# Quarryvale Park Redevelopment

Ecological Impact Assessment

4 April 2023

South Dublin County Council.

# JBA Project Manager

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# Revision History

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# Contract

This report describes work commissioned by Damien Wildes of South Dublin County Council, by an email dated 05th December 2022. Michael Coyle of JBA Consulting carried out this work.

Prepared by ..... Michael Coyle BA (Mod), MSc

…….. Assistant Ecologist

Reviewed by ..... William Mulville, BSc (Hons), MSc, ACIEEM

…….. Project Ecologist

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# Abbreviations

| | |
|---|---|
| AA | Appropriate Assessment |
| BAP | Biodiversity Action Plan |
| BoCCI | Birds of Conservation Concern in Ireland |
| DoEHLG | Department of Environment, Heritage and Local Government |
| CIEEM | Chartered Institute of Ecology and Environmental Management |
| EC | European Communities |
| EcIA | Ecological Impact Assessment |
| EPA | Environmental Protection Agency |
| EU | European Union |
| GIS | Geographical Information Systems |
| GSI | Geological Survey Ireland |
| IFI | Inland Fisheries Ireland |
| NBDC | National Biodiversity Data Centre |
| NPWS | National Parks and Wildlife Service |
| pNHA | Proposed Natural Heritage Area |
| QI | Qualifying Interest |
| RBMP | River Basin Management Plan |
| SAC | Special Area of Conservation |
| SPA | Special Protection Area |
| SuDS | Sustainable Drainage System |
| SDCC | South Dublin County Council |
| WFD | Water Framework Directive |
| ZoI | Zone of Influence |

# 1 Introduction

JBA Consulting Ireland Ltd. has been commissioned by South Dublin County Council to undertake an Ecological Impact Assessment (EcIA) in relation to the proposed redevelopment of the Quarryvale Park in Liffey Valley, Co. Dublin, for the enhancement of its facilities for social interactions and biodiversity.

## 1.1 Aims

The aims of this EcIA are to:

- Establish baseline ecological conditions to enable identification of potentially important ecological features within the zone of influence of the project
- Determine the ecological value of identified ecological features
- Assess the significance of impacts of the proposed project on ecological features of value
- Identify avoidance, mitigation or compensatory measures
- Identify residual impacts after mitigation and the significance of their effects
- Identify opportunities for ecological enhancement

## 1.2 Site location

The site of the development is location Quarryvale Park, west of the Liffey Valley Shopping Centre, and south of the N4 road. The nearest watercourse is the River Liffey (Liffey_180) which the closest point is located 425m north of the development area. The surrounding area is a mixture of residential and commercial properties. This proposed site is shown in (Figure 1-1).

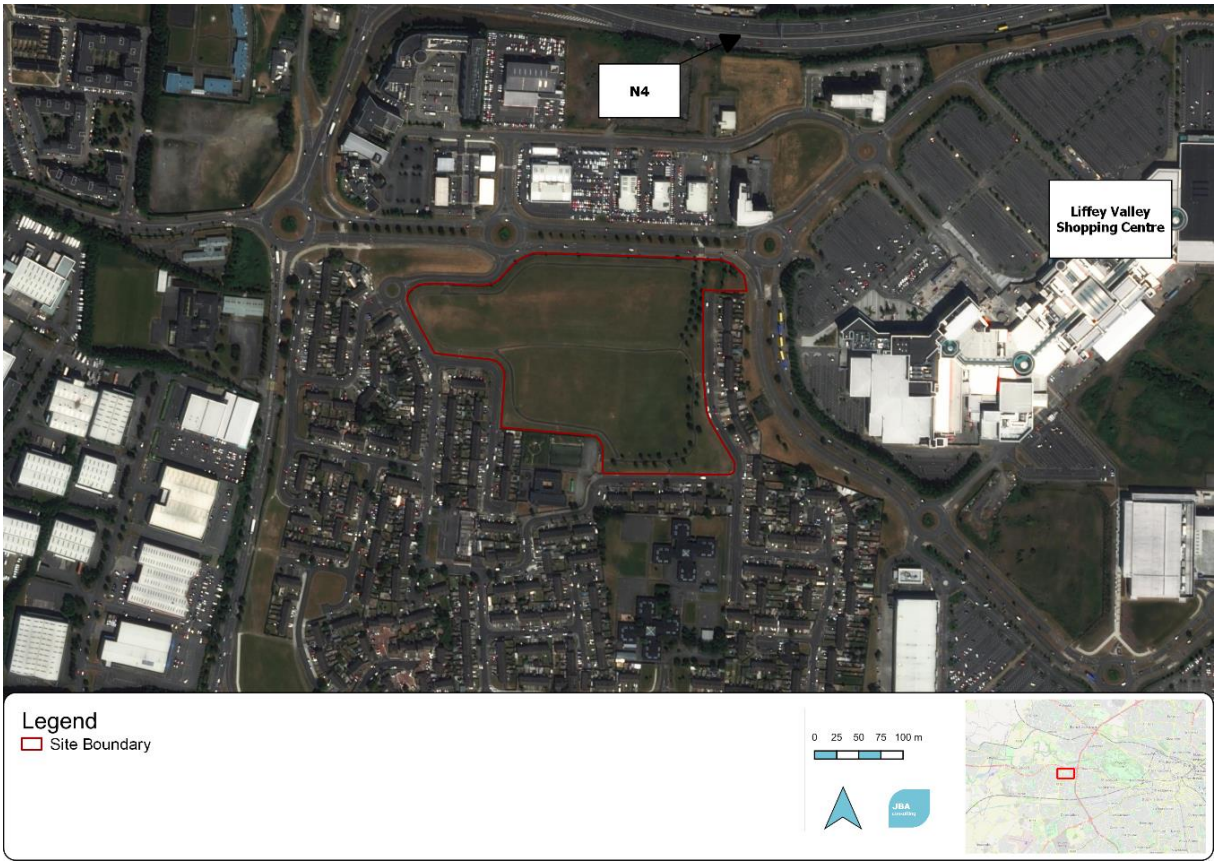


Figure 1-1: Site location (ESRI Satellite, 2023; OSM, 2023)

# 2 Project Description

## 2.1 Proposed project

The proposed and preferred development of the project includes the redevelopment of the Quarryvale Park. The Masterplan Proposals of this project include:

- New park structure focused on a formal entry plaza at Fonthill Road junction, with possible rain gardens, linear water feature, seating and feature lighting.
- Major shared footpath/cycle routes linking to Shancastle Lawns and Greenfort Gardens, with street lighting and formal trees.
- Pedestrian nodes with seating.
- Existing oak trees retained, providing an informal memorial walk.
- Provision for active recreation – e.g. Teenspace, natural play areas and pump track or similar.
- Activity circuit, 800m long - with exercise stations and seats/play equipment.
- Possible grass sports pitch.
- Biodiversity improvements - existing boundary hedge retained, grass meadowland management bands, bulbs in linear strips, informal native tree groups.

The Site Masterplan can be view in Appendix A.

### 2.1.1 Duration of the Works

The envisaged timeframe consists of approximately:

10 months for construction, with 12 months Defects Liability Period and 36 months Planting Maintenance Period.

### 2.1.2 Depth of Excavations

There are six different depths for the excavations relating to the different functional zones of the development. These include:

- Tree pits – 1.50m deep.
- Streetlight bases – 1.25m deep.
- Play/recreation bases – 1.25m deep.
- Wall foundations – 0.50m deep.
- General hard surfaces – 0.45m deep.
- SuDS hard surfaces – 0.50m deep.

### 2.1.3 Site Drainage Plan

The drainage to be implemented during the project includes:

Hard surfaces (Entrance Plaza, Entrance Areas, Pedestrian Nodes, and Recreation and Play Areas) will be drained through permeable concrete sets (SuDS infiltration system), subject to sub-soil percolation tests.

Footpaths would be drained by surface cross-falls to adjacent soft landscape areas.

### 2.1.4 Site Lighting Plan

The specs of the lights have a bat-friendly design are intended to comply with I.S. EN 13201 - 2:2015 P4. The lighting plan for the park includes a design of full cut off luminaires to ensure no light being directed upwards, scheduled dimming of the lights by 25% between 00:00 and 06:00. The luminaires will switch on from dusk at full output. After 20:00, the luminaires will dim down to 10% output through to dawn. When presence is detected, the lighting will ramp up to full output in appropriate sections the Luminaire type to be used- Urbis Axia 2.1 5177 8LED at 600mA 1.66klm in warm white (3000K) with integral rear louvers, and these lighting columns are intended to be 6m high.

# 3 Methodology

## 3.1 The EcIA Team

This EcIA was completed by JBA Ecologists Michael Coyle, BA (Hons), MSc and the report has been reviewed by JBA Project Ecologist William Mulville BSc (Hons), MSc, ACIEEM.

These staff members thus fulfil the Environmental Impact Assessment (EIA) Directive personnel requirements of 'competent persons'.

## 3.2 Policy and Legislation

Policy and legalisation for nature conservation; and protected and priority species relevant to the proposed project is provided in Appendix B.

## 3.3 Methods

This EcIA assesses the ecological features present within the site and its surrounding area (the Zone of Influence (ZoI)) in relation to the proposed works. This allows for identification of the potential impacts of the proposed works upon the ecological features of the site at an early stage, whilst identifying the potential ecological constraints upon the proposed works. The assessment is based on a desk-based assessment, which determines the baseline conditions at the site of the proposed works, and site surveys, which provided information on habitats and species present on the site and its surroundings.

This EcIA will outline the findings of the desk-based assessment and the surveys and identify any potential impacts of the proposed works on ecological features within the ZoI of the site; and propose mitigation measures to avoid or reduce impacts where necessary.

## 3.4 Guidance

This assessment was conducted in accordance with the following guidance documents:

- Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management (CIEEM, 2018).
- Guidelines on the information to be contained in Environmental Impact Assessment Reports Environmental Protection Agency (EPA, 2022).

## 3.5 Baseline

To determine the baseline conditions at the site a review of all available information was made. When determining the pre-work conditions on-site, including the presence or absence of protected habitats and/or species, the precautionary principle was used where limited information was available.

A desk-based assessment was carried out to collate information regarding protected/notable species and statutorily designated nature conservation sites in, or within close proximity to, the study area. This included a data search for protected and notable species using the National Biodiversity Data Centre (NBDC) Mapping System (NBDC, 2023). A customised 2km polygon was created to extract all the species data from the project site and its surrounding area, while an extended customised 5km polygon was created to extract all species data in the set Zone of Influence for this project.

Information for statutory designated sites including Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar Sites, Natural Heritage Areas (NHAs) and proposed NHAs (pNHA) was collected from the online resources provided by the National Parks and Wildlife Service (NPWS).

Other information on the local area was obtained, including:

- EPA, 2023a. EPA Catchments.ie [online]. Available online at: https://www.catchments.ie/maps/
- EPA, 2023b. EPA Maps [online], Next Generation EPA Maps. Available online at: https://gis.epa.ie/EPAMaps/

- GSI, 2023. Geological Survey Ireland Spatial Resources website, available at https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228
- IFI, 2023. Water Framework Directive Fish Ecological Status 2008-2021 Available online at: https://opendata-ifigis.hub.arcgis.com/datasets/IFIgis::water-framework-directive-fish-ecological-status-2008-2021/explore?location=53.365760%2C-6.414157%2C14.45
- NPWS, 2019a. The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.
- NPWS, 2019b. The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitats Assessment. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neil. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.
- NPWS, 2019c. The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessment. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neil. . National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.
- Aerial photography available from www.osi.ie and Google Maps http://maps.google.com/ ;
- Online data available on Natura 2000 sites as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie
- National Biodiversity Data Centre, 2023 – Species Distribution Maps; Available online at www.biodiversityireland.ie Accessed on various dates;
- All Ireland Red Data lists for vascular flora, mammals, butterflies, non-marine molluscs, dragonflies & damselflies, amphibians and fish;
- Water Framework Directive water maps (available online at http://www.wfdireland.ie/maps.html and https://www.catchments.ie/); and
- International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species (available online at http://www.iucnredlist.org).

### 3.5.1 Zone of Influence

The Zone of Influence (ZoI) for the project is based on a judgement of the likely extent of the ecological impacts. This will vary for different ecological features, depending on their sensitivities to environmental change. For the majority of the project, impacts will be limited to within the site boundary. **The Zone of Influence for this project is noise disturbance (1km), air pollution (2km), surface water (5km) and groundwater (5km), with an additional hydrological buffer from connecting transitional waters to coastal areas; and any supporting habitat for SAC/SPA species (5km).**

### 3.5.2 Field Surveys

A general ecological site walkover, including habitat mapping, mammal and preliminary bat roost surveys were conducted on the 17th of August by Ecologists William Mulville and Michael Coyle of JBA Consulting to inform the initial ecological baseline of the site.

The ecological walkover survey recorded habitats and protected species, following guidance outlined in the documents below:

- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009)
- Best Practice Guidance for habitat Survey and Mapping. The Heritage Council. (Smith et al., 2011)
- Collins, J. (Ed.), 2016. Bat Surveys for Professional Ecologists: Good Practise Guidelines (3rd Edition)

Aerial photographs and site maps assisted the habitat survey. Habitats have been named and described following A Guide to Habitats in Ireland by Fossitt (2000). Nomenclature for higher plants follows that

given in The New Flora of the British Isles 4th Edition (Clive Stace 2019). Identification of Irish plants generally follows Webb's An Irish Flora (Parnell and Curtis, 2012).

### 3.5.3 Water Framework Directive

In response to the increasing threat of pollution and the increasing demand from the public for cleaner rivers, lakes and beaches, the EU developed the Water Framework Directive (WFD). This Directive is unique in that, for the first time, it establishes a framework for the protection of all waters including rivers, lakes, estuaries, coastal waters and groundwater, and their dependent wildlife/habitats under one piece of environmental legislation for all European member states.

The WFD (Directive 2000/60/EC) is a substantial piece of EU water legislation that came into force in 2000. The overarching objective of the WFD is for the water bodies in Europe to attain Good or High Ecological Status. The Environment Protection Agency (EPA) is the competent authority in Ireland responsible for delivering the WFD. River Basin Management Plans (RBMP) have been created which set out measures to ensure that water bodies in the country achieve 'Good Ecological Status'.

Good Ecological Quality will depend on the quality of the individual quality elements on which the Ecological status is scored; namely the biological, chemical and morphological condition in a particular water body. Any reduction in any of these elements will result in a reduction of the overall ecological status.

### 3.5.4 Water Framework Status and Objectives

It is understood that Draft River Basin Management Plan for Ireland (2022-2027) has been adopted by all local authorities in order to achieve the aims of the WFD. The Plan sets out the new approach that Ireland will take to enhance protection, prevention, and monitoring of Irish waterbodies. The main actions include:

- Improve waste water treatment;
- Conservation and leakage reduction;
- Scientific assessment of water bodies and implementation of local measures;
- A new collaborative Sustainability and Advisory Support Programme;
- Dairy Sustainability Initiative;
- Development of water and planning guidance for local authorities;
- Extension of Domestic Waste Water Treatment Systems grant Schemes; and
- A new Community Water Development Fund

Regardless of their current quality, surface waters should be treated the same in terms of the level of protection and mitigation measures employed, i.e., there should be no negative change in status.

The third and current cycle aims to build particularly on the initiatives of the second cycle, particularly the governance and implementation structures, and to improve the establishment of Irish Water, An Fóram Uisce (The Water Forum), the Local Authority Waters Programme and the Agricultural Sustainability Support and Advisory Programme.

## 3.6 Screening of Ecological Features

The ecological features identified during the walkover surveys and from desk-based assessments were reviewed.

An informal screening process is presented at the start of the results section to ensure that the assessment focuses only on features where the impact could have important consequences for biodiversity (valued ecological features). Any features which are important beyond the site level were identified for further evaluation. Ecological features with little or no value beyond the site level were screened out and a short statement explaining this is given in the screening section.

An Appropriate Assessment (AA) Screening Report has been produced separate to this EcIA (JBA, 2023), to assess the potential for effects on Designated Natura 2000 sites. The AA Screening Report concluded there was **no potential for adverse significant effects on European sites** arising from the proposed development, either alone or in-combination with other plans or projects.

## 3.7 Assessment of the Effects on Features

Ecological features include nature conservation sites, habitats, species assemblages/ communities, populations or groups of species. The assessment of the significance of predicted impacts on ecological features is based on both the 'value' of a feature, and the nature and magnitude of the impact that the project will have on it. The impact is based on the project which includes a certain amount of designed-in mitigation, including construction best practice measures that will be implemented with a high degree of certainty.

