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INTRODUCTION

5.1 This Biodiversity chapter forms part of the Environmental Impact Assessment Report (EIAR) which considers the likelihood and significance of potential impacts on designated sites, habitats and species arising from the proposed development of extraction and processing of sand and gravel at the application site within Naul townland, Ford-de-Fine, Co. Meath.

Site Description

5.2 The planning application area ("the Site") is ca. 14.9 ha in size. It is located on the western side of the R108 regional road which comprises all or part of three adjoining agricultural fields, currently under agricultural use, and an access track. The Site is centred at approximate Irish Transverse Mercator (ITM) coordinates 712332 E 761204 N within the townland of Naul, Co. Meath. The Site is approximately 750 m north-west of Naul Village north of the Delvin River. The site entrance to the existing Kilsaran Concrete Batching facility is located c. 70m to the north on the opposite (eastern) side of the R108 regional road.

5.3 The Delvin River forms the southern border of the Site, which also forms the border between counties Meath and Dublin. The Site is set in a rolling farmed landscape, featuring a mixture of pasture and arable farmland. Semi-natural broadleaf woodland forms small infrequent stands in the surrounding landscape with larger areas of coniferous forestry plantation also present.

Details of the Proposed Development

5.4 The main element of the proposed development is the extraction and processing of sand and gravel from the proposed pit. Processing of the extracted materials will be carried out on-site to produce a range of aggregates for sole use by the applicant in the manufacture of concrete at the existing batching facility on the eastern side of the R108 regional road. Ancillary facilities required to serve the pit development are outlined below.

5.5 The proposed development being applied for under this planning application comprises of:

- Extraction and processing on site, to include washing (with associated closed recycled washing plant and lagoon system), screening and crushing; storage; stockpiling and haulage of sand and gravel to service the existing readymix concrete plant operated by Kilsaran on the eastern side of the R108 regional road and permitted under P. Ref. 80/572 & 22/153 (ABP-314881-22);
- The total extraction proposal extends to an area of c. 6.2 hectares and will be worked (extracted and restored) on a phased basis for a period of 11 years plus 1 year to complete final restoration works (total duration of 12 years);
- Phased stripping and storage of topsoil and overburden materials for reuse in the restoration works. Restoration of the site will be to a beneficial agricultural after-use;
- Access to the site will be through the existing agricultural enterprise site entrance onto the R108 regional road with upgrade of same to consist of setting-back of the existing boundary wall to the north of the site access, and provision for the upgrade of the existing internal access track and sections of a new access track which will include a new weighbridge; and
- All associated site ancillary works within an overall application area of c. 14.9 hectares.

5.6 Further details on the application site and the proposed operations are provided in Chapters 1 and 2 of this EIAR.

Purpose of this Report

5.7 The purpose of this Biodiversity chapter is to describe the baseline ecological conditions at the Site and to identify potential significant effects associated with the proposed development. Where necessary appropriate mitigation measures will be set out to reduce residual effects to a suitable level.

5.8 This chapter forms part of the EIAR that will be submitted with the planning application to assist the competent authority, in this case Meath County Council, to carry out an Environmental Impact Assessment (EIA) of the proposed extraction and restoration development.

5.9 This Chapter should be read in conjunction with Chapter 2 – Project Description, Chapter 7 – Water (Hydrology and Hydrogeology) and the Appropriate Assessment Screening report accompanying this application.

Contributors / Author

5.10 SLR Project Ecologist Victoria Molloy prepared this report. SLR Associate Ecologist Michael Bailey carried out the technical review. Field survey were undertaken by Jake Matthews.

5.11 Victoria Molloy holds a BSc. in Zoology from the University of Galway (formerly National University of Ireland, Galway). Victoria has three years' experience as a consultant ecologist and has experience in terrestrial ecology, ornithological surveys, and in the preparation of Appropriate Assessments under the Habitats Regulations/Directive and in the writing of Natura Impact Statements. Victoria is a Qualifying Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

5.12 Michael Bailey BSc (Hons) MSc MCIEEM is an Associate Ecologist with SLR and has worked in ecological consultancy in Ireland and the UK and also internationally since 2003. Michael Bailey holds a BSc. in Biology and Ecology from the University of Ulster and an MSc. in Quantitative Conservation Biology from the University of the Witwatersrand in Johannesburg, South Africa. Michael has prepared ecological reports including Appropriate Assessment (AA) screening reports and Natura Impact Statements (NIS) for a wide range of projects in Ireland and the UK and is a full member of CIEEM.

5.13 Jake Matthews is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and holds and MSc in ecology and environmental management from Liverpool Hope University and a BSc in wildlife conservation from the University of Salford. Jake has over five years' experience as a consultant ecologist working on AA screenings and NIS reports for a variety of project types.

