## Appendix 6: Ecological Impact Assessment Report

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# ECOLOGICAL IMPACT ASSESSMENT FOR A PROPOSED DEVELOPMENT AT SLADE, SAGGART, CO. DUBLIN

# Table Of Contents

# 1. Introduction

## 1.1 Background

This Ecological Impact Assessment (EcIA) addresses the potential ecological impacts of a proposed development that may occur in the future on the biodiversity and ecological integrity of a site at Slade, Saggart, Co. Dublin. It followed on from a Request for Further Information made by South Dublin County Council with regards this proposed development (Planning Reference No: SD21A/0159).

It follows a standard approach based upon the description of the existing baseline conditions within the development site. An evaluation of the likely habitats and species currently present within the proposed development site is also given, along with the identification of the potential ecological impacts arising from the proposed development. An assessment of the likely significance of the identified impacts on valued ecological receptors (VERs), both within and close to the development site is also made. Where a significant negative impact has been identified, then suitable remedial mitigation measures are provided in order to prevent, reduce or offset the impact.

## 1.2 Location and Setting

The application site is approximately 2.4ha, and it is located in a rural area, in the townland of Slade. The site will be accessed via an entrance along the northern site boundary, which leads to the ongoing construction site of the new Saggart Irish Water Reservoir that is under construction. The site is bounded to the north by the Irish Water construction site, to the west by an ESB sub-station, to the south by the Camac River and to the east by a yard. A site location map is shown in Figure 1.

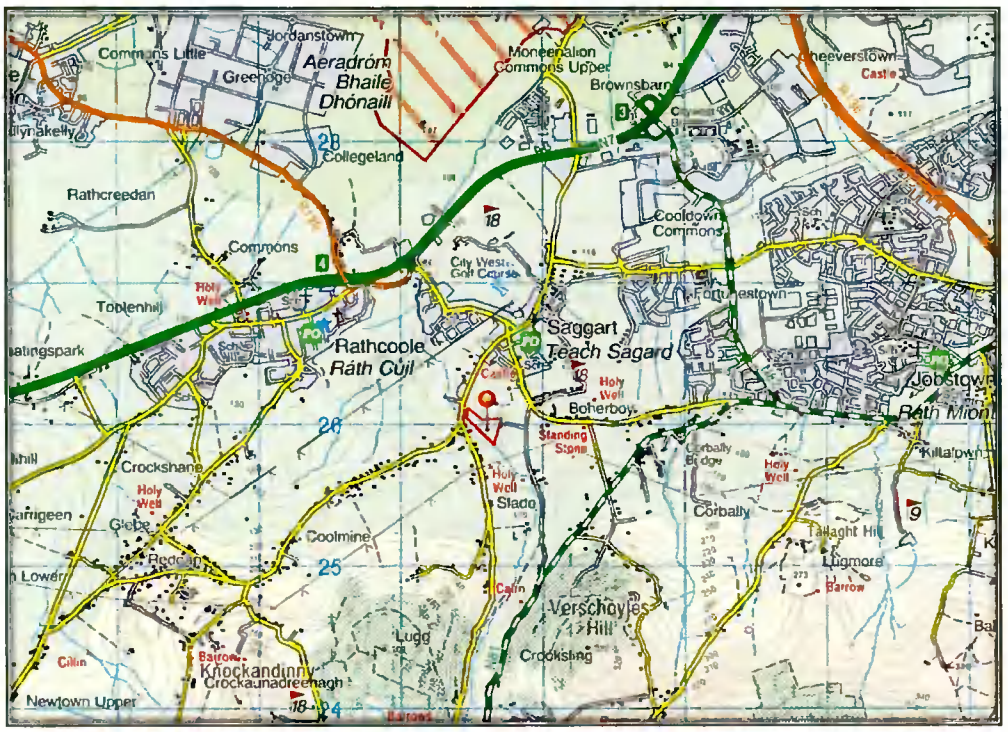


**Figure 1 – Map Showing the Location of the Site (Pinned)**

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## 1.3 Legislative and Policy Context

### 1.3.1 Legislative Context

The Irish Wildlife Act 1976 (and its amendment of 2000) provides protection to most wild birds and animals. Interference with such species can only occur under licence. Under the act it is an offence to "wilfully interfere with or destroy the breeding place or resting place of any protected wild animal". The basic designation for wildlife is the Natural Heritage Area (NHA). This is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection. Under the Wildlife Amendment Act (2000) NHAs are legally protected from damage. NHAs are not part of the Natura 2000 network and so the Appropriate Assessment process does not apply to them.

The Flora Protection Order 1999 provides statutory protection in Ireland to a number of rare plant species from being wilfully cut, picked, uprooted or damaged. It is also illegal under this order to alter, damage or interfere with their habitats.

The Birds Directive (Council Directive2009/147/EC) recognises that certain species of birds should be subject to special conservation measures concerning their habitats. The Directive requires that Member States take measures to classify the most suitable areas as Special Protection Areas (SPAs) for the conversation of bird species listed in Annex 1

of the Directive. SPAs are selected for bird species (listed in Annex I of the Birds Directive), that are regularly occurring populations of migratory bird species and the SPA areas are of international importance for these migratory birds.

The EU Habitats Directive (92/43/EEC) requires that Member States designate and ensure that particular protection is given to sites (Special Areas of Conservation) which are made up of or support particular habitats and species listed in annexes to this Directive.

The Water Framework Directive (WFD) (2000/60/EC), which came into force in December 2000, establishes a framework for community action in the field of water policy. The overall sim of the WFD is the eventual achievement of good status in all waterbodies. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The WFD rationalises and updates existing legislation and provides for water management on the basis of River Basin Districts (RBDs). RBDs are essentially administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD. Ireland is now within the 2nd cycle of the WFD (2015 – 2021), where previous RBDs were merged into one national RBD. This cycle will also facilitate a greater input of communities at the local catchment level.

### 1.3.2 Planning Policies

#### National

Nationally, the Government's commitment to sustainable development is set out in a number of documents including the National Planning Framework and the National Development Plan 2018 – 2027.

#### Regional

The Regional Spatial and Economic Strategy for the Eastern and Midlands Regional Assembly (2018) provides a planning framework covering Dublin and its surrounding counties for the period 2010-2022. These guidelines contain a number of policies relevant to ecology and nature conservation. These guidelines are summarised in Table 1.

| Reference | Objective / Policy |
|---|---|
| RPO 7.16 | Support the implementation of the Habitats Directives in achieving an improvement in the conservation status of protected species and habitats in the Region and to ensure alignment between the core objectives of the EU Birds and Habitats Directives and local authority development plans. |
| RPO 7.17 | Facilitate cross boundary co-ordination between local authorities and the relevant agencies in the Region to provide clear governance arrangements and coordination mechanisms to support the development of ecological networks and enhanced connectivity between protected sites whilst also addressing the need for management of alien invasive species and the conservation of native species. |
| RPO 7.21 | Local authorities shall promote an Ecosystem Services Approach49 in the preparation of statutory land use plans. |
| RPO 7.22 | Local authority development plan and local area plans, shall identify, protect, enhance, provide and manage Green Infrastructure in an integrated and coherent manner and should also have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks, and protected species. |
| RPO 7.23 | Support the further development of Green Infrastructure policies and coordinate the mapping of strategic Green Infrastructure in the Region. |

**Table 1 – Regional Policies Relevant to Ecology and Nature Conservation**

## Local

Planning policy at the local level is provided by the South Dublin County Development Plan 2016–2022. This plan contains a number of objectives and policies relevant to ecology, biodiversity and nature conservation. Some of the relevant measures for nature conservation that are outlined in these plans are summarised in Table 2.

| Reference | Objective / Policy |
|---|---|
| G2 Objective 1 | To reduce fragmentation of the Green Infrastructure network and strengthen ecological links between urban areas, Natura 2000 sites, proposed Natural Heritage Areas, parks and open spaces and the wider regional Green Infrastructure network. |
| G2 Objective 2 | To protect and enhance the biodiversity value and ecological function of the Green Infrastructure network. |
| G6 Objective 1 | To protect and enhance existing ecological features including tree stands, woodlands, hedgerows and watercourses in all new |

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| | developments as an essential part of the design process. |
| G6 Objective 2 | To require new developments to provide links into the wider Green Infrastructure network, in particular where similar features exist on adjoining sites. |
| G6 Objective 3 | To require multifunctional open space provision within all new developments that includes provision for ecology and sustainable water management. |
| HCL12 Objective 1 | To prevent development that would adversely affect the integrity of any Natura 2000 site located within and immediately adjacent to the County and promote favourable conservation status of habitats and protected species including those listed under the Birds Directive, the Wildlife Acts and the Habitats Directive. |
| HCL13 Objective 1 | To ensure that any proposal for development within or adjacent to a proposed Natural Heritage Area (pNHA) is designed and sited to minimise its impact on the biodiversity, ecological, geological and landscape value of the pNHA particularly plant and animal species listed under the Wildlife Acts and the Habitats and Birds Directive including their habitats. |

**Table 2 – Local Policies Relevant to Ecology and Nature Conservation**

## Biodiversity and Heritage Plans

Ireland's National Biodiversity Plan identifies actions that need to be taken in order to understand and protect biodiversity in Ireland. It states that biodiversity and ecosystems in Ireland should be conserved and restored, to deliver benefits that are essential to all sectors of society and that Ireland should contribute to the efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally.

