.
- Set out measures to avoid or mitigate negative impacts.
- Assess the residual effects after the incorporation of agreed avoidance or mitigation measures to ensure legal compliance.
- Set out agreed measures to offset significant residual effects.
- Set out opportunities for ecological enhancement.

1.1 Quality Assurance and Competence

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. CBH, Senior Ecologist with DNV authored this report, in addition to completing both the desktop and field studies that pertain to this report. CBH has a BSc. (Hons) in Wildlife Biology from Munster Technological University (formerly ITT). CBH has a wealth of experience in desktop research, literature review and reporting, as well as practical field and laboratory experience including experience in surveying habitats, plants, bats, birds, mammals, and invasive species. CBH is experienced in the production of Preliminary Ecological Appraisals (PEAs), EcIA, and Stage I/Stage II Appropriate Assessment (AA) Reports, as-well as ornithology reports for renewable energy projects (wind and solar technology). Additionally, CBH has completed, and supported the preparations of several Biodiversity Chapters for Environmental Impact Assessment Reports (EIAR). CBH is also a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

1.2 Relevant Legislation and Policy Context

An EcIA is a process of identifying, quantifying, and evaluating potential effects of development-related or other actions on habitats, species and ecosystems (CIEEM, 2018). The Proposed Development is sub-threshold for an Environmental Impact Assessment (EIA) under the Planning and Development Regulations 2001-2025, as amended. When an EcIA is undertaken as part of an EIA process it is subject to the EIA Regulations (under the Planning and Development Regulations 2001-2023). An EcIA is not a statutory requirement, however it is a best practice evaluation process. This EcIA is provided to assist the Competent Authority with its decision making in respect of the Proposed Development.

There is a number of pieces of legislation, regulations and policies specific to ecology which underpin this assessment. These may be applicable at a European, National or Local level. Legislation at the International level relevant to the Proposed Development are listed below:

- *Council Directive 92/43/EEC* on the Conservation of Natural Habitats and of Wild Fauna and Flora; hereafter the 'Habitats Directive'.
- *Directive 2009/147/EEC*, hereafter the 'Birds Directive'.
- *Directive 2011/92/EU*, hereafter the 'EIA Directive'.
- EU Regulation 1143/2014, on Invasive Alien Species.
- *Convention on the Conservation of European Wildlife and Natural Habitats 1982*, hereafter the 'Bern Convention'
- *The Convention on the Conservation of Migratory Species of Wild Animals 1983*, hereafter the 'Bonn Convention'.
- *Ramsar Convention on Wetlands 1971*, hereafter referred to as 'Ramsar'.
- *Water Framework Directive 2000/60/EC*, hereafter the 'WFD'.

National legislation and policy relevant to the Proposed Development are listed below:

- Wildlife Act 1976, as amended in 2000.
- Flora (Protection) Order 2022.
- The Planning and Development Act 2000 as amended.
- National Biodiversity Plan 2023-2030.

Additionally, NHAs are designations under the Wildlife Acts to protect habitats, species, or geology of national importance. The boundaries of many of the NHAs in Ireland overlap with Special Areas of Conservation (SAC) and/or Special Protection Area (SPA) sites. Although many NHA designations are not yet fully in force under this legislation (referred to as 'proposed NHAs' or pNHAs), they are offered protection in the meantime under planning policy which normally requires that planning authorities give recognition to their ecological value.
Local plans and policies relevant to the Proposed Development are listed below:

- Kildare County Development Plan (CCDP) 2023 – 2029
- Kildare Biodiversity Action Plan 2009-2014
- Kildare Biodiversity Action Plan 2026-2031 (draft)

Further details on legislation and policy relevant to the Proposed Development are detailed in Appendices 10.1 – 10.3

2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Site Location

The Proposed Development Site is located on lands at Southgreen, Co. Kildare. The general surroundings of the Site are a mixture of residential and agricultural in nature, with the residential surrounds encompassing area to the west, south, and east of the Site, and agricultural areas extending north of the Site and into the wider area. The Site itself is bound by Southgreen Road to the west, and local road L7016 (Old Road) to the east and south. The lands, which are currently in agricultural use, slope generally from west to east. The Site is located less than 1km from Kildare Town centre. Kildare Town Community School and Kildare Cemetery are located less than 300m to the east of the Proposed Development Site. Kildare ESB substation is located immediately south/southwest, bordering the Site. See Figure 1 below for Site Location, and Figure 2 showing phase 1 (ongoing) and phase 2 (the Proposed Development).

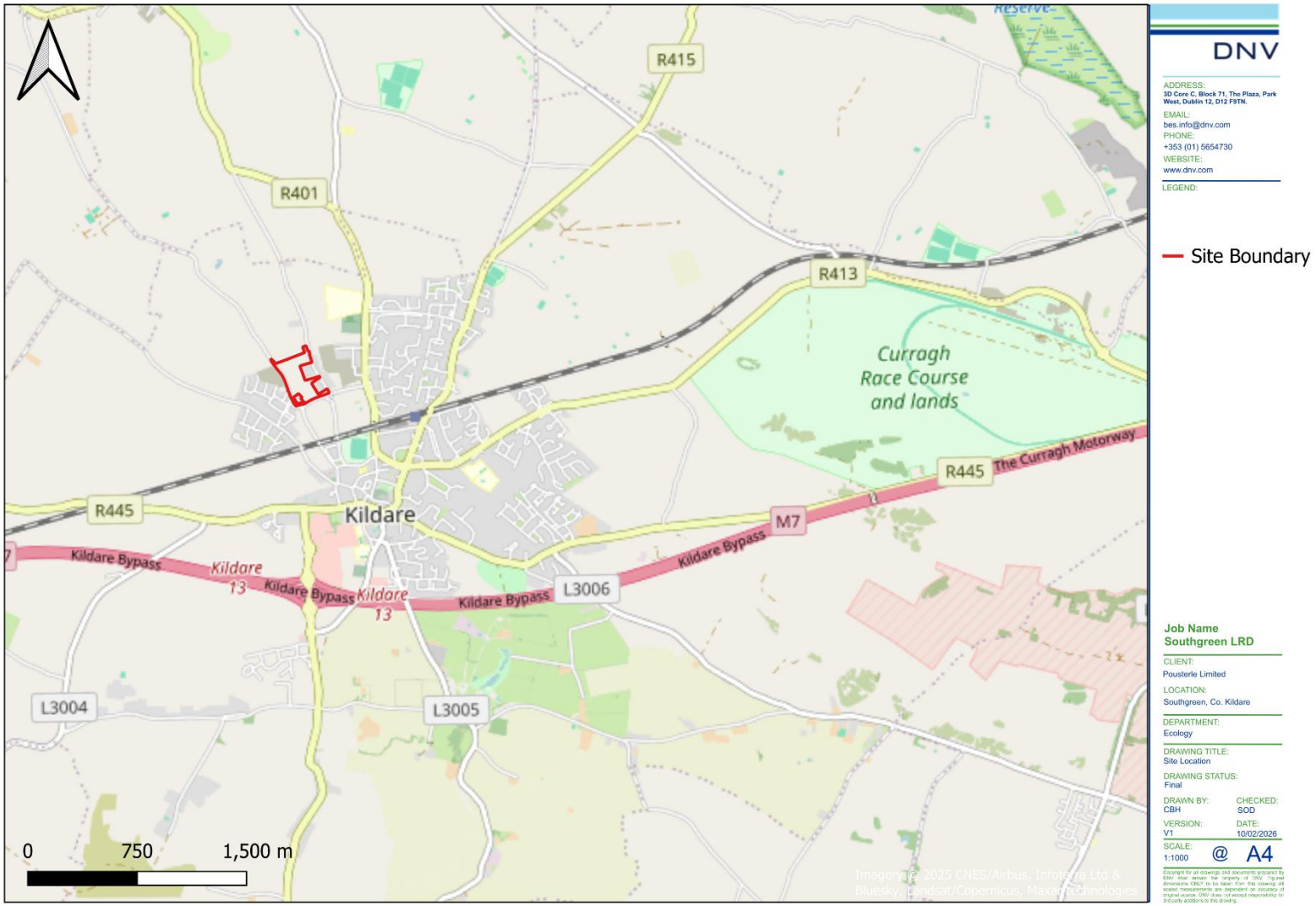


FIGURE 1. SITE LOCATION.



FIGURE 2. SHOWING PHASE 1 AND CURRENT RED LINE BOUNDARY FOR PHASE 2 (WATERMAN MOYLAN, 2026).

2.2 Proposed Development Description

Pousterle Limited intend to apply for permission for development of a Large - Scale Residential Development (LRD) on a site of approx. 6.13 ha at Southgreen Road, Kildare, Co. Kildare. The site is generally bounded to the north by agricultural fields; to the south by the recently constructed Southern Internal Link Road; to the west by Southgreen Road and an existing Electricity Station; and to the east by Old Road and existing residential properties. The proposed development will consist of:

- The construction of a new residential scheme of 146 no. residential units ranging in height from 1-3 storeys as follows:
    - 136 no. houses (7 no. 2 bed units; 102 no. 3 bed units; and 27 no. 4 bed units) in a mixture of bungalow, detached, semi-detached, and terrace style units ranging in height from 1 – 2 storeys.
    - 10 no. duplex apartment units (5 no. 1 beds, 3 no. 2 beds, and 2 no. 3 beds) in new Block A ranging in height from 2-3 storeys
- Each residential unit will be afforded with private open space in the form of a front/rear/side garden for houses or terrace / balconies for duplex apartment units.
- The provision of a new creche facility (approx. 161 sq m GFA) and associated areas of external open space (approx. 60 sq m) located at Block A.
- Public open space (approx. 6,992 sq m) is proposed in the form of 2 no. new large public open space areas within the site (approx. 3,046 sq m and 3,946 sq m respectively).
- Communal open space (approx. 82 sq m) is proposed adjacent to Block A.
- A total of 321 no. car parking spaces (305 no. for residential units and 16 no. for the creche facility) are provided. This provision includes 2 no. accessible spaces and 17 no. visitor spaces.
- A total of 527 no. cycle parking spaces (517 no. for residential units and 10 no. for the creche facility) are provided. This provision includes 75 no. visitor spaces. Resident cycle parking is proposed in the form of secure bicycle store enclosures to the front of terraced units; on curtilage spaces to the rear of units with side access; and a bicycle store for apartment units located within Block A. Visitor parking is proposed in the form of Sheffield stands.
- The development shall be served via 2 no. new vehicular access points from Southgreen Road. An additional private vehicular access point is proposed via Old Road to service 1 no. new bungalow (4 no. bed residential unit). Provision is also made for future vehicular access via Southgreen Road to serve the open space and amenity zoned lands to the north of the main development site.
- Pedestrian and Cyclist access is also proposed via Southgreen Road and via a new secondary access point from the Southern Internal Link Road to the south of the site and Old Road to the east of the site.
- Upgrades/widening to Southgreen Road including the provision of 2 no. directional single lane cycle tracks and pedestrian footpaths on either side of the Southgreen Road, together with amendments to the existing cycle tracks and footpaths on Southgreen Road north of Southern Internal Link Road are proposed.
- A new pedestrian/cycle link is also delivered to the north of the main development site connecting South Green Road to Old Road.
- The associated site and infrastructural works include provision for an ESB Sub Station; water services; foul and surface water drainage and connections; attenuation proposals; permeable paving; all landscaping works; boundary treatment; PV/Solar Panels; internal roads and footpaths; waste storage areas, all electrical services and all associated site development works.

See Figure 3 and Figure 4 for Site Layout and Phase information.



FIGURE 3: SITE LAYOUT (MCORM ARCHITECTURE & URBAN DESIGN, 2026)

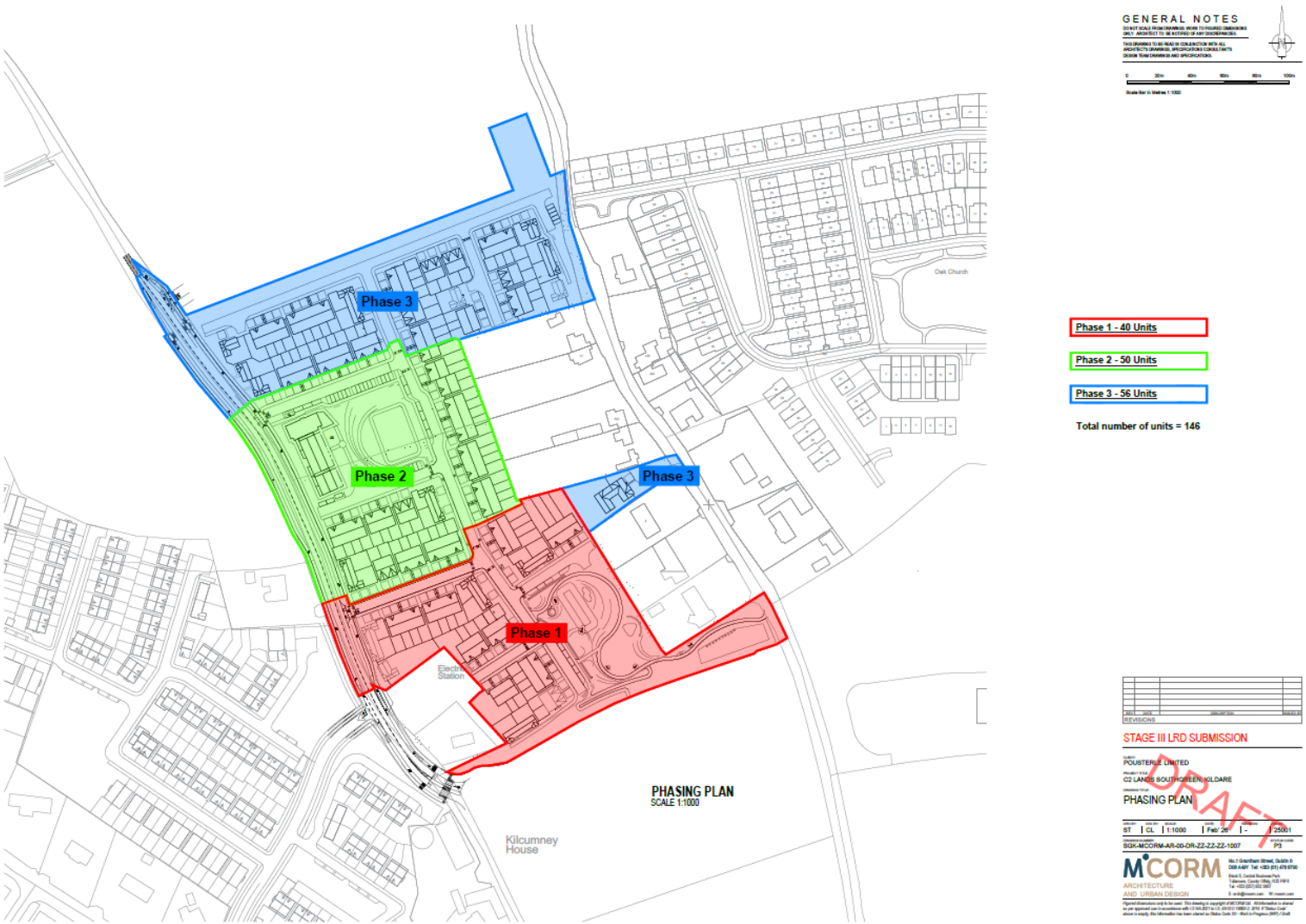


FIGURE 4: SITE PHASES (MCORM ARCHITECTURE & URBAN DESIGN, 2026).

2.2.1 Drainage and Water Supply

The following drainage and water supply information has been extracted from the Draft Engineering Assessment Report, document reference: 25-003r.001. Produced in June 2025 by Waterman Moylan Consulting Engineers Limited.

2.2.1.1 Water Supply

The surrounding area in Southgreen is serviced by Uisce Éireann with water supply infrastructure, the water supply network for which the site will connect into (located within Southgreen, west of the site).

A Pre-Connection Enquiry (PCE) form was submitted Waterman Moylan to Uisce Éireann in December of 2024 to establish the available capacity in the network to facilitate the proposed development's water demands. The relevant Uisce Éireann reference number for the submission is CDS24010462. A response in the form of a Confirmation of Feasibility (COF) Letter was received on the 7th of February 2025 stating the development's water supply connection is feasible without infrastructure upgrades required to the public network.

Given the requirement for planning submissions to include up-to-date COF's (within the past six months) from Uisce Éireann and that the schedule of accommodation at the time of submitting the original PCE was c. 150 No. units, an updated PCE including the quantum of currently proposed units (153 No.) has been submitted, and a response is currently awaited. It is expected that the updated COF will similarly state that the water supply connection is feasible.

2.2.1.2 Surface water Drainage & SuDS

The 5.75 ha subject site is entirely greenfield, with no civil services currently installed within its boundaries. The surface water management strategy for the proposed development has been prepared with reference to the Kildare Town Local Area Plan and related surface water addendum documents, the Greater Dublin Strategic Drainage Study (GDSDS), and the Kildare County Council (KCC) Sustainable Drainage Systems (SuDS) Guidance Document.

The surface water management strategy has been carefully developed to incorporate nature-based Sustainable Urban Drainage Systems (SuDS) features throughout the site. It is proposed, similar to Phase 1 Southgreen, to discharge surface water from the subject site to the ground via. Infiltration. It is proposed to incorporate 3 No. attenuation systems, 1 No. system per sub-catchment. The attenuation systems will comprise of an above ground detention basin and below ground infiltration area, located within an open green space area adjacent to or within the corresponding sub-catchment.

By allowing surface water to naturally percolate into the soil as the main surface water attenuation strategy, this strategy not only mimics the pre-development hydrological cycle but also significantly reduces runoff volumes, lowers flood risk, and supports groundwater recharge. Given Kildare Town's geology and the increasing emphasis on sustainable development, prioritising infiltration to ground as the main surface water attenuation method offers a low-impact, long-term solution that enhances local resilience to climate change while promoting biodiversity and water quality improvements. This nature-based approach aligns with national SuDS guidance and Kildare's commitment to environmental stewardship.

The attenuation systems are sized to accommodate the extreme 1-in-100-year storm event with 30% climate change and 10% urban creep allowances included, as per KCC requirements. The final design of the infiltration systems will be informed by and reflect the findings of hydrogeological investigation undertaken for the subject lands.

It is proposed that the surface water runoff for the development will be intercepted, collected, slowed, and attenuated through the use of nature-based rainwater management and SuDS features. The SuDS features proposed for the subject site are summarised below:

- Permeable paving at private parking / driveways.
- Bio-retention tree pits used in strategic public areas within landscaping and adjacent to hardstanding areas such as the internal roads network.
- Swales located adjacent to footpaths or the internal roads network to collect rainfall runoff from same.
- Above ground attenuation basins for each sub-catchment to facilitate above ground rainfall storage.
- Below ground infiltration systems for each sub-catchment to facilitate infiltration to ground.

These SuDS features will also add value to the biodiversity potential of the development. Further detail on each SuDS feature is provided in Section 6.1 below.

2.2.1.3 Foul Water Drainage

The Dunmurry Rd Wastewater Pump Station (WWPS) is located southeast of the subject site. The WWPS was constructed to accommodate foul flows from future development within the LAP lands north and west of the WWPS (including the subject site).

Existing foul drainage infrastructure information, location of manholes, cover levels, and invert levels, have been sourced from available Uisce Éireann QGIS data, the Uisce Éireann COF Letter, and available as-built information from the approved Phase 1 Southgreen development.

As part of the currently under construction Southgreen Phase 1 development which is located directly south of the subject site, a 450mm diameter foul spine sewer will be installed to facilitate the foul connection for the Phase 2 (this proposal) subject site. Presently, an existing short segment of 450mm foul sewer is located below the road bisecting Phases 1 and 2, built to facilitate the foul connection between the phases. The short segment of foul sewer has an upstream manhole, located in Phase 2, with ref. no. F4-AS-BUILT, that has a cover level of 105.497 OD Malin and an invert level of 103.759 OD Malin, and a downstream manhole located in Phase 1 with a corresponding cover level of 107.421 OD Malin and an invert level of 103.621 OD Malin. Please refer to Figure 5 below for an indicative illustration of the existing 450mm spine foul sewer and proposed connection point from the subject development to the existing 450mm foul segment.