## 3.8 Valuation of Receptors

The value of designated sites, habitats and species populations is assessed with reference to:

- Their importance in terms of 'biodiversity conservation' value (which relates to the need to conserve representative areas of different habitats and the genetic diversity of species populations).
- Any social benefits that habitats and species deliver (e.g., relating to enjoyment of flora and fauna by the public).
- Any economic benefits that they provide.

The valuation of designated sites considers different levels of statutory and non-statutory protection. Assessment of habitat depends on several factors, including the size of the habitat, its conservation status and quality. The assessment also takes account of connected off-site habitat that may increase the value of the on-site habitat through association. Valuation of species depends on a number of factors including distribution, status, rarity, vulnerability, and the population size present.

Designated sites, habitats and species populations have been valued using the scale in Table 3-1.

Table 3-1: Examples of criteria used to define the value of ecological features (derived NRA, 2008, rev. 2009)

| Level of Value | Examples of Criteria |
|---|---|
| International | An internationally important site e.g. Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar (or a site considered worthy of such designation).<br>A regularly occurring substantial population of an internationally important species (listed on Annex IV of the Habitats Directive).<br>Designated shellfish waters.<br>Major fisheries area. |
| National | A nationally designated site e.g. Natural Heritage Area (NHA), a proposed Natural Heritage Area (pNHA), statutory Nature Reserve, or a site considered worthy of such designation.<br>A viable area of a habitat type listed in Annex I of the Habitats Directive or of smaller areas of such habitat which are essential to maintain the viability of a larger whole.<br>A regularly occurring substantial population of a nationally important species, e.g. listed on The Wildlife Act 1976 or The Wildlife (Amendment) Act 2000.<br>A species included in the Irish Red Data Lists/Books.<br>Significant populations of breeding birds. |
| Regional/County (County Dublin) | Species and habitats of special conservation significance within County Dublin.<br>An area subject to a project/initiative under the County's Biodiversity Action Plan.<br>A regularly occurring substantial population of a nationally scarce species. |
| Local (works site and its vicinity) | Areas of internationally or nationally important habitats which are degraded and have little or no potential for restoration.<br>A good example of a common or widespread habitat in the local area.<br>Species of national or local importance, but which are only present very |

| Level of Value | Examples of Criteria |
|---|---|
| | infrequently or in very low numbers within site area. |
| Less than local | Areas of heavily modified or managed vegetation of low species diversity or low value as habitat to species of nature conservation interest.<br>Common and widespread species. |

Guidance published by CIEEM (2018) recommends breaking down the importance of ecological features in a geographic context similar to the NRA guidance shown in Table 3-1 with the following frame of reference to be adapted to local circumstances.

- International and European
- National
- Regional
- Metropolitan, County, vice-county or other local authority-wide area
- River Basin District
- Estuarine system/Coastal cell
- Local

The NRA (2009) guidance is congruent with this CIEEM (2018) guidance and includes a 'Less than local' level. The NRA (2009) guidance on geographic criteria for ecological valuation, as described in Table 3-1 is followed in this report.

Ecological Valuation may also be considered of Local Importance (higher value) or Local Importance (lower value) (Table 3-2).

Table 3-2: Examples of criteria used to define the value of ecological features of local importance (NRA, 2009)

| Level of Value | Examples of Criteria |
|---|---|
| Local Importance (higher value) | Locally important populations of priority species or habitats or natural heritage features identified in the Local Biodiversity Action Plan (BAP), if this has been prepared.<br><br>Resident or regularly occurring populations (assessed to be important at the Local level) of the following:<br>*Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;<br>*Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;<br>*Species protected under the Wildlife Acts; and/or<br>*Species listed on the relevant Red Data List.<br><br>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.<br><br>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;<br>Sites or features containing non-native species that are of some importance in maintaining habitat links. |

### 3.8.1 Magnitude of Impacts

Ecological effects or impacts can be described and categorised in a number of ways. Examples of relevant terms are listed in the table below.

Table 3-3: Categories of Effects (derived EPA, 2022a).

| Description | Categories of Effects |
|---|---|
| Quality of Effects | **Positive Effects**<br>A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities). |
| | **Neutral Effects**<br>No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error. |
| | **Negative/adverse Effects**<br>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). |
| Describing the Significance of Effects | **Imperceptible**<br>An effect capable of measurement but without significant consequences. |
| | **Not Significant**<br>An effect which causes noticeable changes in the character of the environment but without significant consequences. |
| | **Slight Effects**<br>An effect which causes noticeable changes in the character of the environment without affecting its sensitivities. |
| | **Moderate Effects**<br>An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends. |
| | **Significant Effects**<br>An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment. |
| | **Very Significant**<br>An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment. |
| | **Profound Effects**<br>An effect which obliterates sensitive characteristics. |
| Describing the Extent and Context of Effects | **Extent**<br>Describe the size of the area, the number of sites and the proportion of a population affected by an effect. |
| | **Context**<br>Describe whether the extent, duration or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?). |
| Describing the Probability of Effects | **Likely Effects**<br>The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented. |
| | **Unlikely Effects**<br>The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented. |

| Description | Categories of Effects |
|---|---|
| Describing the Duration and Frequency of Effects | **Momentary Effects**<br>Effects lasting from seconds to minutes. |
| | Brief Effects<br>Effects lasting less than a day. |
| | Temporary Effects<br>Effects lasting less than a year. |
| | Short-term Effects<br>Effects lasting one to seven years. |
| | **Medium-term Effects**<br>Effects lasting seven to fifteen years. |
| | **Long-term Effects**<br>Effects lasting fifteen to sixty years. |
| | **Permanent Effects**<br>Effects lasting over sixty years. |
| | **Reversible Effects**<br>Effects that can be undone, for example through remediation or restoration. |
| | **Frequency of effects**<br>Describe how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually). |
| Describing the Types of Effects | **Indirect Effects (a.k.a. Secondary or Off-site Effects)**<br>Effects on the environment. Which are not a direct result of the project, often produced away from the project site of because of a complex pathway. |
| | **Cumulative Effects**<br>The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects. |
| | **Do-nothing Effects**<br>The environment as it would be in the future should the subject project not be carried out. |
| | **Worst Case Effects**<br>The effects arising from a project in the case where mitigation measures substantially fail. |
| | **Indeterminable Effects**<br>The effects arising from a project in the case where mitigation measures substantially fail. |
| | **Irreversible Effects**<br>When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost. |
| | **Residual Effects**<br>The degree of environmental change that will occur after the proposed mitigation measures have taken effect. |
| | **Synergistic Effects**<br>Where the resultant effect is of greater significance than the sum of its constituents (e.g. combination of SOx and NOx to produce smog). |

### 3.8.2 Significance of impacts

The overall significance of an impact can be derived from the total description of the effect compared against the sensitivity and significance (value) of the receptor as shown overleaf in Figure 3-1 which is taken from the EPAs EIAR Guidelines (EPA, 2022). The context and character of the receptor must

also be assessed, such as its position in relation to the effect and its connectivity to the effect, however this should be determined before assessing the significance of the impact.

The total description of the effect includes the character, magnitude, probability and consequences of the effect as described in Table 3-4 which are combined to give a general description of the effect on an ordinal scale from Negligible to High. The sensitivity and significance of the receptor is also described on an ordinal scale from Negligible to High.

The placement of the general description of the effect, and the sensitivity/significance of the receptor on this scale is determined by a Competent Person (a qualified ecologist in this case) as they interpret the qualities of the effect from the categories listed in Figure 3-1 and the receptors sensitivity and significance. Level of significance, also described as value of the receptor is previously set out in sub-section 3.8 above. Sensitivity of the receptor is assessed by the Competent Person based on the receptor's characteristics and how susceptible to impact they are from the type of effect.

The overall significance of an effect is then categorised into one of the following seven classifications:

- Imperceptible
- Not Significant
- Slight
- Moderate
- Significant
- Very Significant
- Profound

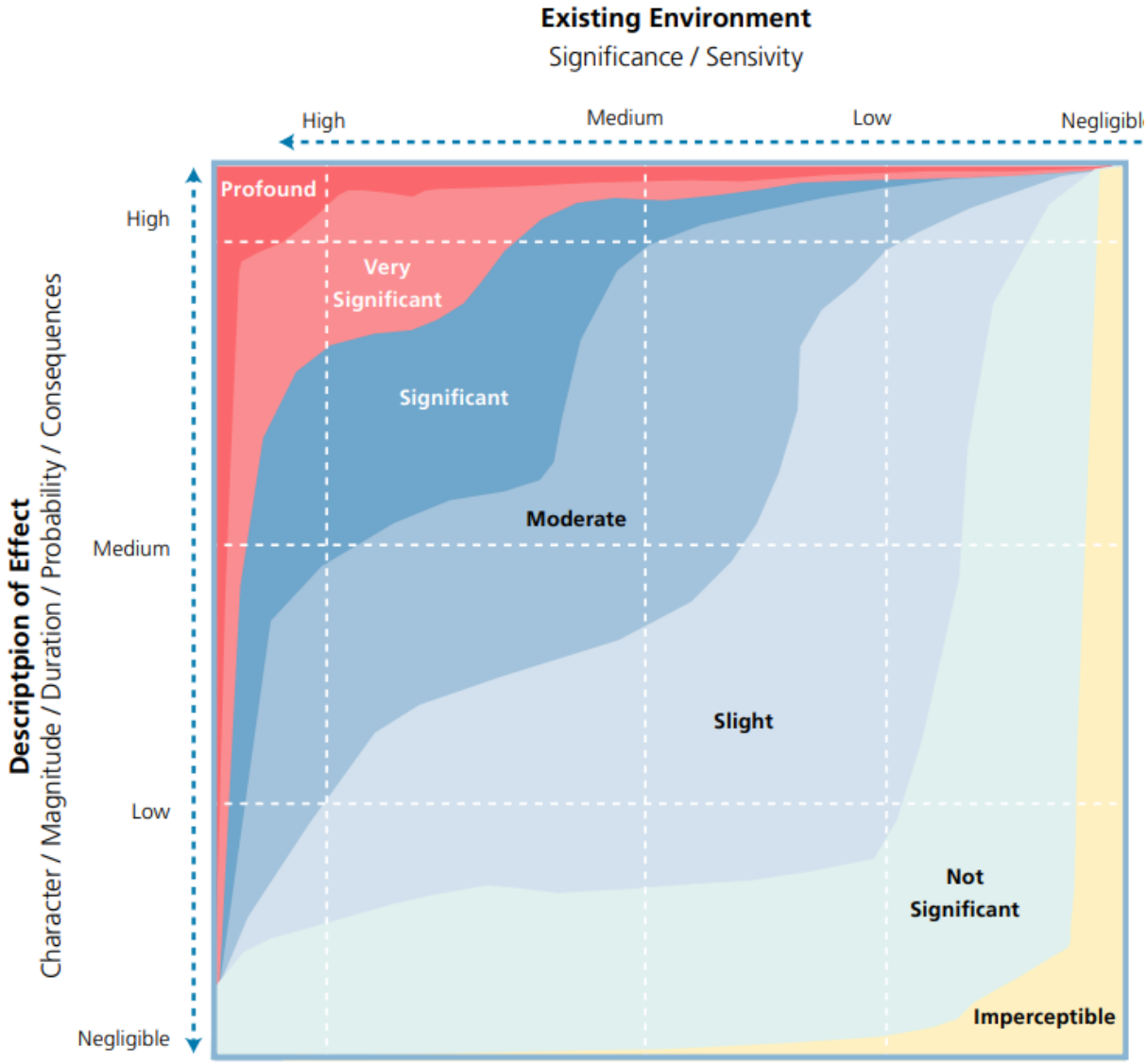


Figure 3-1: Chart showing the typical classifications of the significance of effects (EPA, 2022)

This chart has been interpreted in Table 3-4 as a significance of impacts matrix below, the scale has been ordered into an upper and lower bound for each qualitative category, so that degrees of significance within subcategories can be interpreted by the Competent Person.

Table 3-4: Significance of impacts matrix (derived from Figure 3-1, re EPA, 2022)

| Magnitude of impact | Sensitivity/ Value of Receptor | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **High +** | **High -** | **Medium +** | **Medium -** | **Low +** | **Low -** | **Negligible +** | **Negligible -** |
| **High +** | Profound | Very significant | Very significant | Significant | Moderate | Moderate | Not Significant | Imperceptible |
| **High -** | Very Significant | Very significant | Significant | Moderate | Moderate | Slight | Not Significant | Imperceptible |
| **Medium +** | Very Significant | Significant | Moderate | Moderate | Slight | Slight | Not Significant | Imperceptible |
| **Medium -** | Significant | Moderate | Moderate | Moderate | Slight | Slight | Not Significant | Imperceptible |
| **Low +** | Moderate | Slight | Slight | Slight | Slight | Slight | Not Significant | Imperceptible |
| **Low -** | Slight | Slight | Slight | Slight | Slight | Not Significant | Not Significant | Imperceptible |
| **Negligible +** | Not Significant | Not Significant | Not significant | Not Significant | Not Significant | Not Significant | Not Significant | Imperceptible |
| **Negligible -** | Not Significant | Not Significant | Not significant | Not Significant | Not Significant | Imperceptible | Imperceptible | Imperceptible |

### 3.8.3 Residual Impacts

The project is assessed including some designed-in mitigation (e.g., appropriate drainage design). This is done where mitigation is proven to be effective and will be implemented effectively with a high certainty. Where significant residual impacts are still identified, further mitigation measures will be proposed as part of the Ecological Impact Assessment process to avoid, reduce or minimise them. Each impact assessment section assigns a final significance level to the impact described, which considers and includes the implementation of any stated mitigation measures; these are the residual impacts.

## 3.9 Cumulative Impacts

Potential sources of cumulative impacts were identified based on the ecology of valued ecological features. Potential sources of cumulative impacts were sought within an area where there is the potential for a significant impact on a site or species. The plans and projects identified as potential sources of cumulative impacts are described in Section 5.

## 3.10 Limitations and Constraints

This EcIA is based on ecological site surveys and existing data from the above-mentioned sources. The report necessarily relies on some assumptions and is inevitably subject to some limitations. These do not affect the conclusion, but the following points are recorded in order to ensure the basis of the assessment is clear:

- Information on the works and conditions on site are based on current knowledge at the time of writing. Changes to the site since surveys were undertaken cannot be accounted for. However, the site surveys have followed CIEEM (2019) Advice note on the lifespan of ecological reports and surveys. Any changes to the proposed works will require an assessment by a suitably qualified ecologist to determine if re-assessment is required.
- Adverse weather can cause delays to the schedule and alter the timing of works. This has been accounted for using a worst-case scenario where possible.
- The precautionary principle is used at all times when determining potential ecological sensitivity of the site.
- Ecological surveys were conducted outside of the optimal window for vegetation and invertebrates (mid-August 2022), as such, some vegetation species may not have been present at the time of survey efforts.

# 4 Baseline Conditions

These baseline conditions present information gathered from existing reports and desk-based sources as detailed in Section 3.6. To inform this EcIA the initial baseline ecological walkover survey was carried out by JBA Ecologists William Mulville and Michael Coyle of JBA Consulting on a site visit conducted on 17th August 2022.

## 4.1 Desk-based Assessment

### 4.1.1 Designated Sites

This section lists the designated sites of international and national importance. The ZoI for this project is a 5km general radius and any downstream hydrological connection (including transitional waters buffer) for statutory sites; and a general 5km radius for non-statutory sites**.** Table 4-1 below lists these designated sites with their respective importance and distance from the proposed site development**.** Figure 4-1 displays the locations of the statutory designated sites, with Figure 4-2 displaying the non-statutory (proposed and existing Natural Heritage Area) designated sites within the ZoI of the site. Table 4-2 and Table 4-3 displays site descriptions and their respective ecological features. There is no direct contact between the site, and the nearest watercourse of Liffey_180, which is approximately 425m north.