# 2. Methodology

## 2.1 Statement of Competency

The site survey and EcIA report was carried out by Noreen McLoughlin. Noreen is the owner and main ecologist at Whitehill Environmental. Noreen holds a BA (Hons) in Natural Science (Mod) Zoology and an MSc in freshwater ecology (TCD, Dublin). She has been a full member of the CIEEM (Chartered Institute of Ecology and Environmental Management) for over 15 years. Noreen has over 17 years as a professional ecologist in Ireland and in that time has completed many Ecological Impact Assessments and Appropriate Assessments for various developments.

## 2.2 Study Area

The study area encompasses all the land within the area defined in the plan submitted for planning consent, i.e., the proposed application site. In addition, important ecological habitats and receptors within the zone of influence (15km) of the proposed development were also studied.

## 2.3 Desk Based Studies and Consultation

The desk study involved the examination of aerial photographs, current and historical maps and plans and drawings of the site. In addition, information was collated on designated nature sites within a 15km radius of the proposed site and on protected and rare species within the 1km square of the site.

The following websites were used to access information and data:

- National Parks and Wildlife Service - aerial photographs and maps of designated sites, information on habitats and species within these sites and information on protected plant or animal species; conservation objectives, site synopses and standard data forms for relevant designated sites.
- Environmental Protection Agency (EPA)- Information pertaining to water quality, geology and licensed facilities within the area.
- National Biodiversity Data Centre (NBDC) – Information pertaining to protected plant and animal species within the study area.
- Rowan Engineering Consultants / Coffey Construction Ltd – Details of the proposed plan, including site plans and specifications etc.
- South Dublin County Council – Information on planning history in the area for consideration of cumulative impacts and effects. Information on the Planning File, including the FI Request.

## 2.4 Field Based Studies

Whitehill Environmental carried out a visit to the site of the proposed development in Slade on September 14th 2021. The site was surveyed in accordance with the Heritage Council's *Habitat Survey Guidelines* (Smith et al., 2010) and the Institute of Environmental Assessment's *Guidelines for Baselines Ecological Assessment* (IEA, 1995). Habitats within the application site were classified in accordance to Level 3 of *A Guide to Habitats in Ireland* (Fossit, 2000). These habitats are denoted in the text along with their habitat code. e.g., the habitat code for improved agricultural grassland is GA1. A species list was compiled and target notes were made.

During the surveys any bird and mammal activity was also noted.

## 2.5 Seasonal Constraints

The survey was carried out in early autumn and was considered suitable for the assessment of habitats. The survey was conducted outside of the optimal bird breeding season, whilst signs of mammals are usually most obvious in winter when vegetation has died back. The weather on the day of the survey was warm and dry.

## 2.6 Assessment Methodology

### 2.6.1 Evaluation of Ecological Features

The methodologies used to determine the value of ecological resources, to characterise the impacts of the proposed scheme, and to assess the significance of impacts and any residual effects are described below. This approach is in accordance with EPA guidance and the CIEEM's (Chartered Institute of Ecology and Environmental Management) guidelines.

CIEEM suggest that to ensure a consistency of approach, ecological features are valued in accordance with their geographical frame of reference, as defined below:

- International
- National (Ireland)
- Regional (East)
- County (South Dublin)
- District (Saggart)
- Local/Townland (Slade townland)

The above categories are then applied to the ecological features identified. Ecological features can be defined as:

- Designated sites (i.e., SACs, SPAs, NHAs, pNHAs, National Nature Reserves) or non-statutory locally designated sites and features.
- Non-designated sites and habitats and features of recognised biodiversity value, such as rivers and streams. The features being evaluated can be considered in the context of the site and locality and thus a more accurate assessment of the impacts in the locality can be made.

The criteria used in evaluating ecological habitats follow the NRA (2009) and CIEEM (2006). The site evaluation criteria are detailed in Table 3.

| Ecological Valuation | Description |
|---|---|
| **Internationally Important** | • Sites designated (or qualifying for designation) as an SAC* or SPA* under the EU Habitats or Birds Directives.<br>• Undesignated sites that fulfil criteria for designation as a European Site.<br>• Features essential to maintaining the coherence of the Natura 2000 network.<br>• Sites containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive.<br>• Resident or regularly occurring populations of birds listed in Annex I of the Birds Directive and species listed in Annex II and/or Annex IV of the Habitats Directive.<br>• Ramsar Sites, World Heritage Sites or Biosphere Reserve.<br>• Site hosting significant species populations under the Bonn Convention or Berne Convention.<br>• Biogenetic Reserve or European Diploma Site.<br>• Salmonid waters. |
| **Nationally Important** | • Sites or waters designated or proposed as an NHA*or Statutory Nature Reserve.<br>• Refuge for fauna and flora protected under the Wildlife Acts.<br>• National Park.<br>• Undesignated sites fulfilling criteria for designation as a NHA.<br>• Statutory Nature Reserve.<br>• Refuge for Fauna and Flora protected under the Wildlife Act.<br>• Resident or regularly occurring populations (assessed to be important at the national level) of species protected under the Wildlife Acts and/or species listed on the relevant Red Data list).<br>• Site containing viable areas of the habitat types listed in |

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| | Annex I of the Habitats Directive. |
| **County Importance** | • Areas of Special Amenity.<br>• Area subject to a Tree Preservation Order.<br>• Area of High Amenity, or equivalent, designated under the County Development Plan.<br>• Resident or regularly occurring populations (assessed to be important at the County level) of species of birds listed in Annex I of the Birds Directive, species listed in Annex II and/or IV of the Habitats Directive, species protected under the Wildlife Acts and/or species listed on the relevant Red Data list.<br>• Site containing area(s) of the habitat types listed in Annex I of the Habitats Directive that do not fulfil criteria for valuation as of International or National Importance.<br>• County important populations of species, or viable areas of semi-natural habitats or natural heritage features identified in the National or local BAP.<br>• Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness or populations of species that are uncommon within the county.<br>• Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level. |
| **Local Importance (higher value)** | • Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP.<br>• Resident or regularly occurring populations (assessed to be important at the Local level) of species of birds listed in Annex I of the Birds Directive, species listed in Annex II and/or IV of the Habitats Directive, species protected under the Wildlife Acts and/or species listed in the relevant Red Data list.<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>• 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 of features containing non-native species that are of some importance in maintaining habitat links. |

**Table 3 - Conservation Evaluation (after Natura Site Evaluation Scheme, NRA, 2009).**

**SAC = Special Area of Conservation SPA = Special Protection Area NHA = Natural Heritage Area.**

### 2.6.2 Assessment of Impacts

The assessment of potential ecological impacts has been carried out using guidelines published by the EPA and the CIEEM. They can be summarised as:

- The identification of the range of potential impacts which can reasonably be expected to occur should the proposed developments receive consent.
- The consideration of the systems and processes in place to avoid, reduce and mitigate the possible effects of these impacts.
- The identification of opportunities for ecological enhancement within the site.

Impacts are defined as being positive, negative or neutral. A significant impact is defined as an impact upon the integrity of a defined ecosystem and/or the conservation status of a habitat or species within a given area.