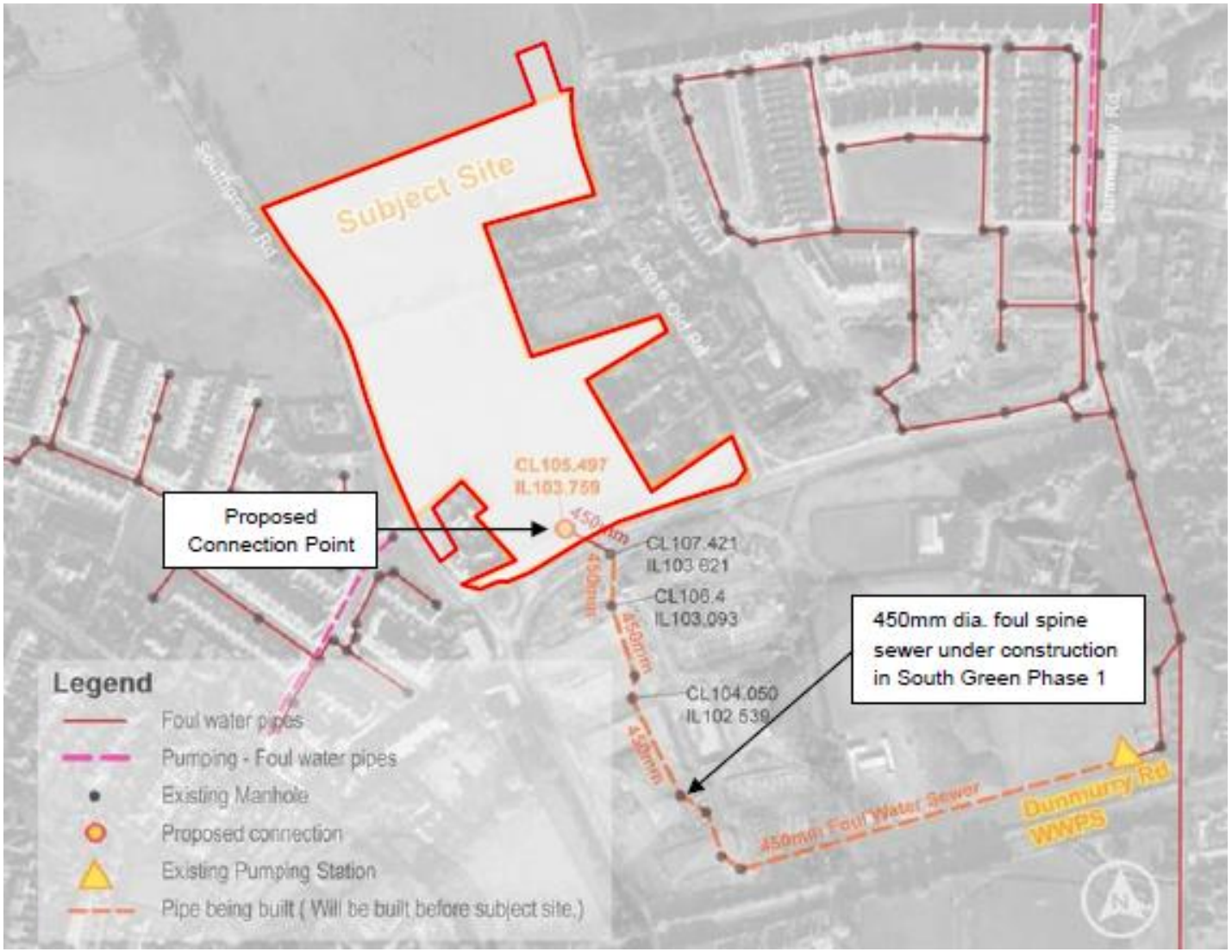


FIGURE 5. EXISTING FOUL WATER NETWORK (WATERMAN MOYLAN CONSULTING ENGINEERS LIMITED, 2026).

2.2.2 Landscape Plan

The landscape plan (Hayes Ryan Landscape Architects, 2026) delivers a rich network of habitats designed to support biodiversity through the retention and enhancement of existing hedgerows, extensive native mixed-species planting, and the creation of species-rich grasslands and wildflower meadows that provide nectar, pollen, and seed resources for pollinators and birds (Figure 6). A variety of tree types, ranging from fastigiate feature trees to clustered light-foliage species, introduce structural diversity, offering shelter, nesting opportunities, and foraging resources for birds and small mammals.

Native buffer planting along boundaries and embankments forms continuous green corridors that facilitate safe movement of wildlife across the site, while dense shrub and whip planting creates cover and refuge for terrestrial mammals. The inclusion of open and closed spaces, naturalised planting pockets, and gently contoured grass areas further enhances habitat heterogeneity. The detention basin and associated wetland margins in the southeastern open space add valuable aquatic and damp-ground habitat, supporting invertebrates, amphibians, and drinking/foraging opportunities for a wide range of bird and mammal species, including bats.

Collectively, these elements create an interconnected mosaic of high-value habitats that strengthen the site's ecological functioning and promote overall biodiversity. Key features of the landscape plan include:

- Retention and protection of majority of existing hedgerows/trees
- Extensive native mixed hedgerow planting
- Native buffer and whip planting
- Species rich wildflower meadows and biodiverse grasslands
- Diverse native tree planting
- Integrated SuDS features, including a pond-like detention basin to southeast
- Mixed habitat mosaic (open and closed)
- Green corridors integrated into circulation routes, maintaining a N-S and E-W connectivity for fauna
- Pollinator friendly groundcover and shrub planting



FIGURE 6. LANDSCAPE MASTERPLAN (HAYES RYAN LANDSCAPE ARCHITECTS, 2026).

2.2.3 Lighting Plan

The lighting plan has been produced by Fallon Design Engineering (2026) and is shown below.



FIGURE 7. LIGHTING PLAN (NORTHERN SECTION) (FALLON DESIGN, 2026).



FIGURE 8. LIGHTING PLAN (SOUTHERN SECTION) (FALLON DESIGN, 2026).

2.3 Description of the Construction Phase

The construction phase will involve a coordinated 18-month programme beginning with site establishment, including condition surveys, installation of hoarding, and setup of a secure compound with welfare facilities. Works will proceed under controlled access via designated routes from the M7, with deliveries scheduled to avoid peak hours and managed by traffic marshals to minimise local disruption. Standard working hours will apply, with strict measures to control noise, dust, vibration, sediment, and pollution in line with best practice (BS 5228) and Kildare County Council requirements.

Surface water will be managed through temporary drainage, silt control systems, and settlement areas until permanent SuDS infrastructure is in place. Soil stripping and excavation will be staged and monitored to reduce erosion, while waste will be minimised through reuse and recycling in compliance with statutory legislation. Environmental safeguards, including wheel washing, dust suppression, careful material storage, and spill-response measures, will ensure construction impacts are contained within the site. Overall, the plan prioritises safety, environmental protection, and minimal disturbance to surrounding residents throughout the duration of the works.

The proposed working hours for the development at Southgreen, Kildare are set out below:

- Monday – Friday 08:00-18:00
- Saturday 08:00-14:00

2.4 Description of the Operational Phase

The Proposed Development will comprise a residential amenity consistent with the neighbouring land use in the area. Operational Phase drainage and foul water details are provided above.

3 METHODOLOGY

This EcIA has been undertaken to support and assess the Proposed Development planning application and assesses the potential impacts that the Proposed Development may have on the ecology of the Site and its environs. Where potential for a risk to the environment is identified, mitigation measures are proposed on the basis that by deploying these mitigation measures the risk is eliminated or reduced to an insignificant level.

This section details the steps and methodology employed to undertake an ecological impact assessment of the Proposed Development.

3.1 Scope of Assessment

The specific objectives of the study were to:

- Undertake baseline ecological surveys and evaluate the nature conservation importance of the Site;
- Identify and assess the direct, indirect and cumulative ecological implications or impacts of the Proposed Development during its lifetime; and
- Where possible, propose mitigation measures to remove or reduce those impacts at the appropriate stage of the Proposed Development.

3.2 Desk Study

A desktop study was carried out to collate and review available information, datasets and documentation sources pertaining to the Site's natural environment. The desk study, completed in on 29/07/2025, relied on the following sources:

- Information on species records[1] and distributions, obtained from the National Biodiversity Data Centre (NBDC) at *maps.biodiversityireland.ie*;
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at *gis.epa.ie*;
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at *www.gsi.ie*;
- Information on the network designated conservation sites, site boundaries, qualifying interests and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at *www.npws.ie*;
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland;
- Information on the existence of permitted development, or developments awaiting decision, in the vicinity of the Proposed Development from the National Planning Application Database available at: *https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de; and*
- Information on the extent, nature and location of the Proposed Development, provided by the applicant and/or their design team.

A comprehensive list of all the specific documents and information sources consulted in the completion of this report is provided in Section 9, References.

3.3 Zone of Influence

The ZOI for a project is the area over which ecological features may be affected by changes as a result of the Proposed Development and associated activities. This is likely to extend beyond the development site, for example where there are ecological or hydrological links beyond the site boundaries (CIEEM, 2018). The ZOI will vary with different ecological features, depending on their sensitivities to an environmental change.
Furthermore, ZOI in relation to European sites is described as follows in the 'OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management' (OPR, 2021):

> "*The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a*

[1] The Site of the Proposed Development lies within the 10km grid square N71, the 10km grid square, N71G 2km grid square. Records from the last 20 years from available datasets are given in the relevant sections of this report.

European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km)."

3.4 Identification of Relevant Designated Sites

To determine the ZOI of the Proposed Development for designated sites, reference was made to the OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management' (OPR, 2021), a practice note produced by the Office of the Planning Regulator, Dublin. This note was published to provide guidance on screening for AA during the planning process, and although it focuses on the approach a planning authority should take in screening for AA, the methodology is also readily applied in the preparation of EcIA reports such as this to identify all relevant designated sites potentially linked to the Proposed Development.

As noted above, the most recent guidance advises against the use of arbitrary distances that serve as precautionary ZOI (e.g., 15km), and instead recommends the application of the Source-Pathway-Receptor (S-P-R) model in the identification of designated sites, stating that "*This should avoid lengthy descriptions of European sites, regardless of whether they are relevant to the proposed development, and a lack of focus on the relevant European sites and issues of importance*". Although this statement refers to European sites, it is also applicable to other designated sites.

Thus, the methodology used to identify relevant designated sites comprised the following:

- Identification of potential sources of effects based on the Proposed Development description and details;
- Identification of potential pathways between the Site of the Proposed Development and any designated sites within the ZOI of any of the identified sources of effects.
    - Water catchment data from the EPA (www.epa.ie) were used to establish or discount potential hydrological connectivity between the Proposed Development and any designated sites.
    - Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Proposed Development and any designated sites.
    - Air and land connectivity assessed based on Proposed Development details and proximity to designated sites.
    - Consideration of potential indirect pathways, e.g., impacts to flight paths, *ex-situ* habitats, etc.
- Review of Ireland's designated sites to identify those sites which could potentially be affected by the Proposed Development in view of the identified pathways, using the following sources;
    - European sites and nationally designated sites (e.g., NHAs and pNHAs) from the NPWS (www.npws.ie);
    - Ramsar sites from the Irish Ramsar Wetland Committee (https://irishwetlands.ie/irish-sites/);
    - Other internationally designated sites e.g., UNESCO Biosphere's; and
- Regional development plans to identify any remaining sites or areas designated for nature conservation at a local level.

3.5 Field Surveys

To determine the likely ecological constraints at the Site, a multidisciplinary walkover survey was carried out on the 30th of May 2025. This survey covered the following aspects:

- Habitat mapping to level 3 (Fossitt 2000);
- Preliminary Bat Roost Assessment and Habitat Suitability Survey;
- Bird Scoping Survey ;
- Invasive Flora Survey; and
- A search for signs of protected fauna (e.g., mammals, reptiles, amphibians).

Details of the survey methods are given in the below sections.

3.5.1 Habitat Surveys

Habitat surveys of the Site were conducted by DNV on the 30th of May 2025. Habitats were categorised according to the Heritage Council's '*A Guide to Habitats in Ireland'* (Fossitt, 2000) to level 3. The habitat mapping exercise had regard to the 'Best Practice Guidance for Habitat Survey and Mapping' (Smith *et al.*, 2010) published by the Heritage Council.

The habitats at the Site were also assessed for their potential to support protected and/or notable fauna.

3.5.2 Bat Surveys

3.5.2.1 Preliminary Bat Roost Assessment

A daytime inspection of the Site was undertaken on the 30th of May 2025. The aim of the inspection was to search for indication of the presence of roosting bats, and to assess the habitat for its ability to support commuting and foraging bats. Buildings and trees on Site were visually assessed from the ground with the aid of a torch and binoculars. The roost inspection comprised a detailed inspection of structures and trees on Site. These were subject to exterior and interior inspections (where possible) to search for evidence of bat use. This includes live and dead specimens, droppings, feeding remains, oil staining and noise (Collins 2023). Buildings were assessed for cracks and crevices, or entry points to the roof that might support roosting bats, while trees were searched for Potential Roosting Features (PRFs) such as hollow trunks, knot holes, peeling bark, splits, cracks, and crevices (Collins 2023; Andrews 2018). Collins (2023) recommends that structures and trees are assessed for their ability to support roosting bats under separate categorisations using professional judgement and sub-categories as presented in Table 4.1 (Collins, 2023):

- Negligible – No suitable features observed, however, a small element of uncertainty remain;
- Low – A structure with one or more roost features as used by individual bats opportunistically at any time of year;
- Moderate – A structure with one or more roost features that could be used by bats on a regular basis or by a larger number of bats; and
- High – A structure with one or more roost features that are obviously suitable for use by a larger number of bats on a regular basis, and potentially for longer periods of time. These features have the potential to support high conservation status roosts.

Trees are categorized separately accordingly to Table 4.2 of Collins (2023). These classifications are:

- NONE – Either no PRFs in the tree or highly unlikely to be any;
- FAR – Further assessment required to establish if PRFs are present in the tree; and
- PRF – A tree with at least one PRF present.

Where a tree contains at least one PRF, each PRF is further assessed according to Table 6.2 (Collins 2023). PRF's are scored as either:

- PRF-I – PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
- PRF-M – PRF is suitable for multiple bats and may therefore be used by a maternity colony.

For trees with PRF-I's only, no further surveys may be required, but appropriate compensation for all PRF-I's must be designed and incorporated in advance of impacts along with a Precautionary Working Method Statement (PWMS). As the Site increases in suitability for roosting bats e.g., PRF-M's present, the survey effort increases accordingly. A PRF-M will require a detailed inspection, such as aerial inspection, conducted over three survey visits, a minimum of three weeks apart, which should be carried out between May and September with at least two in the period May to August. Where features are inaccessible by ladder, climbing, or MEWP, or too extensive for a PRF inspection, the aerial inspection should be replaced with emergence surveys carried out between May and September with Night Vision Aids (NVA) where possible or otherwise surveyed using Advanced Licence Bat Survey Techniques (ALBST), such as trapping, tagging, and radio-tracking to inform of the importance of a roost.

3.5.2.2 Preliminary Bat Habitat Suitability Assessment Survey

A Bat Habitat Suitability Assessment was carried out in conjunction with the roost assessment on the 30th of May 2025. This assessment evaluated the habitats present on Site and in the wider area for bat foraging and commuting suitability. Habitat suitability is assessed qualitatively from Negligible to High:

- Negligible – No suitable foraging or commuting habitats on Site
- Low – Suitable but isolated habitats that could be used by small numbers of commuting and/or foraging bats, such as poorly connected gappy hedgerows, lone trees, unvegetated streams, etc.
- Moderate – Suitable continuous habitat connected to the wider landscape that could be used by commuting and/or foraging bats, such as treelines, scrub, grassland, water, etc.
- High – Continuous high-quality habitat that is well-connected to the wider landscape, and is likely used regularly by commuting and/or foraging bats, such as river valleys, broadleaved woodland, woodland edge, grazed parkland, etc.

3.5.2.3 Bat Landscape Suitability

The Bat Conservation Ireland Landscape Suitability Model (Lundy *et al*., 2011) provides a habitat suitability index for bat species across Ireland. The model divides the country into 1 km grid squares and ranks the habitat within the squares according to its suitability for various bat species. The scores are divided into five qualitative categories of suitability, namely:

- 0.0000000 - 13.000000: Low
- 13.000001 - 21.333300: Low – Medium
- 21.333301 - 28.111099: Medium
- 28.111100 - 36.444401: Medium – High
- 36.444402 - 58.555599: High

3.5.2.4 Bat Activity Transect Survey

The Site was assessed by an experienced ecologist in relation to the potential bat foraging habitat and commuting routes. The survey was undertaken to best practice guidance (Collins, 2023 and Marnell et al., 2022) during suitable weather conditions, as detailed below in Table 1. Transect surveys were undertaken on the same dates as the emergence surveys; commencing after or just before the end of the emergence surveys as per best practice guidance, which states that while surveyors should be on-Site at sunset, walking surveys should not commence until up to an hour after sunset (Collins, 2023).

TABLE 1 SURVEY EFFORT FOR DUSK ACTIVITY SURVEYS UNDERTAKEN AT THE SITE.

Survey no.	Date	Sunset Time	Start Time	Finish Time	Weather Conditions	Limitations
Transect Survey 1 of 1	14/07/2025	21:48	21:35	23:26	Start of survey: Drizzle, wind Beaufort F3, Cloud cover 4/4, visibility 4/4, temp 14ºC. End of survey: Drizzle progressed to constant rain at the end, wind Beaufort F3, Cloud cover 4/4, visibility 4/4, temp 13ºC.	Please refer to Section 3.7 below.

The transect route completed on the day is shown below in Figure 9.



FIGURE 9: BAT TRANSECT ACTIVITY SURVEY (ROUTE)[2].

[2] Please note the red line boundary used in the transect activity map at the time of completion, differs slightly to the final red line boundary of the site.

3.5.2.5 Data Analysis

Species were identified from recordings using Elekon's BatExplorer software (Version 2.1.10.1) and Kaleidoscope Pro software. Bat data was analysed, and species assigned to each record with reference to species identification guides such as Russ (2012).

Each record i.e., a sequence of bat calls/pulses, is noted as a bat pass; to indicate the level of bat activity for each species recorded. Each bat pass does not correlate to an individual bat but is representative of bat activity levels. Some bats such as Pipistrelle species may continuously fly around a habitat or feature, therefore, it is possible that a series of bat passes within a similar time frame is representative of an individual bat. On the other hand, Leisler's bats tend to travel through an area quickly, and as such, an individual sequence or bat pass is more likely to be indicative of individual bats.

3.5.3 Bird Scoping Survey

A bird scoping survey was carried out on the 30th of May 2025 to scope out the breeding and non-breeding bird potential at the Site based on habitats. Additionally, all bird species encountered during the survey were recorded and activity noted where possible.

The survey methodology employed was based on that recommended in standard literature used by for example the British Trust for Ornithology (BTO) (Gillings et al, 2007; Bibby et al, 1992 and Gilbert et al, 1998), which has subsequently been adapted into guidelines for ecological consultants by the Bird Survey & Assessment Steering Group (2022). During the surveys, the Site was walked slowly, approaching all habitats within and adjacent to the Proposed Development and scanning and listening for birds.

Two transects commencing on the morning of the survey were walked through the site to record all the species that were present. A final zig-zag walk through the site was done at the end of the survey to ensure no additional species were missed.

3.5.4 Fauna Survey

A general fauna survey of the Site was carried out in conjunction with the other field surveys on the 30th of May 2025. The habitat types recorded throughout the survey area were used to assist in identifying the fauna considered likely to utilise the area. The Site was searched for tracks and signs of mammals as per Bang and Dahlstrom (2001) and other fauna as per the National Road Authority (NRA, 2005; NRA.2009a).

Additionally, due to presence of historical records, a focused search for signs of the following fauna was carried out:

- Amphibians; and
- Hedgehog (*Erinaceus europaeus*).

3.5.5 Invasive Species Surveys

An invasive species surveys were carried out in conjunction with the habitat surveys on the 30th of May 2025. This included a detailed search for signs or any invasive flora or fauna, with any incidental observations of evidence for invasive species recorded whenever on Site.

3.6 Ecological Assessment

This EcIA has been undertaken following the methodology set out in Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018); and with reference to the National Roads Authority 'Guidelines for Assessment of Ecological Impacts of National Road Schemes' (NRA, 2009) and the Environmental Protection Agency (EPA) 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (EPA, 2022) and BS 42020:2013 Biodiversity: Code of practice for planning and development (BSI, 2013).

The evaluation of significant effects should be based on available scientific evidence. Based on the precautionary principle, if the available information is not sufficient, then a significant effect may be assumed likely to occur.

3.6.1 Evaluation of Ecological Features

The value of the ecological features, i.e., the habitats and species present or potentially present, was determined using the ecological evaluation at different geographical scales (NRA, 2009), presented in Appendix I0.4. This evaluation scheme, with values ranging from locally important to internationally important, seeks to provide value ratings for habitats and species present that are considered ecological receptors of impacts that may ensue from a proposal. Based on best practice (CIEEM, 2018), any features considered to be less than of local value are not assessed within this EcIA.

3.6.2 Impact Assessment

As per the NRA guidelines, impact assessment is only undertaken of Key Ecological Receptors (KERs). The assessment of the potential impact of the Proposed Development on the identified KERs was carried out with regard to the criteria outlined in the EPA Guideline (EPA, 2022), presented in Appendix I0.5. These guidelines set out a number of parameters that should be considered when determining which elements of the Proposed Development could constitute impact or sources of impacts. These include;

- Positive, neutral or negative effect;
- Significance;
- Extent;
- Probability;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat. Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process, or feature, e.g., the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to an adverse effect of a sensitive habitat.

3.6.3 Assessment of Cumulative Impacts and Effects

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a Proposed Development results in individually insignificant impacts that, when considered in combination with impacts of other proposed or permitted plans and projects, can result in significant effects.
Relevant plans and policies (see section 1.2) were reviewed to identify any potential for negative cumulative impacts with the Proposed Development. Additionally, existing planning permissions from the past five years (from 2018 onwards) within the ZOI of the Proposed Development were reviewed, with particular focus on potential cumulative impacts on the identified KERs. Long-term developments were also considered where applicable.

3.6.4 Avoidance, Mitigation, Compensation and Enhancement Measures

Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts

and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement. When seeking mitigation or compensation solutions, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved.