Table 4-1: Proximity and importance of designated sites within their respective ZoI buffers.

| Name | Designation | Importance | Distance from site | Hydrological distance from site |
|---|---|---|---|---|
| North Dublin Bay | SAC | International | 14.3km | n/a |
| South Dublin Bay | SAC | International | 12.4km | n/a |
| North Bull Island | SPA | International | 11.1km | n/a |
| South Dublin Bay and River Tolka Estuary | SPA | International | 12.4km | n/a |
| Grand Canal | pNHA | National | 2.4km | n/a |
| Liffey Valley | pNHA | National | 0.5km | n/a |
| Royal Canal | pNHA | National | 2.7km | n/a |
| South Dublin Bay | pNHA | National | 12.3km | n/a |
| North Dublin Bay | pNHA | National | 10.9km | n/a |
| Dolphins, Dublin Docks | pNHA | National | 13.3km | n/a |

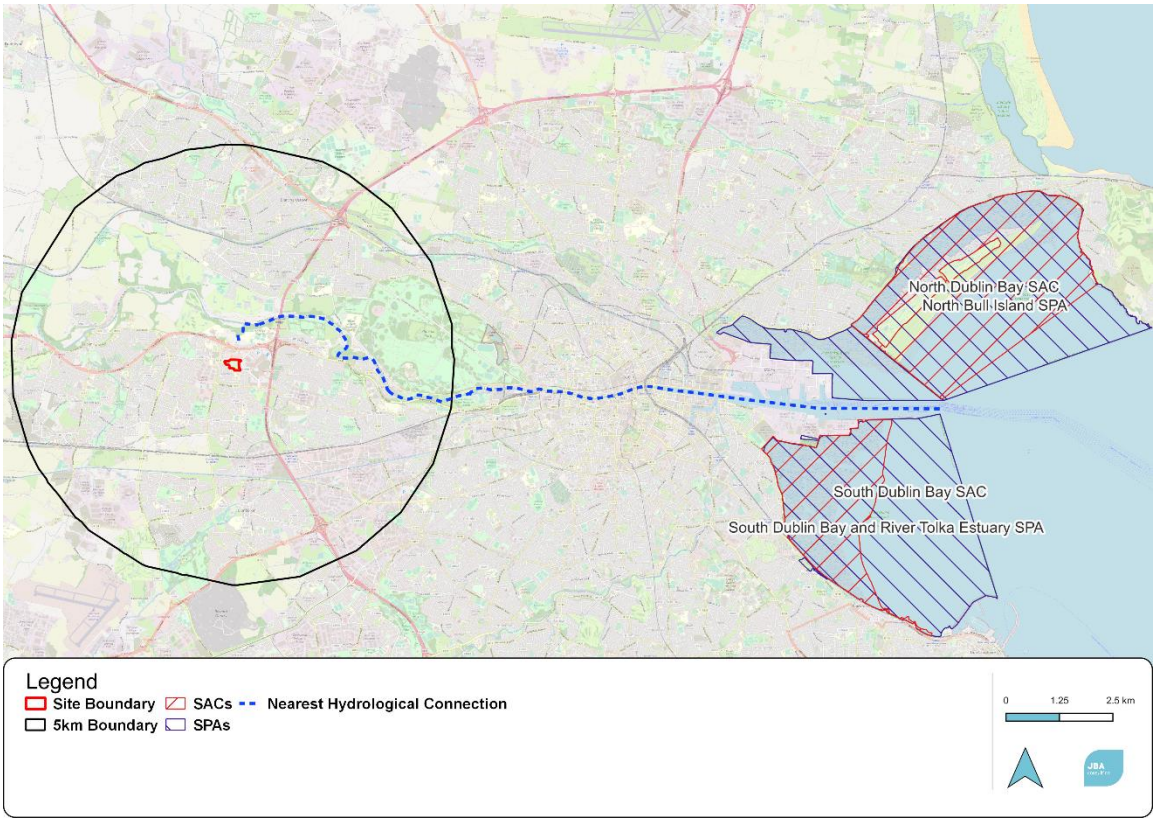


Figure 4-1: Statutory (SAC and SPA) designated sites within the ZoI of the development (OSM, 2023)

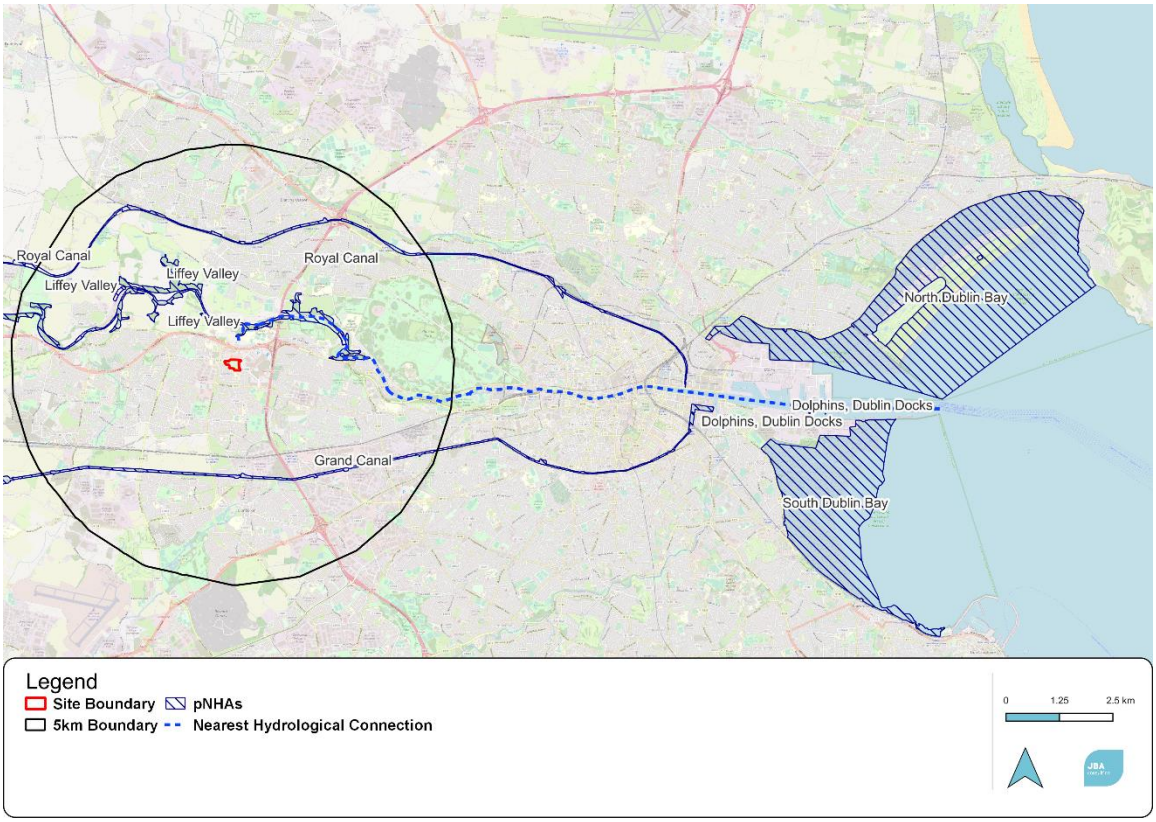


Figure 4-2: Non-statutory (pNHA) designated sites within their respective ZoI of the site works (OSM, 2023)

Table 4-2: Site briefs; Qualifying Interests; and project threats and their impacts and sources to the Natura 2000 sites within the ZoI

| Site Name | Brief | Qualifying Interests | Project-relevant Threats / Pressures: Impact (Source) |
|---|---|---|---|
| South Dublin Bay SAC [000210] | The intertidal flats at their widest points are 3km with channels existing at largest with Cockle Lake. A small sandy beach occurs near to Dun Laoghaire, with an almost entire artificial embankment. The sediments from the Tolka Estuary vary from thixotrophic mud with a high organic content in the inner estuary to a well aerated and exposed sand system off of the Bull Wall. Insights show that many birds who winter in South Dublin Bay do not continue towards North Dublin Bay (NPWS, 2015a). | - Mudflats and sandflats not covered by seawater at low tide [1140]<br>- Annual vegetation of drift lines [1210]<br>- *Salicornia* and other annuals colonising mud and sand [1310]<br>- Embryonic shifting dunes [2110]<br>(NPWS 2013a) | Roads, motorways:<br>Low impact (outside)<br><br>Urbanised areas, human habitation:<br>High impact (outside)<br>(EEA, 2020a) |
| South Dublin Bay and River Tolka Estuary SPA [004024] | This site covers a large part of the Dublin Bay, including the intertidal area of the River Liffey and Dun Laoghaire, along with the estuary of the River Tolka to the north of the River Liffey and Booterstown Marsh. The south of the bay has intertidal flats that at their widest extend for almost 3km. The site is important for wintering fowl, integral for the importance of the Dublin Bay complex (NPWS, 2015b). | - Light-bellied Brent Goose *Branta bernicla hrota* [A046]<br>- Oystercatcher *Haematopus ostralegus* [A130]<br>- Ringed Plover *Charadrius hiaticula* [A137]<br>- Grey Plover *Pluvialis squatarola* [A141]<br>- Knot *Calidris canutus* [A143]<br>- Sanderling *Calidris alba* [A144]<br>- Dunlin *Calidris alpina* [A149]<br>- Bar-tailed Godwit *Limosa lapponica* [A157]<br>- Redshank *Tringa totanus* [A162]<br>- Black-headed Gull *Chroicocephalus ridibundus* [A179]<br>- Roseate Tern *Sterna dougallii* [A192]<br>- Common Tern *Sterna hirundo* [A193]<br>- Arctic Tern *Sterna paradisaea* [A194]<br>- Wetland and Waterbirds [A999]<br>(NPWS 2015c) | Roads, motorways<br>Low impact (outside)<br><br>Urbanised areas, human habitation<br>High impact (outside)<br><br>(EEA, 2021) |

| Site Name | Brief | Qualifying Interests | Project-relevant Threats / Pressures: Impact (Source) |
|---|---|---|---|
| North Dublin Bay SAC [000206] | This SAC extends from the inner part of North Dublin Bay, and primarily focuses on North Bull Island. Dynamic dune systems and saltmarshes are found along this region. A variety of important and rare flora habituate this SAC, including Lesser Centaury, Red Hemp-nettle, and Meadow Saxifrage. North Dublin Bay is also of international importance for waterfowl as it hosts Brent Goose, Knot, Bar-tailed Godwit, Oystercatcher, Ringed Plover, Sanderling, and Dunlin (NPWS, 2013b). | - Mudflats and sandflats not covered by seawater at low tide [1140]<br>- Annual vegetation of drift lines [1210]<br>- *Salicornia* and other annuals colonising mud and sand [1310]<br>- Atlantic salt meadows *Glauco-Puccinellietalia maritimae* [1330]<br>- Mediterranean salt meadows *Juncetalia maritimi* [1410]<br>- Embryonic shifting dunes [2110]<br>- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]<br>- Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]<br>- Humid dune slacks [2190]<br>- Petalwort *Petalophyllum ralfsii* [1395]<br>(NPWS, 2013c) | Urbanised areas, human habitation:<br>High impact (outside)<br>(EEA, 2020b). |
| North Bull Island SPA [004006] | This site covers all the inner part of north Dublin Bay, with the seaward boundary extending from Bull Wall lighthouse to Howth Head. The spit in the north is relatively recent, almost 5km long, 1km wide and running parallel to the coast between Clontarf and Sutton. The saltmarsh extends the length of the landward side of the island, providing the main site for wintering bird roosting in Dublin Bay. The wintering waterfowl use two lagoons as their primary feeding grounds, these lagoons are divided by a causeway. (NPWS, 2014) | - Light-bellied Brent Goose *Branta bernicla hrota* [A046]<br>- Shelduck *Tadorna tadorna* [A048]<br>- Teal *Anas crecca* [A052]<br>- Pintail *Anas acuta* [A054]<br>- Shoveler *Anas clypeata* [A056]<br>- Oystercatcher *Haematopus ostralegus* [A130]<br>- Golden Plover *Pluvialis apricaria* [A140]<br>- Grey Plover *Pluvialis squatarola* [A141]<br>- Knot *Calidris canutus* [A143]<br>- Sanderling *Calidris alba* [A144]<br>- Dunlin *Calidris alpina* [A149]<br>- Black-tailed Godwit *Limosa limosa* [A156]<br>- Bar-tailed Godwit *Limosa lapponica* [A157]<br>- Curlew *Numenius arquata* [A160]<br>- Redshank *Tringa totanus* [A162]<br>- Turnstone *Arenaria interpres* [A169]<br>- Black-headed Gull *Chroicocephalus ridibundus* [A179]<br>- Wetland and Waterbirds [A999]<br>(NPWS 2015d) | Continuous urbanisation:<br>Medium impact (inside)<br><br>Other patterns of habitation:<br>Low impact (inside)<br>(EEA, 2020c) |

Table 4-3: Site briefs and ecological features of conservation concern of proposed Natural Heritage Areas within the ZoI

| Site Name | Brief | Ecological Features of Conservation Concern |
|---|---|---|
| Dodder Valley pNHA [000991] | This stretch of the River Dodder extends for about 2 km between Firhouse Bridge and Oldbawn Bridge in the south-west of Dublin City. The vegetation consists of woodland scrub mainly comprising Willows spp., but up to thirteen species of tree have been recorded. The understorey vegetation contains a good variety of plant species, including Early-purple Orchid *Orchis mascula* and Bugle. Along the banks there are wildflower meadows with a good diversity of plant species. Forty-eight bird species have been recorded recently in the area, including Little Grebe *Tachybaptus ruficollis*, Kingfisher *Alcedo atthis*, White-throated Dipper *Cinclus cinclus* and Grey Wagtail *Motacilla cinerea*. Part of the riverbank supports a Sand Martin *Riparia riparia* colony of up to 100 pairs. The site also supports a population of Otter. The site represents the last remaining stretch of natural riverbank vegetation on the River Dodder in the built-up Greater Dublin Area (NPWS, 2009a). | - Little Grebe *Tachybaptus ruficollis*<br>- Kingfisher *Alcedo atthis*<br>- Grey Wagtail *Motacilla cinerea*<br>- Sand Martin *Riparia riparia*<br>- Otter *Lutra lutra* |
| Glenasmole Valley pNHA [001209] | As per the Natura 2000 SAC description. | As per those outlined in Natura 2000 SAC description. |
| Grand Canal pNHA [002104] | The Grand Canal is a man-made waterway linking the River Liffey at Dublin with the Shannon at Shannon Harbour and the Barrow at Athy. The Grand Canal proposed Natural Heritage Area (pNHA) comprises the canal channel and the banks on either side of it. A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland. The diversity of the water channel is particularly high in the eastern section of the Main Line - between the Summit level at Lowtown and Inchicore. Otter spraints are found along the towpath, particularly where the canal passes over a river or stream. The Smooth Newt *Lissotriton vulgaris* breeds in the ponds on the bank at Gollierstown in Co. Dublin. The rare and legally protected Opposite-leaved Pondweed *Groenlandia densa* (Flora Protection Order 1987) is present at a number of sites in the eastern section of the Main Line, between Lowtown and Ringsend Basin in Dublin (NPWS, 2009b). | - Otter *Lutra lutra*<br>- Smooth Newt *Lissotriton vulgaris*<br>- Opposite-leaved Pondweed *Groenlandia densa* |
| Royal Canal pNHA [002103] | The Royal Canal is a man-made waterway linking the River Liffey at Dublin to the River Shannon near Tarmonbarry. A number of different habitats are found within the canal boundaries - hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland. The hedgerow, although diverse, is dominated by Hawthorn Crataegus monogyna. The vegetation of the towpath is usually dominated by grass species. Otter spraints are found along the towpath, particularly where the canal passes over a river or stream. The rare and legally protected Opposite-leaved Pondweed (Flora Protection Order 1987) is present at one site in Dublin, between Locks 4 and 5. *Tolypella intricata* (a stonewort listed in the Red Data Book as being vulnerable) is also in | - Otter Lutra lutra<br>- Opposite-leaved Pondweed *Groenlandia densa*<br>- *Tolypella intricat* |

| Site Name | Brief | Ecological Features of Conservation Concern |
|---|---|---|
| | the Royal Canal in Dublin, the only site in Ireland where it is now found. The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. It crosses through agricultural land and therefore provides a refuge for species threatened by modern farming methods (NPWS, 2009c). | |
| North Dublin Bay pNHA [000206] | As per North Dublin Bay SAC description in Table 4-2. | As per those outlined in SAC description. |
| South Dublin Bay pNHA [000210] | As per South Dublin Bay SAC description in Table 4-2. | As per those outlined in SAC description. |
| Dolphins, Dublin Docks pNHA [000201] | As per Red Bog, Kildare SAC descriptions in Table 4-2. | As per those outlined in SAC description. |
| Liffey Valley pNHA [000128] | The Liffey Valley site is situated along the River Liffey between Leixlip Bridge on the Kildare-Dublin border and downstream of the weir at Glenaulin, Palmerstown, Co. Dublin. The river meanders through low hills for much of its course through the site and forms the focus for the site itself. The Mill Race between Palmerstown and the weir at the Wren's Nest Public House is also included in the site. The river is a Salmon river and there are a series of weirs along the river between Palmerstown and Leixlip. The water level in the Mill Race has dropped and the channel has been filled with vegetation in a number of areas as a result.<br>The threatened Green Figwort *Scrophularia umbrosa*, a species listed in the Irish Red Data Book, is recorded from a number of stations along the river within the site. This stretch of the river Liffey has the greatest number of recently recorded populations of this species in Ireland. The rare and legally protected Hairy St. John's Wort *Hypericum hirsutum* (Flora Protection Order 2022) has been recorded from the woodlands in this site. This species has only been recorded in Kildare and Dublin, at sites on the river Liffey, since 1970. The threatened Yellow Archangel *Lamiastrum galeobdolon*, listed in the Irish Red Data Book, is also recorded from these woodlands (NPWS, 2009). | - Green Figwort *Scrophularia umbrosa*<br>- Hairy St. John's Wort *Hypericum hirsutum*<br>- Yellow Archangel *Lamiastrum galeobdolon*<br>- Salmonoid river |