Where a potential negative impact has been identified, mitigation measures have been formulated using best practices techniques and guidance to prevent, reduce or offset the impact.

## 3. Development Description

In June 2021, Coffey Construction Ltd applied to South Dublin County Council for planning permission for a development on lands at Slade, Saggart, Co. Dublin. Permission is being sought here for land recontouring/infilling works on c.16,000sq.m. of a folio size of c.2.4ha (allowing buffers). The volume of material to be placed on site is c.35,000m3 with an average fill level of c.3.5m above existing. The material will be sourced from the adjacent Saggart waterworks site, where Irish Water and Coffey Construction Ltd are undertaking the construction of a new reservoir. The main site has previously been granted planning permission by South Dublin County Council (Planning File Reference: 18A/0180). The estimated duration of works will be approximately 18 months.

An extract from the planning drawings submitted is shown in Figure 2.

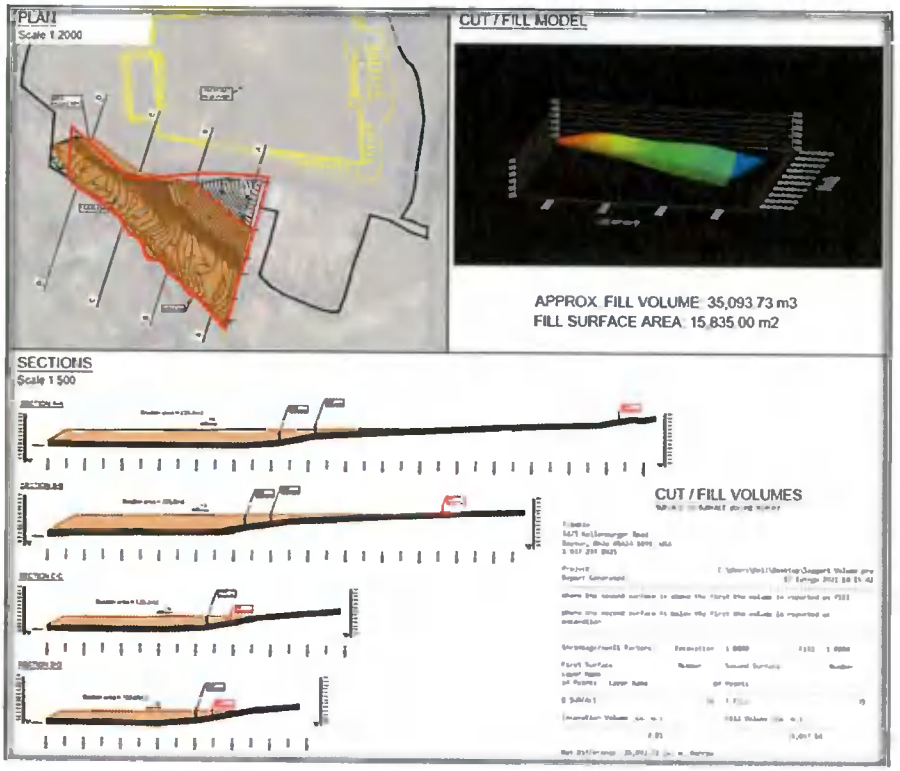


Figure 2 – An Extract from Planning Drawings Submitted

# 4. Receiving Environment

This section provides an overview of the existing ecological conditions within the site and the surrounding environment.

## 4.1 Land-Use Surrounding the Site

The land-use immediately surrounding the site is predominantly agricultural and improved agricultural grassland is the dominant habitat in the lands that surround the site. Other habitats represented locally include small areas of woodland and scrub, hedgerows and treelines. There are a number of watercourses close to the application site, including the Camac River which flows along the south-western site boundary. The urban / sub-urban areas of Saggart lie further north of the site, and the main habitats associated with these areas include buildings and artificial surfaces, and amenity grasslands and gardens.

An aerial photograph of the site and its surrounding habitats is shown in Figure 3.

Figure 3 – An OSI Aerial Photograph (Outdated) of the Site (Outlined in Red) and Surrounding Habitats © Google

## 4.2 Designated Sites

### 4.2.1 Natura 2000 Sites

The proposed application site is not within nor adjacent to any site that has been designated as a Special Area of Conservation (SAC) or a Special Protection Area (SPA) under the EU Habitats or EU Birds Directive.

There are six Natura 2000 designated sites within 15km of this application site, plus four other sites that are hydrologically connected to it via the River Camac. These sites are the summarised in Table 4. The location of the application site in relation to these designated areas is shown in Figure 4 and a full synopsis of the relevant sites can be read online on the website of the National Parks and Wildlife Service (www.npws.ie). In addition, any other sites further than 15km, but potentially within its zone of influence were also considered. The zone of influence may be determined by an assessment of the connectivity between the application site and the designated areas by virtue of hydrological connectivity, atmospheric emissions, flight paths, ecological corridors etc.

| Site Name & Code | Distance | Features of Interest |
|---|---|---|
| **Glenasmole Valley SAC 001209** | 5.1km south-east | • Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)<br>• Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)<br>• Petrifying springs with tufa formation (Cratoneurion) |
| **Wicklow Mountains SAC 002122** | 6km south-east | • Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)<br>• Natural dystrophic lakes and ponds<br>• Northern Atlantic wet heaths with *Erica tetralix*<br>• European dry heaths<br>• Alpine and Boreal heaths<br>• Calaminarian grasslands of the Violetalia calaminariae<br>• Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)<br>• Blanket bogs (* if active bog)<br>• Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani<br>• Calcareous rocky slopes with chasmophytic vegetation |

| | | |
|---|---|---|
| | | • Siliceous rocky slopes with chasmophytic vegetation<br>• Old sessile oak woods with Ilex and Blechnum in the British Isles<br>• *Lutra lutra* (Otter) |
| **Wicklow Mountains SPA 004040** | 9.5km south-east | • Merlin (*Falco columbarius*)<br>• Peregrine (*Falco peregrinus*) |
| **Poulaphouca Reservoir SPA 004063** | 10.5km south | • Greylag goose Anser anser<br>• Lesser black-backed gull Larus fuscus |
| **Red Bog Kildare SAC 000397** | 10.1km south-west | • Transition mires and quaking bogs |
| **Rye Water Valley/Carton SAC 001398** | 10km north | • Petrifying springs with tufa formation (Cratoneurion)<br>• *Vertigo angustior* (Narrow-mouthed Whorl Snail)<br>• *Vertigo moulinsiana* (Desmoulin's Whorl Snail) |
| **South Dublin Bay SAC 000210** | 24km downstream | • Mudflats and sandflats not covered by seawater at low tide<br>• Annual vegetation of drift lines<br>• Salicornia and other annuals colonising mud and sand<br>• Embryonic shifting dunes |
| **South Dublin Bay and River Tolka Estuary SPA 004024** | 24km downstream | • Light-bellied Brent Goose (*Branta bernicla hrota)*<br>• Oystercatcher (*Haematopus ostralegus*)<br>• Ringed Plover (*Charadrius hiaticula*)<br>• Grey Plover (*Pluvialis squatarola)*<br>• Knot *(Calidris canutus)*<br>• Sanderling *(Calidris alba)*<br>• Dunlin *(Calidris alpina)*<br>• Bar-tailed Godwit *(Limosa lapponica)*<br>• Redshank *(Tringa totanus)*<br>• Black-headed Gull *(Chroicocephalus ridibundus)*<br>• Roseate Tern *(Sterna dougallii)*<br>• Common Tern *(Sterna hirundo)*<br>• Arctic Tern *(Sterna paradisaea)*<br>• Wetland and Waterbirds |
| **North Bull Island SPA 004006** | 24km downstream | • Light-bellied Brent Goose (*Branta bernicla hrota)*<br>• Shelduck (*Tadorna tadorna*)<br>• Teal (*Anas crecca*)<br>• Pintail (*Anas acuta*)<br>• Shoveler (*Anas clypeata*)<br>• Oystercatcher (*Haematopus ostralegus)*<br>• Golden Plover (*Pluvialis apricaria*)<br>• Grey Plover (*Pluvialis squatarola*) |

| | | |
|---|---|---|
| | | • Knot (*Calidris canutus*)<br>• Sanderling (*Calidris alba*)<br>• Dunlin (*Calidris alpina*)<br>• Black-tailed Godwit (*Limosa limosa)*<br>• Bar-tailed Godwit (*Limosa lapponica)*<br>• Curlew (*Numenius arquata*)<br>• Redshank (*Tringa totanus*)<br>• Turnstone (*Arenaria interpres*)<br>• Black-headed Gull (*Chroicocephalus ridibundus*)<br>• Wetland and Waterbirds |
| **North Dublin Bay SAC 000206** | 24km downstream | • Mudflats and sandflats not covered by seawater at low tide<br>• Annual vegetation of drift lines<br>• Salicornia and other annuals colonising mud and sand<br>• Atlantic salt meadows (Glauco-Puccinellietalia maritimae)<br>• Mediterranean salt meadows (*Juncetalia maritimi*)<br>• Embryonic shifting dunes<br>• Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)<br>• Fixed coastal dunes with herbaceous vegetation (grey dunes)<br>• Humid dune slacks<br>• *Petalophyllum ralfsii* (Petalwort) |