It is important for the EcIA to clearly differentiate between avoidance, mitigation, compensation and enhancement and these terms are defined here as follows:

- Avoidance is used where an impact has been avoided, e.g., through changes in scheme design. In practice, avoidance measures are typically implemented during the design stage via discussions and re-design (e.g., avoiding a sensitive habitat by relocating a building). Avoidance measures are therefore rarely reported within an EcIA, which focuses on assessing the final design.
- Mitigation is used to refer to measures to reduce or remedy a specific negative impact in situ.
- Compensation describes measures taken to offset residual effects, i.e. where mitigation in situ is not possible.
- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

3.7 Limitations

Every effort has been made to provide a comprehensive description of the site; however, the following specific limitations apply to this assessment:

- An extensive search of available datasets for records of rare and protected species within proximity of the Proposed Development has been undertaken as part of this assessment. However, the records from these datasets do not constitute a complete species list. The absence of species from these datasets does not necessarily confirm an absence of species in the area.
- While a faunal survey included searching for any sign of badger (Meles meles) including tracks, snuffle holes, latrines, and setts, it should be noted that vegetation cover was dense, given the time of year that the survey was carried out. However, the Site was still very accessible allowing for a thorough search, which found no evidence of Badger using the Site, meaning that this is not considered a significant limitation to this report.
- The bat transect activity survey was completed during the optimal survey period; however, drizzle was present for the duration of the survey, increasing to heavier rain at the end. This could impact on count data, leading to an underestimation of activity, as a result. However, this is not considered to pose a significant limitation to the survey results, particularly given the fact that activity was recorded along the linear habitat features, and mitigations for protection of same, where possible, are included in this report on a precautionary basis.

4 ECOLOGICAL BASELINE CONDITIONS

This section sets out the baseline conditions for the ecological features within the Site using the findings of the desk study and field surveys.

4.1 Geology, Hydrogeology and Hydrology

The Site of the Proposed Development is within the Barrow Water Framework Directive (WFD) catchment (catchment ID 14) and the Barrow_SC_060 sub catchment (EPA, 2026). There are no waterbodies located within the Site. The nearest waterbody to the Site is the 1st order freshwater waterbody of Tully Steam (ID: IE_SE_14T020200) which lies 2.5km south of the Site and flows in a south-westerly direction. Following this, the next nearest waterbody to the Site is the Cloncumber Stream.

The Cloncumber Stream (ID: IE_SE_14C170200), a 1st order Stream is located approximately 5km northeast of the Site, at Pollardstown Fen, and flows north-westerly before meeting the 3rd order Slate River (ID: IE_SE_14S010210) which continues west/southwest, eventually flowing into the 5th order River Barrow. The Tully Stream, however, continues southwest where it also meets the 5th order River Barrow, before travelling southwards and eventually discharging into the Barrow, Suir, Nore Estuary (EU Code: IE_SE_100_0100) located some 100km south of the Site at its nearest point (EPA, 2026).

The Tully Stream has been assessed as 'Poor' status and is considered 'At Risk' of not meeting its Water Framework Directives (WFD, 2019-2024), while the Cloncumber Steam has been assessed as 'Moderate' status while its risk is currently 'At Risk' (EPA, 2026). The Tully Stream forms one of two waterbodies located within the Barrow_SC_60 sub-catchment which were assessed as being 'At Risk'. The WFD Cycle 2 Sub catchment assessment Report provides the following information for this sub-catchment:

"Similar to subcatchment 14_16, this subcatchment has wastewater treatment plants and several large areas of urbanisation on the outskirts of the greater Dublin area, including Kildare, Kildangan and Monasterevin. Agricultural land (both pastures and arable) is common throughout, with areas of peat bog also present, particularly at the lower end of the Tully Stream, but these practices were not identified by local authorities as significant pressures. There have been some wastewater treatment plant upgrades carried out in recent years, and more upgrades are ongoing or are planned in the near future. These upgrades have resulted in marked improvements to date in both chemistry and biology and similar improvements are expected following further proposed upgrades." (Catchments.ie, 2019)

The EPA water quality monitoring data for the stations on the aforementioned streams located closest to the Site are summarised in Table 3.

TABLE 2. EPA MONITORING STATIONS AND ASSIGNED Q VALUES

EPA Monitoring Station name	Station Code	Location from Site	Distance from Site	Assigned Q value (2019-2024)
Tully Stream (Bridge near Tully House)	RS14T020100	South	2.5km	3 "Poor"
Cloncumber Stream (Bridge at Whelans Crossroads)	RS14C170100	Northeast	5km	3-4 "Moderate"

The Site of the Proposed Development is situated on the Curragh Gravels West (IE_SE_G_133) groundwater body (GWB) which was assigned a status of Good and not at risk, for the 2019-2024 survey period (EPA,2025). The aquifer type in the area is Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones (GSI, 2025). The groundwater rock units underlying the Site are classified as Dinantian Lower impure Limestones. The level of vulnerability to groundwater contamination from human activities is Moderate throughout the Site (GSI, 2026). The subsoil is comprised of Limestone sands and gravels (Carboniferous) (GLs). The bedrock beneath the Site is mapped as Argillaceous dark grey bioclastic limestone, and subsidiary shale (GSI, 2026).

The Waterbody Status for river, groundwater, transitional and coastal water bodies relevant to the Site as recorded by the EPA (2022) in accordance with European Communities (Water Policy) Regulations 2003 (SI no. 722/2003) are provided in Table 3.

TABLE 3. WFD RISK AND WATER BODY STATUS

Waterbody Name	Water body; EU code	Location from Site	Distance from Site (km)	WFD water body status (2019-2024)	WFD 3rd cycle Risk Status	Hydraulic Connection to the Site
Surface Water Bodies						
Tully Stream	IE_SE_14T 020200	2.5km	South	Poor	At Risk	Weak connection via underlying GWB
Cloncumber Stream	IE_SE_14 C170200	5km	Northeast	Moderate	At Risk	Weak connection via underlying GWB
Transitional Water Bodies						
Barrow, Suir, Nore Estuary	IE_SE_100 _0100	100km	South	Moderate	At Risk	Downstream of the Tully Stream
Groundwater Bodies						
Curragh Gravels West	IE_SE_G_ 133	N/A	N/A	Good	Not at Risk	Underlying groundwater-body

4.2 Designated Sites

All European sites potentially linked to the Proposed Amendments have been identified and fully assessed in the AA Screening Report (Stage 1 AA) accompanying this submission under separate cover. A summary of the AA conclusions is given below.

Other nationally or internationally designated sites potentially linked to the Proposed Development are identified in section 4.2.2.

4.2.1 European sites – Appropriate Assessment

An AA Screening report was carried out in February 2026, which determined there was no potential for significant impact arising from the Proposed Development. The following is the conclusion determined by carrying out the AAS:

"The Proposed Development on lands at Southgreen, Co. Kildare has been assessed taking into account:

- *The nature, size and location of the proposed works and possible impacts arising from the construction works.*
- *The QIs and conservation objectives of the European sites.*
- *The potential for in-combination effects arising from other plans and projects.*

In conclusion, upon the examination, analysis and evaluation of the relevant information and applying the precautionary principle, it is concluded by the authors of this report that the possibility ***may be excluded*** *that the Proposed Development will have a significant effect on any of the European sites listed below:*

- *Pollardstown Fen SAC (000396)*
- *Mouds Bog SAC (002331)*
- *River Nore and River Barrow SAC (002162)*

In carrying out this AA screening, any targeted ecological mitigation measures and/or measures intended or included for the purposes of avoiding adverse effects arising as a result of the Proposed Development on any European site have not been taken into account.

On the basis of the screening exercise carried out above, it can be concluded, on the basis of the best scientific knowledge available and objective information, that the possibility of any significant effects on the above listed European sites, whether arising from the project itself or in combination with other plans and projects, can be excluded in light of the above listed European sites' conservation objectives. Thus, there is no requirement to proceed to Stage 2 of the Appropriate Assessment process."

4.2.2 Other Designated sites

4.2.2.1 S-P-R links to Designated Sites

Potential impact pathways are discussed in the following sections in the context of the Proposed Development as described in Section 2.

Direct Pathways

Hydrological pathways

The Proposed Development Site is located on lands at Southgreen, Co. Kildare. There are no hydrological features present within the Site or in the immediate surrounds. The nearest waterbody to the Site is the 1st order freshwater waterbody of Tully Steam (ID: IE_SE_14T020200) which lies 2.5km south of the Site and flows in a south-westerly direction. Following this, the next nearest waterbody to the Site is the Cloncumber Stream. The Cloncumber Stream (ID: IE_SE_14C170200), a 1st order Stream is located approximately 5km northeast of the Site, at Pollardstown Fen (pNHA). Both streams eventually discharge into the Barrow, Suir, Nore Estuary (EU Code: IE_SE_100_0100) located some 100km south of the Site at its nearest point (EPA, 2025).

Therefore, owing to the significant (>2.5km) hydrological distance between the Site and the nearest stream, significant hydrological impacts arising from the Proposed Development on any designated site are considered unlikely to occur.

Hydrogeological pathways

During groundworks and other construction activities, the ground will be exposed and any potential accidental discharges to ground could potentially migrate vertically downward to the underlying bedrock aquifer and laterally within the aquifer to the **Curragh Kildare pNHA, Pollardstown Fen SAC (also a designated pNHA and RAMSAR Site), Grand Canal pNHA, and Mouds Bog pNHA**.

These pathways have been ruled out, as per the below table. No other Designated sites are linked to the Site via hydrogeological means.

Air and land pathways

The Construction Phase of the Proposed Development could introduce dust and noise impacts transferable via air and land pathways, as well as increased lighting and human activity at the Site and in the vicinity of the Site during the Construction and Operational Phases. However, no designated sites are linked to the Site via air and land pathways due to the relatively small scale of the Proposed Development and the distance between the Site and the nearest designated site (> 5 km northeast).

Therefore, direct impact pathways via air and land do not exist and there is no potential for significant air and land impacts between the Proposed Development and any designated Site.

Indirect Pathways

No indirect pathways to any nationally or internationally designated sites (excl. SACs/SPAs) were identified.

4.2.2.2 Relevant Designated Sites

A designated site will only be at risk from likely significant effects where an S-P-R link of note exists between the Proposed Development and the designated site. All designated sites considered as part of the S-P-R method are listed in the below table and their relative location to the Site is shown on Figure 10.

Note that the Pollardstown Fen pNHA (& RAMSAR site) is also listed as an SAC with the site boundaries and reasons for designation overlapping with the related pNHA. Due to this overlap, the potential for impacts is fully considered by proxy of the assessment of impacts on the SACs in the AA Screening Report accompanying this submission, and no further assessment of this site is therefore required in this report.

TABLE 4: SHOWING DESIGNATED SITES WITHIN ZOI WITH S-P-R LINK TO THE SITE

Site Name & Code (Receptor)	Distance to Site of Proposed Amendments	Qualifying Interests (* = priority habitats) / Designation Rationale	Potential Pathway to receptors	Rationale for inclusion/exclusion
PROPOSED NATURAL HERITAGE AREAS (pNHAs)				
Curragh Kildare pNHA (000392)	1.7km	• Lowland acid grassland • Wintering birds • Wet heath • Dry heath	Discharges to ground which could travel laterally through the underlying ground water body to this pNHA	Weak hydrogeological connection to these pNHA sites via underlying groundwater body, considered insignificant due to buffering capacity of intervening distance and owing to the scale and nature of the project. Therefore, further assessment for these sites can be excluded for the remainder of this report.
Grand Canal pNHA (002104)	7.4km	• Canal channel and banks on either side. A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland.	Discharges to ground which could travel laterally through the underlying ground water body to this pNHA	
Mouds Bog pNHA (000395)	7km	• Bog habitat	Discharges to ground which could travel laterally through the underlying ground water body to this pNHA	

As no other designated sites (e.g., Ramsar sites) with notable S-P-R links to the Proposed Development were identified in the preceding steps, no further assessment of potential impacts on designated sites is required in this report.

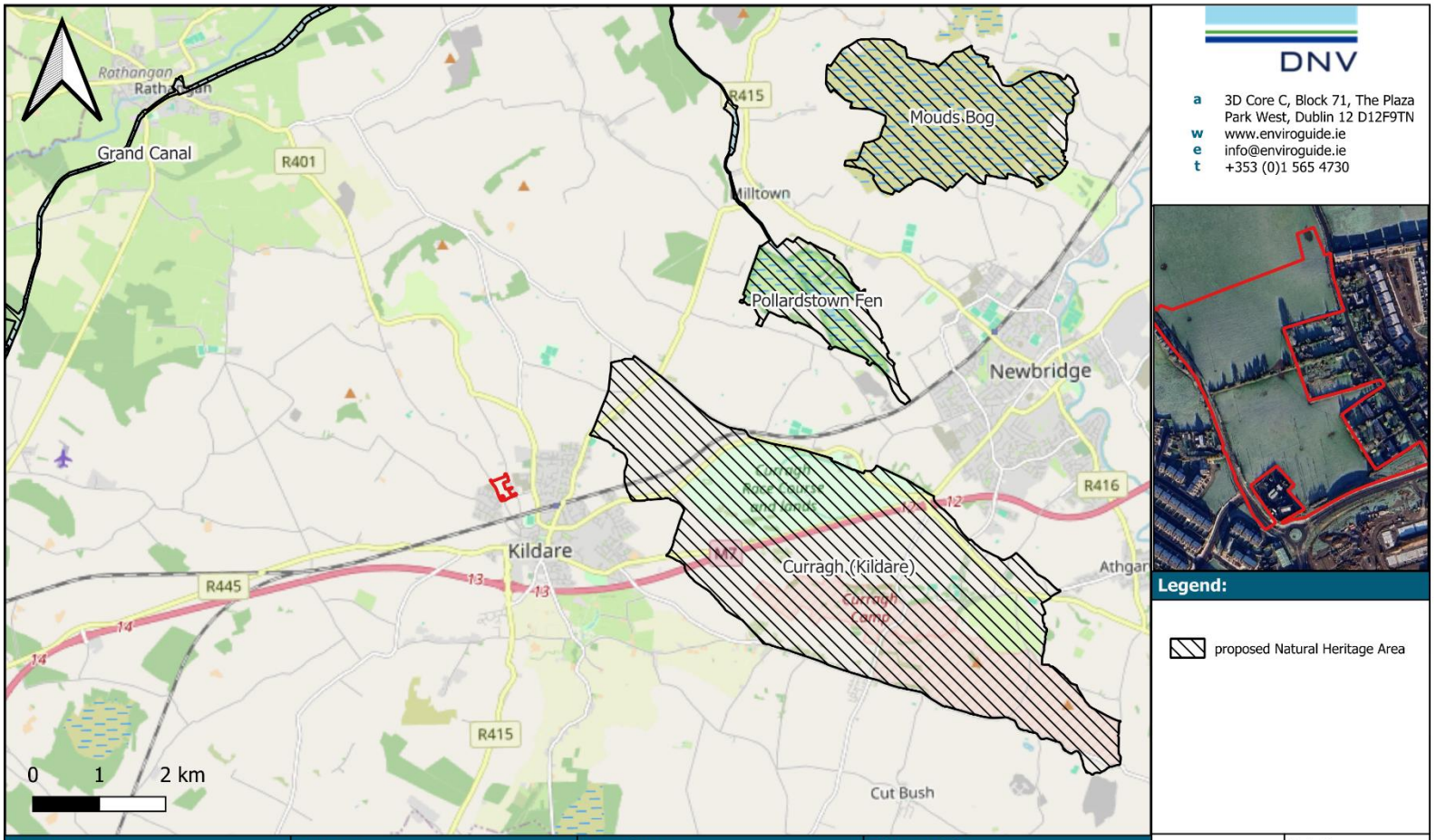


FIGURE 10. LOCATION OF DESIGNATED SITES CONSIDERED WITH THE SOURCE-PATHWAY-RECEPTOR (S-P-R) METHOD IN RELATION TO THE PROPOSED DEVELOPMENT.

4.3 Habitats

The habitats present within the Site, as recorded during the field survey carried out on the 30th of May 2025, are described in this section, and summarised below. Site photographs of these habitats are included in Appendix I0.6 and a map of the habitats is presented in Figure 11.

There are no buildings on Site[3]. The Site is made up of two fields which consist primarily of improved agricultural grassland (GA1) habitat. The upper field (for which only part is included in the Proposed Development footprint) comprises agricultural grassland habitat grown for silage, while the lower field comprises agricultural grassland used for grazing cattle. The perimeters of the fields are enclosed within existing mature hedgerows, treelines and scattered trees, with areas of scrub intersecting or occurring in the understory. These linear habitats are bound to the west, south and east by existing road networks, as outlined above, which lie outside of the red line boundary. There are no hydrological features present on Site, including ponds, pools of standing water, drainage ditches, streams/rivers or trenches. No invasive species were present on Site. The hedgerows and trees that bound the Site were largely comprised of Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Ash (*Fraxinus excelsior*), Oak (*Quercus spp*.), and Elder (*Sambucus nigra*). Areas of scrub were dominated by Bramble (*Rubus fructicosus*) and Ivy (*Hedera hibernica*) species, with a lot of Common Nettle (*Urtica dioica*) running adjacent to these linear habitats, on the ground floor, and along the field margins. No invasive plant species were recorded within or adjacent to the Proposed Development Site.

Nearby and Adjacent habitats

A small, well-sealed, stone wall (BL1) habitat occurs to the northeastern section of the upper field, outside of the red line boundary, as-well as a small section of spoil and bare ground (ED2) habitat, once again occurring outside of the red line boundary for the Site. To the southwest, an immature treeline occurs outside of the red line boundary, bordering the existing Kildare ESB substation fence line.

It is noted that the existing treelines recorded during the May 2025 survey, comprised immature tree species which were planted outside of the red line boundary, within neighbouring lands, including contiguous to the Southgreen road to the west, the ESB substation to the southwest, and neighbouring residences to the east.

4.3.1 Improved Agricultural Grassland (GA1)

The Site is made up of two fields (referred to as upper and lower field in this report) which consist primarily of improved agricultural grassland (GA1) habitat. The upper field (for which only part is included in the Proposed Development footprint) comprises agricultural grassland habitat grown for silage, while the lower field comprises agricultural grassland used for grazing cattle. Cattle were observed grazing in the lower field on the day of the survey. This habitat was the dominant habitat type recorded on Site during the May 2025 survey. Aside from the dominant grass sward monoculture of Timothy grass (*Phleum pratense*), the following herb layer was recorded within this habitat: Dandelion (*Taraxacum spp*.), plantains (*Plantago spp*.), Nettle (*Urtica dioica*), thistles (*Cirsium arvense, and C. vulgare*) and docks (*Rumex spp*.). See Appendix 10.6, Photograph 1.

4.3.2 Hedgerows (WL1)

Hedgerows made up the second most dominant habitat on Site after Improved Agricultural Grassland. This linear habitat occurred along the margins of the two existing fields that make up the footprint of the Proposed Development. The hedgerows comprised a small number of species, including, Blackthorn, Ash, Oak, and Elder. Hawthorn was the dominant species in most hedgerows observed. The hedgerows did not run continuously around the field margins i.e., they were interrupted by sections of boundary fencing or scrub habitat in parts, particularly to the south of the Site. The hedgerows appeared in good condition and occurred alongside treeline/scattered tree and scrub habitat which was a frequent constitution of both hedgerow and treeline understory. See Appendix 10.6, Photograph 2.

[3] BL3 building and artificial surfaces habitats does exist where the final red line boundary intersects with the existing road/pathway networks that bound the Site. This habitat also comprises small pockets of GS2 – Grassy verges and WD5 - Scattered trees and parkland.

4.3.3 Treelines (WL2)

Tree species were predominantly comprised of Hawthorn, Ash, Oak, and Elder. However, pine species were noted in the treelines bordering the neighbouring residences to the east (outside the red line boundary and separated by a boundary fence).

Treelines occurred along the margins of the Site, just outside the red line boundary, bordering neighbouring residences (elder and pine dominant), particularly to the east, and the ESB substation to the southwest (Ash dominant). Similarly, an immature treeline was also noted to the west (ash and oak dominant), bordering the footpath which runs contiguous to the Southgreen Road. Some trees were also found interspersed with hedgerow habitat, including that which divided the upper and lower fields near the centre of the Site. These included Hawthorn and Elder species. See Appendix 10.6, Photograph 3.

4.3.4 Scattered Trees and Parkland (WD5)

Scattered trees were found interspersed with hedgerow and scrub habitat in a small area to the eastern section of the Proposed Development Site and along the western boundary of the Site that comprises the existing road/pathway network that bounds the Site. Tree species included Oak, Hawthorn, and Elder. See Appendix 10.6, Photograph 4.

4.3.5 Scrub (WS1)

Areas of scrub were recorded along the margins of the Site, alongside hedgerow habitat. These areas were dominated by Bramble and Ivy (*Hedera hibernica*) species, with a lot of Common Nettle (*Urtica dioica*) running along the field margins. Other species recorded in the understory/ground layer included Cow Parsley (*Anthriscus sylvestris*), Hogweed (*Heracleum sphondylium*), and Greater Burdock (*Arctium lappa*). See Appendix 10.6, Photograph 5.

4.3.6 Grassy Verges (GS2)

Grassy verges that are well maintained are found in small mosaic with scattered trees and parkland, along the existing path/road networks that bound the Site and intersect with the Site boundary along parts of the east and western sections.