### 4.1.2 Screening of designated sites

An AA Screening has been carried out for this project by JBA (2023). Following initial screening, and based upon best scientific judgement it is concluded that adverse **significant impacts are not anticipated** from the project on the following Natura 2000 sites within the Zone of Influence:

- North Dublin Bay SAC [000206]
- South Dublin Bay SAC [000210]
- North Bull Island SPA [004006]
- South Dublin Bay and River Tolka Estuary SPA [004024]

The pNHA sites below are being screened out due one or more of the following: lack of hydrological connectivity (surface water and groundwater) and/or distance from the proposed site; and the development's scale (e.g., capacity for dust generation)

- Dodder Valley pNHA [000991]
- Glenasmole Valley pNHA [001209]
- Grand Canal pNHA [002104]
- Royal Canal pNHA [002103]
- North Dublin Bay pNHA [000206]
- South Dublin Bay pNHA [000210]
- Dolphins, Dublin Bay pNHA [000201]

The following pNHA site is being screened in due to its close proximity to the project site, and its connection via the air pathway:

- Liffey Valley pNHA [000128]

### 4.1.3 Protected Species

#### National Biodiversity Data Centre (NBDC)

Records of protected fauna including amphibians, bats, birds, invertebrates and mammals collated from the NBDC (2023) database, present within the surrounding 2km within the past 10 years are used to assess the potential species present in the vicinity of the site, meanwhile an extended list of species present within the surrounding 5km within the past 10 years is listed in Appendix C. This list includes their level of protection, if they are red or amber listed on the International Union for the Conservation of Nature and Natural Resources (IUCN) Red List and the date of the last record of this species at this location.

### 4.1.4 Invasive Non-native Species

The NBDC shows record of invasive non-native species being present within 2km of the-site (NBDC, 2023), species within 2km that are either High Impact species, or are on the Invasive species management Regulations SI. 477 are listed in Table 4-4. Many of these species were located 1.8km-1.9km to the north-east within Palmerstown Park and are potentially cultivated for horticulture reasoning. While there is a list of previously reported species within a 5km radius of the site is found in the Appendix C.

Table 4-4: Proximity of invasive non-native species within 2km of the proposed site.

| Invasive Non-native Species | Approximate distance from site | Impact status |
|---|---|---|
| Cherry Laurel<br>*Prunus laurocerasus* | 0.8km | High Impact Invasive Species |
| Giant Hogweed<br>*Heracleum mantegazzianum* | 1.8km | High Impact Invasive Species Regulation S.I. 477 (Ireland) |

| Invasive Non-native Species | Approximate distance from site | Impact status |
|---|---|---|
| Indian Balsam<br>*Impatiens glandulifera* | 1.8km | High Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Japanese Knotweed<br>*Reynoutria japonica* | 1.9km | High Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Three-cornered Garlic<br>*Allium triquetrum* | 0.9km | Medium Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Harlequin Ladybird<br>*Harmonia axyridis* | 0.1km | High Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Brown Rat<br>*Rattus norvegicus* | 0.5km | High Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Eastern Grey Squirrel<br>*Sciurus carolinensis* | 0.5km | High Impact Invasive Species<br>EU Regulation No. 1143/2014<br>Regulation S.I. 477 (Ireland) |

### 4.1.5 Waterbodies in the Vicinity of the Proposed Site

A tributary of the Water Framework Directive (WFD) River Liffey (Liffey_180), Quarryvale Stream is located within close proximity of the site, approximately 425m north of the site and drains into the River Liffey main body, before draining into the Liffey Estuary Upper (IE_EA_090_0400) transitional waterbody.

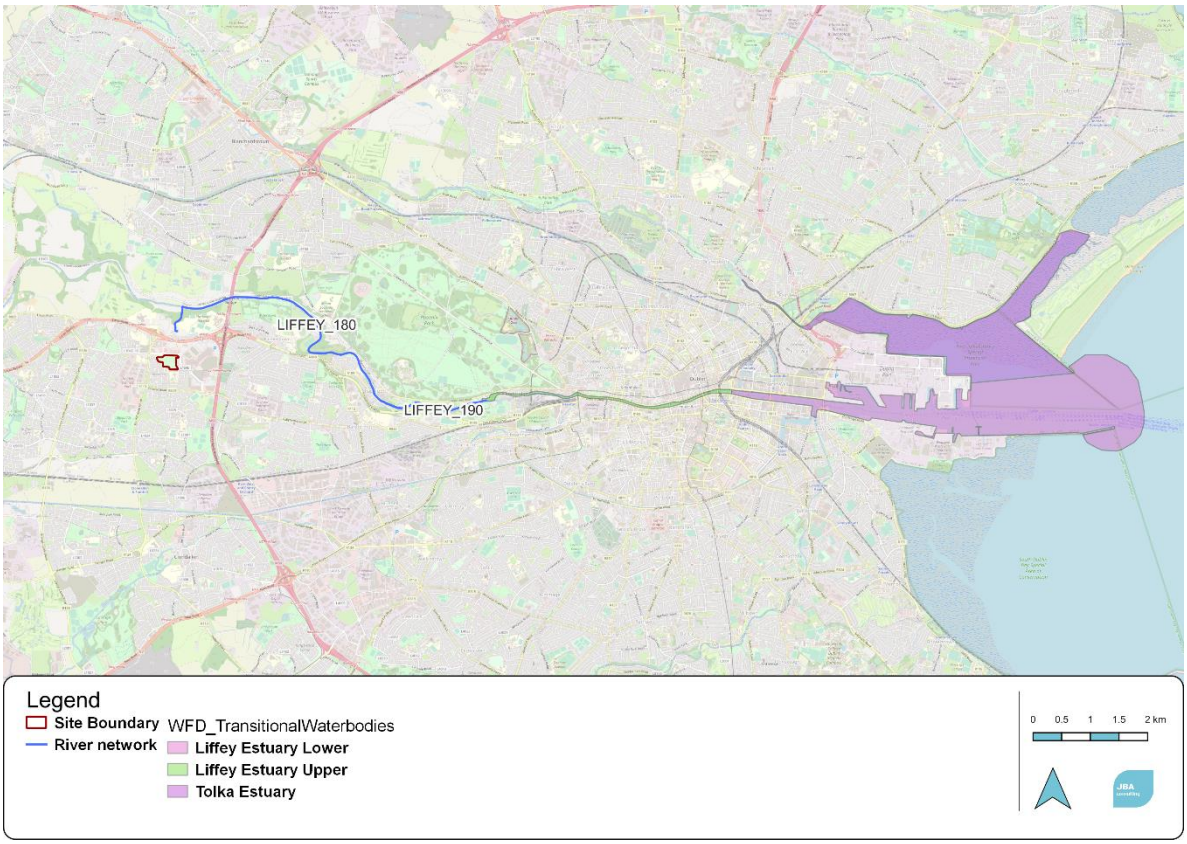


Figure 4-3: Local waterbodies and their downstream connections (OSM, 2023)

## 4.2 Water Framework Directive

### 4.2.1 Surface Water Status

A tributary of the Water Framework Directive (WFD) River Liffey (Liffey_180), Quarryvale Stream, is located within close proximity of the site, approximately 425m north of the site and drains into the Liffey_190 waterbody, and then int the Liffey Estuary Upper transitional waterbody, The proposed site is located within the Liffey and Dublin Bay catchment, and the Liffey_SC_090 sub-catchment (EPA, 2022). The WFD Status and Risk level of each of these WFD waterbodies are listed below in Table 4-5, and the indirect connection between the site and Dublin Bay is shown in Figure 4-3.

Table 4-5: WFD (2016-2021) status and risk level for river waterbodies in the vicinity of the site

| Waterbody | WFD Status | WFD Risk |
|---|---|---|
| River Liffey (Liffey_180) | Poor | At Risk |
| River Liffey (Liffey_190) | Poor | At Risk |

### 4.2.2 Groundwater Status

The groundwater body which underlies the proposed site is the Dublin groundwater body (IE_EA_G_008) (Figure 4-5). The WFD status for the groundwater body is currently marked as 'Good'; and is currently considered to be undergoing review.

The proposed development will need to ensure that the proposed construction works will have no negative effect on these water bodies and will support their maintaining 'Good' status into the future.

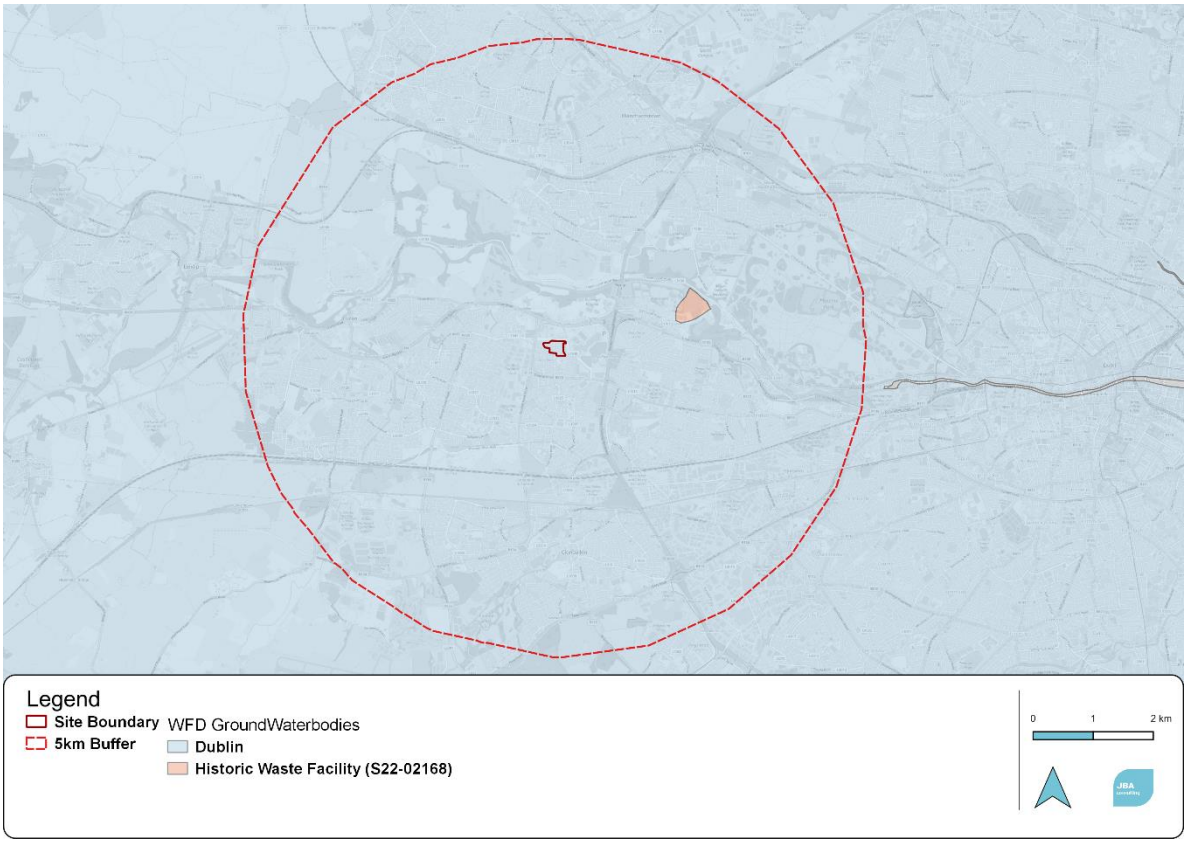


Figure 4-4: Groundwater bodies in the vicinity of the site (OSM, 2023)

## 4.3 Site Visits

A baseline ecological site walkover, including habitat mapping, was conducted by JBA Ecologist, William Mulville and Michael Coyle on the 17th of August 2022. Habitats and species recorded are presented in detail in the following sections.

## 4.4 Habitats

Habitats recorded in and around the site boundary are listed in Table 4-6. The survey results are illustrated as a habitat map Figure 4-5. The site mainly consists of amenity grassland, with a surrounding border of a Beech *Fagus sylvatica* hedge, and a grassy verge found in the south-west corner of the site. The footpaths in the east of the site are bordered with treelines of Pedunculate Oak *Quercus robur.*

Table 4-6: List of habitats recorded on site

| Fossitt Habitat | Fossitt Code |
|---|---|
| Building and artificial surfaces | BL3 |
| Amenity grassland (improved) | GA2 |
| Dry meadow and grassy verges | GS2 |
| Hedgerows | WL1 |
| Treelines | WL2 |


Figure 4-5: Habitat map of Quarryvale Park (ESRI: Satellite, 2023)

### 4.4.1 Building and artificial surfaces (BL3)

There is a pathway present on the inside of the boundary of the park, as well as across the centre of the site in an east-west direction.

In the context of the site and the lands immediately adjacent, this manmade and weedy habitat is considered to be of **less than local ecological importance.**

### 4.4.2 Amenity grassland (improved) (GA2)

The majority of the site consists of GA2 grasses, with species consisting of Ribwort Plantain *Plantago lanceolata*, Greater Plantain *Plantago major*, Red Clover *Trifolium pratense*, Dandelion *Taraxacum*

spp., Nipplewort *Lapsana communis*, False Oat-grass *Arrhenatherum elatius,* Common Bent *Agrostis capillaris*, Lesser Stitchwort *Stellaria graminea*, Perennial Rye-grass *Lolium perenne*, Field Mustard *Brassica rapa subsp oleifera*, Creeping Cinquefoil *Potentilla reptans* and Dock *Rumex* spp. There are patches throughout the site of small beds of Yarrow *Achillea millefolium* that have been mown around and retained (Figure 4-6).

Throughout the site were bird species; Rook *Corvus frugilegus*, Jackdaw *Corvus monedula*, Feral Pigeon *Columba livia f. domestica*, Pied Wagtail *Motacilla alba yarrellii*, Black-headed Gull *Chroicocephalus ridibundus*, Hooded Crow *Corvus cornix* and House Sparrow *Passer domesticus*. Of these species, Black-headed Gull and House Sparrow are both listed on the BoCCI Amber List (Gilbert et al., 2021).

This habitat has a low species diversity of plants, while it is also utilised by low number of different bird species on the BoCCI Amber and Red List. Therefore, in the context of the site and the lands immediately adjacent, this habitat grassland habitat is considered to be of **less than local ecological importance** given its low floral diversity and low level of utilisation by birds**.**

Figure 4-6: Amenity grassland within Quarryvale Park, with the patches of Yarrow present

### 4.4.3 Dry meadow and grassy verges (GS2)

There is a patch of grassy verge present on the boundary in the south west of the site with False Oat-grass, Sow thistle *Sonchis spp*, Silverweed *Potentilla anserina*, Field Mustard, Common Poppy *Papaver rhoeas* and Pineapple weed *Matricaria discoidea*. This patch was approximately 2.5m wide (Figure 4-7).

Figure 4-7: Dry grassy verge located along the south-western boundary of the site

In the context of the site and the lands immediately adjacent, this habitat provides for potential foraging and commuting of local mammals, birds and bats. Therefore, this habitat is considered of high local ecological importance given its capacity to provide its foraging opportunities and refuge for mammals, birds and bats while being a relatively uncommon habitat within the locality of the site.

### 4.4.4 Hedgerows (WL1)

The hedging of the site's boundary consisted primarily of Beech *Fagus sylvatica* hedging. There were also some other floral species that were recorded less frequently within the hedgerow, these included Field Mustard, Cleavers *Galium aparine*, Creeping Thistle *Cirsium arvense*, Nettle *Urtica dioica*, Ragwort *Jacobaea vulgaris, and* Bramble *Rubus fruticosus agg.* with occasional Ash *Fraxinus excelsior* and Lime *Tilia cordata x platyphyllos* (Figure 4-8).