Relevant Legislation and Policy

Legislation

5.14 The following legislation are relevant to this Chapter:

- The EIA Directive (2014/52/EU);
- The Habitats Directive (92/43/EEC);
- The Birds Directive (2009/147/EC);
- European Communities (Birds and Natural Habitats) Regulations, 2011 - 2015.
- The Wildlife Acts 1976 as amended;
- Wildlife (Amendment) Act, 2000, 2010, 2012;

- The Flora (Protection) Order 2015; and
- The Planning and Development Act 2000 (as amended).

5.15 The details of these legislation are summarised in **Appendix 5-A** of this Chapter.

Relevant Planning Policy

5.16 The relevant local planning policies have been extracted from the Meath County Development Plan 2021-2027 and are presented in **Appendix 5-A** of this Chapter. These policies are specific to "Chapter 6: Infrastructure Strategy" and "Chapter 8: Cultural and Natural Heritage Strategy" and are concerned with the policies and objectives relating to biodiversity and designated sites.

Biodiversity Planning

5.17 Ireland's National Biodiversity Plan 2017–2021[1] identifies actions towards understanding and protecting biodiversity in Ireland with the vision "*that biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally*".

5.18 Local Biodiversity Action Plans have been produced by some County Councils. This includes the County Meath Biodiversity Plan 2008-2012 that identifies a programme of actions to protect and enhance biodiversity at the local level.

METHODOLOGY

5.19 The methods used to carry out the survey of the Site; to evaluate the ecological value and to prepare the biodiversity chapter is outlined in this section. The assessment methodology for this proposal was developed using the standard professional impact assessment guidance published in 2018 by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Scope of the Chapter

5.20 The scope of this Biodiversity Chapter is to identify potential impacts likely to occur from the proposed progressive extraction and restoration operations, and to determine if the effects on biodiversity are significant. The scope of the report includes the provision of mitigation, compensation and enhancement measures as required.

Zone of Influence

5.21 The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects because of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018).

5.22 The 'zone of influence' for the project can be identified through review of the nature of the proposed development / works, the presence / absence of surface water receptors, the presence

[1] Department of Culture, Heritage and the Gaeltacht (2017). *National Biodiversity Plan 2017-2021*. Department of Culture, Heritage and the Gaeltacht, Dublin.

of ecological connectivity to the wider landscape and distance from known ecologically sensitive sites.

Desk Study

5.23 A desk study was carried out to collate the available existing ecological information on the Site. The Site and the surrounding area were viewed using existing available satellite imagery using Google maps[2] and Bing maps[3] .

5.24 The National Parks and Wildlife Service (NPWS)[4] and the National Biodiversity Data Centre (NBDC)[5] online resources were accessed for information on sites designated for nature conservation and on protected habitats and species known from the 2 km grid square O16F, in which the site is located. Environmental Protection Agency (EPA) maps[6] were also accessed for other environmental information, such as designated wildlife sites and surface water features, relevant to preparation of this report.

5.25 Meath County Council[7]and Fingal County Council[8] websites were accessed for information on relevant planning policy, while the planning portal[9] was accessed for information on other proposed or permitted developments within the Site and immediate surrounding area.

5.26 Birds of Conservation Concern in Ireland (BoCCI) 2020-2026 (Gilbert *et al* 2021), published by BirdWatch Ireland and the RSPB NI, is a list of priority bird species for conservation action on the island of Ireland. The BoCCI lists birds which breed and/or winter in Ireland and classifies them into three separate lists; Red, Amber and Green; based on the conservation status of the bird and hence their conservation priority. Birds on the Red List are those of highest conservation concern, Amber List are of medium conservation concern and Green List are not considered threatened. The BirdWatch Ireland website[10] was accessed for information on birds of conservation concern.

5.27 All bird species are protected under the Wildlife Acts 1976 – 2018 and all those species listed as Red or Amber-listed on BoCCI or listed on Annex 1 of the Birds Directive are included from records held by the NBDC and NPWS web searches have been assessed (see **Table 5-1**).

5.28 The conservation status of mammals, amphibians, reptiles, fish and protected flora within Ireland and Europe was determined using one or more of the following documents: Wildlife Acts (1976 - 2012), the Red List of Terrestrial Mammals (Marnell *et al*., 2019), Ireland Red Lists No.5: Amphibians, Reptiles and Freshwater Fish (King *et al*. 2011), The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) and the EU Habitats Directive 92/43/EEC.

5.29 The documents reviewed to assist the preparation of this chapter of the EIAR included the Appropriate Assessment Screening report for the project (SLR, 2024).