FIGURE 11. MAP OF HABITATS PRESENT AT THE SITE OF THE PROPOSED DEVELOPMENT.

4.4 Species and Species Groups

4.4.1 Flora

4.4.1.1 Rare and Protected Flora

The Site of the Proposed Development is located within the NBDC 2km tetrad N71G. Species records from the NBDC online database for this grid square was studied for the presence of rare and/or protected species within the last 20 years. This database contained no records of protected flora within the last 20 years. The Floral Protection Order (FPO) Bryophytes database was also checked for rare and protected flora records within the vicinity of the Proposed Development. Several threatened bryophyte species of least concern occurred within the 2km Grid Square N71G. No rare and/or protected bryophyte records exist within the immediate vicinity of the Proposed Development.

4.4.1.2 Invasive Species

There are records for three species of flora considered to be invasive within the grid square which encompasses the Site of the Proposed Development. Details of these records are listed in Table 5.

TABLE 5. RECORDS OF INVASIVE SPECIES OF FLOWERING PLANT FOR THE SURROUNDING 2KM GRID SQUARE ASSOCIATED WITH THE SITE FROM THE NBDC

Species	Date of last record	Source	Designations
Japanese knotweed (*Fallopia japonica*)	14/04/2014	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477/2011 (Ireland)
Butterfly-bush (*Buddleja davidii*)	30/08/2017	Vascular plants: Online Atlas of Vascular Plants 2012 Onwards	Medium Impact Invasive Species
Fringed Water-lily (*Nymphoides peltata*)	12/06/2015	National Invasive Species Database	High Impact Invasive Species Regulation S.I. 477 (Ireland)

4.4.1.3 Field Study Results

No rare, protected, or invasive plant species were recorded on site during ecological walkover.

4.4.2 Bats

4.4.2.1 Desk Study Results

A total of three bat species have been recorded within the 2km grid square (N71G) which encompasses the Site (Table 6).

TABLE 6: RECORDS OF BATS FOR THE SURROUNDING 2KM GRID SQUARE ASSOCIATED WITH THE SITE FROM THE NBDC.

Species	Date of last record	Database	Designation
Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*)	29/04/2014	National Bat Database of Ireland	• Wildlife Act 1976 (as amended)
Leisler's Bat (*Nyctalus leisleri*)	20/07/2006	National Bat Database of Ireland	• EU Habitats Directive, Annex IV • Wildlife Act 1976 (as amended)

Species	Date of last record	Database	Designation
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	20/07/2006	National Bat Database of Ireland	• EU Habitats Directive, Annex IV • Wildlife Act 1976 (as amended)

The Bat Conservation Ireland Landscape Suitability Model (Lundy *et al*., 2011) provides a habitat suitability index for bat species across Ireland. The model divides the country into grid squares and ranks the habitat within the squares according to its suitability for various bat species. The scores are divided into five qualitative categories of suitability, namely:

- 0.0000000 - 13.000000: Low
- 13.000001 - 21.333300: Low – Medium
- 21.333301 - 28.111099: Medium
- 28.111100 - 36.444401: Medium – High
- 36.444402 - 58.555599: High

The Proposed Development Site (Figure 12) is located in an area with an overall Medium (24.33) suitability for bats in general. The suitability index for specific bat species is presented in Table 7. The landscape suitability index is high for two bat species listed below, medium-high for two species, medium for one species, low-medium for one species, and finally, low for three species.

TABLE 7: LANDSCAPE SUITABILITY INDEX FOR INDIVIDUAL BAT SPECIES (SOURCE: NBDC) SHOWING THOSE SPECIES THAT HAVE BEEN RECORDED IN THE NBDC DATABASE WITHIN THE N71G 2KM GRID SQUARE HIGHLIGTED IN GREEN.

Bat Species	Suitability Index (2km Grid Square)
Soprano pipistrelle *(Pipistrellus pygmaeus)*	36 (Medium - High)
Brown Long-eared Bat (*Plecotus auritus*)	36 (Medium – High)
Common pipistrelle (*Pipistrellus pipistrellus*)	38 (High)
Lesser Horseshoe Bat (*Rhinolophus hipposideros*)	0 (Low)
Leisler's Bat (*Nyctalus leisleri*)	49 (High)
Whiskered Bat (*Myotis mystacinus*)	12 (Low)
Daubenton's Bat (*Myotis daubentoniid*)	17 (Low – Medium)
Nathusius pipistrelle (*Pipistrellus nathusii*)	5 (Low)
Natterer's Bat (*Myotis nattereri*)	26 (Medium)



FIGURE 12: BAT LANDSCAPE SUITABILITY MODEL (ALL BATS) SURROUNDING THE PROPOSED DEVELOPMENT SITE (BLUE STAR INDICATIVE OF SITE LOCATION)(ADAPTED FROM NBDC, 2025).

4.4.2.2 Field Study Results

Preliminary Bat Roost Assessment

No buildings or structures were present on Site. A total of 2 No. trees on Site were assessed as having PRF-I rating due to the presence of small superficial cracks and exposed holes in the tree limbs. Overall, however, the trees on Site held no bat roost potential (classification: None), with many trees being immature, comprising smooth bark or heavily laden with ivy which acts as a barrier to bat access and egress. Further surveys were therefore not required on the trees on Site, per BCT guidelines, as the trees on Site, in their current condition, based on the assessments contained in this report, are therefore not considered likely to support roosting bats.

Preliminary Bat Habitat Suitability Assessment Survey Results

The linear scrub and hedgerows on Site provide moderate foraging and commuting habitat for local bats, with good connectivity to adjacent scrub, hedgerow and treeline habitats that surround the Site, particularly those to the north, which is less developed in nature and offer greater connectivity to the wider area.

Bat Transect Activity Survey Results

Two species of bat were recorded during the bat transect activity survey conducted in July 2025. These species were also recorded in the historical records held by NBDC for the surrounding area. They are Common Pipistrelle (*Pipistrellus pipistrellus*), and Leisler's Bat (*Nyctalus leisleri*). However, it should be noted that the majority of recordings related to Common Pipistrelle (31) with Leisler's bat being recorded just once during the survey, accounting for 97% and 3% of records, respectively, as shown in Figure 13 below.

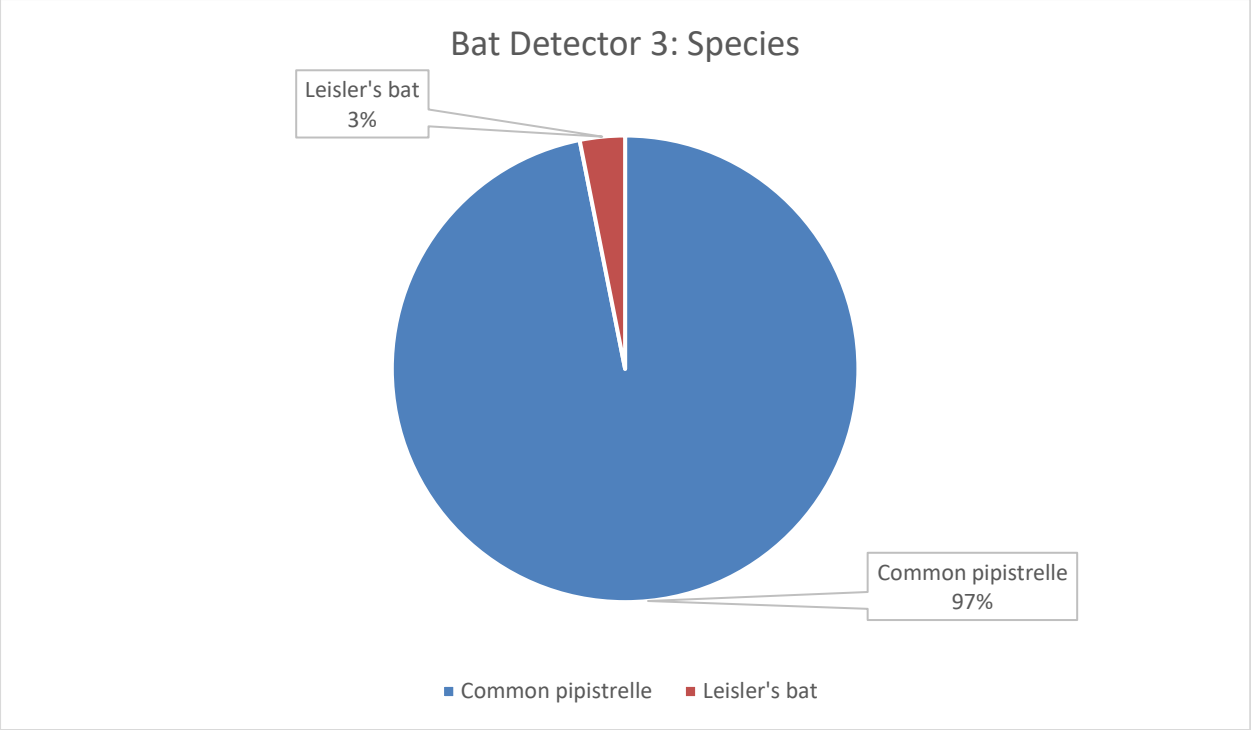


FIGURE 13: SPECIES RECORDED DURING THE BAT TRANSECT SURVEY.

Common Pipistrelle was also visually observed by the surveyors during the transect survey, particularly along the eastern section of the Site, using the east and central hedgerow and scrub habitat (Point counts 6, 7, 18, 19, and 20 on the bat transect map, Figure 9, above).

For a complete breakdown of survey data for each record, please refer to Appendix 10.7 below.

Evaluation

Given the "Moderate" to "High" bat habitat suitability of the mature hedgerows and treeline habitats for foraging and commuting on-site, the local bat populations using the Proposed Development Site and the surroundings as foraging and commuting habitat are valued as being of local importance (higher value). This value has been assigned using the precautionary principle.

4.4.3 Birds

4.4.3.1 Desk Study Results

A total of 45 bird species have been recorded within the 2km grid square N71G. Of these, thirteen are amber listed birds and four are red listed birds as identified on the Birds of Conservational Concern in Ireland (BoCCI) (Gilbert et al. 2021). All bird species listed below are protected under the Wildlife Acts. Details of amber, red, and annex listed species are detailed in Table 8. The remaining species are all green listed.

TABLE 8: DETAILS OF AMBER AND RED LISTED BIRD SPECIES WITHIN THE 2KM GRID SQUARE (N71G)

Species	Date of record	BoCCI Status (2021)
Barn Owl (*Tyto alba*)	14/09/2017	**Red List**
Common Gull (*Larus canus*)	14/09/2017	**Amber List**
Curlew (*Numenius arquata*)	14/09/2017	**Red List**
Golden Plover (*Pluvialis apricaria*)	14/09/2017	**Red List**

Species	Date of record	BoCCI Status (2021)
Grey Plover (*Pluvialis squatarola*)	14/09/2017	Amber List
House Martin (*Delichon urbicum*)	14/09/2017	Amber List
House Sparrow (*Passer domesticus*)	14/09/2017	Amber List
Linnet (*Linaria cannabina*)	14/09/2017	Amber List
Pheasant (*Phasianus colchicus*)	14/09/2017	EU Birds Directive; Annex II and III
Rock Dove (*Columba livia*)	14/09/2017	EU Birds Directive; Annex II
Skylark (*Alauda arvensis*)	14/09/2017	Amber List
Snipe (*Gallinago gallinago*)	14/09/2017	EU Birds Directive; Annex II and III Amber List
Starling (*Sturnus vulgaris*)	14/09/2017	Amber List
Swallow (*Hirundo rustica*)	14/09/2017	Amber List
Swift (*Apus apus*)	17/05/2019	Amber List
Tree Sparrow (*Passer montanus*)	14/09/2017	Amber List
Wigeon (*Mareca penelope*)	14/09/2017	EU Birds Directive; Annex II and III Amber List
Woodcock (*Scolopax rusticola*)	14/09/2017	EU Birds Directive; Annex II and III Amber List
Woodpigeon (*Columba palumbus*)	14/09/2017	EU Birds Directive; Annex II and III
Yellowhammer (*Emberiza citrinella*)	14/09/2017	Red List

4.4.3.2 Field Study Results

During the Site walkover on the 30th of May 2025, eight species of birds were recorded (Table 9) at the Site. Of these, only three species are amber listed, and none are red listed, while the remaining species are green listed (Gilbert et al. 2021).

TABLE 9. BIRD SPECIES RECORDED DURING WALKOVER SURVEY ON THE 30TH OF MAY 2025.

Species	BoCCI Status
Blackbird (*Turdus merula*)	Green
Coal Tit (*Periparus ater*)	Green
Common Gull (*Larus canus*)	Amber
Goldfinch (*Carduelis carduelis*)	Green
Jackdaw *(Coloeus monedula)*	Green
Magpie (*Pica pica*)	Green

Species	BoCCI Status
Rook (*Corvus frugilegus*)	Green
Swallow *(Hirundo rustica)*	Amber
Tree Sparrow *(Passer montanus)*	Amber
Woodpigeon (*Columba palumbus*)	Green
Wren (*Troglodytes troglodytes*)	Green

Evaluation

Considering the variety of bird species recorded both in the historical records and during the field surveys, it is considered that the Site contains resident and regularly occurring, locally important populations of bird species protected under the Wildlife Act and Birds and Habitats Regulations 2011, As such the species importance was assessed as having Local Importance – Higher Value.

4.4.4 Mammals (excl. bats)

4.4.4.1 Desk Study Results

Records for terrestrial mammals were obtained from the NBDC online database. Table 10 lists these species, their date of last record and summarises their protected status/designation. In total, three mammal species (two native and one non-native or invasive) were recorded within the 2km grid square which encompasses the Proposed Development Site.

TABLE 10: RECORDS OF TERRESTRIAL MAMMALS (NATIVE AND NON-NATIVE) FOR THE SURROUNDING 2KM GRID SQUARE ASSOCIATED WITH THE SITE FROM THE NBDC.

Species	NBDC Grid Square	Date of last record	Source	Designation
NATIVE SPECIES				
West European hedgehog (*Erinaceus europaeus*)	N71G	11/06/2023	Hedgehogs of Ireland	• Wildlife Act 1976 (as amended)
Irish Hare *(Lepus timidus subsp. hibernicus)*	N71G	14/09/2017	Mammals of Ireland 2016 - 2025	• Wildlife Act 1976 (as amended)
NON-NATIVE AND INVASIVE SPECIES				
European rabbit (*Oryctolagus cuniculus*)	N71G	16/09/2015	Atlas of Mammals in Ireland 2010 - 2015	• Medium Impact Invasive Species

4.4.4.2 Field Study Results

Overall mammal activity on Site during the May 2025 visit was very low. There was some evidence of mammal trails along the perimeter of the Site but mostly moving between fields through the existing hedgerows and scrub habitat. Fox (*Vulpes vulpes*) scat was recorded along the eastern section of the Site. However, Fox is not a protected species in Ireland.

There was no evidence of Badger (*Meles meles*) on Site (in the form of trails, snuffle holes, latrines etc.) nor was there evidence of any other mammals using the Site (including Irish Hare). However, it should be noted that the Site does provide suitable habitat for mammal species such as Badger, Irish Hare, Hedgehog (*Erinaceus europaeus*), and Pygmy Shrew (*Sorus Minutus*) in the form of suitable commuting and foraging habitat. The lack of mammal activity could be attributed to the lack of connectivity to surrounding habitats as the Site is bound on all sides but the north side by existing road network and residential developments, either under construction, partially constructed, or complete.

Evaluation

Badgers, and their breeding and resting places, are protected under the Wildlife Acts. Due to their stable Irish populations, they are considered to be of "Least concern" in terms of conservation (Nelson et al., 2019). The subject lands are considered to be of local importance (higher value) for badgers, as while no setts were observed on Site, there is suitable habitat within the lands and its vicinity to support local badger populations.

4.4.5 Amphibians

4.4.5.1 Desk Study

No amphibians were recorded in the N71G grid square which encompasses the Site in the past 20 years.

4.4.5.2 Field Study

No suitable habitat for amphibians was recorded during the May 2025 survey. As such, the species importance is assessed as having negligible value at this Site.

4.4.6 Reptiles

4.4.6.1 Desk Study

No reptiles were recorded in the N71G grid square which encompasses the Site in the past 20 years.

4.4.6.2 Field Study

No evidence of reptiles was found during the May 2025 survey. The stone wall which occurs outside the red line boundary to the north-west of the upper field did not provide suitable habitat for reptiles as it was well sealed and contained little in the way cracks or crevices for refuge. The grassland habitat could be used by reptiles such as the Common Lizard (*Zootica vivipara*) (Ireland's only native reptile species) in commuting or foraging. As such, the species importance is assessed as having Local Importance – Lower Value at this Site.

4.4.7 Fish

There are no habitats present on Site to support any fish populations. As such, the species importance is assessed as having negligible value at this Site.

4.4.8 Invertebrates

4.4.8.1 Desk Study

There are no records of rare of protected species in the last 20 years in the grid square N71G which encompasses the Site.

4.4.8.2 Field Study

Several invertebrate species were observed during the May 2025 survey including Red-tailed Bumblebee (*Bombus lapidarius*), Small Tortoiseshell butterfly (*Bombus lapidarius*) and Small White butterfly (*Pieris rapae*). Small mining holes likely belonging to mining bee species were observed in small patches on the ground floor, most notably in

the bare ground/spoil heap to the northwest, outside of the red line boundary. As such, the species importance is assessed as having negligible value at this Site.

4.4.9 Other Protected and/or Notable Species

No other protected or notable fauna were recorded in the historical (NBDC) 2km (N71G) grid square for the Site or the surrounding area.

4.5 Evaluation of Ecological Features

Habitats have been evaluated for their conservation importance, based on the NRA evaluation scheme (NRA, 2009b). Those selected as KERs are those which are evaluated to be of at least local importance (higher value). Fauna that has the potential to utilise the Site and immediate area of the Proposed Development, or for which records exist in the wider area, have been evaluated for their conservation importance. This evaluation follows the Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009b).

The impacts of the Proposed Development on the identified KERs are assessed in section 5.
Table 11 below summarises the evaluation rating assigned to each ecological feature and the rationale behind these evaluations is also provided.

Table 11. Evaluation of Designated Sites, Habitats, Flora and Fauna recorded within the Site and the surrounding area. Those identified as Key Ecological Receptors (KERs) are highlighted in green.

Ecological Feature / Evaluation	Likely Ecological Constraint	Rationale
DESIGNATED SITES		
European sites / International Importance	No	Designated sites within the ZOI of the Proposed Development are sufficiently well separated from the Proposed Development so that no impacts on their designated features are anticipated as a result of the Proposed Development. As determined in the Appropriate Assessment Screening (AAS) Report.
Proposed Natural Heritage Areas / National Importance	No	Designated sites within the ZOI of the Proposed Development are sufficiently well separated from the Proposed Development so that no impacts on their designated features are anticipated as a result of the Proposed Development. Additionally, Pollardstown Fen pNHA overlaps with Pollardstown Fen SAC and so has been ruled out in the AAS by proxy.
Ramsar sites / international importance	No	Designated sites within the ZOI of the Proposed Development are sufficiently well separated from the Proposed Development so that no impacts on their designated features are anticipated as a result of the Proposed Development. Additionally, Pollardstown Fen Ramsar site overlaps with an SAC and so has been ruled out in the AAS by proxy.
HABITATS		
Improved Agricultural Grassland (GA1) / Local Importance (Lower Value)	No	The footprint of the proposed Development will require the removal in part or full of this habitat which is a highly modified habitat.
Hedgerows (WL1) / Local Importance (Higher Value)	Yes	The footprint of the proposed Development will require the removal in part or full of this habitat which provides a commuting, foraging, roosting/nesting, and sheltering functions to native species that might use the area.
Treelines (WL2) / Local Importance (Higher Value)	Yes	The footprint of the proposed Development will require the removal in part or full of this habitat which provides a commuting, foraging, roosting/nesting, and sheltering functions to native species that might use the area
Scattered Trees and Parkland (WD5) / Local Importance (Higher Value)	Yes	The footprint of the proposed Development will require the removal in part or full of this habitat which provides a commuting, foraging, roosting/nesting, and sheltering functions to native species that might use the area
Scrub (WS1) / Local Importance (Higher Value)	Yes	The footprint of the proposed Development will require the removal in part or full of this habitat which provides a commuting, foraging, roosting/nesting, and sheltering functions to native species that might use the area
SPECIES AND SPECIES GROUPS		
Flora / Local Importance (Lower Value)	No	The footprint of the proposed Development will require the removal in part or full of floral species present on Site. However, no rare and/or protected species were recorded, and no invasive plant species were recorded on Site during the May 2025 survey.

Ecological Feature / Evaluation	Likely Ecological Constraint	Rationale
Bats / Local Importance (Higher Value)	Yes	While no habitat with roost suitability was recorded for Bats, the Site does provide moderate commuting and foraging habitat for bat species which may be using the area.
Birds / Local Importance (Higher Value)	Yes	Bird species are protected in Ireland under the Wildlife Acts and several amber-listed species (BoCCI, 2021) were recorded during the May 2025 survey.
Mammals / Local Importance (Higher Value)	Yes	While little to no evidence of mammals using the Site was observed during the May 2025 survey, suitable commuting and foraging habitat does exist and needs to be considered.
Amphibians / Negligible	No	No rare and/or protected species were recorded on Site.
Reptiles / Lower Importance (Lower Value)	No	No rare and/or protected species were recorded on Site. However, some potential for presence owing to widespread presence of Common Lizard in a variety of habitats in Ireland.
Fish / Negligible	No	No suitable habitat present for fish or other aquatic species.
Invertebrates / Negligible	No	No rare and/or protected species were recorded on Site.