Hedgerows possess the potential for providing nesting opportunities for birds and foraging for mammals, bats and birds but is limited in doing so due to its small size and is unlikely to house regular or large communities of these species groups. Therefore, in the context of the site and the lands immediately adjacent the hedgerows are considered to be of **high local ecological importance** for fauna on site.

Figure 4-8: Boundary hedgerow along the northern boundary

### 4.4.5 Treelines (WL2)

The treeline stretching the length of the park's east side consisted of planted Pedunculate Oak *Quercus robur.*

Treelines can provide nesting opportunities for birds, however, none of the trees on-site currently supported active nests, nor was there evidence of past nesting activities. Treelines can also increase the number and diversity of invertebrates, which provides foraging opportunities for mammals, bats and birds. Therefore, in the context of the site and the lands immediately adjacent, the treelines are considered to be of **high local ecological importance** given their capacity to provide foraging opportunities for mammals, bats and birds, as well as future nesting opportunities for breeding birds.

## 4.5 Protected Flora

The survey did not record any protected floral species within the site. Desktop study findings of protected or red-listed species within a 5km radius of the site were collated from the National Biodiversity Centre Ireland (NBDC, 2023) and the Botanical Society of Britain and Ireland (BSBI, 2023), and are presented in Appendix C.

## 4.6 Protected Fauna

### 4.6.1 Mammals

JBA staff did not record any direct or indirect evidence of protected mammals was recorded on-site during the ecological walkover survey. The following mammals are recorded within 2km of the site within recent years, while there is a list of previously reported species within a 5km radius of the site is found in the Appendix C.

- Badger *Meles meles*
- Hedgehog *Erinaceus europaeus*

Species that are granted further legal status in addition to the Wildlife Act includes:

- Pine Marten *Martes martes* (EU Habitats Directive Annex V)

Hedgehog, Badger and Pine Marten and are species that are sometimes found within urban and suburban parklands, where they might use this site for commuting and foraging. Hedgehog is the most likely of the three species to utilise the park given the recent NBDC recordings of individuals within the adjacent housing estates.

Therefore, considering the potential for foraging and commuting of mammal species within this site, this site is considered to be of **high local ecological importance for the selected mammals.**

### 4.6.2 Bats

#### Desk Study

There were no direct or indirect evidence of bat species listed under the Wildlife Act 1976 and its Amendments or the EU Habitats Directive recorded by the JBA Ecologists during the ecological walkover survey. No bat species protected under the Wildlife Act and/or the EU Habitats Directive that have been recorded under the NBDC within 2km of the site in the previous 10 years. Additionally, NBDC records of bats within an extended 5km are found within Appendix C.

#### Preliminary Bat Roost Survey

During the ecological walkover of the proposed site, it was determined that there was no potential roost features present within the site.

#### Bat presence / activity on-site

In the absence of bat activity survey data, under the precautionary principal, we must assume that one or more bat species (e.g., Soprano Pipistrelle, *Pipistrellus pygmaeus*, Common Pipistrelle *Pipistrellus pipistrellus sensu lato*, and Lesser Noctule *Nyctalus leisleri* - common urban area bat species) are likely

utilising this site for opportunistic foraging and commuting activities, given the presence of grassy verges, hedgerows and treelines on-site.

The proposed site has been valued as being of **high local ecological importance for local bat species**, given the site's role as a foraging grounds and commuting corridor.

### 4.6.3 Breeding and Wintering Birds

The surveyors recorded two bird species of conservation concern within the site boundary during the ecological walkover, namely the House Sparrow (Breeding) and the Black-headed Gull (Breeding and Wintering), both of which are listed on the BoCCI Amber list. The remaining bird species observed on-site during the survey are all currently Green-listed.

Additionally, recent local (2km radius) NBDC records (within the last 10 years) highlight the presence of a number of other Amber- and Red-listed bird species (BoCCI, 2020-2026). These records included the Amber-listed Mallard *Anas platyrhynchos* (Breeding and Wintering), Goldcrest *Regulus regulus* (Breeding), Light-bellied Brent Goose *Branta bernicla hrota* (Wintering) and Cormorant *Phalacrocorax carbo* (Breeding and Wintering); and the Red-listed Snipe *Gallingo gallingo* Breeding and Wintering, Swift *Apus apus* (Breeding), Barn Owl *Tyto Alba* (Breeding) and Grey Wagtail *Motacilla cinerea* (Breeding). Mallard and Snipe are also protected under Annexes II and III of the EU Birds Directive. One or more of these bird species may potential occasionally utilise the habitats within the site.

A full list of previously reported species within a 5km radius of the site is found in the Appendix C.

The proposed site has been valued as being of **high local ecological importance for the above bird species of conservation concern,** given the foraging opportunities within the site, as well as the nesting opportunities within the hedgerows and treelines.

### 4.6.4 Amphibians

Surveyors did not record any direct or indirect evidence of amphibians during the ecological walk over. There are recent records observing amphibian species Common Frog *Rana temporaria* within 2km of the site, and there are no additional amphibians previously reported within a 5km radius of the site is found in the Appendix C.

The proposed site has been valued as being of **less than local ecological importance for amphibian species** due to the lack of waterbodies on the site and the low foraging and refuge resources available for amphibians**.**

### 4.6.5 Terrestrial Invertebrates

The surveyors did not record any pollinator species of conservation concern within the site, and there are no records of any protected invertebrates within 2km of the site, and no additional records of protected invertebrates within 5km of the site.

The proposed site has been valued as being **of low local importance,** given the absence of records of invertebrates of conservation importance on**-**site, and the limited floral diversity available for foraging pollinator species.

## 4.7 Invasive Non-native species

JBA staff did not record any invasive non-native species on-site during the ecological walkover.

## 4.8 Screening of Designated Sites & Ecological Features

The screening of designated sites and ecological features identified during the desktop study and ecological survey are given in Table 4-7. Sites and features screened out are not considered further in this assessment. Ecological features carried forward are assessed for potential impact during construction and operation in the following sections.

Table 4-7: Summary of ecological features and the screening assessment.

| Designated Site / Ecological Feature | Value | Screening | Reasoning |
|---|---|---|---|
| North Dublin Bay SAC | International | Screened out | JBA, 2023 - AA Screening Conclusion |
| South Dublin Bay SAC | International | Screened out | JBA, 2023 - AA Screening Conclusion |
| North Bull Island SPA | International | Screened out | JBA, 2023 - AA Screening Conclusion |
| South Dublin Bay and River Tolka Estuary SPA | International | Screened out | JBA, 2023 - AA Screening Conclusion |
| Dolphins, Dublin Docks pNHA | National | Screened out | Lack of connectivity |
| Grand Canal pNHA | National | Screened out | Lack of connectivity |
| Liffey Valley pNHA | National | **Screened in** | Potential air pathway impacts |
| North Dublin Bay pNHA | National | Screened out | Lack of connectivity |
| Royal Canal pNHA | National | Screened out | Lack of connectivity |
| South Dublin Bay pNHA | National | Screened out | Lack of connectivity |
| Buildings and artificial surfaces | Less than local | Screened out | Low value habitat |
| Amenity grassland (improved) | Less than local | **Screened out** | Low value habitat with low benefit to foraging birds |
| Dry meadows and grassy verges | High Local | **Screened in** | Offers nesting, refuge and foraging opportunity for various species |
| Hedgerows | High Local | **Screened in** | Offers nesting, refuge and foraging opportunity for various species |
| Treelines | High Local | **Screened in** | Offers nesting, refuge and foraging opportunity for various species |
| Mammals | High Local | **Screened in** | Treelines and grassland offer foraging and commuting opportunity |
| Bats | High Local | **Screened in** | Treelines, hedgerow and grassland offer foraging and commuting opportunity |
| Breeding and Wintering Birds | High Local | **Screened in** | Treelines, hedgerow and grassland offer nesting, foraging and commuting opportunities |
| Amphibians | Less than Local | Screened out | Site lacking in suitable habitat |
| Terrestrial Invertebrates | Low Local | Screened out | Site lacking in floral diversity |
| Invasive species | - | Screened out | None present in the area of works |

# 5 Other Relevant Plans and Projects

## 5.1 Cumulative Impacts

Potential sources of cumulative impacts were identified based on the ecology of valued ecological features. Potential sources of cumulative impacts were sought within an area where there is the potential for a significant impact on identified ecological features.

The following projects or plans were identified as potential sources of cumulative impacts:

- South Dublin County Development Plan 2022-2028
- Greater Dublin Drainage Strategy
- River Basin Management Plan for Ireland 2022-2027
- Planning Applications (March 2023)

## 5.2 Plans

### 5.2.1 South Dublin County Development Plan 2022-2028

The proposed scheme's development is in line with the South Dublin County Development Plan 2022-2028. It is an objective of the Plan to ensure that all development within the County conforms to key design principles which includes the promotion of sustainable energy and environmental services. These goals include the requirement that the planning system will 'be responsive to our national environmental challenges and ensure that development occurs within environmental limits, having regard to the requirements of all relevant environmental legislation and the sustainable management of our natural capital.

The Plan also aims to protect and enhance surface water quality, to support, improve and protect Natura 2000 sites, and to develop an integrated Green Infrastructure network to enhance biodiversity, provide accessible parks, open spaces and recreational facilities (SDCC, 2022a). The plan also states that work will be in conjunction with Irish Water to protect existing water and drainage infrastructure, to promote investments aiming to support environmental protection and facilitate the sustainable growth of the county.

A Screening for Appropriate Assessment was carried out on the plan, which was concluded that an Appropriate Assessment was necessary for this project. The associated Natura Impact Report concluded that there are no likely significant direct, indirect or secondary impacts of the project on any Natura 2000 sites (SDCC, 2022b), **therefore the SDCC Development Plan is not anticipated to contribute to cumulative or in-combination impacts.**

### 5.2.2 Greater Dublin Drainage Strategy

The Greater Dublin Drainage Strategy sets out the strategic planning for the development of wastewater treatment in the Greater Dublin Area in relation to the Ringsend Waste Water Treatment Plant (WWTP) Upgrade, Greater Dublin Drainage Project and associated wastewater network drainage projects (Irish Water, 2018). The proposed developed connects with the Local Authority sewer system which is included in this strategy. The Ringsend WWTP Upgrade includes plans to expand the WWTP to its ultimate capacity, together with associated network upgrades required. The Greater Dublin Drainage Project is planned to relieve both the Ringsend WWTP and network loading by construction of a new WWTP at Clonshaugh, an orbital sewer and provision of an outfall pipe discharging 1km north east of Ireland's Eye. The Ringsend WWTP upgrade is in progress and carried out in stages, with an increased capacity of 400,000 PE by the first half of 2021 and the ultimate capacity of 2.4 million PE to be in operation by 2025 (Irish Water, 2018). The Greater Dublin Drainage Project is strategically important to the Dublin Region in that it will provide capacity for residential and commercial growth (Irish Water, 2018).

**The Greater Dublin Drainage Strategy is not anticipated to contribute to cumulative or in-combination effects.**

### 5.2.3 Third Cycle River Basin Management Plan for Ireland 2022-2027 (DoHPLG, 2022)

The first cycle of River Basin Management Plans included the Eastern River Basin District - River Basin Management Plan (ERBDMP) 2009 – 2015 (WFD (2010). The plans summarised the waterbodies that may not meet the environmental objectives of the WFD by 2015 and identified which pressures are contributing to the environmental objectives not being achieved. The plans described the classification results and identified measures that can be introduced in order to safeguard waters and meet the environmental objectives of the WFD.

- Prevent deterioration of water body status.
- Restore good status to water bodies.
- Achieve protected areas objectives.
- Reduce chemical pollution of water bodies

The 2nd cycle River Basin Management Plan (RBMP) for Ireland 2018-2021 sets out the actions that Ireland will take to improve water quality and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2021 (DoHPLG, 2018a). Changes from previous River Basin Management Plans is that all River Basin Districts are merged as one national River Basin District. The Plan provides a more coordinated framework for improving the quality of our waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland.

The 3rd and current cycle aims to build on the initiatives of the second cycle, particularly the governance and implementation structures, and to improve the establishment of Irish Water, An Forum Uisce, the Local Authority Waters Programme and the Agricultural Sustainability Support and Advisory Programme.

The third cycle draft Catchment Report for Liffey and Dublin Bay Catchment (EPA, 2021) identified that between Cycles 2 and 3 there has been an overall small improvement in the catchment's status. The overall change in quality between Cycles 2 and 3 include 2 waterbodies that have achieved High Status, which is an increase of one, 56 which achieve Good Status has been increased by four, 23 achieving a Moderate Status which is a decrease in four waterbodies, and 24 achieving a Poor Status an increase of 1 between cycles. There are no Bad Status waterbodies as of Cycle 3, which is a decrease of one from Cycle 2. The main significant pressures are aquaculture, anthropogenic, atmospheric, historically polluted sites and waste pressures followed by agriculture, urban run-off and forestry.

**The Third Cycle River Basin Management Plan for Ireland 2022-2027 is not anticipated to contribute to cumulative or in-combination effects**

## 5.3 Other Projects

Other projects dated back three years are included overleaf (Table 5-1), which are not retention applications, home extensions and/or internal alterations, have been granted planning permission in the locality (approx. 2km) of the proposed.

Table 5-1: Other projects within approximately 2km which may have an accumulative impact on the development of the project

| Planning reference | Address | Application Status | Decision Date | Summary of Development |
|---|---|---|---|---|
| SHD3ABP-305857-19 | St. Edmunds, St. Lomans Road, Palmerstown, Dublin 20 | Permission granted | 06/03/2020 | Mixed use scheme which consists of: (a) 252 residential units in 3 blocks made up of 247 apartment/duplex units within 2 2-8 storey blocks (1 of which is over podium car park) comprising 119 one bed units, 125 two bed units, and 3 three bed units; 5 2 storey, three bed semi-detached/terraced house; all of the residential units will have associated private open space/balconies/terraces facing north/south/east/west; (b) a separate non-residential block measuring (total floor area c. 1118sq.m) and will comprise a creche (c.430sq.m), retail unit (c. 269sq.m), gym (c.152sq.m), community room (c. 231sq.m), and concierge (c. 36sq.m). The development will have 225 car parking spaces (145 spaces at under croft level, 70 spaces at surface level and 10 spaces at the 5 houses), 5 motorcycle parking spaces and 308 secure bike parking spaces. The site is accessed through the existing vehicular access to the west, off the unnamed road to the west. There will be a number of pedestrian entrances along St. Lomans Road, the Fonthill Road (R113) and the unnamed road to the west. In addition to all the new facilities all other site services and works to enable the development of the site will also be provided including site, bin stores, ESB substations, associated roadworks and services connections, a large quantity of public and communal open space, boundary treatment works and landscaping. |
| SD20A/0109 | Kishoge Community College, Thomas Omer Way, Lucan, Co. Dublin | Permission granted | 16/07/2020 | 2 storey modular classroom building and a single storey toilet building, steel framed covered walkway structure linking to the existing school, relocation of existing bicycle shelters and all associated site development works. |
| SD19A/0008 | Site at Balgadddy, South Lucan, Co. Dublin | Permission granted | 23/01/2020 | Demolition of two existing unoccupied, unused and dilapidated single storey buildings and the construction of a Community Centre and Place of Worship (Mosque) in a detached three storey over basement building (basement, ground, first and second floors), part pitched and part flat roofed, incorporating solar PV panels and a feature minaret and dome on/over roof levels and including: (a) at basement level - circulation spaces, car parking, bicycle parking, exercise room, service rooms, service plant and bin storage; (b) at ground floor level - main entrance and circulation spaces, administrative spaces, toilets and ablutions areas, storage rooms, tea stations, mortuary, prayer room with supporting service rooms, 2 classrooms, a library/book store, 3 retailing/services units, child minding rooms; (c) at first floor level - circulation spaces, administrative spaces, toilets and ablutions areas, 2 apartments, community health rooms, events room, kitchen/servery, prayer gallery overlooking the prayer room; (d) at second floor level - circulation spaces, administrative spaces, toilets, restaurant, kitchen; external to the building will be main vehicular and pedestrian site entrances including gates in the new northern boundary, limited car and bicycled parking, ramp entrance/exit |