**Table 4 – Natura 2000 Sites of Relevance to the Proposed Development**

The generic conservation objectives of all these sites are:

1. To maintain the favourable conservation status of the qualifying interests (outlined above) of these SACs.

2. To maintain the extent, species richness and biodiversity of the entire site.

3. To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

The favourable conservation status of a habitat is achieved when:

- Its natural range and area it covers within that range is stable or increasing and the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future;

- The conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- The population dynamics data on the species concerned indicate that it is maintaining itself on a long -term basis as a viable component of its natural habitats;

- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future;
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

A Stage I Appropriate Assessment Report as required under Article 6(3) of the EU Habitats Directive has been prepared in relation to this proposed application at Slade. This Screening report has concluded that the proposed development will not have any impacts on any European designated site.

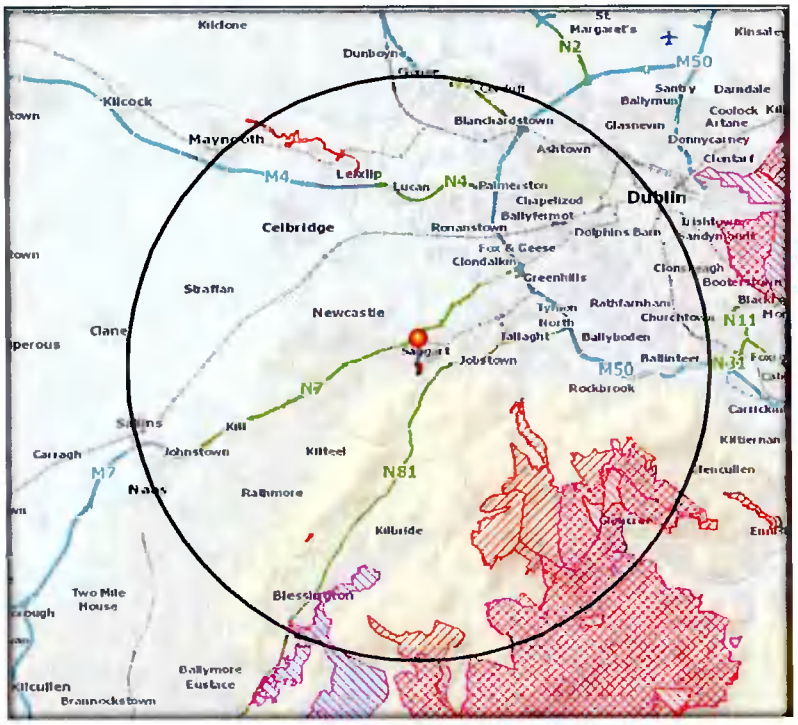


**Figure 4 – The Application Site (Pinned) in relation to the Relevant Designated Sites. SACs - Red Cross Hatching, SPAs – Red Vertical Hatching**

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### 4.2.2 Nationally Important Sites

The application site is not within nor adjacent to any nationally designated site, such as a Natural Heritage Area or a proposed Natural Heritage Area. It is within 10km of five sites that have been designated as proposed Natural Heritage Areas. These sites are summarised in Table 5 and a map showing their location relative to the application site is shown in Figure 5.

| Site Name | Distance from Proposed Development | Connectivity |
|---|---|---|
| Slade of Saggart and Crooksling Glen pNHA 000211 | 1km south | Upstream along the Camac River |
| Lugmore Glen pNHA 001212 | 2.6km east | None |
| Doffer Valley pNHA 000991 | 6 km east | None |
| Grand Canal pNHA 002104 | 6.1km north | None |
| Kilteel Wood pNHA 001394 | 6.7km south-west | None |
| Liffey Valley pNHA 000128 | 8.9km north | None |

**Table 5 – Nationally Important Sites within 10km of the Proposed Development**

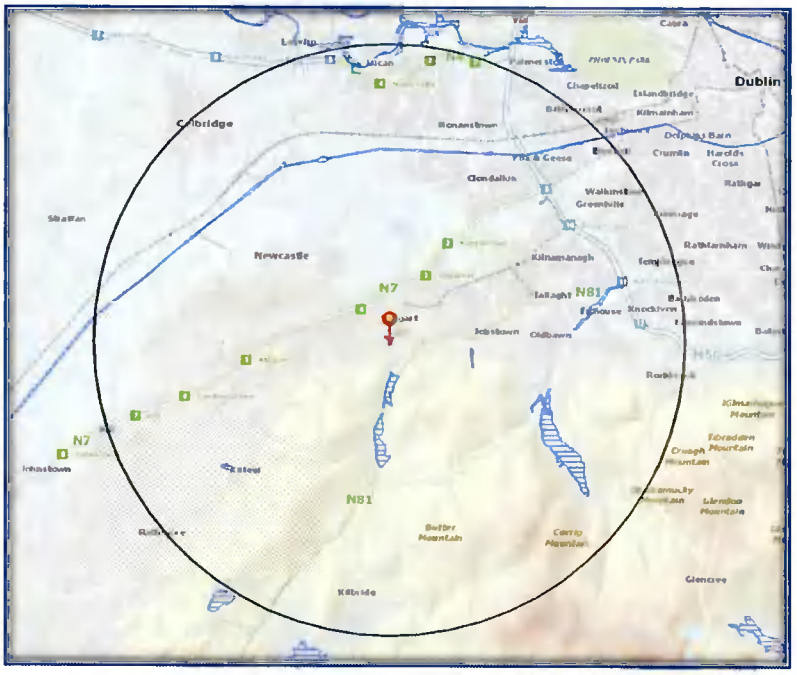


**Figure 5 – The Proposed Application Site at Slade (Pinned) in Relation to proposed Natural Heritage Areas (Blue Cross Hatching)**

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## 4.3 Flora and Fauna

### 4.3.1 Rare and Protected Plant Species

An examination of the website of the National Parks and Wildlife, the National Biodiversity Data Centre and the Online Atlas of Vascular Plants for Ireland revealed that no species protected under the Flora Protection Order occurs within the 1km square (O0326, O0325), Zone of Influence or the townland (Slade) of the proposed application site. No species listed as protected under this order were observed on the day of the survey.

### 4.3.2 Non-Native Invasive Species

No invasive plant species listed in the Third Schedule of the Birds and Habitats Regulations (2011) were recorded from the study area.

### 4.3.3 Habitats within the Study Area

No part of the site lies within any area that is designated for nature conservation purposes. The footprint of the infilling works will take place on lands of relatively low biodiversity value. The application site consists of two fields, which were previously divided by a treeline, however this treeline was removed prior to this planning application being made. The site outline is roughly triangular. The dominant habitats present within the site include Dry Calcareous and Neutral Grasslands (GS1), small areas of Wet Grasslands (GS4), Hedgerows (WL1), Treelines (WL2) and Watercourses (FW2). The majority of the fill will be brought into the lower field that lies to the south of the stie. The habitats within the site are described in greater detail below.