5 ECOLOGICAL IMPACT ASSESSMENT

5.1 Construction Phase

5.1.1 Impacts on Designated Sites

Section 4.2 identified designated sites within the zone of influence of the Site and then assessed each for potential pathways between the Proposed Development and same. All designated sites were ruled out within that section and so no impacts on same are to be expected, nor is any further assessment of impact on same required at this stage of the Report.

5.1.2 Impacts on Habitats and Flora

5.1.2.1 Hedgerows (WL1) and Treelines (WL2)

The retention of existing hedgerows across the site has been prioritised wherever feasible; however, the central east–west hedgerow must be removed due to significant level changes required to deliver the proposed layout, infrastructure, and densities. Its position on the steeply sloping section of the site means that its retention would prevent the necessary regrading and render the design unworkable. A short section of hedgerow in the southeast, as well as the north–south hedgerow along Southgreen Road, also cannot be retained due to required alterations in site levels and the integration of essential pathways and cycle tracks. All other boundary hedgerows are preserved. To ensure the maintenance and enhancement of ecological connectivity, substantial compensatory planting is proposed, including the reinstatement of a continuous mixed-native hedgerow along the full northern boundary to re-establish a strong east–west corridor for bats, birds and small mammals. This will be supplemented with biodiverse tree planting, whip planting clusters, and species-rich wildflower margins to strengthen habitat structure and foraging opportunities. Additional new hedgerows are also proposed along the southern boundary and retained along the western roadside boundary, ensuring that overall hedgerow cover and ecological function are significantly enhanced compared to baseline conditions.

In the absence of mitigation, the loss of hedgerow/treeline at the Site, in the context of the retained habitat, constitutes a *negative, permanent* effect of *slight* significance at the local level.

Furthermore, retained features may be at risk of dust deposition on leaves and root structures (via soil surface sealing, chemical contamination, ph. and nutrient alteration/imbalance, and physical root damage), affecting photosynthesis and respiration, during excavation works at the Site. Similarly, roots could be damaged by plant and machinery traversing the Site during Construction. This could constitute a *negative*, *short-term* effect of *moderate* significance at the local level.

5.1.2.2 Scattered Trees and Parkland (WD5)

Part of this habitat will be removed. In the absence of mitigation, the loss of scattered trees and parkland habitat at the Site, constitutes a *negative, permanent* effect of *slight* significance at a local level.

As with the previous hedgerow/treeline habitat, any retained features may be at risk of dust deposition on leaves and root structures (via soil surface sealing, chemical contamination, ph. and nutrient alteration/imbalance, and physical root damage), affecting photosynthesis and respiration, during excavation works at the Site. Similarly, roots could be damaged by plant and machinery traversing the Site during Construction. This could constitute a *negative*, *short-term* effect of *moderate* significance at the local level.

5.1.2.3 Scrub (WS1)

Much of this habitat will be removed. In the absence of mitigation, the loss of scrub habitat at the Site, constitutes a *negative, permanent* effect of *slight* significance at a local level.

5.1.3 Impacts on Native Fauna

5.1.3.1 Bats

Small numbers of foraging and commuting bats were recorded at the Site, primarily comprising the two most common species in Ireland which are widespread throughout the country (common pipistrelle and Leisler's bat) (NPWS, 2019). Potential impacts on foraging and commuting bats as a result of the Construction Phase of the Proposed Development comprise light-related disturbance and loss of foraging and commuting habitat to be removed to facilitate the Proposed Development, and potential for injury/death during any tree removal.

In the absence of mitigation, light-disturbance affecting bats could result in *negative, short-term* effects of *moderate* significance.

In the absence of mitigation, loss of foraging and commuting habitat could result in *negative, permanent* effects of *moderate* significance.

Furthermore, should any vegetation removal (e.g. tree removal) be undertaken when bats are present within trees, bats could be subject to injury or death. This would constitute a *negative*, *short-term*, *significant* effect on the local bat assemblage.

5.1.3.2 Birds

Taking a precautionary approach, in the absence of mitigation, there is potential for disturbance to lead to *negative*, *temporary* effects of *slight* significance on breeding birds, in the event that works are undertaken during breeding bird season (March-August inclusive).

Furthermore, should any vegetation removal (e.g. tree removal) works be undertaken during the breeding bird season (March-August inclusive), nests could be directly lost, potentially leading to the death of adults, chicks or eggs, in contravention of national and international law. This would constitute a *negative*, *short-term*, *significant* effect on local breeding birds.

Loss of potential nesting habitat is also considered here; however, given the minimal tree loss at the Site (as most trees/hedgerows are being maintained and significant replacement planting is proposed), this effect is considered to be *negative, permanent*, and of *slight* significance for local breeding birds.

5.1.3.3 Mammals

Potential impacts on badger and small terrestrial mammals, such as hedgehog, or pygmy shrew, relate to direct disturbance / mortality during vegetation clearance or entrapment within construction materials.

Should removal be undertaken during hedgehog hibernation period (October-April), or during the breeding periods of the aforementioned mammals, in the absence of mitigation, this could result in *negative*, *short-term*, *significant* effects at the local scale.

Small mammal species have the potential to become trapped in trenches and entangled in construction materials such as netting and plastic sheeting, as well as other waste materials, causing entrapment and injury or death. Should this occur, it would constitute a *negative*, *short-term*, *moderate* effect on local populations.

Visual and noise disturbance of mammal species including badger due to increased human presence, machinery and lighting during the Construction Phase, although unlikely, is possible and, as such, a precautionary approach is adopted with these disturbances representing potential *negative, short-term, slight* effects at a local scale.

5.2 Operational Phase

5.2.1 Impacts on Native Fauna

5.2.1.1 Bats

There is the potential for Operational Phase lighting to cause disturbance to foraging bats, given that its use cannot be avoided at the Site. Although a low level of bat activity was recorded overall at the Site during bat activity surveys, the provision of supplementary habitat planting in the form of hedgerows, treelines and shrub will increase the Site's value for use by bats by providing improved foraging and commuting corridors through the Site.

These measures will improve habitat quality, increase foraging opportunities, and enhance ecological connectivity across the Site and the wider landscape. Elements of the Proposed Development which are considered to provide *positive, local, slight* effects, and ultimately positive contributions to local level bat conservation, which includes:

- Enhanced Foraging Habitat: The inclusion of native hedgerows, semi-mature native trees, and nectar-rich perennials will support a diverse and abundant insect population, providing a reliable food source for foraging mammals and bats.
- Improved Habitat Connectivity: Linear features such as hedgerows and tree lines will function as commuting corridors, facilitating safe movement between roosting, sheltering, and foraging areas while reducing exposure to predators.
- Shelter and Roosting Potential: Semi-mature native trees (e.g., oak) may, over time, offer natural roosting opportunities. Green walls and dense vegetation will also contribute to microhabitat diversity.
- Low-Disturbance Green Spaces: lawns and communal gardens with native planting will create a more naturalistic and less intensively managed environment, which is generally more conducive to promoting biodiversity and maintaining connectivity within the Site.
- Alignment with Biodiversity Policy: The proposed measures are consistent with national biodiversity strategies and contribute to the ecological resilience of the wider area.

However, in the absence of suitable mitigation measures, nocturnal species which may be using the area may experience the following as a result of operation phase lighting proposed as part of the Development:

- Disruption of commuting routes.
- Reduced foraging efficiency.
- Delayed emergence from bat roosts.
- Increased predation risk.

These impacts would represent a *permanent, negative, moderate impact* on nocturnal species using the area (in the absence of suitable mitigation).

5.2.1.2 Birds

The Proposed Development will be consistent with the existing urban fabric of Kildare Town, and bird species present are considered to be habituated to this urban environment. Therefore, noise and human activity disturbance impacts to bird species as a result of the operation of the Proposed Development would therefore be reduced.

However, adopting a precautionary approach, and accounting for the marginal location of the Site to the north of Kildare town which borders semi-natural and natural habitats largely associated with agricultural activities; potential impacts during the Operational Phase include disturbance from increased human activity on Site. In the absence of appropriate mitigation measures, this could constitute *negative, permanent, slight* impacts on breeding birds in the locality.

The retention of boundary habitats alongside the proposed additional planting included as part of the landscaping for the Site will offer potential commuting, foraging, and nesting habitat for local birds. As such, the likely effect is considered *positive, permanent and slight* effect at the local level, due to the increase of available resources and habitats at the Site.

5.2.1.3 Mammals

Potential impacts on mammals relate directly to disturbance/displacement during the Operational Phase via loss of foraging, commuting, sheltering/breeding habitat, increased human (and dog) presence, lighting and noise pollution, increased traffic, as well as road mortality In the absence of mitigation, this would constitute a *negative, short-term, moderate* effect on local mammal populations.

Similar to birds, the retention of boundary habitats alongside the proposed additional planting included as part of the landscaping for the Site will offer potential commuting, foraging, and sheltering habitat for local mammals. As such, the likely effect is considered *positive, permanent and slight* effect at the local level, due to the increase of available resources and habitats at the Site, and the maintained ecological corridors from N-S and E-W along boundary habitats in particular.

5.3 Do Nothing Impact

If the proposed works were not to go ahead, the Site would likely continue on in its current use (agricultural activities), which provides, some, albeit limited, local ecological value. Should agricultural activities cease, then some plants considered to be 'weed' species could appear in cracks in areas that receive less footfall, but this would be minimal. While successional scrub species would likely invade the open grassland habitats, the overall character of this area would not be expected to undergo significant change, in the short term, should the Proposed Development not go ahead.

5.4 Potential for In-Combination Effects

5.4.1 Relevant Plans and Policies

The following plans and policies were reviewed and considered for possible in-combination effects with the Proposed Development.

- Kildare County Development Plan (CCDP) 2023 – 2029
- Kildare Biodiversity Action Plan 2009-2014
- Kildare Biodiversity Action Plan 2026-2031 (draft)

5.4.2 Existing Planning Permissions

A search of planning applications located within a 300m radius of the Site of the Proposed Development was conducted using online planning resources such as the National Planning Application Database (NPAD) (MyPlan.ie) and Kildare County Council Planning Applications online map. A 300m radius was deemed sufficient given the scale and nature of the Proposal. Any planning applications listed as granted or decision pending from within the last five years were assessed for their potential to act in-combination with the Proposed Development and cause likely significant effects on the relevant European sites. Long-term developments granted outside of this time period were also considered where applicable.

It is noted that the majority of the larger developments within the vicinity of the Site of the Proposed Development are applications granted for residential developments, while several small scale applications for retention/modification to existing buildings were also observed. Applications within the past five years are shown in the below table (Table 12).

TABLE 12. GRANTED AND PENDING DEVELOPMENT APPLICATIONS WITHIN 300 M OF THE PROPOSED DEVELOPMENT. LOCATION AND DISTANCE GIVEN IS RELATIVE TO THE PROPOSED DEVELOPMENT.

Planning Reference	Planning Authority	Status	Location
201601	**Kildare County Council**	**Withdrawn**	**Green Road & Southgreen Road (also known as Hill Road), South Green, Kildare Town, Co. Kildare**
Development Description			

Planning Reference	Planning Authority	Status	Location
A housing development to be known as Walker's Gate is already approved on the site under 17/764. It is noted that roads works permitted under 17/764 to serve the development have already been constructed including the Link Road between Southgreen Road and Dunmurray Road including road/junction upgrade works at Southgreen Road, Old Road and Dunmurray Road. This proposal consists only of changes to House Type F (2 bed terrace dwellings) approved under Planning Reference 17/764. In total 12 no. Type F Houses are proposed to be revised at house no. 15-26 'The Close'. Changes include modifications to elevations and internal layout, reduction in overall height of dwellings by 0.626 metres & removal of windows from end gable walls. There is no increase in the permitted floor area or total number of dwellings (187). 2 no new bin stores are proposed in the open space to serve house nos. 12 & 13 'The Close' with associated changes to the footpath. **Potential for In-combination effects** There is no potential for in-combination effects as the development was deemed withdrawn			
22369	**Kildare County Council**	**Permission**	**Troytown, Greyabbey Road, Southgreen, Kildare. Co. Kildare.**
Development Description An alteration to previously granted permission Ref. 19/1332. The development will consist of change from pitched roof to flat roof to Phase 1 single storey intern accommodation building (143sqm.) containing 6 no. bedrooms, ancillary and communal facilities and all associated site works, landscaping and sewerage treatment system. **Potential for In-combination effects** The Planner's Report dated 11/05/2022 stated that there was no potential for significant effect to arise owing to the Development and an AA was not required. Therefore, the potential for in-combination effects is not foreseen.			
23810	**Kildare County Council**	**Permission**	**Townlands of Crockanure Glede, Southgreen, Kidlare, Bishopsland Cloghgarret Glebe, Crockanure, Blackmillerhill, Dunmurry West, Curragh (Ed Kildare), Rathbride, Friarstown, Newtown (Ed Pollarrdstown), Milltown, Scarletstown, Rosberry between, Kildare ESB Substation & Newbridge ESB Substation**
Development Description A new 38kV electricity circuit between the existing Kildare ESB substation and the existing Newbridge ESB substation County Kildare. The circuit will be c. 8.5km in length and will consist of c. 7km of overhead line (OHL) and c. 1.5km of underground cable (UGC). The OHL structures (48 No.) will consist of single and double wood polesets, with a height above ground level ranging from c. 9.7m to c. 18m and will require below ground foundations and staywires at specific locations. The UGC will primarily run along public roads and will consist of electrical cables laid in underground ducts buried in a trench (with varying dimensions between c.0.6m and c. 0.9m width and a depth of c.1.2m). Permission is sought for all associated works including temporary works such as the creation of access ways and ancillary temporary and permanent works. Revised by Significant further information which consists of Natura Impact Statement (NIS) **Potential for In-combination effects** The Planner's Report dated 11/09/2023 requested that an NIS be carried out to ensure no significant impact arises from the Development, the NIS was later submitted which found no potential for significant effect, alone or in-combination and permission was subsequently granted, as such the potential for in-combination effects to arise are not foreseen.			
2560645	**Kildare County Council**	**Permission**	**Southgreen Rd, Crockanure Glebe, Co. Kildare.**
Development Description For: 1. Retention for change of use and renovation of original equine hospital to small animal hospital including alterations to the original building incorporating extension to side, boarding area for small animals, new reception area, installation of new roof and alterations to elevations including new windows and doors. 2. Retention for construction of detached single storey storeroom to rear of main hospital building.			

Planning Reference	Planning Authority	Status	Location
3. Retention for change of use and refurbishment of original equine stable block to small animal building used ancillary to main hospital/boarding building, and; 4. And all associated and ancillary works **Potential for In-combination effects** Owing to the small scale and short duration of works, the potential for in-combination effects is not foreseen.			
2560453	**Kildare County Council**	**Permission**	**Ard na Pairce Theas, Southgreen, Kildare, Co. Kildare**
Development Description To modify a permitted Large-scale Residential Development (LRD) permission (PA Ref 23416 ABP-318401-23) by way of a planning application for an LRD at Ard na Pairce Theas, Southgreen, Kildare. The development will consist of amendments to the two-storey crèche building granted under ABP-318401-23. The changes involve amendments to the floor plans, including the addition of a second stairs for fire safety purposes, and elevational changes associated with these floor layout amendments. The proposed amendments to the crèche do not affect any other parts or aspects of the permitted LRD. The housing elements of the LRD are currently under construction. **Potential for In-combination effects** The Planner's Report dated 09/06/2025 stated that the screening found that significant effects are not likely to arise, either alone or in combination with other plans or projects to the Natura 2000 network. The potential for in-combination effects is not foreseen.			
2560729	**Kildare County Council**	**Retention (pending FI/decision)**	**Southgreen Rd, Crockanure Glebe, Co. Kildare**
Proposed Development Description for 1. Retention for change of use and renovation of original equine hospital to small animal hospital including alterations to the original building incorporating extension to side, boarding area for small animals, new reception area, installation of new roof and alterations to elevations including new windows and doors 2. Retention for construction of detached single storey store-room to rear of main hospital building 3. Retention for change of use and refurbishment of original equine stable block to small animal building used ancillary to main hospital/boarding building 4. And all associated and ancillary works. **Potential for In-combination Effects** Owing to the small scale and short duration of works, the potential for in-combination effects is not foreseen.			
2561082	**Kildare County Council**	**Incomplete Application**	**Old Road, Southgreen, Kildare, Co. Kildare, R51EV21**
Proposed Development Description The development will consist of subdivision of existing site and six-bedroom dwelling into two separate dwellings, consisting of 1no single storey three-bedroom bungalow to include conversion of garage to a bedroom & 1no two-bedroom 2storey dwelling with internal alterations, and associated site works including removal of existing septic tank and installation of 2no new waste water treatment systems. Both dwellings to be accessed via existing entrance from local road L7016. **Potential for In-combination Effects** Incomplete application – application void.			
2561208	**Kildare County Council**	**Permission**	**Old Road, Southgreen, Kildare, Co. Kildare**
Proposed Development Description subdivision of existing site and six-bedroom dwelling into two separate dwellings, consisting of 1no single storey three-bedroom bungalow to include conversion of garage to a bedroom & 1no two-bedroom 2storey dwelling with internal alterations, and associated site works including removal of existing septic tank and installation of 2no new waste water treatment systems. Both dwellings to be accessed via existing entrance from local road L7016 **Potential for In-combination Effects** Owing to the small scale and short duration of works, the potential for in-combination effects is not foreseen.			

The local policies and plans detailed in the above sections were reviewed and considered for possible in-combination effects with the Proposed Development. Each of these plans has undergone AA, and where potential for likely significant effects has been identified (e.g., in the case of the Kildare County Development Plan), an NIS has been prepared which identifies appropriate mitigation. As such, it is considered that the plans and policies listed will not result in in-combination effects with the Proposed Development. The Kildare County Development

Plan 2023-2029 has directly addressed the protection of European sites and biodiversity through specific objectives. The above listed plans are not being relied upon to rule out potential significant effects on European sites.

As such, it is considered that there is no potential for the Proposed Development to act in-combination with other permitted developments in the vicinity that could cause likely significant effects on any nearby KERs.

6 AVOIDANCE, MITIGATION, COMPENSATION AND ENHANCEMENT MEASURES

6.1 Avoidance By Design

The Proposed Development includes several embedded design features that may act to avoid or mitigate negative impacts that would likely occur in the absence of these features. However, as opposed to typical mitigation measures, the implementation of these features is integral to the design and completion of the Proposed Development, and as such the impact assessments are performed with consideration of these features as integrated parts of the Proposed Development. All considered embedded design features that may act to mitigate negative impacts on local ecology and environment are listed in Table 13.

TABLE 13. EMBEDDED DESING FEATURES AND THEIR POTENTIAL TO ACT TO AVOID OR MITIGATE NEGATIVE IMPACTS ON THE LOCAL ECOLOGY AND ENVIRONMENT.

Embedded Design Feature	Avoidance / Mitigation Potential
Construction Environmental Management Plan (CEMP)	The Proposed Development shall be undertaken according to a construction environmental management plan (CEMP) to reduce and control impacts on biodiversity during the construction phase. The CEMP is written in accordance with best practice guidelines.
SUDS: • Permeable paving at private parking / driveways. • Bio-retention tree pits used in strategic public areas within landscaping and adjacent to hardstanding areas such as the internal roads network. • Swales located adjacent to footpaths or the internal roads network to collect rainfall runoff from same. • Above ground attenuation basins for each sub-catchment to facilitate above ground rainfall storage. • Below ground infiltration systems for each sub-catchment to facilitate infiltration to ground.	The SUDS features included in the Project Design will ensure the surface water discharge from the Proposed Development is reduced to greenfield runoff rates. These features will be implemented as part of the surface water drainage design.
Landscape Design: • Retention and protection of majority of existing hedgerows/trees • Extensive native mixed hedgerow planting • Native buffer and whip planting • Species rich wildflower meadows and biodiverse grasslands • diverse native tree planting • integrated SuDS features • pond-like detention basin to southeast • mixed habitat mosaic (open and closed) • green corridors integrated into circulation routes, maintaining a N-S and E-W connectivity for fauna • pollinator friendly groundcover and shrub planting	These features offset potential impacts on bat and bird species using the Site, and further serve to provide important commuting/foraging, nesting, and food sources for local fauna.

Embedded Design Feature	Avoidance / Mitigation Potential
Lighting Design The following has been extracted from the lighting report (Fallon Design, 2026): • The chosen luminaire Veelight Metro Series has a full cut off lantern type, that offers with a G6 Glare rating and no upward light making it dark sky friendly. • An inbuilt multi step dimming program within this luminaire allows for night time hours to be dimmed by up to 25%. This means during peak hours of nocturnal foraging, feeding and activity the adjacent public lighting can be further designed to minimize impact on the local wildlife. • The colour rendering of the selected light fitting is 2700k making the LED fittings a warmer light, helping to further minimize the impact on the local wildlife. • Greater energy savings will also result using the inbuilt multi-step dimming program during late hours of darkens along the public lighting spaces. • Unnecessary light spill controlled through a combination of directional lighting and luminaire optics design. No floodlighting will be used on the scheme.	• Careful consideration has been given to the design of Public Lighting with regard to the existing natural habitat and the wildlife. • Integration of these features into the lighting design ensures no unnecessary lighting of linear features and that lighting is controlled with dim effects and warmer light suitable for commuting and foraging bat species.