| Planning reference | Address | Application Status | Decision Date | Summary of Development |
|---|---|---|---|---|
| | | | | to & from the underground basement car park, service yard, external circulation, children's play space, hard and soft landscaped areas, boundary treatments including walls and metal fencing; the areas and locations of each use will be shown on the drawings proposed to be lodged with the planning application and the times of use and occupancy of each are listed within written documents to be lodged with the planning application. |
| SHD3ABP-307092-20 | Lands at Palmerstown Retail Park, Kennelsfort Road Lower, Palmerstown, Dublin 20, D20 AE04 | Permission granted | 01/09/2020 | Demolition of all existing structures on site and the construction of a residential development of 250 'build-to-rent' apartments in 5 blocks; with a cafe and ancillary residential amenity facilities. Block A- 27 apartments in a building ranging from 3-6 storeys over basement, with 1 communal roof garden and most apartments provided with private balconies/terraces. A cafe, reception/concierge with managers office and bookable space at ground floor level; meeting rooms and workspace/lounge at first floor level, a gym at second floor level; and a cinema and a games room at basement level; Block B- 46 apartments in a building 6 storeys over basement and all apartments provided with private balconies/terraces; Block C- 47 apartments in a building 6 storeys over basement and all apartments provided with private balconies/terraces; Block D- 67 apartments in a building 7 storeys over basement and most apartments provided with private balconies/terraces; Block E- 63 apartments in a building 8 storeys over basement and all apartments provided with private balconies/terraces. The development also includes the construction of a basement providing 120 car parking spaces, 10 motorcycle spaces, 250 bicycle spaces and a plant room and bin stores. The proposal also incorporates 5 car parking spaces and 26 bicycle spaces at surface level; upgrades and modifications to vehicular and pedestrian/cyclist access on Kennelsfort Road Lower; utilisation of existing vehicular and pedestrian/cyclist access via Palmerstown Business Park; 1 ESB sub-station; landscaping including play equipment and upgrades to public realm; public lighting; boundary treatments and all associated engineering and site works necessary to facilitate the development. |
| SD20A/0089 | Immediately adjacent to and south-east of the Liffey Valley Shopping Centre, Fonthill Road, Clondalkin, Dublin 22 | Permission granted | 08/12/2021 | Mixed leisure, entertainment and retail extension to the existing Liffey Valley Centre organised around a large public plaza and pedestrian friendly east-west street with parapet levels varying between c.15m and c.18m above street level; the scheme provides for: (a) a two storey commercial extension (c.46,783sq.m gross) with plant areas at roof level to the existing Centre providing for mixed leisure and entertainment units (c. 9,247sq.m gross), food/beverage units (c.4,052sq.m gross), retail units (c. 21,051sq.m gross) and all ancillary space and circulation areas (c.12,433sq.m gross); the main retail area will be anchored by two stores (comprising a total of c.10,090sq.m gross) located on either side of the public plaza; (b) a central public plaza fronting onto the east-west street covered with a large glass canopy in the form of a curved gridshell |

| Planning reference | Address | Application Status | Decision Date | Summary of Development |
|---|---|---|---|---|
| | | | | structure, this structure will be the tallest part of the proposal at a height of c. 20m above street level, the food/beverage units are located around the plaza at both ground and first floor levels; (c) car parking over two levels (c.900 spaces including 45 universal access spaces and c.200 long stay cycle spaces with an area of c.27,917sq.m gross) located north-east of the extension area c. 290 short stay cycle spaces, 27 short stay car parking spaces and car/taxi set down areas on the east-west street; c.100 long stay cycles spaces provided within the existing car park to the adjacent to the Westend development (Vue Cinema and restaurants); approximately 2,085sq.m of existing gross floor space is to be removed/demolished over ground and first floor to facilitate the extension; the proposal includes all associated service yards, plant and equipment, photovoltaic panels, electricity substations, all utility connections and works, street lighting, signage, landscaping and boundary treatments; the proposal includes the construction of new toucan crossing points for cyclists on Ascail an Life (Ring Road around the Centre) at the western end of the east-west street to provide safe connection to the existing cycle network. |

## 5.4 Summary of Cumulative Impacts

The developments permitted above have the potential to have overlapping construction and short-term residual impact phases with the proposed project and therefore, in the absence of mitigation measures, these developments may result in potential in-combination or cumulative impacts on ecological features listed in Table 4-6. The County Development Plan, RBMP and projects within the locality of the proposed project are considered in combination with the currently proposed enhancement project in the following Impact Assessment section.

# 6 Impact Assessment

## 6.1 Introduction

The impacts on the valued ecological features are assessed here. The initial assessment considers the potential impact pathways and whether these apply to the ecological features. The impact assessment considers the project and the anticipated effects in the absence of any mitigation.

The potential impacts from the enhancement works are assessed under the following:

- Disturbance to habitats and species
- Small-scale habitat loss
- Degradation of on-site habitats, and site adjacent habitats via surface water and groundwater pollution events

The following sections describe the nature of immediate / short-term impacts, as well as any medium- or long-term impacts, predicted for designated protected sites, habitats and species in the absence of implemented mitigation measures during the maintenance works.

## 6.2 Do Nothing Scenario

If the proposed works were not to go ahead and the present land management continues as is, the ecological value of the site would remain unchanged.

## 6.3 Construction Phase

### 6.3.1 Designated Sites- Liffey Valley pNHA

The Liffey Valley pNHA is located approximately 500m north of the site. The proposed works are not anticipated to generate a large amount of dust given the small-scale works, however, there is a possibility of dust-based pollutants reaching the pNHA site should a continuous southerly wind be present during the construction phase. Therefore, the main impact concern for pNHA site would be the introduction of dust-based pollutants (e.g., cement-based dust). During long dry periods dust can coat plant foliage adversely affecting photosynthesis and other biological functions. Furthermore, cement-based dust deposited on leaves can increase the surface alkalinity, which in turn can hydrolyse lipid and wax components, penetrate the cuticle, and denature proteins, finally causing the leaf to wilt.

The pNHA's woodland communities, particularly the canopy, would be vulnerable to cement-based dust deposition impacts during the construction phase of the proposed development. This has knock-on impact for associated fauna which are supported by these woodlands. Furthermore, cement-based dust could be accidentally ingested by bird species when foraging and preening.

Therefore, in the absence of mitigation, **a temporary negative impact of slight significance** is anticipated during the construction phase of this project as a result of airborne pollutants.

### 6.3.2 Habitats & Species

#### Dry meadows and grassy verges

The grassy verge within the site boundary will be vulnerable to temporary degradation via polluting events (e.g., leaking or spilled hydrocarbons) which may occur within the site. These impacts would have a knock-on effect on the protected faunal groups which frequent this habitat for foraging purposes.

While the project involves the alteration of sections of the site for other biodiverse and social purposes, the grassy verge within the south-west corner of the site is not anticipated to be removed, and the functionality of this habitat type will not be lost.

Therefore, in the absence of mitigation during the construction phase, a **temporary negative impact of slight significance** is anticipated for the grassy verge due to pollution leakage events.

#### Hedgerows

The hedgerow at the site is not expected to suffer any direct habitat loss as it is intended to be retained around the boundary of the site, however, the hedge would be vulnerable to any polluting events (e.g., leaking or spilled hydrocarbons) which may occur within the site. Additionally, physical root compaction

from machinery during the construction phase of the development may degrade these habitats. Furthermore, minor impacts will have a knock-on effect on the protected faunal groups which frequent this habitat for commuting, foraging or refuge purposes. Due to the location of this habitat around the border of the boundary, they are likely to undergo direct, minor impacts as machinery and equipment reaches the site.

Therefore, in the absence of mitigation, during the construction phase, a **temporary negative impact of slight significance** is anticipated for this habitat due to accidental damage from pollutants and machinery.

### Treelines

The existing treeline habitats are not expected to suffer any direct habitat loss as they are intended to be retained as an informal memorial walk, however, these treelines would be vulnerable to any polluting events (e.g., leaking or spilled hydrocarbons) which may occur within the site. Additionally, physical root compaction and limb damage from machinery during the construction phase of the development may degrade this habitat. Furthermore, minor impacts will have a knock-on effect on the protected faunal groups which frequent this habitat for nesting, commuting, foraging or refuge purposes.

Therefore, in the absence of mitigation, during the construction phase, a **temporary negative impact of slight significance** is anticipated for this habitat due to accidental damage from pollutants and machinery.

### Mammals - Badger, Pine Marten and Hedgehog

While no signs of Badger, Pine Marten or Hedgehog habitation were present during the ecological walkover, this does not ensure that the local mammal species don't occasionally visit the site area for foraging. Bearing this in mind, impacts may arise in the form of disturbance to foraging and commuting activities, as well as potential loss of life to individuals in the case of the accidents within the construction site (e.g., accidental trappings), after failure to exclude entry.

Therefore, in the absence of appropriate mitigation during the construction phase, there is likely to be **temporary negative impacts of slight significance** for these mammal species.

### Bats

While no signs of bat roosts were present during the ecological walkover, this does not ensure that the three local bat species found within the NBDC records (Common Pipistrelle, Soprano Pipistrelle and Leisler's Bat) do not use the site area for commuting and foraging.

Impacts during construction relate to the external lighting a which could reduce the quality of foraging and commuting within this habitat for bats. Potential minor impacts on individuals using the site could be posed by the construction-based external lighting.

Therefore, in the absence of appropriate mitigation for lighting during the construction phase, **there is likely to be a temporary negative impacts of slight significance for local bats.**

### Breeding and Wintering Birds

Local breeding and seasonal wintering bird species will potentially be physically disturbed from their nesting (breeding only) and foraging activities during the construction works. While there are a number of bird species in the general area of conservation concern, the extent of the works on the site are small, contained and temporary, there are many alternate grass pitches in the vicinity of the site that will provide the birds ample opportunity for foraging.

Therefore, in the absence of mitigation during the construction phase, a t**emporary negative impact of slight significance** is anticipated for these bird species.

### Terrestrial Invertebrates

The foraging and commuting activities of the local invertebrates, including pollinators; will be adversely impacted as result of the works that will take place during the developments construction phase.

Therefore, in the absence of mitigation, during the construction phase, a **temporary low impact of negligible significance** is anticipated for terrestrial invertebrates.

## 6.4 Operational Phase

### 6.4.1 Designated Sites- Liffey Valley pNHA

Due to the nature of the project, operational impacts from the development of the project on this pNHA are not anticipated.

### 6.4.2 Habitats & Species

#### Dry meadows and grassy verges

Positive impacts on this habitat type are anticipated in the form of a large-scale increase in meadow and diverse floral grasslands throughout the site and an overall increase in cover of this habitat type. Therefore, the increase in the total area of this habitat type is anticipated to have a **long-term, positive impact of slight significance** on this habitat of local importance.

#### Treelines

Positive impacts on this habitat type during the operational phase are anticipated in the form of improvements and extension of the existing treelines, and the introduction of new treelines along the pathways using native tree species as listed below:

- Maple *Acer campestre* - 10%
- Alder *Alnus glutinosa* - 20%
- Silver Birch *Betula pendula* - 20%
- Scot's Pine *Pinus sylvestris* - 10%
- Wild Cherry *Prunus avium* - 20%
- Pedunculate Oak *Quercus robur* - 10%
- Rowan *Sorbus aucuparia* - 10%

Therefore, the increase in the total area of this habitat type is anticipated to have a **long-term, positive impact of slight significance** on this habitat of local importance.

#### Hedgerows

Operational impacts from the proposed development are not anticipated for this habitat type.

#### Ground-dwelling Mammals

Positive impacts during the operational phase will arise given the increase of total area of the dry meadow habitat and treeline habitat, which will in-turn increase the available areas for foraging and refuge, is anticipated to have a **long-term, positive impact of slight significance** for these mammal species.

#### Bats

During the operation of the park, there will be an increased number of lighting columns within the site boundary. The specs of the lights have a bat-friendly design are intended to comply with I.S. EN 13201 - 2:2015 P4. The lighting plan for the park includes a design of full cut-off luminaires to ensure no light being directed upwards, scheduled dimming of the lights by 25% between 00:00 and 06:00. The luminaires will switch on from dusk at full output. After 20:00, the luminaires will dim down to 10% output through to dawn. When presence is detected, the lighting will ramp up to full output in appropriate sections the Luminaire type to be used- Urbis Axia 2.1 5177 8LED at 600mA 1.66klm in warm white (3000K) with integral rear louvers, and these lighting columns will be 6m in height.

Common and Soprano Pipistrelles which are commonly known to frequent urban landscapes as they are generally more tolerant to anthropogenic impacts, including lighting impacts, than the other bat species in Ireland. Additionally, Leisler's Bat has also been recorded frequenting street lit and amenity grassland areas in the urban environment (Russ and Montgomery, 2002; Russ et al., 2003). This highlights the adaptability of three bat species, likely to be present on-site, to anthropogenic lighting sources. In addition to their adaptability to anthropogenic lighting, studies have shown that pipistrelle species and Leisler's Bat can congregate around urban street lighting feeding on the insects attracted to the lower impact lighting (Rydell et al., 1993, Blake et al., 1994; Stone et al., 2015; Spoelstra et al., 2015; 2017). Therefore, the local individual bats have likely already obtained the necessary behavioural

adaptations to adjust their respective foraging strategies for when the site has operational, bat-friendly lighting.

Given the above, the lighting during the operational phase of the development will have a **neutral impact** on local bat populations, while the enhancement of the treeline and meadow habitats will increase foraging capabilities for bats and will therefore have a **long-term positive impact of slight significance** on local urban bat species.

### Breeding and Wintering Birds

Positive impacts during the operational phase relate to the increase of total area and the extension of the treeline and dry meadow habitats, which will in-turn increase available areas for foraging and nesting (breeding only), which will result in **a long-term, positive impact of slight significance** for bird species.

### Terrestrial Invertebrates

Positive impacts during the operational phase relate to the increase of total area and the extension of the treeline and dry meadow habitats, which will in-turn increase available areas for foraging, refuge and hive creation (colony species only), which will result in **a long-term, positive impact of slight significance** for local terrestrial invertebrate species.

## 6.5 Invasive Non-native Species

Given the absence of invasive non-native species on-site within the proposed site, adverse impacts from this problematic species grouping are not anticipated during the construction and operational phases of this enhancement project.

## 6.6 Summary

The following potential significant impacts have been identified below, with the necessary mitigation is discussed in the next chapter:

- Degradation of the woodland canopies within the Liffey Valley pNHA.
- Degradation of dry meadow grassland, hedgerow and treeline habitats via pollution events; root compaction; and direct habitat loss, thus reducing the capacity of these habitats to support local wildlife.
- Disturbance and/or degradation commuting and foraging habitats for mammals, birds and terrestrial invertebrates, as well as potentially accidental fatal entrapment for these faunal groups during the construction phase.

The mitigation is based on existing guidance documentation and where necessary additional mitigation is proposed to reduce the impacts identified above.

# 7 Mitigation

The following mitigation is recommended to ensure that the proposed works do not adversely impact on the ecological receptors outlined in Section 6.

Mitigation measures for anticipated impacts on designated sites and ecological features are outlined below.

## 7.1 Mitigation for Project Construction Phase

The activities of the project for the construction phase shall remain within the boundary of the proposed site. Within this area, the mitigation measures outlined below shall be implemented.

- A Construction and Environment Management Plan (CEMP) will be submitted to South Dublin County Council for agreement prior to site works commencing. This CEMP will incorporate the mitigation measures listed here.
- The CEMP will also strictly adhere to best practice environmental guidance including but not limited to the following:

  - CIRIA Guidance C532 Control of water pollution from construction sites. Guidance for consultants and contractors. (CIRIA, 2019 - www.ciria.org);

  - CIRIA Guidance C741: Environmental good practice on site guide (Charles & Edwards, 2015; CIRIA, 2019 - www.ciria.org);

  - CIRIA Guidance C750D: Groundwater control: design and practice (Preene et al., 2016; CIRIA, 2019 - www.ciria.org);
- Construction method statements will be submitted to South Dublin County Council for agreement prior to site works commencing.

### 7.1.1 Site Compound

- The site compound will be sited in either the north-western section of the site, or within the central pitch, in order to locate it away from the higher-valued dry meadow habitat which is located adjacent to the southwest section of the development site, and from the treeline habitat which is located along the eastern boundary.
- Only plant and materials necessary for the construction of the works will be permitted to be stored at the compound location.
- Site establishment by the Contractor will include the following:

  - Site offices;

  - Site facilities (canteen, toilets, drying rooms, etc.);

  - Office for construction management team;

  - Secure compound for the storage of all on-site machinery and materials;

  - Temporary car parking facilities;

  - Temporary fencing;
- Site Security to restrict unauthorized entry;
- Bunded storage of fuels and refuelling area.
- A separate container will be located in the Contractors compound to store absorbents used to contain spillages of hazardous materials. The container will be clearly labelled, and the contents of the container will be disposed of by a licenced waste contractor at a licenced site. Records will be maintained of material taken off site for disposal.
- A maintenance programme for the bunded areas will be managed by the site environmental manager. The removal of rainwater from the bunded areas will be their responsibility. Records will be maintained of materials taken off site for disposal.
- The site environmental manger will be responsible for maintaining all training records.
- Drainage collection system for washing area to prevent run-off into surface water system.