Grassland Habitats

The grassland habitat within the application site is not intensively managed and has been classed as *Dry Calcareous and Neutral Grassland* GS1. Fertiliser use within the site is low or absent, but the site is grazed by a small number of cattle. Fossit (2000) describes this habitat as grassland that is unimproved or semi-improved and associated with low intensity agriculture. True calcareous grassland is restricted to the esker ridges and moraines and to other areas with shallow and rocky limestone soils. The grassland within the application site is neutral in character and this has a much wider distribution than true calcareous grasslands and most old permanent pastures and less intensively managed lowland grasslands fit into this category. Grass is the dominant group here and species noted included meadow grasses *Poa* sp, cocksfoot grass *Dactylis glomerata* and fescues *Festuca* sp. Typical broadleaved species of this habitat were noted as common and they included creeping buttercup *Ranunculus repens*, broadleaved dock *Rumex obtusifolius*, spear thistle *Cirsium vulgare* and clovers *Trifolium* sp.

Certain lower sections of the field, near to the river, are poorly drained and have been considered as *Wet Grassland* GS4. Rushes (*Juncus effusus, Juncus conglomeratus*) are common here, whilst flag iris *Iris pseudacorus* was abundant locally in certain sections. Measowsweet *Filipendula ulmaria* was also common.

Field Boundaries

The boundaries of the site are mostly defined by hedgerows (WL1) and treelines (WL2). There are also some notable mature trees along these boundaries. For the purpose of this report, these boundaries were numbered and are described below.

**Boundary 1** – This boundary occurs along the northern perimeter of the site, immediately south of the ongoing construction works on the reservoir site. This boundary consists mostly of a thick hedgerow in the eastern section of the site. Common species noted here included grey willow *Salix cinerea*, hazel *Corylus avellana* and hawthorn *Crataegus monogyna*. Extensive growth of bramble *Rubus fruticosus agg* was also noted growing amongst the existing shrubs. This boundary occurs in association with a dry drain. This section of the hedgerow is thickly verged with agricultural broadleaves including nettles *Urtica dioica*, ragwort *Senecio jacobaea*, broadleaved dock and spear thistle.

In the western section of the site, this boundary is a treeline and some very mature ash *Fraxinus excelsior* and sycamore *Acer pseudoplantatus* trees were noted here. Willow, hawthorn and gorse *Ulex europaeus* were also common along this section.

**Boundary 2** – This boundary occurs along the eastern perimeter of the site, immediately west of an existing farmyard and the operational compound containing the offices and carpark associated with the ongoing reservoir works. This boundary is dominated by a hawthorn and bramble hedgerow, with an occasional mature ash. The lower section of this hedgerow, i.e., that which was once in the lower field before the removal of the treeline and closer to the Camac River, is dominated by willow. There is also a wet drain present along this section of the boundary. There is one mature sycamore at the lower end of this hedgerow, where this boundary meets the Camac River.

**Boundary 3** – This boundary occurs along the corridor of the River Camac. It consists of the river itself, which at this point is approximately 1.5m wide. The river is heavily shaded by a hedgerow in the south-eastern section of the site, and species such as hawthorn, ash and brambles were common. Other species noted included willow, elder *Sambucus nigra*, blackthorn *Prunus spinosa*, gorse and Eucalyptus (probably a garden escapee). Further downstream along the boundary, it opens out somewhat and becomes less shaded, with mature trees growing outside of the application site on the

opposite side of the bank. There were a number of cattle access points noted along the banks of the Camac within the application site. There are leading to erosion of the banks and subsequent sedimentation of the water.

**Boundary 4** – This boundary is short (56m) and it consists of a fence with separates the application site from the ESB sub-station.

Watercourse

The Camac River flows along the south-western boundary of the application site. This falls into the *Depositing / Lowland River category (FW2).* The river is shallow and approximately 1.5m in width as it flows through the application site. The level of siltation in the river is relatively low. The river is heavily shaded in the upper parts of the site, however where the banks are more open in-stream vegetation was present and was dominated by fool's watercress *Apium nodiflorum.*

**Overall Evaluation of Habitats within the Site**

The dominant habitat within the application site is unimproved grassland that is used for grazing. This habitat is common locally and is of limited value for biodiversity, although the broadleaved plants would provide suitable sources of nectar for local populations of pollinating insects. The site boundaries consist of the Camac River, along with hedgerows and treelines and these are the most valuable biodiversity features within the site due to the mixture of native species that they contain, as well as being important habitats and ecological corridors for local birds and small mammals. These boundaries are considered to be of local importance (higher value).

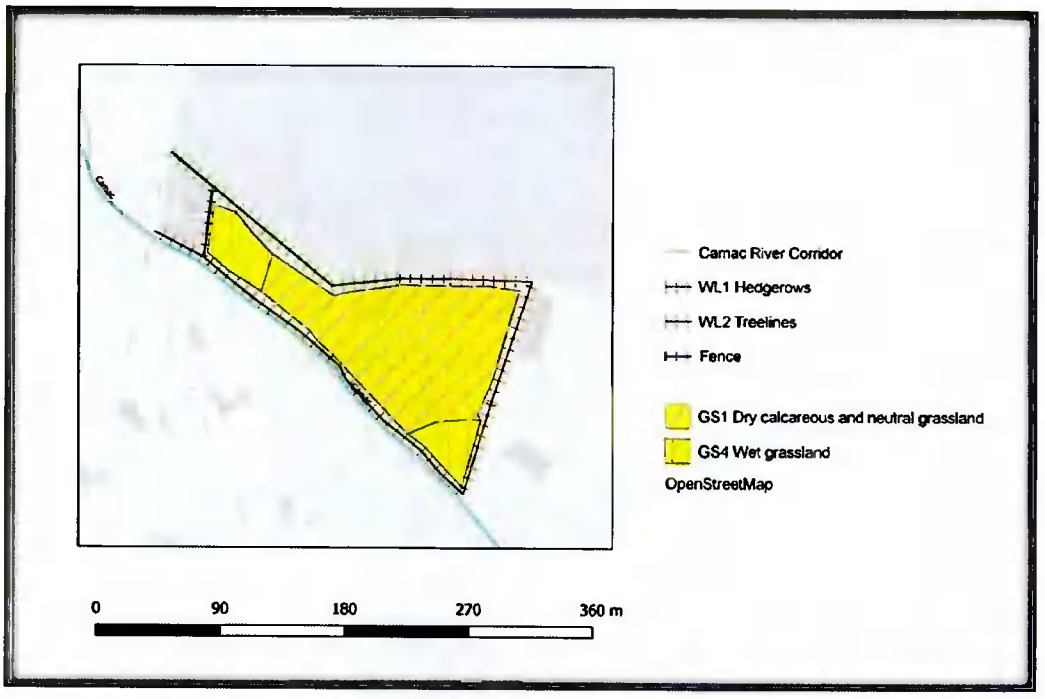



Figure 6 – Map of the Main Habitats within the Application Site and Adjacent Existing Quarry

## 4.4 Fauna

### 4.4.1 Protected Mammals

Previous Records

Records from the National Biodiversity Data Centre reveal the presence of the following protected mammals from within the 10km square (O02) of this proposed application site:

- Brown Long-eared Bat (*Plecotus auritus*)*
- Daubenton's Bat (*Myotis daubentonii*)
- Eurasian Badger (*Meles meles*)
- Eurasian Pygmy Shrew (*Sorex minutus*)
- Eurasian Red Squirrel (*Sciurus vulgaris*)
- European Otter (*Lutra lutra*)
- Fallow Deer (*Dama dama*)
- Irish Hare (*Lepus timidus subsp. hibernicus*)
- Irish Stoat (*Mustela erminea subsp. hibernica*)
- Lesser Noctule (*Nyctalus leisleri*)
- Natterer's Bat (*Myotis nattereri*)
- Pine Marten (*Martes martes*)
- Pipistrelle (*Pipistrellus pipistrellus sensu lato*)*
- Red Deer (*Cervus elaphus*)
- Sika Deer (*Cervus nippon*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)*
- West European Hedgehog (*Erinaceus europaeus*)*

All these species are protected under the Irish Wildlife Acts. In addition, the otter *Lutra lutra* is protected under Annex II of the European Habitats Directive.

The species with an asterisk indicate that records are held for these species from the relevant 1km square of this site, i.e., O0326.

As part of the extensive ecological surveys that were undertaken in 2017 and 2018 for the main reservoir site by RPS, a number of records for mammals were obtained. These results are outlined in the Ecological Impact Assessment report that was prepared for the site (RSP, 2018) and they are summarised below.