Further details on SuDS features proposed at the Site are provided below:

Permeable surfacing / paving

Permeable paving is proposed for the private parking areas / driveways to manage surface water runoff directly from these hard surfaces and from the residential dwellings roofs to reduce the risk of flooding. Downpipe collector drains can be routed from the roof gutters to connect into the below ground permeable paving driveways as an additional treatment process before discharging to the surface water mainline.

The storage layer of the permeable paving system has a depth of 350 mm and a void ratio of 0.4, meaning 40% of the storage volume consists of void spaces, allowing for effective water retention. This storage layer facilitates the management of stormwater by providing temporary detention, which helps to reduce peak runoff and promote gradual infiltration.

Bio-retention tree pits

Bio-detention tree pits are proposed adjacent to the internal roads network and footpath arrangements in the subject development. This SuDS feature will capture surface water runoff from the adjacent road and/or footpath, filtering and slowing the surface water within the pit before conveying it to the mainline network and attenuation storage area within each sub-catchment. The pits have been located within the public realm. This SUDS feature is designed as 1m in depth, 1m in width & length, and has an associated voids ratio of 0.4.

Swales

A swale is a shallow, vegetated, linear depression designed to convey, store, and treat surface water runoff from adjacent impermeable surfaces such as roads, car parks, and footpaths. In line with KCC's SuDS principles, swales provide an effective means of managing runoff close to source while delivering water quality, quantity, and biodiversity benefits. Swales are typically grass-lined or planted with low-maintenance, native vegetation, allowing for infiltration of surface water into the ground where soil conditions permit, or conveyance to downstream SuDS features such as the proposed detention basins and attenuation areas.

Above Ground Detention/Retention Basins

A detention basin is a normally dry vegetated depression designed to temporarily store surface water runoff during rainfall events and release it at a controlled rate to downstream systems. Unlike infiltration systems, detention basins do not typically allow water to soak into the ground, but instead attenuate flows and provide time for sedimentation and pollutant removal before discharge.

An above ground detention basin is proposed in Catchment A (southern catchment) and Catchment C (northern catchment), located above the proposed infiltration areas. Where feasible, surface water runoff will be conveyed above ground directly into the detention basin. For runoff that enters the subsurface attenuation system, an open-grated manhole will be incorporated at the interface between the detention basin and infiltration area. This will allow exceedance flows during extreme storm events to discharge above ground, providing an additional overflow route from the infiltration system.

The above-ground basin located within Catchment B2 will technically operate as a retention basin rather than a detention basin. During the 1-in-1-year design storm, a small volume of surface water will be stored within the basin, corresponding to an approximate maximum water depth of 87 mm.

Infiltration Areas

An infiltration area is a subsurface or surface feature designed to temporarily store surface water runoff and allow it to infiltrate directly into the underlying ground, thereby reducing runoff volumes, attenuating peak flows, and supporting groundwater recharge. In accordance with Ireland's SuDS guidance, infiltration systems are most effective when located close to the runoff source and are particularly suited to developments with permeable or moderately permeable soils, and where groundwater levels and contamination risks are suitably low.

The final design of the infiltration systems will be informed by and reflect the findings of this investigation. Detailed information including calculations can be found in the Engineering Assessment Report (Waterman Moylan, 2026) which is provided under separate cover for this application.

6.2 Pre-Construction Phase

6.2.1 Mitigation 1: Pre-Clearance Requirements

The CIEEM Advice Note on the Lifespan of Ecological Reports and Surveys (CIEEM, 2019) provides guidance on how long ecological surveys remain valid, acknowledging that ecological conditions can change rapidly. Per this advice note, should 18 months or more lapse between these surveys and the commencement of the Development which would involve the passing of several seasons, where weather events such as storms can alter the roost potential of trees, or where tree age and structure change with significant lapse of time, then further surveys (and updated PBRA, including habitat and roost assessments) by an ecologist will be required to check if baseline conditions at the site have changed, and if further surveys (in the form of transect and/or emergence surveys) or mitigations, are required.

6.2.2 Mitigation 2: Pre-Felling Requirements

In addition to the above, all survey work will be undertaken in accordance with best practice guidance set out by the Bat Conservation Trust (BCT), ensuring compliance with relevant wildlife legislation and informing any required mitigation or licensing measures.

Adopting a precautionary approach; trees will be felled during the start or end of the hibernation period (so either in September/October or February). The felling of trees during this period will ensure that bats are likely to have entered hibernation or will soon be coming out of it and will reduce the likelihood of them either not having enough energy or a food source if they happen to be disturbed and take flight. It is also outside of the breeding bird season and so unlikely to come across active nests. Felling in this period will further reduce the likelihood of bats having transitioned between roosts overnight, should felling not be carried out immediately following the bat survey. Felling must be carried out no later than 24 hours after the bat survey is complete and once the surveyor can confirm no roosting bats are present.

Should the tree felling or hedgerow removal take place outside of this recommended period, then a thorough survey to check for bats and nesting birds shall be undertaken by a qualified ecologist to rule out presence. In the event that a roosting bat be found within trees or hedgerows at the Site, no felling of the tree in question will take place and a derogation licence will be obtained from the NPWS to proceed. The area around the roost will be protected with an appropriate buffer to prevent disturbance of the bat(s).

Should a nesting bird be found at the Site, no felling of the tree in question will take place and the nest will be protected until the young birds have fledged, as confirmed by a suitable qualified ecologist. The area around the nest will be protected with an appropriate buffer to prevent disturbance of the bird(s).

It is important to note that permission for the Proposed Development can be granted without any reliance on the potential grant of a derogation licence, and that any references to the potential need to obtain a licence for bats are purely precautionary, as detailed above, and therefore not integral to the decision on whether to grant permission.

6.3 Construction Phase

6.3.1 Best Practice Measures

Best practice development standards and mitigation measures are also to be implemented during the Construction Phase of the Proposed Development. The measures listed are outlined in more detail in the CEMP (Waterman Moylan, 2026) accompanying this application under separate cover.

All works carried out as part of the Proposed Development will comply with all Statutory Legislation including the Local Government (Water Pollution) acts, 1977 and 1990. Personnel working on the Site will be trained in the implementation of environmental control and emergency procedures. Procedures and relevant documents produced will be formulated in consideration of standard best international practice including but not limited to:

- CIRIA, (2001), Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors.
- CIRIA Environmental Good Practice on Site (C650), 2005.
- BPGCS005, Oil Storage Guidelines.
- UK Pollution Prevention Guidelines (PPG) UK Environment Agency, 2004; Construction Industry Research and Information Association CIRIA C648: Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006).
- CIRIA C648: Control of water pollution from linear construction projects: Site guide (Murnane et al. 2006); and
- Inland Fisheries Ireland (2016). Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters.

In addition, to ensure the CEMP remains ‘fit for purpose’ for the duration of the project it should be reviewed and updated by the Project Manager in consultation with the Contractor’s Ecologist during the life of the project to ensure that it remains suitable to facilitate efficient and effective delivery of the project’s environmental commitments. The Contractor shall also designate a Site Engineer/Manager/Assistant Manager as the Construction Waste Manager and who will have overall responsibility for the implementation of the Project Waste Management Plan (WMP). This Plan will be prepared upon appointment of the Main Contractor.

Additional mitigation measures required for sufficient protection of the KERs identified in this report, and/or details for the specific implementation of the mitigation measures as per the above table are given in the below sections.

6.3.2 Protection of Habitats

6.3.2.1 Mitigation 3: Ecological Clerk of Works

An Ecological Clerk of Works (ECoW) will be appointed prior to commencement to oversee the implementation of the ecological mitigation measures and conduct monitoring where required during the Construction Phase of the Proposed Development.

6.3.2.2 Mitigation 4: Dust Suppression and Prevention Measures

The following general dust control measures will be followed for the duration of the Construction of the Site and will ensure no significant dust related effects occur to nearby sensitive receptors.

- Haulage vehicles transporting gravel and other similar materials to Site will be covered by a tarpaulin or similar.
- Access and exit of vehicles will be restricted to certain access/exit points.
- Vehicle speed restrictions of 20km/hr will be in place.
- Bowsers will be available during periods of dry weather throughout the Construction period.
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil thereby reducing the amount of dust.
- Stockpiles will be stored in sheltered areas of the Site, covered, and watered regularly or as needed if exposed during dry weather.
- Gravel should be used at Site exit points to remove caked-on dirt from tyre tracks.
- Hard surfaced roads will be wet swept to remove any deposited materials.
- Unsurfaced roads will be restricted to essential traffic only.
- If required to control dust nuisance wheel-washing facilities will be located at the exit from the construction area.
- Dust production as a result of Site activity will be minimised by regular cleaning of the access roads using vacuum road sweepers and washers. Access roads should be cleaned at least 0.5km on either side of the approach roads to the access points.
- Public roads outside the Site shall be regularly inspected for cleanliness, as a minimum daily, and cleaned as necessary. A road sweeper will be made available to ensure that public roads are kept free of debris.
- The frequency of cleaning will be determined by the Site agent and is weather and activity dependent.
- The height of any required stockpiles will be kept to a minimum and slopes should be gentle to avoid windblown soil dust.
- The following will be dampened during dry weather:
    - Unpaved areas subject to traffic and wind.
    - Stockpiles.
    - Areas where there will be loading and unloading of dust-generating materials.
- Under no circumstances will wastewater from equipment, wheel or surface cleaning enter the local drainage network.

6.3.2.3 Mitigation 5: Root Protection Zones

Protective tree fencing in compliance with BS 5837:2012 ‘Trees in relation to design, demolition and construction – Recommendations’ will be erected prior to any Construction works being undertaken to prevent damage to the canopy and root protection areas of existing trees to be retained at the Site.

The fencing will be signed off by a qualified arborist prior to construction to ensure it has been properly erected. No ground clearance, earthworks, stock-piling or machinery movement will be undertaken within these areas.

The project Arborist will be instructed **prior to commencement on Site**; to ensure that appropriate tree protection measures are in place. These measures will entail robust fencing around the root protection zones of all trees and hedgerows being retained on Site. An adequate level of signage will also be provided to highlight ‘no work zones’ and ensure that Site creep and damage to retained habitats does not occur. The northern and southern boundary hedgerows must be sufficiently protected for the duration of the Construction Phase to maximise their ecological value in the final landscape plan.

The project Arborist, the project Ecologist and the Site Manager will work together to ensure these sections of hedgerow/treeline are protected for the duration of the works.

6.3.2.4 Mitigation 6: Biosecurity

The following best practice Site hygiene and biosecurity measures will be in place as a precautionary measure to avoid the potential introduction of new invasive floral species at the Site and / or transfer offsite via movement of materials/staff:

- All soils/materials being introduced to the Site will be sourced from a certified invasive flora-free source site, to ensure no introduction of invasive plant materials to the Site occurs.

- Personnel working on or between sites will ensure their clothing and footwear are cleaned, ensuring they are visually free from soil and organic debris, in order to prevent inadvertent spread of invasive plant material.
- All vehicles entering or leaving the Site will have been suitably checked and pressure-washed to ensure no introduction of invasive flora to and from the Site. Measures such as a drive through hygiene bath or footbaths will be considered where appropriate.
- Designated wash-down area to be located away from sensitive receptors such as watercourses, ditches, drains etc.
- Material/water left after vehicles have been pressure-washed must be contained, collected and disposed of appropriately (these waters must not under any circumstances be discharged to drains or nearby ditches).

6.3.2.5 Mitigation 7: Timing of Vegetation Clearance

Any vegetation clearance at the Site will need to be cognisant of any potentially present fauna, and as such this mitigation is included as precautionary guidance, even though hedgerows are to be retained. Table 14 below provides guidance for when vegetation clearance is permissible in relation to hibernating and breeding fauna. Information sources include British Hedgehog Preservation Society's *Hedgehogs and Development* and *The Wildlife (Amendment) Act, 2000* and the Herpetofauna Groups of Britain and Ireland (1998).

Vegetation removal will not occur within the period of March-August inclusive, and the hedgerow sections marked for removal will be conducted outside of this period. The preferred period for vegetation clearance is within the months of September and October to avoid the main breeding bird season, as well as mammal hibernation and common lizard hibernation (See Table 14); vegetation clearance at the Site should be supervised by an ecologist. During any works at the Site, should a breeding bird and/or an active nest be found, the nest will be protected through the demarcation of a 5m buffer zone (or appropriate area) around the nest, and no further works will take place in the vicinity of the nest until the young have fledged. Where continuance of works is critical during the nesting season, an ecologist will be instructed to survey the vegetation in question and make recommendations on how best to proceed. The area containing the nest would need to be protected with a suitable buffer to minimise disturbance until the ecologist has confirmed the young have fledged.

TABLE 14. SEASONAL RESTRICTIONS ON VEGETATION REMOVAL. RED BOXES INDICATE WHEN CLEARANCE / WORKS ARE NOT ADVISED.

Ecological Feature	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Breeding Birds	Vegetation clearance permissible		**Nesting bird season** **No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of nesting birds by an ecologist.**						Vegetation clearance permissible			
Small terrestrial mammals (Hedgehog)	**Mammal hibernation season** **No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist.**				Vegetation clearance permissible						**Mammal hibernation season** **No clearance of vegetation or works to relevant structures permitted unless confirmed to be devoid of hibernating mammals by an ecologist.**	
Common Lizard	**Lizard Hibernation Season** **No habitat clearance permissible**				Active period Habitat (scrub, tall sward grass) clearance permissible						**Lizard Hibernation Season**	

			No habitat clearance permissible

Additionally, all vegetation clearance will be carried out in sections working in a consistent direction to prevent entrapment of protected fauna potentially present (e.g., hedgehog). A phased cutting approach under the supervision of a suitably qualified ECoW will be used to allow wildlife (e.g. small mammals, reptiles) to move away from any suitable habitat that will be removed:

- Phase 1 – Cutting vegetation to 150-200 mm and removing the arisings;
- Phase 2 – After a minimum of one hour, hand-searching the cut areas (conducted by an ECoW) and removing any sheltering habitat (e.g. logs or debris) then cutting vegetation to ground level and removing the arisings; and
- Phase 3 – Soil scrape.

Should any suitable refugia or day nesting habitats need to be removed, this will be carried out outside the most vulnerable breeding periods for hedgehogs wherever practicable (main hedgehog birthing months June and July) and outside of the main bird breeding season (March to August inclusive) (See Table 14) and will be supervised by the ECoW.

6.3.2.6 Mitigation 8: Waste Management

As best-practice all construction-related rubbish on Site e.g., plastic sheeting, netting etc. will be kept in a designated area and kept off ground level so as to prevent small mammals such as hedgehogs from entrapment and death.

Trenches/pits must be either covered at the end of each working day or include a means of escape for any animal falling in e.g., a plank or objects placed in the corner of an excavation (Species such as badgers will continue to use established paths across a site even when construction work has started).

Any temporarily exposed open pipe system will be capped in such a way as to prevent animals gaining access as may happen when contractors are off Site.

6.3.2.7 Mitigation 9: Construction Phase Lighting

To minimise ecological disturbance during the Construction Phase, lighting will be managed with a strong emphasis on environmental sensitivity. Where possible, all construction lighting will be switched off during non-working hours to reduce unnecessary illumination of the surrounding environment.

When lighting is required, directional lighting will be the preferred method. This approach significantly reduces light spill beyond the immediate work area, thereby limiting potential disruption to nearby habitats. This is particularly important for nocturnal mammals, bats, and other light sensitive species that may be using the site or adjacent areas for commuting, foraging, or other essential behaviours. These species are often highly sensitive to artificial lighting, which can interfere with their natural activity patterns and ecological functions.

To further mitigate impacts, it is recommended that LED luminaires with a warm white spectrum (2700K–3000K) be utilised. This spectrum reduces the blue light component, which is known to be more disruptive to wildlife. LED lighting is also advantageous due to its sharp cut-off angles, lower intensity, and dimming capabilities, all of which contribute to minimising light pollution and ecological disturbance.

These measures are intended to support the protection and conservation of local biodiversity, ensuring that construction activities are carried out in a manner that is both responsible and environmentally conscious.

6.3.2.8 Mitigation 10: Noise and Visual Stimuli

Bird species are sensitive to disturbance from increased noise as a result of the Construction Phase of the Proposed Development.

Mitigation to reduce the effects of noise during the Construction Phase (including human presence, plant, machinery and vehicles) is required to avoid significant adverse effects on the birds and other noise sensitive species (such as badger) which may be present on the Site, as follows:

- High noise disturbance works (such as demolition and heavy drilling) should be undertaken outside of the breeding bird season (March – August).
- Minimise working time outside of the designated area within the Proposed Development Site.
- Selection of plant machinery with low inherent potential for generating noise.
- Siting of plant as far away from sensitive receptors as permitted by Site constraints.

- Avoidance of unnecessary revving of engines and switch off plant items when not required.
- Keep plant machinery and vehicles adequately maintained and serviced.
- Proper balancing of plant items with rotating parts.
- Keep internal routes well maintained and avoid steep gradients.
- Minimise drop heights for materials or ensure a resilient material underlies.

6.4 Operational Phase

6.4.1 Protection of Fauna

6.4.1.1 Mitigation 11: Bat-friendly Lighting

Artificial lighting within the Proposed Development will be designed and installed to minimise the effect on local wildlife and in accordance with the Bat Conservation Trust guidelines on artificial lighting and bats (ILP, 2023):

- There will be no light spill to the boundary habitats.
- All luminaires used will lack UV/IR elements to reduce effect.
- LED luminaires will be used because they are highly directional, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum).
- Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.
- Only luminaires with an upward light ratio of 0% and with good optical control will be used.
- Luminaires will be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting will be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres will be used to reduce light spill and direct it only to where it is needed.

6.4.1.2 Mitigation 12: Bird-friendly Lighting

Artificial lighting at the Site should be designed so as to minimise any potential for significant effects on SCI birds in flight, or nesting on Site, throughout the Operational lifetime of the Site. Consideration should be given to the following common issues that arise as a result of light pollution: glare, light trespass, over-illumination and sky glow (Crymble, n/d). The following measures will ensure the protection of seabirds and other birds in flight throughout the lifetime of the Operational Phase of the Proposed Development:

- LED luminaires possessing a warm white spectrum (<2700k) will be used so as to reduce the blue light component. LED lights are also ideal due to their sharp cut-off, lower intensity, and dimming capabilities.
- External lighting will be set on motion-sensors and short (1min) timers.
- Balcony lighting should be switched off as default, with the option to turn lights on given to the room's occupants using a timer switch.
- Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.
- Fixtures should be downward facing with limited light spill. As a last resort, accessories such as baffles, hoods or louvres will be used to reduce light spill and direct it only to where it is needed.
- There will be **no light spill onto boundary habitats** (treelines, hedgerows).

6.4.2 Biodiversity Enhancement By Design

The Landscape Plan incorporates native planting throughout the open green spaces of the Proposed Development. This will take the form of trees, hedgerow, shrubs, grasses and wildflower meadow.

The proposed landscape plan establishes a rich network of interconnected green infrastructure that significantly enhances biodiversity across the Proposed Development. Retained boundary hedgerows, particularly along Old Road and the eastern and northeastern edges, combined with mixed native hedgerow planting and buffer zones, create continuous linear corridors that support commuting and foraging bats, birds, and mammals, by maintaining sheltered flight routes and dark, vegetated edges. These linear features maintain a N-S and E-W connectivity for

fauna and are further complemented by diverse planting zones, including species-rich wildflower meadows, native whip planting, and pollinator-friendly shrub and bulb mixes, providing abundant invertebrate prey for local fauna, including bats, and essential nectar sources for pollinators.

The open spaces incorporate a mosaic of closed and open habitats, from gently contoured grasslands to tree clusters and specimen trees offering structural variety, which benefits edge-foraging bat species while also supplying roosting, nesting, and feeding opportunities for birds. The landscape plan further includes a pond/detention basin in the southeast, functioning as a seasonal wetland that supports aquatic invertebrates, attracts foraging bats, and provides vital drinking and feeding resources for birds and small mammals. Extensive native planting, such as hazel, rowan, hawthorn, holly, and viburnum, produces berries, nuts, and dense cover, enhancing habitat quality for mammals (e.g., hedgehog, shrew) and birds that rely on scrub and hedgerow shelter.

Collectively, the mixture of tree avenues, native hedgerows, wildflower grasslands, buffer planting, varied canopy heights, and linked open spaces creates a multifunctional and ecologically resilient landscape that supports movement, foraging, and nesting opportunities for a wide range of fauna while integrating seamlessly with the SuDS network for added habitat diversity.

The planting schedule can be found in full in the Landscape Report, along with specifications for plant material, the requirements of the Landscape Contractor and proposals for monitoring establishment of green spaces. The landscaping will offset habitat loss at the Site to an extent, producing an imperceptible net effect on habitats.

6.4.2.1 Enhancement 1: Native Hedgerow, wildflower meadow, and Tree Planting

The proposed planting scheme places a strong emphasis on the use of native hedgerows and trees, which are essential for enhancing local biodiversity, improving ecological connectivity, and contributing to the overall environmental resilience of the Site.