- Wherever reasonably practical, refuelling of vehicles will be carried out off site to reduce risk of accidental hydrocarbon pollution events.

### 7.1.2 Water Quality

Relevant legislation and best practice guidance that have been considered includes but not limited to the following:

- Water Framework Directive (2000/60/EC);
- European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009;
- Local Government (Water Pollution) Acts 1977-1990;
- CIRIA C532 *Control of water pollution from construction sites*. Guidance for consultants and contractors. (www.ciria.org);
- CIRIA Guidance C750D: *Groundwater control: design and practice* (Preene *et al.*, 2016) (www.ciria.org);
- CIRIA C515 Groundwater control – design and practice, 2nd ed. (CIRIA, 2021 - www.ciria.org)
- CIRIA Guidance C741: *Environmental good practice on site guide* (Charles & Edwards, 2015; CIRIA, 2020 - www.ciria.org)

To prevent watercourse pollution:

- Adoption of a surface water plan including appropriate barrier controls to prevent any polluted surface water from the site reaching the adjacent habitats of high local ecological value.
- Minimise area of exposed ground by maintaining existing vegetation in vicinity of site compound/pier infrastructure.
- Oil booms and oil soakage pads should be maintained on-site to enable a rapid and effective response to any accidental spillage or discharge. These shall be disposed of correctly and records will be maintained by the environmental manager of the used booms and pads taken off site for disposal.
- Fail-safe site drainage and bunding through drip trays on plant and machinery will be provided to prevent discharge of chemical spillage from the sites to surface water.
- Any accidental discharge will be controlled by use of oil booms in the water prior to construction starting.

### 7.1.3 Dust generation management

The following measures will be implemented to prevent the generation and spread of dust from the site to nearby areas:

- Limit the breaking of the topsoil or earth stripping from occurring during dry and windy weather.
- Wheel washing of vehicles leaving the site, covering of fine dry loads or spraying of loads prior to exiting the site, and if necessary regular cleaning of public roads in the vicinity of the entrance.
- Appropriate maintenance of vehicles and machinery to minimise any extensive release of exhaust pollutants during works (OPR, 2004).

### 7.1.4 Concrete Management Procedures

The following measures will be implemented to prevent liquid concrete/ cement-based dust entering the adjacent habitats of ecological value.

- Wherever reasonably possible, pre-cast concrete bridge features should be utilised to minimise the risk of a concrete-based pollution event.
- Concrete delivery, concrete pours and related construction methodologies will be part of the procedure agreed with the contractor to mitigate any possibility of spillage or contamination of the local environment. Particular attention will be paid during the pouring process in order to avoid leakages or spills of concrete.

- Washout of concrete plant will occur off site at a designated impermeable area with waste control facilities.
- Raw, uncured or waste concrete will be stored appropriately prior to disposal by licenced contractor.
- The contractor's construction methodology will require the use of precast elements where practical; the use of secondary protection shuttering for concrete pours; all pours to be carried out in dry weather conditions; and that all trucks be cleaned prior to leaving respective depots.
- The contractor will be required to use experienced operators for the work; provide an appropriate level of continuous monitoring during any concrete pours by experienced management; and have method statements approved by the client prior to commencing works. Works will be carried out using recommendations from current guidance and relevant codes of practise as outlined in **EA (2011) -** *Managing concrete wash waters on construction sites: good practice and temporary discharges to ground or to surface waters*.

### 7.1.5 Pollution Control and Spill Prevention

Spill kits containing absorbent pads, granules and booms will be stored in the site compound with easy access for delivery to site in the case of an emergency. A minimum stock of spill kits will be maintained at all times and site foremen's vehicles will carry large spill kits at all times. Absorbent material will be used with pumps and generators at all times and used material disposed of in accordance with the Waste Management Plan. All used spill materials e.g., Absorbent pads will be placed in a bunded container in the contractor's compound. The material will be disposed of by a licenced waste contractor at a licenced facility. Records will be maintained by the environmental site manager.

Regular inspections and maintenance of plant and machinery checking for leaks, damage or vandalism will be made on all plant and equipment.

In the event of a spill the Contractor will ensure that the following procedure are in place:

- Emergency response awareness training for all Project personnel on-site works.
- Appropriate and sufficient spill control materials will be installed at strategic locations within the site. Spills kits for immediate use will be kept in the cab of mobile equipment.
- Spill kits will be stored in the site compound with easy access for delivery to site in the case of an emergency. A minimum stock of spill kits will be maintained at all times and site vehicles will carry spill kits at all times. Spill kits must include suitable spill control materials to deal with the type of spillage that may occur and where it may occur. Typical contents of an on-site spill kit will include the following as a minimum:

  - Absorbent granules;

  - Absorbent mats/cushions;

  - Absorbent booms;

  -Track-mats, geotextile material and drain covers.
- All potentially polluting substances such as oils and chemicals used during construction will be stored in containers clearly labelled and stored with suitable precautionary measures such as bunding within the site compound.
- All tank and drum storage areas on the site will, as a minimum, be bunded to a volume not less than the following;

  - 110% of the capacity of the largest tank or drum within the bunded area, or

  - 25% of the total volume of substances which could be stored within the bunded area.
- The site compound fuel storage areas and cleaning areas will be rendered impervious and will be constructed to ensure no discharges will cause pollution to surface or ground waters.
- Designated locations for refuelling are within Site Compound.
- Potentially contaminated run off from plant and machinery maintenance areas will be managed within the site compound surface water collection system.
- Damaged or leaking containers will be removed from use and replaced immediately.

### 7.1.6 Noise and vibration

The construction works will be limited to daylight hours where possible, ensuring minimum disturbance to commuting and foraging activities of local wildlife. With regard to construction activities, reference will be made to British Standard BS 5228-1:2009 Code of practice for noise and vibration control on construction and open sites. Noise, which offers detailed guidance on the control of noise from construction activities. A variety of practicable noise control measures will be employed. These include:

- Erection of barriers at construction works boundary as necessary and around items such as generators or high duty compressors.
- Limiting the hours during which site activities likely to create high levels of noise are permitted. Construction activities will take place Monday to Friday, between 08:00 and 18:00, and on Saturdays, between 08:00 and 13:00.
- A site representative responsible for matters relating to noise will be appointed to liaise with South Dublin County Council.

Additional guidance relevant to acceptable vibration and noise levels will be followed and is contained in the following documents:

- British Standard BS 7385: 1993: Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration.
- British Standard BS 5228-2: 2009: Code of Practice for Noise and Vibration Control on Construction and Open Sites: Vibration.
- NRA: 2004: Guidelines for the Treatment of Noise and Vibration in National Road Schemes.

### 7.1.7 General Avoidance Measures

Although it has been identified that there will be no permanent impact through disturbance to wildlife during the work, it is advised that general avoidance measures be undertaken to protect wildlife while the works are being carried out.

General avoidance measures that should be incorporated by the contractors working on site include:

- Limit the hours of working to daylight hours, to limit disturbance to nocturnal and crepuscular animals;
- Contractors must ensure that no harm comes to wildlife by maintaining the site efficiently and clearing away materials which are not in use, such as wire or bags in which animals can become entangled; and
- Any pipes should be capped when not in use (especially at night) to prevent local fauna becoming trapped. Any excavations Not included in works as no watercourse should be covered overnight to prevent animals from falling and getting trapped. If that is not possible, a strategically placed plank should be placed to allow animals to escape

### 7.1.8 Site Lighting Design

#### Hours of illumination during works and operational phases:

The lighting will be controlled by photocells which go on/off at sunrise and sunset as per set lux levels. Additionally, 'Virtual Midnight' dimming will need to be incorporate on-site, which automatically dims the lights by 33% between midnight and 6am

#### Light levels and type:

Construction site lighting that meets the lowest light levels permitted under health and safety would be preferable for bats in the vicinity. The specification and colour of light treatments, such as single bandwidth lights and no UV light are essential. LED luminaires are ideal and should be used where possible due to their sharp cut-off, lower intensity, and dimming capability. A warm white spectrum (3000K) should be used in the lighting located along the boundaries of the site to reduce the blue light component.

#### Column heights of lamp posts:

As bats most likely forage in the unlit areas surrounding the site, the introduction of new lighting as a result of the new development, with accompanying light spillage, is anticipated to result in the bats becoming averse to commuting and foraging within the proposed site and potentially the adjacent habitats also. In order to reduce the amount of light spillage where it is not needed, the height of lamp columns should be restricted. A height of 6m or less is necessary to avert lighting impacts.

### 7.1.9 Root compaction and limb damage avoidance

In order to avoid the damage and compaction of roots, machinery should avoid areas in rooting zones or by areas occupied by the treelines, standalone trees or hedgerow vegetation.

### 7.1.10 Sowing of Remedial Grassland

The areas outside of the zone of development that are damaged as a result of machinery accessing the site will have remedial sowing of grass. This sowing mix combined with the natural seedbank within the soil will help replace the functionality provided by the current grassland habitat.

## 7.2 Additional Biodiversity Recommendations for the Operational Phase

### 7.2.1 Bird boxes

It is recommended that bird nesting boxes be installed around the edges of the park on trees to enhance the site for nesting bird species, especially during the period when newer trees are too immature to provide nesting opportunities.

Bird nesting boxes come in a range of entrance sizes that are suitable for different species dependant on their size. A selection of the following is recommended:

- 25mm hole for Blue Tit and similar-sized (small) bird species
- 32mm hole for Great Tit and similar sixed bird species
- Open-fronted nest box for Robins
- 45mm hole for Starlings and similar-sized bird species.

### 7.2.2 All Ireland Pollinator Plan

It is recommended that actions from the All-Ireland Pollinator Plan be implemented through the operation and management of the pitches. Measures outlining pollinator-friendly management of Public land are detailed in this guidance document: Pollinator Planting Code Guide All-Ireland Pollinator Plan 2021-2025 (pollinators.ie).

The mowing regime of the grasses on site to be kept to a minimum.

Inclusion of pollinator resources, including a collective of native and non-invasive ornamental bulbs, perennials and shrubs, along with the exclusion of invasive non-native species.

# 8 Residual Impact

Residual ecological impacts are those that remain once the development proposals have been implemented. The main aim of ecological mitigation, compensation and enhancement is to minimise or eliminate residual impacts.

## 8.1 Construction Phase

Preparatory and construction works will result in temporary, minor disturbance to the foraging and commuting habitat for protected species such as ground-dwelling mammals and birds.

Implementation of mitigation measures during the construction works phase, along with good site management and construction practices will help to minimise any significant and/or permanent impact on the environment. This will be included in a Construction Environmental Management Plan (CEMP). Included in this will be best practice measures for visual and audible disturbance, as well as control of surface and ground water pollution, which will minimise any impact on local habitats and the species reliant on them.

With the proposed mitigation implemented the residual impact during the construction phase is assessed to be overall long-term, positive impact on account of the enhancement and maintenance of high-value habitats of local ecological importance, which will have knock-on effects for local protected species.

## 8.2 Operational Phase

The intended operational of the project includes the maintenance and upkeep of the increased biodiversity resources. The proposed remedial planting within the development, i.e., tree planting and sowing of wildflower meadows, will help maintain the overall floral and faunal biodiversity of the site. Overall, the works will have a positive residual impact on the biodiversity within and adjacent to the site.

# 9 Summary of Impact Assessment

## 9.1 EcIA Table

Table 9-1 presents a summary of the impacts envisaged when mitigation approaches are included. Residual impacts are also described.

All other ecological impacts can be avoided, mitigated or compensated so there is no anticipated significant impact for the remaining species considered in the assessment.

Table 9-1: Summary of Impacts; Mitigations; and Significance of Residual Impacts on ecological features

| Ecological Features | Impacts | Importance of Feature | Significance of impact without Mitigation | Mitigation | Significance of Residual Impacts |
|---|---|---|---|---|---|
| Liffey Valley pNHA | Accidental introduction of airborne pollutants into the habitat, degrading its condition and its ability to support the species associated with the site. | National | Temporary negative impact of slight significance | Strict adherence to<br><br>-The mitigations outlined in Sub-sections 7.1.1, 7.1.2, 7.1.3, 7.1.4 and 7.1.5, ensuring the prevention of dust pollutants from contaminating the pNHA. | Neutral residual impact during the operational phase. |
| Dry meadows and grassy verges | Accidental introduction of pollutants into the habitat, degrading its condition and its ability to support the species associated with the habitat.<br><br>The enhancement of existing habitats, including expansion of the meadow habitat. | High Local | Temporary negative impact of slight significance | Strict adherence to<br><br>The mitigations outlined in Sub-sections 7.1.1, 7.1.2, 7.1.3, 7.1.,4 and 7.1.5 ensuring the prevention of surface water and dust pollutants from contaminating the grassy verge on site. | Slight positive residual impact during the operational phase due to the large expansion of this habitat type. |
| Hedgerows | Accidental introduction of pollutants into the habitat, degrading its condition and its ability to support the species associated with the habitat<br><br>Root compaction or accidental limb damage through site access.<br><br>The enhancement of existing habitats, including expansion | High Local | Temporary negative impact of slight significance | Strict adherence to<br><br>The mitigations outlined in Sub-sections 7.1.1, 7.1.2, 7.1.3, 7.1.,4, 7.1.5, 7.1.9 and 7.1.10 ensuring the protection of local habitats which are used by local fauna.<br><br>The mitigations outlined in Sub-sections 7.1.1, 7.1.9 and 7.1.10 in relation to the location of the site compound and the prevention of damage to nearby limbs and roots of vegetation. | Neutral residual impact during the operational phase. |
| Treelines | | | | | Slight positive residual impact during the operational phase due to the large expansion of this habitat type. |

| Ecological Features | Impacts | Importance of Feature | Significance of impact without Mitigation | Mitigation | Significance of Residual Impacts |
|---|---|---|---|---|---|
| | of the hedgerow and treeline habitats. | | | The mitigation listed in Sub-section 7.1.11 in relation to the replacement of trees and shrubs lost from the park | |
| Ground-dwelling Mammals -<br>Badger<br>Pine Marten<br>Hedgehog | Disturbance of foraging and commuting activities during construction phase.<br><br>Accidental entrapments causing injury or fatality.<br><br>Increased resources due to the expansion and maintenance of beneficial habitats. | High Local | Temporary negative impact of slight significance | Strict adherence to<br><br>The mitigations outlined in Sub-sections 7.1.1, 7.1.2, 7.1.3, 7.1.,4, 7.1.5, 7.1.9 and 7.1.10 ensuring the protection of local habitats which are used by local fauna.<br><br>The mitigations outlined in Sub-sections 7.1.6, 7.1.7 and 7.1.8 in relation to the prevention of disturbance and/or accidental entrapment of local mammals. | Slight positive residual impact during the operational phase due to the large expansion of habitat types beneficial for foraging. |
| Bats | Disturbance of foraging and commuting activities through development if additional lighting used at night<br><br>Physical and visual audible disturbance from construction works | High Local | Temporary negative impact of slight significance | Strict adherence to<br><br>The mitigations outlined in Sub-sections 7.1.1, 7.1.2, 7.1.3, 7.1.,4, 7.1.5, 7.1.9 and 7.1.10 ensuring the protection of local habitats which are used by local fauna.<br><br>The mitigation listed in Sub-section The mitigations outlined in Sub-sections 7.1.6, 7.1.7 and 7.1.8 in relation to the prevention of disturbance of bats. | Slight positive residual impact during the operational phase due to the large expansion of habitat types beneficial for foraging. |
| Breeding and Wintering Birds | Disturbance of foraging and commuting activities through damage to the treelines and | High Local | Temporary negative impact of slight significance | Strict adherence to:<br><br>The mitigations outlined in Sub-sections 7.1.1, | Slight positive residual impact during the operational |

| Ecological Features | Impacts | Importance of Feature | Significance of impact without Mitigation | Mitigation | Significance of Residual Impacts |
|---|---|---|---|---|---|
| | adjacent amenity grassland habitats.<br><br>Disturbance of nesting through disruption of the treeline habitats. | | | 7.1.2, 7.1.3, 7.1.,4, 7.1.5, 7.1.9 and 7.1.10 ensuring the protection of local habitats which are used by local fauna.<br><br>The mitigation listed in Sub-section The mitigations outlined in Sub-sections 7.1.6, and 7.1.7 in relation to the prevention of disturbance and/or accidental entrapment of local fauna. | phase due to the large expansion of habitat types beneficial for foraging and nesting. |
| Terrestrial Invertebrates | Disturbance of foraging and commuting activities as a result of construction works on-site. | Low Local | Temporary negative impact of slight significance | Strict adherence to:<br><br>The mitigations outlined in Sub-sections 7.1.1, 7.1.2, 7.1.3, 7.1.,4, 7.1.5, 7.1.9 and 7.1.10 ensuring the protection of local habitats which are used by local fauna.<br><br>The mitigation listed in Sub-section The mitigations outlined in Sub-sections 7.1.6, and 7.1.7 in relation to the prevention of disturbance and/or accidental entrapment of local fauna. | Slight positive residual impact during the operational phase due to the large expansion of habitat types beneficial for foraging and hive-building. |

## 9.2 Cumulative Impacts

As there are no significant residual impacts on ecological features (following mitigation measures) from this development, there is therefore no potential for other plans or projects identified in Section 5 to act in combination with it. Therefore, significant cumulative impacts are not expected to occur on the ecological features within the proposed site.