Badger *Meles meles* – Badgers were found to be active within the site of the reservoir. There were found to make use of the grassland, hedgerows, treelines, scrub and woodland that surround the reservoir site at this time, and they used these areas for foraging and shelter. Trails and badger prints were noted throughout the site. Evidence of badger activity was documented along hedgerows parallel to the site's southern (the

current site's northern boundary) and western boundaries, with a small number of badger-sized excavated holes, latrines in shallow depressions and trails noted along hedgerows which suggested regular use of parts of the site by badger.

Otter *Lutra lutra* - During the early stages of the ecological surveys for the proposed reservoir in 2017, the only evidence of otter usage was a single spraint found in the Camac River at a bridge on the Slade Road adjacent to the Millbrook Manor Nursing Home (which is just downstream of the proposed infill site). No evidence of holts were identified along the Camac river at this point or along accessible sections of the Millrace Stream. Follow up visits undertaken in January and April 2018 did not locate any evidence of Otter holts along sections of the Millrace and Camac River, although it was noted that some sections were largely overgrown with dense bramble-dominated scrub on both sides of the bank. It is highly likely that otter use the Camac River for resting, breeding and commuting, though no breeding/resting sites were confirmed. Although no holts were identified, further evidence of sprainting was noted under the roadbridge which crosses over the Camac River alongside the ESB substation.

Bats – The hedgerows, treelines and watercourses throughout the reservoir site were found to provide connectivity to the wider landscape for bats and it was determined that they provided suitable commuting/foraging corridors for bats. Static surveys deployed along treelines on the southern boundary of the lands (northern boundary of the infill site) revealed a minimum of four, and potentially five species of bat mostly attributed to Common and Soprano Pipistrelle along hedgerows and treelines. The bat survey report concluded that the lands around the proposed reservoir site were found to be used for foraging and commuting bats (Common pipistrelle, Soprano pipistrelle, and Leisler's bat).

Findings from the Survey of the Proposed Infill Site

No protected mammal species were directly observed on site during the course of the field survey. However, there were a number of defined mammal trails through grass, especially close to north-eastern and eastern perimeters and along the river. Possibly badger snuffle holes were also observed close to the eastern boundary. No badger setts were noted within any of the hedgerow or treeline boundaries.

There were no otter holts noted along the Camac River, however certain points along the river bank were observed to have slides into them, and these could be used by otters. No obvious otter prints were noted in the mud at these potential slide locations. No otter spraints were noted along the river. However, despite the lack of direct

evidence, it should be assumed that otters do commute along the banks of the Camac River within the application site.

As there will be no treeline or hedgerow removal as part of the infilling works, no dedicated bat survey was undertaken. However, the treelines and hedgerows are likely to serve as valuable ecological corridors for local bats. In addition, there are some notable mature trees along the perimeters which could potentially provide suitable roosting habitats for bats.

### 4.4.2 Birds

A limited range of common passerine birds associated with agricultural areas were noted within or outside the application site. Species observed / heard within or flying over the site included:

- Blackbird *Turdus merula*
- Goldfinch Carduelis carduelis
- Great tit *Parus major*
- Hooded crow *Corvus cornix*
- Jackdaw Corvus monedula
- Magpie *Pica pica*
- Pigeon *Columba palumbus*
- Robin *Erithacus rubecula*
- Starling *Sturnus vulgaris*
- Swallow *Hirundo rustica*
- Wren *Troglodytes troglodytes*

The site survey was carried out outside the optimal breeding season for birds so bird activity would be naturally lower. Overall, the treelines and hedgerows would normally provide good nesting, perching and feeding sources for local birds and the site is likely to be of local value for birds.

### 4.4.3 Amphibians, Reptiles and Invertebrates

The drains and wetter areas within the application site are likely to provide suitable habitat for the common frog *Rana temporaria,* although none were observed on the day. There were no sightings of the smooth newts *Lissotriton vulgaris* and there is limited habitat within the application site suited for this species. There were no sightings of the viviparous lizard *Lacerta vivipara.* This species can be found in grassland and hedgerow habitats, therefore its presence within the application site cannot be excluded. All the above species are protected under the Irish Wife Acts.

A range of common butterflies, diurnal moths and bumble bees were noted during the survey.

The Camac River is a known habitat for the crayfish *Austropotamobius pallipes,* which is a species that is protected under the Irish Wildlife Acts and listed in Annex II of the EU Habitats Directive. There are historical records of crayfish from the River Camac (www.biodiversityireland.ie) approximately 650m downstream from where the Millrace diverges from the Camac (O034260, May 2013, EPA River biologists) and approximately 3.5km downstream of the Camac confluence with the Millrace (O049292, August 2013, EPA rivers biologists). There is also a record of crayfish within the Brittas River which is connected to the Camac via a partial diversion of the Brittas river approximately 7km upstream of Camac confluence with the Millrace (O055212, August 2013, EPA River biologists).

As part of the survey works for the reservoir (RPS, 2018), surveys of the Millrace and Camac Rivers were undertaken. Crayfish habitat was less than optimal at all sites sampled within the Millrace with either no suitable habitat or poor habitat present. Within the River Camac, crayfish habitat was fair with slightly improved habitat conditions (good to fair) at the bridge over the road at the ESB substation. A weir is present downstream of the Millrace/Camac confluence and forms a barrier to any potential upstream migration of crayfish from the Camac. There are past records of crayfish in the Camac upstream of the weir and also within the Brittas River which is connected to the Camac upstream. Crayfish could potentially colonise the Millrace from the upstream end where it diverges from the Camac. Due to this there is always the potential that crayfish are present in the Millrace at any time, however as previously noted the habitat conditions within the Millrace are not optimal and it is likely that if present it would not be in large numbers.

As part of the current study of the proposed infilling area, a survey of the River Camac for crayfish was not undertaken. However, given the records that are available and the

overall suitability of the River Camac for this species, then it must be assumed that crayfish occur in the River Camac within the application site.

## 4.5 Aquatic Environment

### 4.5.1 Water Features and Quality

The application site is located within the Liffey and Dublin Bay Hydrometric Area and Catchment, the Liffey Sub Catchment and the Camac Sub-Basin. The Camac River rises in the foothills of the Wicklow Mountains. If flows along the southern boundary of the application site. This river flows through the southern suburbs of Dublin city. It is channelized and culverted for much of its journey though Dublin city and suburbs. It flows into the River Liffey near Heuston Station.

The Millrace Stream is diverted off the Camac River upstream of the site, it then flows around the eastern and northern boundaries of the main reservoir site before re-joining the Camac downstream of Saggart. The location of these watercourses in relation to the application site is illustrated in Figure 7.

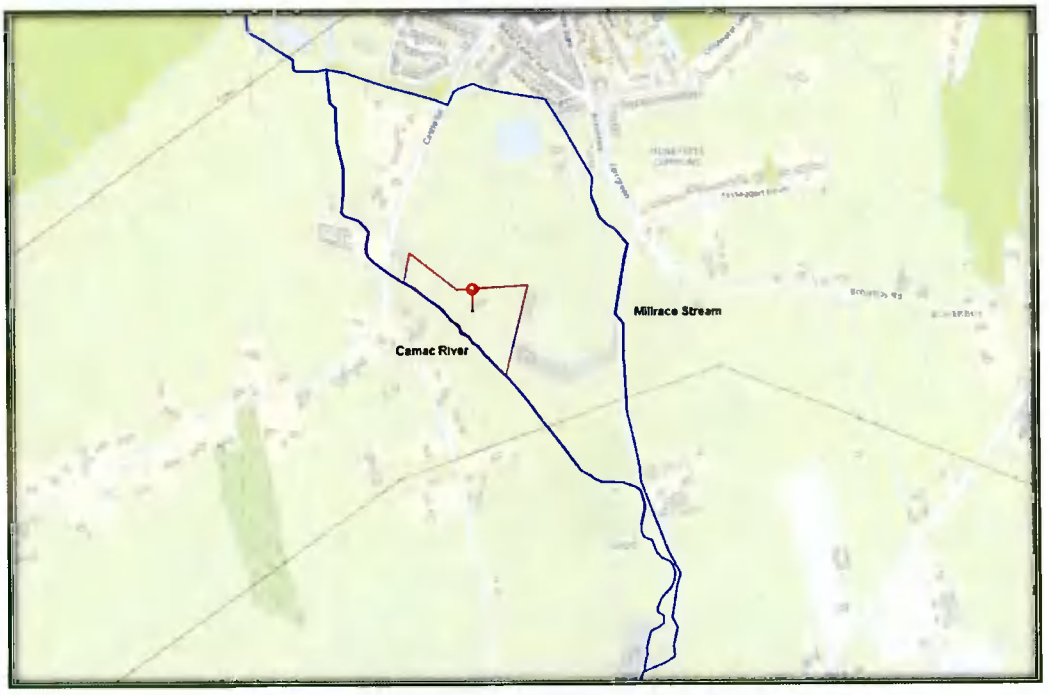



Figure 7 – The Camac River and Millrace Stream

The EPA have defined the ecological status of the Camac River as good along the boundary of the application site. However, this deteriorates to moderate just downstream of the site. Further downstream again, ecological status deteriorates to poor. Under the requirements of the Water Framework Directive, all waterbodies must achieve good status.