Native Hedgerows

The integration of native hedgerows, established using multi-purpose topsoil and bark mulch, will create valuable linear habitats that support a wide range of wildlife. These include nesting birds, small mammals, and pollinating insects such as bees and butterflies. Hedgerows act as ecological corridors, enabling species to move safely across the landscape, which is particularly important in fragmented urban or semi-urban environments.
Native hedgerows also provide natural screening, offering visual privacy and reducing noise pollution from surrounding areas. Their seasonal variation adds aesthetic value and supports year-round ecological functions, including food provision (berries, seeds, nectar) and shelter.

Wildflower Meadows

The Landscape Plan includes the introduction of wildflower meadows across the Site. All wildflower seeds will be Irish Provenance Certified Seed, from a reputable source such as Design by Nature (Wildflowers.ie). To maximise the biodiversity value of the landscaping at the Site, consideration has been made to the All-Ireland Pollinator Plan planting code (NBDC, 2022).

Native Tree Planting

The tree planting strategy includes a mix of clear-stemmed and multi-stemmed semi-mature native trees, carefully selected for their adaptability to local soil and climatic conditions. Key species include:

- Downy Birch: A pioneer species that enhances soil quality and provides habitat for insects and birds.
- Sessile Oak: A keystone species in Irish woodlands, supporting hundreds of insect species and providing acorns for birds and mammals.
- Hawthorn: A dense, thorny shrub ideal for nesting birds, with spring blossoms for pollinators and autumn berries for wildlife.

These trees can contribute significantly to urban greening, offering benefits such as carbon sequestration, urban cooling, and stormwater management. Their presence also helps to visually soften the built environment, creating a more natural and welcoming landscape for both people and wildlife.

In addition to their ecological value, the selected species will enhance the Site's resilience to climate change, improve air quality, and support the long-term sustainability of the Development. The planting design also ensures that these features are integrated into the wider green infrastructure network, maintaining connectivity with adjacent habitats and contributing to a cohesive ecological framework across the wider landscape.

6.4.2.2 Enhancement 2: Hedgerow Management

The planted hedgerows at the Site and any retained hedgerows will be managed using a low-intervention approach i.e., in a way that maximises the ecological value they provide, with habitat connectivity maintained along the western, northern and eastern margins of the site; connecting it with the wider area.

This connectivity is vital for wildlife such as birds, bats, mammals and insect pollinators in a human landscape such as that which will be provided by the Proposed Development. Additionally, by managing hedgerows and woodland in a more natural way, they will provide more in terms of biodiversity; through increased plant diversity, increased provision of food resources and higher quality shelter to wildlife inhabiting and commuting through the area.

A low-intervention management approach may not be appropriate for internal ornamental hedgerows planted within the main residential area of the Proposed Development, due to aesthetics or logistics, however, it is suited to the remaining native hedgerows within the Site.

The following measures will be adopted by the Management Company tasked with maintaining the Site's landscaping into the future:

- The hedgerow areas located along the outer boundaries of the Site will, as much as is practicable, be allowed to link up with each other. The provision of an almost continuous vegetative margin around the Site; through planted native hedgerows and trees, will maintain habitat connectivity with the surrounding environment.
- Hedgerows will be maintained with a minimum natural meadow strip of 1-2m at their base wherever possible. Hedges with plenty of naturally occurring flowers and grasses at the base support will provide higher quality habitat for local wildlife using the hedges.
- The 1-2m strip at the base of the hedgerow will be cut on a reduced mowing regime to encourage wildflower growth and maximise the value of the hedgerow for pollinators. A two-cut management approach is ideal for suppressing coarse grasses and encouraging wildflowers. Cut the hedgerow basal strip once during February and March (this is before most verge plants flower and it will not disturb ground-nesting birds). Cut the verge once again during September and October (this slightly later cutting date allows plants that were cut earlier in the year time to grow and set seed).

N.B. Raising the cutter bar on the back cut will lower the risk to small mammals.

- Where hedgerow, scrub or woodland understorey trimming needs to occur, delay trimming as late as possible – until January and February as the surviving berry crop will provide valuable food for wildlife. The earlier this is cut; the less food will be available to help birds and other wildlife survive through the winter. Any hedgerow/scrub/woodland trimming will be done outside of the nesting season and due consideration of the Wildlife Act 1976 (as amended) must be taken.
- Where possible, cut these outer boundary hedgerows on a minimum **3-year cycle** (cutting annually stops the hedgerow flowering and fruiting), and cut in rotation rather than all at once - this will ensure some areas of hedgerow will always flower (blackthorn in March, hawthorn in May etc.).
- Where they occur naturally, bramble and ivy should be allowed to grow in hedgerows as they provide key nectar and pollen sources in summer and autumn.

<u>Hedgerow Management Methods to Avoid</u>

Hedgerows and woodland understorey will not be over-managed. Tightly cut hedges and vegetation mean there are fewer flowers and berries, thus reducing available habitats, feeding sources and suitable nesting sites.
Hedgerows will not be cut between March 1st and August 31st inclusive. It is both prohibited (except under certain exemptions) and very damaging for birds as this is the period they will have vulnerable nests containing eggs and young birds.
DO NOT use pesticide/ herbicide sprays or fertilisers at all as they can have an extremely negative effect on the variety of plants and animals they support.

6.4.2.3 Enhancement 3: Habitat Management Plan

The development of a habitat management plan for the Site is recommended to ensure longevity and proper maintenance of the proposed enhancement features for the Site. This plan should include, but not be limited to the following:

- Native Planting Maintenance: Regular care of native hedgerows, trees, wildflower meadows, and green roofs to ensure healthy growth and prevent invasive species.

- Seasonal Pruning: Conduct pruning outside of bird nesting season (March–August) and use less intensive measures where possible (e.g., hand tools) to avoid disturbance.

- Deadwood Retention: Leave some deadwood in situ (where safe) to support invertebrates and fungi as trees/hedgerows are pruned.
- Regular Maintenance of SuDS Features: Ensure swales, rain gardens, and attenuation ponds are functioning properly and not overgrown or polluted.
- Biodiversity-Friendly Design: Maintain vegetation around SuDS to attract and support amphibians, insects, and birds.

6.4.2.4 Enhancement 4: Hedgehog Highways

By fencing the boundaries of a Site, the land becomes fragmented and largely inaccessible to species such as hedgehog, which like to roam each night in search of food (garden pests e.g., slugs). This can easily be fixed by ensuring that the boundaries and barriers within and surrounding the Site are permeable for hedgehogs. This will allow hedgehogs to move freely between the Site and adjacent sites.
This can be achieved by:

- Providing 13 x 13 cm holes at ground level at various locations along the external mesh fencing (Hedgehog holes).
- Leaving a sufficient gap beneath gates.
- Leaving brick spaces at the base of brick walls.

Examples of hedgehog 'highways' are provided below in Figure 14.



FIGURE 14. EXAMPLES OF HEDGEHOG HIGHWAYS THAT COULD BE INCORPORATED INTO THE PROPOSED DEVELOPMENT.

The inclusion of hedgehog highways will be considered as part of the landscape design of the Site, specifically the external mesh fencing proposed. A variety of fence suppliers stock specific hedgehog-friendly fencing options, which can be easily incorporated at little or no additional cost. The 13 x 13cm holes can also be cut into mesh fencing on Site quite easily. These simple measures will provide habitat connectivity at the Site for hedgehogs and reduce the effect of the land-use change on this species.

6.4.2.5 Enhancement 5: Bird Boxes

Four bird boxes will be installed as part of the Development within suitable trees on Site. The boxes will be durable. The bird box will be firm and secure to its support, and only paced on trees that are robust and large enough to support bird boxes. There are various standard bird box options, and two of each of the following box types will be installed:

- 'Hole type' bird boxes (28 mm hole) for house sparrows:
  - For example, the Eco Small Bird Box, which can be found at the following link: https://www.nhbs.com/eco-small-bird-box
- Open fronted bird boxes for blackbirds and starlings:
  - For example, the Blackbird FSC Nest Box, which can be found at the following link: https://www.nhbs.com/blackbird-fsc-nest-box
- Open fronted bird boxes for wrens and robins:
  - For example, the Eco Robin (Open-Fronted) Nest Box, which can be found at the following link: https://www.nhbs.com/eco-robin-open-fronted-nest-box

Hole type bird boxes should be positioned 2-4m off the ground, with good-visibility, a clear flight line, and away from the prevailing wind direction. The open-fronted boxes for Robins, Wrens and Blackbirds should be installed lower than 2m but amongst dense vegetation, or newly planted vegetation that will grow to become dense upon establishment, and somewhere cats and other predators won't easily see or access them. Boxes will not be drilled or nailed to trees to avoid damage, but instead be attached via a wire strap wrapped around the tree.

6.4.2.6 Enhancement 6: Bat Boxes

A minimum of four summer bat boxes (e.g., Woodcrete 1FF Schwegler design) will be erected on suitably sized trees along boundary habitats of the Site, the placement of which will be determined by a bat ecologist. The boxes will be installed as part of the landscaping works, so as to not delay their deployment and potential positive effects. Bat boxes will be sited carefully, and this will be undertaken by a bat specialist. The bat ecologist will erect the bat boxes with assistance from the contractor. Some general points that will be followed include:

- Bat boxes will be erected on trees (or telegraph poles) with no crowding branches or other obstructions for at least 1 metre above and below the bat box.
- Diameter of tree should be wide and strong enough to hold the required number of boxes.
- Locate bat boxes in areas where bats are known to forage or adjacent to suitable foraging areas. Locations will be sheltered from prevailing winds.
- Bat boxes will be erected at a height of 4-5 metres to reduce the potential for vandalism and predation of roosting bats.
- The recommended Woodcrete 1FF design is open at the bottom, allowing the droppings to fall out, and so does not need cleaning.

6.5 Monitoring

6.5.1 Operational Phase Monitoring

6.5.1.1 Measure 1: Post-Construction Lighting Assessment by a Bat Ecologist

Following the completion of the Development, a post-construction lighting assessment will be undertaken by a suitably qualified bat ecologist. This assessment is a critical component of the Site's biodiversity mitigation strategy, ensuring that the installed night-time lighting does not adversely affect local nocturnal species, including local bat populations, particularly in areas that may be important for commuting and foraging activities.

The bat ecologist will conduct a site-wide evaluation of all lighting, including streetlights, building-mounted luminaires, bollard lighting, and any landscape or architectural lighting features. The assessment will be carried out during the active bat season (typically between April and October) and under suitable weather conditions to ensure accurate observations of bat activity in relation to lighting.
Key elements of the assessment will include:

- Measurement of light levels (lux) at ground level and at canopy height in key sensitive areas, particularly along linear features, and treeline/hedgerow edges.
- Identification of light spill or glare into sensitive habitats.
- Behavioural observations of bat activity in relation to illuminated areas, using bat detectors and visual surveys, where required, to assess whether lighting is deterring or displacing bat movement.
- Comparison with pre-construction ecological data, including this report, to determine whether lighting has altered bat usage patterns across the Site in any way (positive or negative).

Based on the findings, the ecologist will provide recommendations for remedial action, if necessary. These may include:

- Retrofitting or re-aiming luminaires to reduce light spill into sensitive areas.
- Installing shields, baffles, or louvres on existing lights to direct illumination away from sensitive habitats.
- Adjusting lighting schedules to reduce illumination during peak nocturnal species activity hours (typically dusk to dawn).
- Replacing high-intensity or cool-spectrum lights with warm-white LEDs (≤2700K) to minimise ecological disruption.

The implementation of these recommendations will ensure that the Development remains compliant with wildlife protection legislation and continues to support the long-term conservation of local nocturnal species, including migratory bird and local bat populations.

In addition, a follow-up report documenting the assessment findings and any corrective actions taken will be submitted to the relevant planning authority or ecological oversight body as part of the site's post-construction compliance obligations.

6.5.1.2 Measure 2: Post-Construction Bird Box Assessment by an Ecologist

Bird box placement and installation will be undertaken and overseen by an ecologist to ensure they are carried out per specifications. Bird boxes will be monitored by the existing maintenance team and any defects or faults reported to an ecologist who can supervise the installation of new boxes during the appropriate season (before February). The bird boxes will require emptying from October onwards, which will help prevent the spread of any parasites or disease between nesting birds and encourage birds to nest in the future breeding season. This task will be done once annually by the existing maintenance team.

6.5.1.3 Measure 3: Post-Construction Bat Box Assessment by an Ecologist

As with the bird boxes, bat box placement and installation will be undertaken and overseen by an ecologist to ensure they are carried out per specifications

Bat boxes installed on development sites should be subject to regular monitoring and maintenance to ensure their continued suitability and to promote long-term use by bats. As such, annual inspections are recommended, ideally to be carried out during autumn or winter when bats are less likely to be present, to check for structural integrity, signs of damage, and secure mounting. While bat boxes typically do not require cleaning, any accumulation of droppings or debris that could obstruct entry or reduce internal space should be carefully inspected and removed. Inspections should also include checks for pest activity, such as wasp or bird nests, which may deter bat use. Vegetation around the box should be managed to maintain clear flight paths (entry/egress), and artificial lighting in the vicinity should be avoided to preserve a dark environment conducive to bat activity. Lighting will be monitored per Measure 1 above.

6.5.2 Monitoring Summary

Table 15 below provides a summary of the required monitoring and pre-works inspections during the Construction Phase, as well as any surveys that should be completed during the Operational Phase. The monitoring, inspections and surveys will ensure that the identified mitigation measures are implemented and maintained efficiently and have the desired effect of protecting the local ecology from adverse effects.

TABLE 15. SUMMARY OF MITIGATION MEASURES AND THE RESPONSIBLE PERSON FOR MONITORING DURING THE CONSTRUCTION AND OPERATIONAL PHASES (THOSE REQUIRING ECOLOGICAL INPUT ARE HIGHLIGHTED IN AMBER).

Measure	Monitoring
PRE-CONSTRUCTION PHASE	
Mitigation 1: Pre-Clearance Requirements	**Should further surveys be required, they are to be undertaken by qualified ecologist.**
Mitigation 2: Pre-Tree Felling Requirements	**To be undertaken by qualified ecologist.**
CONSTRUCTION PHASE	
Mitigation 3: Ecological Clerk of Works	**To be undertaken by qualified ecologist.**
Mitigation 4: Dust Suppression and Prevention Measures	Ongoing monitoring by Contractor, if required
Mitigation 5: Root Protection Zones	Demarcated by Arborist. Ongoing monitoring by Contractor.
Mitigation 6: Biosecurity	Ongoing monitoring by Contractor
Mitigation 7: Timing of Vegetation Removal	**Any Site vegetation clearance within scrub, hedgerows, treeline or grassland habitats subject to supervision by an Ecologist and a phased approach.**
Mitigation 8: Waste Management	Ongoing monitoring by Contractor
Mitigation 9: Construction Phase Lighting	Ongoing monitoring by Contractor.
Mitigation 10: Noise & Visual Stimuli	Ongoing monitoring by Contractor.
OPERATION PHASE	
Mitigation 11 and 12: Operation Phase Lighting	**Post-construction monitoring by qualified ecologist**
ENHANCEMENT MEASURES	
Enhancement 1: Native Hedgerow and Tree Planting	Installation by certified Landscape Architect. Ongoing monitoring by Contractor.
Enhancement 2: Hedgerow Management	Ongoing by contractor/management company
Enhancement 3: Habitat Management Plan	Ongoing by contractor/management company
Enhancement 4: Reptile Hibernacula	The placement and construction of these structures should be carried out under supervision of an Ecologist to ensure they are fit for purpose.
Enhancement 5: Hedgehog Highways	No monitoring required.
Enhancement 6: Bird Boxes	The placement of swift boxes and setup of swift-calling system should be carried out under supervision of an Ecologist to ensure they are fit for purpose.
Enhancement 7: Bat Boxes	The placement of bat boxes should be carried out under supervision of an Ecologist to ensure they are fit for purpose.
OPERATIONAL PHASE MONITORING	
Measure 1: Post Construction Lighting Assessment	**To be undertaken by qualified ecologist.**
Measure 2: Post Construction Bat Box Assessment	**To be undertaken by qualified ecologist.**

Measure	Monitoring
Measure 3: Post Construction Bat Vox Assessment	**To be undertaken by qualified ecologist.**

7 RESIDUAL IMPACTS

Residual impacts are impacts that remain once mitigation has been implemented or impacts that cannot be mitigated. Table 16 below provides a summary of the impact assessment for the identified KERs and details the nature of the impacts identified, the mitigation measures proposed, and the classification of any residual impacts. Both standard Construction Phase control measures, and specific mitigation measures, have been outlined to ensure that the Proposed Development does not impact on any species, habitats or designated sites of conservation importance. It is essential that these measures are complied with, in order to ensure that the Proposed Development complies with National conservation legislation.

Provided all recommended measures are implemented in full and remain effective throughout the lifetime of the Proposed Development, no significant negative residual impacts on the local ecology, or on any designated nature conservation sites, will occur as a result of the Proposed Development.

TABLE 16. SUMMARY OF POTENTIAL IMPACTS ON KER(S), MITIGATION PROPOSED AND RESIDUAL IMPACTS.

Key Ecological Resource	Evaluation	Potential Effect	Effect Without Mitigation				Proposed Mitigation / Mitigating Factors	Proposed Enhancements	Residual Impact
			Quality	Magnitude / Extent	Duration	Significance			
DESIGNATED SITES									
No effects to any nationally designated sites will occur as a result of the Proposed Development and therefore no mitigation measures are recommended. Mitigation measures for the protection of European sites are included within the Natura Impact Statement and CEMP reports, accompanying this submission under a separate cover.									
HABITATS									
Treelines (WL2) / Hedgerow (WL1)	Local Importance (Higher Value)	**Construction Phase:** Removal of treelines Risk of damage to roots and overground growth. **Operational Phase:** Habitat retention & supplementary planting	*Negative* *Negative* *Positive*	*Local* *Local* *Local*	*Permanent* *Short-term* *Permanent*	*Slight* *Moderate* *Slight*	Best practice guidance as per **CEMP** **Mitigation 4:** Dust Suppression Measures **Mitigation 5:** Root Protection Zones	**Landscape Plan** (planting plan) **Enhancement 2:** Hedgerow Management **Enhancement 3**: Habitat Management Plan	**Imperceptible**
Scattered Trees & Parkland (WD5)	Local Importance (Higher Value)	**Construction Phase:** Removal of trees . **Operational Phase:** Habitat retention & supplementary planting	*Negative* *Positive*	*Local* *Local*	*Permanent* *Permanent*	*Slight* *Slight*	Best practice guidance as per **CEMP** **Mitigation 4:** Dust Suppression Measures **Mitigation 5:** Root Protection Zones	**Landscape Plan** (planting plan) **Enhancement 3**: Habitat Management Plan	**Imperceptible**

Key Ecological Resource	Evaluation	Potential Effect	Effect Without Mitigation				Proposed Mitigation / Mitigating Factors	Proposed Enhancements	Residual Impact
			Quality	Magnitude / Extent	Duration	Significance			
Scrub (WS1)	Local Importance (Higher Value)	**Construction Phase:** Removal of scrub . **Operational Phase:** Habitat retention & supplementary planting	*Negative* *Positive*	*Local* *Local*	*Permanent* *Permanent*	*Slight* *Slight*	Best practice guidance as per **CEMP**	**Landscape Plan** (planting plan) **Enhancement 3**: Habitat Management Plan	**Imperceptible**
FAUNA									
Bat Assemblage	Local Importance (Higher Value)	**Construction Phase:** Habitat loss Light-related disturbance Mortality/injury during vegetation clearance **Operational Phase:** Light-related disturbance Habitat retention & supplementary planting	*Negative* *Negative* *Negative* *Negative* *Positive*	*Local* *Local* *Local* *Local* *Local*	*Permanent* *Short-term* *Short-term* *Permanent* *Permanent*	*Moderate* *Moderate* *Significant* *Moderate* *Slight*	**Mitigation 7:** Timing of Vegetation Removal **Mitigation 11:** Construction Phase Lighting **Mitigation 12:** Operational Phase Lighting	**Landscape Plan** (Supplementary planting of hedgerow and tree habitats) **Enhancement 6:** Bat Boxes	**Imperceptible**
Breeding Bird Assemblage	Local Importance (Higher Value)	**Construction Phase:** Habitat loss Risk of injury during vegetation clearance or works to facilitate development, including removal of Herring Gull	*Negative* *Negative* *Negative*	*Local* *Local* *Local*	*Permanent* *Permanent* *Temporary*	*Slight* *Significant* *Moderate*	**Mitigation 7:** Timing of Vegetation Removal **Mitigation 8:** Waste Management	**Landscape Plan** (replacement hedgerow and treeline planting)	**Negative, Local, Short-term, Slight** *(Imperceptible long-term)*

Key Ecological Resource	Evaluation	Potential Effect	Effect Without Mitigation				Proposed Mitigation / Mitigating Factors	Proposed Enhancements	Residual Impact
			Quality	Magnitude / Extent	Duration	Significance			
		nesting habitat (including nest abandonment by breeding Herring Gull on Site) Disturbance from noise, dust and/or lighting. **<u>Operational Phase:</u>** Habitat retention & supplementary planting	*Positive*	*Local*	*Temporary*	*Slight*	Best practice guidance as per **CEMP**	**Enhancement 5:** Bird Boxes	
Mammals (Badger, Hedgehog, Pygmy Shrew)	Local Importance (Higher value)	**<u>Construction Phase:</u>** Risk of injury or death during vegetation clearance. Risk of injury or death via entrapment in construction-related rubbish. Disturbance from noise, dust and/or lighting. **<u>Operational Phase:</u>** Habitat retention & supplementary planting	*Negative* *Negative* *Negative* *Positive* *Negative*	*Local* *Local* *Local* *Local* *Local*	*Short-term* *Short-term* *Short-term* *Permanent* *Permanent*	*Significant* *Moderate* *Slight* *Slight* *Slight*	**Mitigation 7:** Timing of Vegetation Removal **Mitigation 8:** Waste Management Best practice guidance as per **CEMP**	Landscape Plan **Enhancement 4:** Hedgehog Highways	**Imperceptible**

Key Ecological Resource	Evaluation	Potential Effect	Effect Without Mitigation				Proposed Mitigation / Mitigating Factors	Proposed Enhancements	Residual Impact
			Quality	Magnitude / Extent	Duration	Significance			
		Increased human presence leading to increased disturbance.							