# 10 Conclusion

The proposed development project has been shown to potentially impact on a number of different habitats with high local importance (dry meadows, hedgerows and treelines,) and faunal groups (ground-dwelling mammals; bats; breeding and wintering birds; and terrestrial invertebrates), whose ecological importance ranges from low to high local level in the context of this proposed site.

Based upon the information supplied, regarding the site layout, drainage, lighting descriptions and landscaping; and provided that the development is constructed in accordance with the mitigation measures outlined above, there will be no significant impacts alone or in-combination with other projects and plans, as result of the development and associated works on the ecology and local species of the area and on any designated conservation sites.

Given the scale of this development and its suitable landscape plan, the local ecology, including ground-dwelling mammals, bats, birds and terrestrial invertebrates will benefit from the maintained and improved ecological function of the site (planting of trees and wildflower meadows and installation of bird boxes) associated with the operational phase of this project.

# A Site Layout Plan

A1

L-004

L-005

L-006

Car Park

Ramp

SHANCASTLE AVENUE

SHANCASTLE DRIVE

SHANCASTLE CLOSE

SHANCASTLE CRESCENT

SHANCASTLE LAWNS

GREENFORT GARDENS

GREENFORT LAWNS

Community Centre

Shopping Centre

N

GRAPHIC SCALE (metres) 0 10 20 50 100

KEY

- Project extents Approx. 6.10ha
- Entrance plaza
- Main entrance areas
- Main pedestrian/cycle route with streetlights
- Secondary footpaths
- Activity circuit with exercise equipment/seating
- Pedestrian nodes with seating
- Active recreation area e.g. pumptrack
- Teenspace
- Children's play areas
- Raingarden
- Linear water feature
- Sculptural feature
- Streetlight
- Meadowland Grassland management
- Native bulb planting
- Formal trees signature species
- Native tree groups
- Existing trees retained
- Possible grass sports pitch
- Amenity grassland

| Issue | Date | By | Chkd | Appd |
|---|---|---|---|---|
| 01 | 28/03/23 | HAR | NDJ | NDJ |
| Issued for Part 8 Planning | | | | |

Client

Comhairle Contae Átha Cliath Theas
South Dublin County Council

Job Title

Quarryvale Local Park Up-grade
Tallaght, Dublin 24

Scale 1:1000 at A1

Discipline

Nicholas de Jong Associates
URBAN DESIGN

Drawing Title

LAYOUT and KEY PLAN

Drawing Status

Part 8 Planning

| Job No | Drawing No | Issue |
|---|---|---|
| 2213 | L-004 | R1 |

Do not scale

# B Relevant Policy and Legislation

The legislation discussed below is intended as a guide only and does not replace formal legal advice.

## B.1 Biodiversity Policy Guidance

'Biodiversity: The National Biodiversity Action Plan 2017-2021 (DCHG, 2017) sets out actions through which a range of government, civil and private sectors will undertake to achieve Ireland's 'Vision for Biodiversity' and has been developed in response to The Earth Summit, held in Rio de Janeiro in 1992 (UN Convention on Biological Diversity) and subsequent EU and International Biodiversity strategies and policies.

As part of the Action Plan process Local Authorities (LA) must produce Biodiversity Action Plans (BAP). BAPs highlight local biodiversity issues and set out a series of objectives and action plans for the conservation of priority species and habitats where they occur in each district or county.

## B.2 Designated Sites and Nature Conservation

### B.2.1 Statutory Designated Nature Conservation Sites

Sites with statutory designations receive varying degrees of legal protection under Irish statute (i.e. Wildlife Act 1976 and Wildlife (Amendment) Act (2000) and European Directives (i.e. the EC Birds Directive (2009/147/EC) and EC Habitats Directive (92/43/EC). The EU directives were transposed into Irish national law and subsequent amendments were revised and consolidated in the European Communities (Birds and Natural Habitats) Regulations 2011 and Irish Statutory Instrument 477/2011

There are a number of statutory designations used for sites of high nature conservation value in Ireland, which are applied depending upon the importance of the site in a local, regional, national or international context. These include:

- National
- Natural Heritage Area (NHA)
- Wildfowl Sanctuary
- Statutory Nature Reserve
- Refuge for Fauna
- European
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- International
- UNESCO Biosphere Reserve
- Ramsar Convention Site
- National Park (Category II) Sites

### B.2.2 Non-Statutory Designations

Non-statutory sites are afforded no statutory legal protection, but are normally recognised by local planning authorities and statutory agencies as being of local nature conservation value

A proposed Natural Heritage Area (pNHA) is an area deemed to be of special interest containing important wildlife habitat and often containing rare or threatened species. They may also be selected on the basis of their geology or geomorphology.

### B.2.3 Protected and Notable Species

A number of species are protected under Irish and international legislation. In Ireland, primary protection is provided under the 1976 Wildlife Act and Wildlife (Amendment) Acts (2000 & 2010) and revision 2018. Species of European importance receive additional protection in Ireland under the Birds and

Natural habitats Regulations 2011. The Flora (Protection) Order (2015) makes it illegal to cut, uproot or damage a listed species in any way. It is illegal to alter, damage or interfere in any way with their habitats

# C National Biodiversity Data Centre (2023)

## C.1 Recent records (within 10 years) of protected species within the 5km of the site

| Species Name | Date of last record | Designation |
|---|---|---|
| | | **Amphibian** |
| Common Frog *Rana temporaria* | 01/03/2020 | EU Habitats Directive >> Annex V<br>Wildlife Act 1976 & Amendments |
| Smooth Newt *Lissotriton vulgaris* | 15/06/2020 | Wildlife Act 1976 & Amendments |
| | | **Bird** |
| Barn Owl *Tyto alba* | 07/07/2019 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Red List |
| Barn Swallow *Hirundo rustica* | 16/07/2020 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Black-headed Gull *Larus ridibundus* | 21/05/2020 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Brent Goose *Branta bernicla* | 07/04/2021 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Common Coot *Fulica atra* | 22/05/2020 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II,<br>Annex Birds of Conservation Concern - Amber List |
| Common Kestrel *Falco tinnunculus* | 15/01/2020 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Common Kingfisher *Alcedo atthis* | 28/04/2021 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex I<br>Birds of Conservation Concern - Amber List |
| Common Linnet *Carduelis* | 12/02/2020 | Protected Species: Wildlife Acts |

| Species Name | Date of last record | Designation |
|---|---|---|
| *cannabina* | | Birds of Conservation Concern - Amber List |
| Common Pheasant *Phasianus colchicus* | 21/05/2020 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II], Annex III |
| Common Snipe *Gallinago gallinago* | 28/01/2017 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II, Annex III, Section III<br>Birds of Conservation Concern - Amber List |
| Common Starling *Sturnus vulgaris* | 06/03/2021 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Common Swift *Apus apus* | 31/05/2021 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Common Wood Pigeon *Columba palumbus* | 16/07/2020 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II, Annex III |
| Eurasian Curlew *Numenius arquata* | 22/11/2018 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II,<br>Birds of Conservation Concern - Red List |
| Eurasian Teal *Anas crecca* | 26/02/2017 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II, Annex III,<br>Birds of Conservation Concern - Amber List |
| Great Black-backed Gull *Larus marinus* | 19/06/2020 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Great Cormorant *Phalacrocorax carbo* | 16/07/2020 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Greylag Goose *Anser anser* | 15/01/2020 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II, Annex III<br>Birds of Conservation Concern - Amber List |
| Herring Gull *Larus argentatus* | 16/07/2020 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Red List |
| House Martin *Delichon urbicum* | 05/07/2020 | Protected Species: Wildlife Acts |

| Species Name | Date of last record | Designation |
|---|---|---|
| | | Birds of Conservation Concern - Amber List |
| House Sparrow *Passer domesticus* | 06/03/2021 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Lesser Black-backed Gull *Larus fuscus* | 28/07/2019 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Little Egret *Egretta garzetta* | 22/10/2018 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex I Bird Species |
| Little Grebe *Tachybaptus ruficollis* | 21/05/2020 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Mallard *Anas platyrhyncho* | 26/04/2021 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II, Annex III |
| Mew Gull *Larus canus* | 28/07/2019 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Mute Swan *Cygnus olor* | 21/04/2021 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Peregrine Falcon *Falco peregrinus* | 16/07/2016 | Protected Species: Wildlife Acts<br>Protected Species: EU Birds Directive >> Annex I |
| Rock Pigeon *Columba livia* | 16/07/2020 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II |
| Sand Martin *Riparia riparia* | 04/08/2020 | Protected Species: Wildlife<br>Birds of Conservation Concern - Amber List |
| Sky Lark *Alauda arvensis* | 21/05/2020 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |

| Species Name | Date of last record | Designation |
|---|---|---|
| Stock Pigeon *Columba oenas* | 01/05/2021 | Protected Species: Wildlife Acts<br>Birds of Conservation Concern - Amber List |
| Tufted Duck *Aythya fuligula* | 19/06/2020 | Protected Species: Wildlife Acts<br>EU Birds Directive >> Annex II, Annex III,<br>Birds of Conservation Concern - Amber List |
| **Invertebrate** | | |
| Freshwater White-clawed Crayfish *Austropotamobius pallipes* | 18/08/2013 | EU Habitats Directive >> Annex II, Annex V<br>Protected Species: Wildlife Acts |
| **Mammals** | | |
| Brown Long-eared Bat *Plecotus auritus* | 25/05/2020 | Protected Species: EU Habitats Directive >> Annex IV<br>Protected Species: Wildlife Acts |
| Daubenton's Bat *Myotis daubentonii* | 25/05/2020 | EU Habitats Directive >> Annex IV<br>Protected Species: Wildlife Acts |
| Eurasian Badger *Meles meles* | 01/09/2020 | Protected Species: Wildlife Acts |
| Eurasian Pygmy Shrew *Sorex minutus* | 01/09/2020 | Protected Species: Wildlife Acts |
| Eurasian Red Squirrel *Sciurus vulgaris* | 24/01/2015 | Protected Species: Wildlife Acts |
| European Otter *Lutra lutra* | 06/12/2018 | EU Habitats Directive >> Annex II , Annex IV<br>Protected Species: Wildlife Acts |
| Lesser Noctule *Nyctalus leisleri* | 08/06/2020 | EU Habitats Directive >> Annex IV<br>Protected Species: Wildlife Acts |

| Species Name | Date of last record | Designation |
|---|---|---|
| Nathusius's Pipistrelle *Pipistrellus nathusii* | 25/05/2020 | EU Habitats Directive >> Annex IV<br>Protected Species: Wildlife Acts |
| Natterer's Bat *Myotis nattereri* | 25/05/2020 | EU Habitats Directive >> Annex IV<br>Protected Species: Wildlife Acts |
| Pine Marten *Martes martes* | 13/12/2021 | EU Habitats Directive >> Annex V<br>Protected Species: Wildlife Acts |
| Pipistrelle *Pipistrellus pipistrellus sensu lato* | 06/06/2013 | EU Habitats Directive >> Annex IV<br>Protected Species: Wildlife Acts |
| Soprano Pipistrelle *Pipistrellus pygmaeus* | 25/05/2020 | EU Habitats Directive >> Annex IV<br>Protected Species: Wildlife Acts |
| West European Hedgehog *Erinaceus europaeus* | 23/06/2021 | Protected Species: Wildlife Acts |

## C.2 Invasive Species recorded within a 5km radius of the site over the last 10 years

| Species Name | Date of last record | Designation |
|---|---|---|
| **Flora** | | |
| Black Currant *Ribes nigrum* | 16/09/2017 | Medium Impact Invasive Species |
| Butterfly-bush *Buddleja davidii* | 26/09/2022 | Medium Impact Invasive Species |
| Canadian Fleabane *Conyza canadensis* | 02/08/2018 | Medium Impact Invasive Species |
| Canadian Waterweed *Elodea canadensis* | 08/07/2020 | High Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Cherry Laurel *Prunus laurocerasus* | 18/04/2022 | High Impact Invasive Species |
| Common Broomrape *Orobanche minor* | 22/06/2020 | Medium Impact Invasive Species |
| Evergreen Oak *Quercus ilex* | 01/06/2020 | Medium Impact Invasive Species |
| Giant Hogweed *Heracleum mantegazzianum* | 14/06/2021 | High Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Giant Knotweed *Fallopia sachalinensis* | 03/08/2017 | High Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Himalayan Honeysuckle *Leycesteria formosa* | 10/11/2021 | Medium Impact Invasive Species |
| Indian Balsam *Impatiens glandulifera* | 15/09/2022 | High Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Japanese Knotweed *Fallopia japonica* | 29/11/2021 | High Impact Invasive Species Regulation S.I. 477 (Ireland) |
| Japanese Rose *Rosa rugosa* | 26/05/2019 | Medium Impact Invasive Species |
| Narrow-leaved Ragwort *Senecio inaequiden*) | 09/08/2020 | Medium Impact Invasive Species |

| Species Name | Date of last record | Designation |
|---|---|---|
| Nuttall's Waterweed *Elodea nuttallii* | 22/07/2019 | High Impact Invasive Species<br>Regulation S.I. 477 (Ireland) |
| Russian-vine *Fallopia baldschuanica* | 11/08/2020 | Medium Impact Invasive Species |
| Spanish Bluebell *Hyacinthoides hispanica* | 18/04/2022 | Regulation S.I. 477 (Ireland) |
| Sycamore *Acer pseudoplatanus* | 18/04/2022 | Medium Impact Invasive Species |
| Three-cornered Garlic *Allium triquetrum* | 09/04/2022 | Medium Impact Invasive Species<br>Regulation S.I. 477 (Ireland) |
| Turkey Oak *Quercus cerris* | 09/05/2019 | Medium Impact Invasive Species |
| **Invertebrates** | | |
| *Arthurdendyus triangulatus* | 03/05/2016 | High Impact Species |
| *Australoplana sanguinea* | 28/01/2021 | Medium Impact Species |
| Budapest Slug *Tandonia budapestensis* | 16/06/2022 | High Impact Species<br>EU Regulation No. 1143/2014 |
| Harlequin Ladybird *Harmonia axyridis* | 18/05/2012 | Medium Impact Species |
| Jenkins' Spire Snail *Potamopyrgus antipodarum* | 02/09/2016 | Medium Impact Species |
| **Mammals** | | |
| American Mink *Mustela vison* | 02/08/2018 | High Impact Invasive Species<br>Regulation S.I. 477 (Ireland) |
| Brown Rat *Rattus norvegicus* | 26/05/2020 | High Impact Invasive Species<br>Regulation S.I. 477 (Ireland) |
| Eastern Grey Squirrel *Sciurus carolinensis* | 27/07/2022 | High Impact Invasive Species<br>EU Regulation No. 1143/2014<br>Regulation S.I. 477 (Ireland) |

| Species Name | Date of last record | Designation |
|---|---|---|
| European Rabbit *Oryctolagus cuniculus* | 15/06/2020 | Medium Impact Invasive Species |
| Fallow Deer *Dama dama* | 19/07/2018 | High Impact Invasive<br>Regulation S.I. 477 (Ireland)<br>Protected Species: Wildlife Acts |
| **Reptile** | | |
| Red-eared Terrapin *Trachemys scripta* | 08/05/2021 | Medium Impact Species<br>EU Regulation No. 1143/2014 |

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