As part of the ecological reports that were prepared for the construction of the reservoir, a survey of the ecological status of the Camac River at points in and downstream of the application was undertaken by RPS in 2018. Using biological water indices (the Q value) it was determined that the Q value of the Camac River at points within the application site was Q4 (i.e., good status), whilst 500m downstream a Q3 (poor status) was noted.

In June 2021, kick samples from the Camac River at points within and downstream of the proposed infill site were analysed by Whitehill Environmental A Q3-4 (moderate status) was noted midstream of the application site, whilst Q4s (good status) were obtained from points downstream of the application site. The full Biological Water Quality Report for the site was submitted with the original application.

## 4.6 Ecological Evaluation

### 4.6.1 Summary of the Value of the Application Site

The site at Slade is within 15km of six sites designated under the Natura 2000 network. There is no ecological connectivity between the application site and these six sites. The River Camac within the application site is a tributary of the Liffey and consequently there is connectivity to the European sites associated with Dublin Bay, i.e., the South Dublin Bay SAC, the South Dublin Bay and River Tolka Estuary SPA, the North Bull Island SPA and North Dublin Bay SAC. These sites at a minimum distance of 24km downstream of the proposed infill site.

The site is also within 10km of five sites designated as Natural Heritage Areas (NHAs and pNHAs). The closest of these is the Slade of Saggart/Crooksling Glen pNHA. This is 1km south and upstream of the site.

There are a limited range of habitats within the application site and dry calcareous and neutral grassland is the dominant habitat. This is considered to be of low ecological and biodiversity value. The hedgerow / treeline habitats around the site provide important feeding sites, nesting areas and safe commuting corridors for local populations of birds and small mammals. Bats may forage over the site on summer evenings, and some of the trees on site may be Potential Bat Roosts. Larger mammals such as foxes and

badgers may also use the site. The riparian corridors along the River Camac are potentially important for the otter, whilst the Camac is also likely to host crayfish.

# 5. Potential Impacts

## 5.1 Introduction

### 5.1.1 Significant Effects

The information gathered as part of the desk study and field survey for this proposed application has been used to make an Ecological Impact Assessment (EcIA). This EcIA has been undertaken following the latest guidelines set out by CIEEM (2018) and the EPA.

The identification of potential impacts and the assessment of their significance typically requires the identification of the type and magnitude of the impacts. For example, will the impacts be short term or long term, direct, indirect or cumulative and will they occur during construction or operation. This section will establish whether ecological impacts of the proposed development at Slade are likely to occur and whether or not they are significant. These potential impacts will be examined with respect to the ecological receptors identified in the previous section.

The emphasis in EcIA is on "significant" effects, rather than all ecological effects (CIEEM, 2018). For the purpose of EcIA, a "significant effect" is an effect that either supports or undermines biodiversity conservation objectives for important ecological features for biodiversity in general. Conservation objectives may be specific (e.g., for a designated site) or broad (e.g., national / local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.

A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. In broad terms, significant effects encompass impacts on structures and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution). (CIEEM, 2018).

## 5.2 Impacts upon Designated Sites

### 5.2.1 Natura 2000 Sites

The site at Slade is within 15km of six sites designated under the Natura 2000 network. There is no ecological connectivity between the application site and these six sites and significant effects upon these sites will not arise.

The River Camac within the application site is a tributary of the Liffey and consequently there is connectivity to the European sites associated with Dublin Bay, i.e., the South Dublin Bay SAC, the South Dublin Bay and River Tolka Estuary SPA, the North Bull Island SPA and North Dublin Bay SAC. There are sites at a minimum distance of 24km downstream of the proposed infill site. Having regard to this significant distance, it is considered that significant effects upon these European sites will not arise and there are no mitigation measures necessary to specifically address potential effects that may occur on these sites.

An AA screening report for the proposed development has been submitted and this concluded that significant effects upon the European sites of Dublin Bay will not arise.

### 5.2.2 Natural Heritage Areas

The site is also within 10km of five sites designated as Natural Heritage Areas (NHAs and pNHAs). The closest of these is the Slade of Saggart/Crooksling Glen pNHA. This is 1km south and upstream of the site and therefore significant effects upon this pNHA will not arise.

## 5.3 Impacts Upon Non-Designated Habitats

### 5.3.1 Development Phase

Should the proposed infilling development at Slade be allowed to proceed then the following impacts are likely to occur during all phases of the proposed development.

- **Habitat loss and fragmentation** – The plan allows for the infilling and re-contouring of the existing fields, therefore the grassland habitats in these fields will be lost. This grassland habitat is generally considered to be of low ecological value and overall, the loss of this habitat is not considered to be of ecological significance. Upon completion of the infilling works, the grassland habitat will be reinstated to agricultural land.

  Whilst all the hedgerow and treeline boundaries of the site will be retained, risk of loss or damage to these treelines exists due to potential damage from machinery or root compaction due to storage of materials or overburden in the root protection zone. Root compaction or damage can significantly reduce the lifespan of a tree.

These trees are important in their own right, but they also contain suitable nesting sites for local birds and potentially some bats. The loss or fragmentation of treelines and hedgerows would be of medium significance on a local level.

Any loss, fragmentation or disturbance to the riparian corridor of the River Camac could lead to impacts upon the otter, which is likely to commute along the banks of the river within the application site.

- **Disturbance to local wildlife** – During the works, local populations of birds and mammals may be disturbed by the increase in noise from traffic and human activity. Any fragmentation or loss of the hedgerow and treeline habitats could result in disturbance to species that use these ecological corridors. Mammal paths were noted occurring along the hedgerows and treelines, and these commuting corridors could also be lost in the absence of mitigation.

- **Pollution** – The infilling works will take place on a site that is adjacent to the Camac River. In the absence of mitigation, the works will have a high potential to generate run-off of silt and other pollutants into this watercourse. This could have a serious negative effect upon the water quality in the River Camac and subsequently on the protected species that use this river, i.e., the crayfish and the otter. The plan for the proposed site includes for the maintenance of a buffer 19m buffer along the riparian zone of the Camac River.

### 5.3.2 Post-Infilling Phase

Negative impacts upon water quality in the Camac River post-infilling and rehabilitation also been considered. Post infilling, the site will be returned to agricultural use and therefore activities arising out of this may include the spreading of chemical or organic fertiliser. Inappropriate land-spreading of fertiliser can lead to serious impacts upon the receiving waters in local catchments and it can result in eutrophication, algal blooms, fish kills and loss of biodiversity. Designated habitats and species can be impacted upon and it can take years for the eco-system to recover. In addition, the effects of elevated nitrogen and phosphorus in any watercourses from land-spreading can be exacerbated when the siltation levels in those watercourses are already high.

### 5.3.3 Cumulative Impacts

Cumulative impacts or effects are changes in the environment that result from numerous human-induced, small-scale alterations. Cumulative impacts can be thought of as occurring through two main pathways: first; through persistent additions or losses of the same materials or resource, and second,-through the compounding effects as a result of the coming together of two or more effects (Bowers-Marriott, 1997).

A search of the planning portal of Dublin County Council for other applications in the Saggart/Slade area revealed a number of recent developments of various scales and sizes. These developments will have no cumulative impacts on the biodiversity of the surrounding areas when considered in combination with this current application.