8 CONCLUSION

It is considered that, provided the mitigation measures proposed within this report together with mitigations provided in the final EcIA report following completion of all surveys at the Site, and together with all best practice development standards as outlined in the CEMP are carried out in full, there will be no significant negative impact to any KER habitat, species group or biodiversity as a result of the Proposed Development.

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10 APPENDICES

10.1 Legislation and Policy

International Legislation

EU Birds Directive

The Birds Directive constitutes a level of general protection for all wild birds throughout the European Union. Annex I of the Birds Directive includes a total of 194 bird species that are considered rare, vulnerable to habitat changes or in danger of extinction within the European Union. Article 4 establishes that there should be a sustainable management of hunting of listed species, and that any large scale non-selective killing of birds must be outlawed. The Directive requires the designation of Special Protection Areas (SPAs) for: listed and rare species, regularly occurring migratory species and for wetlands which attract large numbers of birds. There are 25 Annex I species that regularly occur in Ireland.

EU Habitats Directive

The Habitats Directive aims to protect some 220 habitats and approx. 1000 species through-out Europe. The habitats and species are listed in the Directives annexes where Annex I covers habitats and Annex II, IV and V cover species. There are 59 Annex I habitats in Ireland and 33 Annex IV species which require strict protection wherever they occur. The Directive requires the designation of Special Areas of Conservation (SACs) for areas of habitat deemed to be of European interest. The SACs together with the SPAs from the Birds Directive from a network of protected sites called Natura 2000.

Bern and Bonn Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982) was enacted to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was introduced in order to give protection to migratory species across borders in Europe.

Ramsar Convention

The Ramsar Convention on Wetlands is an intergovernmental treaty signed in Ramsar, Iran, in 1971. The treaty is a commitment for national action and international cooperation for the conservation of wetlands and their resources. In Ireland there are currently 45 Ramsar sites which cover a total area of 66,994ha.

Water Framework Directive

The EU Water Framework Directive (WFD) 2000/60/EC is an important piece of environmental legislation which aims to protect and improve water quality. It applies to rivers, lakes, groundwater, estuaries, and coastal waters. The Water Framework Directive was agreed by all individual EU member states in 2000, and its first cycle ran from 2009 – 2015. The Directive runs in 6-year cycles; the second cycle ran from 2016 – 2021, and the current (third) cycle runs from 2022-2027. The aim of the WFD is to prevent any deterioration in the existing status of water quality, including the protection of good and high-water quality status where it exists. The WFD requires member states to manage their water resources on an integrated basis to achieve at least 'good' ecological status, through River Basin Management Plans (RBMP), by 2027.

10.2 National Legislation

Wildlife Act 1976 and amendments

The Wildlife Act 1976 was enacted to provide protection to birds, animals, and plants in Ireland and to control activities which may have an adverse impact on the conservation of wildlife. With regard to the listed species, it is an offence to disturb, injure or damage their breeding or resting place wherever these occur without an appropriate licence from the National Parks and Wildlife Service (NPWS). This list includes all wild birds along with their nests and eggs. Intentional destruction of an active nest from the building stage up until the chicks have fledged is an offence. This includes the cutting of hedgerows from the 1st of March to the 31st of August. The act also provides a mechanism to give statutory protection to Natural Heritage Areas (NHAs). The Wildlife Amendment Act 2000 widened the scope of the Act to include most species, including the majority of fish and aquatic invertebrate species which were excluded from the 1976 Act.

The current list of plant species protected by Section 21 of the Wildlife Act, 1976 (and amendments) is set out in the Flora (Protection) Order, 2015 (S.I. No. 356/2015). The Flora (Protection) Order affords protection to several species of plant in Ireland, including 68 vascular plants, 40 mosses, 25 liverworts, 1 stonewort and 1 lichen. This Act makes it illegal for anyone to uproot, cut or damage any of the listed plant species and it also forbids anyone from altering, interfering, or damaging their habitats. This protection is not confined to within designated conservation sites and applies wherever the plants are found.

EU Habitats Directive 1992 and EC (Birds and Natural Habitats) Regulations 2011

The EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive 1992) provides protection to particular species and habitats throughout Europe. The Habitats Directive has been transposed into Irish law through the EC (Birds and Natural Habitats) Regulations 2011.

Annex IV of the EU Habitats Directive provides protection to a number of listed species, wherever they occur. Under Regulation 23 of the Habitats Directive, any person who, in regard to the listed species, "Deliberately captures or kills any specimen of these species in the wild, deliberately disturbs these species particularly during the period of breeding, rearing, hibernation and migration, deliberately takes or destroys eggs from the wild or damages or destroys a breeding site or resting place of such an animal shall be guilty of an offence."

Invasive Species Legislation

Certain plant species and their hybrids are listed as Invasive Alien Plant Species in Part 1 of the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations* 2011 (SI 477 of 2011, as amended). In addition, soils and other material containing such invasive plant material, are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls.

Failure to comply with the legal requirements set down in this legislation can result in either civil or criminal prosecution, or both, with very severe penalties accruing. Convicted parties under the Act can be fined up to €500,000.00, jailed for up to 3 years, or both.

Extracts from the relevant sections of the regulations are reproduced below.

"49(2) Save in accordance with a licence granted [by the Department of Arts, Heritage and the Gaeltacht]*, any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in anyplace* [a restricted non-native plant]*, shall be guilty of an offence.*

49(3) … it shall be a defence to a charge of committing an offence under paragraph (1) or (2) to prove that the accused took all reasonable steps and exercised all due diligence to avoid committing the offence.

50(1) Save in accordance with a licence, a person shall be guilty of an offence if he or she […] offers or exposes for sale, transportation, distribution, introduction, or release—
(a) an animal or plant listed in Part 1 or Part 2 of the Third Schedule,
(b) anything from which an animal or plant referred to in subparagraph (a) can be reproduced or propagated, or
(c) a vector material listed in the Third Schedule, in any place in the State specified in the third column of the Third Schedule in relation to such an animal, plant or vector material."

National Biodiversity Action Plan 2023-2030

The National Biodiversity Plan (NBAP) 2023-2030, the fourth such plan for Ireland, captures the objectives, targets and actions for biodiversity that will be undertaken by a wide range of government, civil society and private sectors. Actions required to achieve the strategic objectives as well as the lead and key partners responsible for their implementation are set out for each of the objectives and their outcomes (Table A1).

TABLE A1: OBJECTIVES AND OUTCOMES OF THE NATIONAL BIODIVERSITY ACTION PLAN 2023-2030.

Objective	Outcome
1: Adopt a Whole-of-Government, Whole-of-Society Approach to Biodiversity	1A. Governance structures and reporting outputs have improved.
	1B. Organisational capacity and resources for biodiversity have increased at all levels of Government.
	1C: Responsibility for biodiversity is shared across the whole of government.
	1D: Biodiversity initiatives are supported across the whole of society.
	1E. The legislative framework for biodiversity conservation is robust, clear and enforceable.
2: Meet Urgent Conservation and Restoration Needs	2A: The protection of existing designated areas and protected species is strengthened and conservation and restoration within the existing protected area network are enhanced.
	2B: Biodiversity and ecosystem services in the wider countryside are conserved and restored – agriculture & forestry.

	2C: Biodiversity and ecosystem services in the wider countryside are conserved and restored – peatlands & climate action.
	2D: Biodiversity and ecosystem services in the marine and freshwater environment are conserved and restored.
	2E: Genetic diversity of wild and domesticated species is safeguarded.
	2F: A National Restoration Plan is in place to contribute to the ambition of the EU Biodiversity Strategy 2030 and global restoration targets.
	2H: Invasive alien species (IAS) are controlled and managed on an all-island basis to reduce the harmful impact they have on biodiversity and measures are undertaken to tackle the introduction and spread of new IAS to the environment.
3. Secure Nature's Contribution to People	3A: Ireland's natural heritage and biocultural diversity is recognised, valued, enhanced and promoted in policy and practice.
	3B: The role of biodiversity in supporting wellbeing, livelihoods, enterprise and employment is recognised and enhanced.
	3C: Planning and development will facilitate and secure biodiversity's contributions to people.
4. Enhance the Evidence Base for Action on Biodiversity	4A: Research funding bodies will have an improved understanding of the research and skills required to address biodiversity research gaps.
	4B: Data relevant to biodiversity and ecosystems, including conservation needs, is widely accessible and standardised.
	4C: Long-term monitoring programmes are in place to guide conservation and restoration goals.
	4D: Ireland has prepared national assessments of ecosystem services.
5. Strengthen Ireland's Contribution to International Biodiversity Initiatives	5A: Science, policy and action on biodiversity conservation and restoration is effectively coordinated in an all-island approach.
	5B: Ireland takes action internationally to cooperate with other countries, sectors, disciplines and communities to address the biodiversity crisis.
	5C: Ireland enhances its contributions to the international biodiversity data drive.

10.3 Local Plans/Policies

Kildare County Development Plan 2023-2029

The policies and objectives relevant to the Proposed Development are listed below:

TABLE A2: RELEVANT POLICIES AND OBJECTIVES OF THE KILDARE COUNTY DEVELOPMENT PLAN.

Aim / Target	Policies and Objectives
Chapter 12: Biodiversity & Green Infrastructure	
Protection and enhancement of biodiversity and landscape, including green infrastructure.	BI P1, BI O2, BI O3, BI O70, BI O72, BI O75
Policies and objectives promoting Biodiversity Net Gain.	BI O5, BI O7,
The requirement for an EcIA.	BI O1, BI O12, BI O38, BI O51
Protection of European sites.	BI P2, BI O6, BI O9, BI O10,
Protection of nationally designated sites for nature conservation.	BI P3, BI O6, BI O14,
Protected species and habitats outside of designated sites.	BI P4, BI O15, BI O16, BI O17, BI O18, BI O19, BI O21, BI O22
Protection and retention of trees, woodlands and hedgerows.	BI P6, BI O26, BI O27, BI O28, BI O29, BI O30, BI O31, BI O32, BI O34, BI O35
Protection of watercourses, lakes, and wetland habitats, including riparian zones.	BI P7, BI O37, BI O41, BI O44, BI O45, BI O46, BI P8, BI O56, BI P15

Require consultation with relevant environmental agencies and statutory bodies (e.g., NPWS, IFI, etc.)	BI O39, BI O43, BI O54, BI O60
Prevent spread of invasive species	BI P9, BI O58,

In addition, Chapter 15 - Development Management Standards of the KCDP 2023-2029 contains detailed guidance on Soft Landscaping, including tables 15.1 a-c which list tree and hedge species approved by the Council, and provides a planting guide of suitable habitats for each (i.e., suited as street trees, hedging, open space, wet habitats, etc.)

Kildare Biodiversity Action Plan 2009 - 2014

Kildare Biodiversity Action Plan is set out to protect and improve biodiversity through the following objectives:

- To facilitate the collection and dissemination of heritage information.
- To raise public awareness, understanding and appreciation of County Kildare's heritage.
- To promote best practice in heritage conservation and management.
- To inform policy and provide advice to Kildare local authorities.

(Kildare Coco, 2025b).

10.4 Value of Ecological Resources

The criteria outlined in the table below, taken from the *Guidelines for Assessment of Ecological Impacts of National Road Schemes* published by the NRA, were used for assigning value to designated sites, habitats and species within the Site of the Proposed Development and surrounding area.

TABLE A2.1. DESCRIPTION OF VALUES FOR ECOLOGICAL RESOURCES BASED ON GEOGRAPHIC HIERARCHY OF IMPORTANCE (NRA, 2009B).

Importance	Criteria
International Importance	- '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). - Site that fulfils the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended). - Features essential to maintaining the coherence of the Natura 2000 Network - Site containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive. - Resident or regularly occurring populations (assessed to be important at the national level) of the following: o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive - Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971). - World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972). - Biosphere Reserve (UNESCO Man & The Biosphere Programme) - Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979). - Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979). - Biogenetic Reserve under the Council of Europe. - European Diploma Site under the Council of Europe. - Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988).

National Importance	- Site designated or proposed as a Natural Heritage Area (NHA). - Statutory Nature Reserve. - Refuge for Fauna and Flora protected under the Wildlife Acts. - National Park. - 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. - Resident or regularly occurring populations (assessed to be important at the national level) of the following: o Species protected under the Wildlife Acts; and/or o Species listed on the relevant Red Data list. o Site containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive
County Importance	- Area of Special Amenity. - Area subject to a Tree Preservation Order. - Area of High Amenity, or equivalent, designated under the County Development Plan. - Resident or regularly occurring populations (assessed to be important at the County level) of the following: o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; o Species protected under the Wildlife Acts; and/or o Species listed on the relevant Red Data list. o 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. - County important populations of species; or viable areas of semi-natural habitats; or natural heritage features identified in the National or Local BAP; if this has been prepared. - 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. - Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.
Local Importance (higher value)	- Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared; - Resident or regularly occurring populations (assessed to be important at the Local level) of the following: o Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; o Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; o Species protected under the Wildlife Acts; and/or o o Species listed on the relevant Red Data list. o 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; - 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.
Local Importance (lower value)	- Sites containing small areas of semi-natural habitat that are of some local importance for wildlife; - Sites or features containing non-native species that is of some importance in maintaining habitat links.

10.5 EPA Impact Assessment Criteria

In line with the draft EPA Guidelines (EPA 2022), the following terms are defined when evaluating and quantifying the quality, significance, extent/context, probability and duration/frequency of effects.

TABLE A3.1. DEFINITION OF QUALITY, SIGNIFICANCE, EXTENT/CONTEXT, PROBABILITY AND DURATION/FREQUENCY OF EFFECTS.

Term	Definition
Quality of Effects	
Positive	A change which improves the quality of the environment (for example, by increasing species diversity, or improving the reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
Neutral	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
Negative/Adverse	A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).
Significance of Effects	
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, 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. No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error
Extent and Context of Effects	
Extent	Describe the size of the area, the number of sites and the proportion of a population affected by an effect.
Context	Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Probability of Effects	
Likely	The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
Unlikely	The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.

Duration and Frequency of Effects	
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 one to seven years.
Medium-term Effects	Effects lasting seven to fifteen years.
Long-term	Effects lasting fifteen to sixty years.
Permanent	Effects lasting over sixty years.
Reversible	Effects that can be undone, for example through remediation or restoration.
Frequency	Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually).

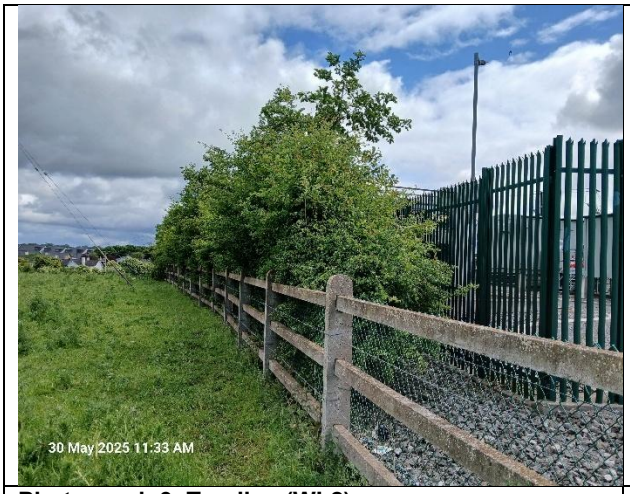
10.6 Site Photographs



Photograph 1. Improved Agricultural Grassland (GA1)



Photograph 2. Hedgerow (WL1)



Photograph 3. Treeline (WL2)



Photograph 4. Scattered Trees and Parkland (WD5)



Photograph 5. Scrub (WS1)

10.7 Bat Transect Survey Metadata

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
07370003	14/07/2025 22:14	Common pipistrelle	19	48.1	3	85	14	68	53.16613	-6.91957
07370004_1	14/07/2025 22:14	Common pipistrelle	3	47.3	3.7	103	14	68	53.16612	-6.9196
07370006	14/07/2025 22:16	Common pipistrelle	12	48	5	129	14	68	53.16608	-6.91978
07370007_1	14/07/2025 22:17	Common pipistrelle	11	46.7	3	80	14	68	53.16604	-6.91979
07370008_1	14/07/2025 22:18	Common pipistrelle	9	47.5	4	226	14	68	53.16556	-6.91985
07370009_1	14/07/2025 22:18	Common pipistrelle	2	45	2.9	81	14	68	53.16548	-6.91977
07370010	14/07/2025 22:18	Common pipistrelle	13	45.5	4	65	14	68	53.16543	-6.91973
07370011_1	14/07/2025 22:18	Common pipistrelle	3	47.1	3.7	851	14	68	53.16529	-6.91942
07370040	14/07/2025 23:14	Leisler's bat	13	26.6	4	162	13	80	53.16525	-6.9211
07370041	14/07/2025 23:16	Common pipistrelle	4	46.3	2.9	390	13	80	53.16543	-6.92011
07370042_1	14/07/2025 23:16	Common pipistrelle	2	46.5	3.2	99	13	80	53.16553	-6.91981
07370042_2	14/07/2025 23:16	Common pipistrelle	1	22.9	4.3	0	13	80	53.16553	-6.91981
07370043	14/07/2025 23:20	Common pipistrelle	15	47.3	3	190	12	81	53.16553	-6.91982
07370044	14/07/2025 23:21	Common pipistrelle	18	47.6	4	110	12	81	53.16552	-6.91981
07370045	14/07/2025 23:21	Common pipistrelle	4	43.5	4.9	220	12	81	53.16552	-6.91982
07370046	14/07/2025 23:21	Common pipistrelle	15	48.6	2	179	12	81	53.16553	-6.91983

Recording	Timestamp	Species Text	Calls [#]	Mean Peak Frequency [kHz]	Mean Call Length [ms]	Mean Call Distance [ms]	Temperature [°C]	Humidity [%r.H.]	Latitude [WGS84]	Longitude [WGS84]
07370047	14/07/2025 23:21	Common pipistrelle	45	47.6	5	75	12	81	53.16554	-6.91984
07370048_1	14/07/2025 23:22	Common pipistrelle	45	48.6	4	85	12	82	53.1656	-6.92002
07370049_1	14/07/2025 23:22	Common pipistrelle	12	49.3	4	75	12	81	53.16557	-6.92016
07370050_1	14/07/2025 23:22	Common pipistrelle	22	50.1	3	80	12	81	53.1655	-6.92047
07370050_2	14/07/2025 23:22	Common pipistrelle	1	90.4	5.9	0	12	81	53.1655	-6.92047
07370051_1	14/07/2025 23:22	Common pipistrelle	21	48.3	3	80	12	81	53.1655	-6.92047
07370051_2	14/07/2025 23:22	Common pipistrelle	3	58.4	3.2	108	12	81	53.1655	-6.92047
07370052	14/07/2025 23:22	Common pipistrelle	14	49.1	3	70	12	81	53.16551	-6.92047
07370053	14/07/2025 23:23	Common pipistrelle	21	49.1	4	63	12	81	53.1655	-6.92047
07370054_1	14/07/2025 23:24	Common pipistrelle	10	49.4	2	50	12	82	53.16552	-6.92046
07370055	14/07/2025 23:24	Common pipistrelle	25	47.8	2	55	12	82	53.16551	-6.92047
07370056	14/07/2025 23:24	Common pipistrelle	32	47	4	65	12	82	53.16551	-6.92047
07370057	14/07/2025 23:24	Common pipistrelle	18	45.7	3	70	12	82	53.16551	-6.92047
07370058	14/07/2025 23:24	Common pipistrelle	4	46.3	3	91	12	82	53.16551	-6.92049
07370059_1	14/07/2025 23:25	Common pipistrelle	15	46.7	3	70	12	82	53.16552	-6.92048
07370060_1	14/07/2025 23:25	Common pipistrelle	18	46.3	3	75	12	82	53.16553	-6.9205





About DNV

DNV is the independent expert in risk management and assurance, operating in more than 100 countries. Through its broad experience and deep expertise DNV advances safety and sustainable performance, sets industry benchmarks, and inspires and invents solutions.

Whether assessing a new ship design, optimizing the performance of a wind farm, analyzing sensor data from a gas pipeline or certifying a food company's supply chain, DNV enables its customers and their stakeholders to make critical decisions with confidence.

Driven by its purpose, to safeguard life, property, and the environment, DNV helps tackle the challenges and global transformations facing its customers and the world today and is a trusted voice for many of the world's most successful and forward-thinking companies.