As part of the original EcIA report for the reservoir (RSP, 2018) a number of potential ecological impacts were identified and mitigation measures for the reduction and elimination of these impacts were included. The proposed infilling development on this site, which is adjacent to the reservoir site will lead to a further alteration of habitats within this area. However, the infilling works will be temporary, the grassland habitats within the site will be restored and all existing treelines, hedgerows and riparian margins will be maintained. The mitigation measures around the protection of existing hedgerows and treelines in the site, along with the maintenance of a buffer zone along the Camac River will ensure any potential cumulative impacts that this proposal will have when considered in-combination with the ongoing reservoir works will be neutral.

# 6. Mitigation Measures

In order to mitigate against the loss or damage of habitats of high biodiversity value, and to reduce impacts on birds and mammals and water quality, a number of compensatory mitigation measures must be implemented and followed. These measures are site specific and they have been devised to consider the most achievable ways to allow for the protection of habitats of high biodiversity value on the site, along with measures for the protection of protected species.

## 6.1 Mitigation and Monitoring

The primary method of mitigation for any development should be avoidance of that impact. Consideration was therefore given to avoiding any direct or indirect impacts on the sensitive ecological receptors within the site. In order to protect the existing ecological features on site and surrounding area, the following mitigation measures are recommended:

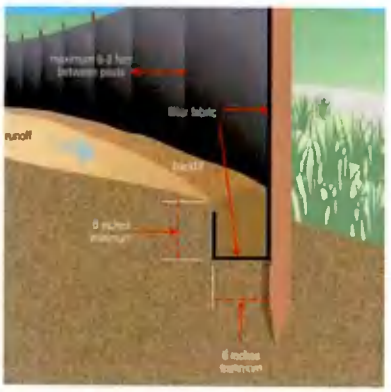
**Before and During the Infilling Works**

- All infilling works must be confined to the development site only and should adhere to all standard best practice measures. Work areas should be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out in advance of the proposed works. These measures must be undertaken from initial site works until the completion of all works on site.

- The plans for the infilling development allowed for a 10m unfilled buffer zone along the perimeter of the site, which includes all hedgerows, treelines and the riparian zone of the River Camac. It is vital that this 10m buffer is adhered to for the protection of birds, mammals and water quality. Prior to the commencement of works on the site, this buffer zone will be fenced off with sturdy fencing, which ideally should be mammal proof. There must be no storage of machinery, soil or other material within this buffer zone. All existing vegetation in this buffer zone should be maintained.

- As per the plans submitted and in accordance with the Construction and Environment Management Plan (CEMP), a silt barrier will be installed at the edge of the 10m buffer zone along the Camac River and the drain that occurs along the eastern site boundary. This silt fence must be sturdy and inspected regularly for weaknesses and deficiencies. As part of the FI response for this proposed development (Point 1.2) details of the proposed silt control measures have been submitted by the applicant as part of the CEMP.

- The silt fence proposed will be a permeable geotextile barrier installed vertically on support posts and entrenched in the ground. Such a design is illustrated in the sketch below:




- All chemicals, fuels, oils, greases and hydraulic fluids will be stored outside of this site and away from any watercourse in bunded compounds.

- There will be no re-fuelling on site.

- All soil materials will be visually inspected for signs of potential contamination. Should any contamination be identified, the relevant soils will be stored separately, sampled and disposed of by a licensed waste contractor (as required).

**Post Infilling Works**

- Any landscaping at the end of the infilling works should involve the planting of native Irish species that are indigenous to the site. Suitable species would hawthorn, willow and alder. The characteristics of newly planted hedgerows should mimic those in the surrounding area. Invasive species must not be used. Any landscape plan must be cognisant of the sensitivity of the natural habitats surrounding the site. Herbicides should be avoided during all phases of the construction and operation as these chemicals can have detrimental impacts upon local populations of pollinators.

- Bare soil should be seeded as soon as possible with grass seed. This will minimise erosion into the River Camac.

- The remaining perimeters of the site should be managed at a low intensity level post infilling. They should not be cleared of vegetation, sprayed with herbicide or re-seeded. This will allow for the protection of mammals and water quality post infilling. Cutting of the grass once a year in late summer will promote biodiversity and the

growth of flowering herbaceous plants. This will be of benefit to local pollinating insects.

- Any future landspreading of the land post reseegin should only be done in accordance with the measures outlined in S.I. 605 of 2017. Land-spreading should adhere the guidance in this legislation and it should conform to any Nutrient Management Plan set out for the source farm.

# 7. Residual Impacts

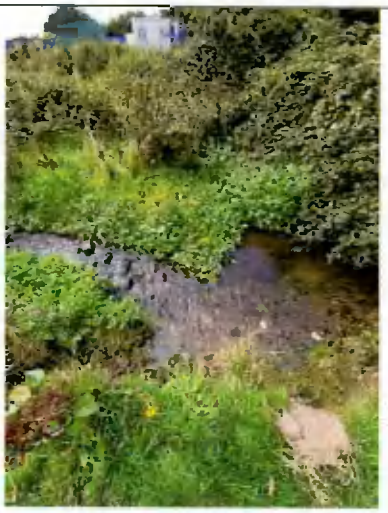
With the recommended mitigation measures, it can be concluded that the proposed development at Slade will have a residual neutral impact upon the biodiversity of the local area.

# Appendix I – Species List

| Common Name | Scientific Name |
|---|---|
| Annual meadow-grass | *Poa annua* |
| Ash | *Fraxinus excelsior* |
| Bindweed | *Calystegia sepium* |
| Blackthorn | *Prunus spinosa* |
| Bramble | *Rubus fruticosus agg.* |
| Broadleaved Dock | *Rumex obtusifolius* |
| Bush vetch | *Vicia sepium* |
| Chickweed | *Stellaria media* |
| Cleavers | *Galium aparine* |
| Cock's-foot | *Dactylis glomerata* |
| Common ragwort | *Senecio jacobaea* |
| Cow parsley | *Anthriscus sylvestris* |
| Creeping buttercup | *Ranunculus repens* |
| Creeping thistle | *Cirsium arvense* |
| Daisy | *Bellis perennis* |
| Dandelion | *Taraxacum officinale* |
| Elder | *Sambucus nigra* |
| Eucalyptus | *Eucalyptus* |
| Flag iris | *Iris pseudacorus* |
| Germander speedwell | *Veronica chamaedrys* |
| Gorse | *Ulex europaeus* |
| Grey willow | *Salix cinerea* |
| Hawthorn | *Crategus monogyna* |
| Hazel | *Corylus avellana* |
| Herb Robert | *Geranium robertianum* |
| Ivy | *Hedera helix* |
| Lords and Ladies | *Arum maculatum* |
| Meadow buttercup | *Ranunculus acris* |
| Meadow grass | *Poa sp.* |
| Meadowsweet | *Filipendula ulmaria* |
| Mouse ear | *Cerastium fontanum* |
| Nettle | *Urtica dioica* |
| Perennial rye-grass | *Lolium perenne* |
| Red clover | Trifolium pratense |
| Red fescue | *Festuca rubra* |
| Ribwort plantain | *Pantago lanceolate* |
| Rushes | *Juncus sp* |
| Silverweed | *Potentilla anserina* |
| Spear thistle | *Cirsium vulgare* |
| Sycamore | *Acer pseudoplatanus* |
| Tufted vetch | *Vicia cracca* |
| White clover | *Trifolium repens* |
| Willow | *Salix sp.* |
| Willowherbs | *Epilobium sp* |
| Yorkshire fog | *Holcus lanatus* |

## APPENDIX II – Photographs

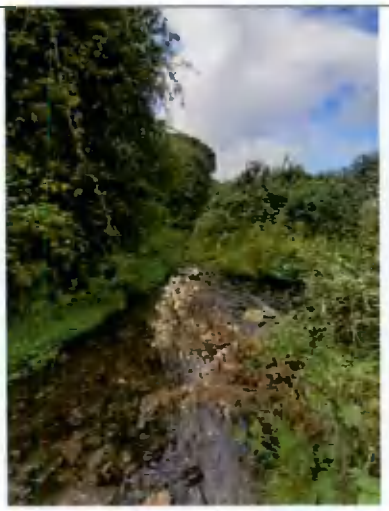
Grassland Habitats within the Application Site



The River Camac within the Application Site

The River Camac within the Application Site

Rushes Indicated Wetter Areas



River Camac

Hedgerow within the Site

Treeline along Northern Boundary

View from Existing Work Site along Proposed Site Boundary

## Appendix III – References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