[2] https://www.google.ie/maps (last accessed September 2024)
[3] https://www.bing.com/maps (last accessed September 2024)
[4] https://www.npws.ie/(last accessed September 2024)
[5] https://maps.biodiversityireland.ie/ (last accessed September 2024)
[6] http://gis.epa.ie/(last accessed September 2024)
[7] https://www.meath.ie/ (last accessed September 2024)
[8] https://www.fingal.ie/ (last accessed September 2024)

[9] https://www.eplanning.ie/MeathCC/searchtypes (last accessed September 2024)
[10] https://birdwatchireland.ie/(last accessed September 2024)

FIELD SURVEYS

During the period between 2019 and 2024 a number of site visits were carried out to assess the biodiversity on site and also survey for specific species and behaviours. A summary of the surveys is show in Table 5-1 below:

Table 5-1:
Biodiversity Surveys carried out between 2019 and 2024

Survey Date	Survey Type	Surveyor
18 April 2019	Initial Biodiversity Walkover Survey	Owen Twomey (SLR Senior Ecologist)
21 November 2023	Second Biodiversity Walkover Survey as 2019 survey considered out of date	Jake Matthews (SLR Senior Ecologist)
1 May 2024	1st breeding Bird Survey and potential bat roost assessment (PRA)	Jake Matthews (SLR Senior Ecologist)
27 June 2024	Up-dated habitat survey and 2nd Breeding Bird Survey	Jake Matthews (SLR Senior Ecologist)
28 August 2024	Bat – Emergence Survey	Jake Matthews (SLR Senior Ecologist) and Michael James SLR Project Ecologist)

Habitat Survey

5.30 The Site was initially visited on 18 April 2019 and a walkover survey was carried out by Ecologist Owen Twomey as part of the site assessment for the previous planning application at the site (P. ref. AA/191263 & ABP-308009-20). The objective of the site visit was to describe and evaluate the ecological features within the Site.

5.31 A follow-up walkover survey was conducted on 21st November 2023 by SLR Ecologist Jake Matthews who also carried out an up-dated habitat survey on 27 June 2024 with the purpose to note any changes in the habitats on site or species which may be utilising the site since the initial 2019 site visit. This is in line with CIEEM guidance for ecological site surveys (CIEEM 2018). Habitats were identified and classified using '*A Guide to Habitats in Ireland*' (Fossitt, 2000) during the visit. Any Annex I habitats and the dominant plant species present in each habitat type were recorded. Species nomenclature follows Parnell & Curtis (2012) for scientific and English names of vascular plants.

5.32 Incidental sightings or evidence of birds, mammals or amphibians were also noted during the habitat survey and the habitats evaluated for their suitability to support such species.

5.33 All trees and structures were assessed for their potential to support roosting bats based on the current Bat Conservation Trust (BCT) guidance (Collins, 2023), which are detailed further in **Appendix 5-CAppendix 5-C** BCT Guidelines (2023) for assessing the potential suitability of proposed development sites for bats A full Preliminary Roost Assessment (PRA) is provided in **Appendix 5-D**.

Breeding Bird Survey

5.34 Two breeding bird surveys were conducted to assess the Site for breeding bird activity (Table 5-1). All surveys were conducted during the optimal survey season (i.e., between March – July) and during good weather conditions with high visibility.

5.35 The methodology followed the current Bird Survey Guidelines (Bibby *et al.* 2000). The walked transect breeding bird surveys began approximately 15 – 30 minutes after sunrise and comprised a walked transect route along suitable nesting habitats throughout the Site (the transect routes are shown in **Appendix 5-E**) All birds seen and/or heard were recorded digitally using the British Trust for Ornithology (BTO) species and behaviour codes (refer to **Table 5-2** to record bird behaviours that may indicate breeding within the Site).

Table 5-2:
BTO breeding status codes (BTO, n.d.)

Breeding status	Details
Non-breeding	Flying over
	Species observed but suspected to be still on migration
	Species observed but suspected to be summering non-breeder
Possible breeding	Species observed in breeding season in suitable nesting habitat
	Singing male present (or breeding calls heard) in breeding season in suitable breeding habitat
Probable breeding	Pair observed in suitable nesting habitat in breeding season
	Permanent territory presumed through registration of territorial behaviour (song etc) on at least two different days a week or more part at the same place or many individuals on one day
	Courtship and display (judged to be in or near potential breeding habitat; be cautious with wildfowl)
	Visiting probable nest site
	Agitated behaviour or anxiety calls from adults, suggesting probable presence of nest or young nearby
	Nest building or excavating nest-hole
Confirmed breeding	Distraction-display or injury feigning
	Used nest or eggshells found (occupied or laid within period of survey)
	Recently fledged young (nidicolous species) or downy young (nidifugous species). Careful consideration should be given to the likely provenance of any fledged juvenile capable of significant geographical movement. Evidence of dependency on adults (e.g. feeding) is helpful. Be cautious, even if the record comes from suitable habitat.
	Adults entering or leaving nest-site in circumstances indicating occupied nest (including high nests or nest holes, the contents of which cannot be seem) or adults seen incubation.
	Adult carrying faecal sac or food for young
	Nest containing eggs
	Nest with young seen or heard

Roosting Bat Survey

5.36 The PRA carried out in May 2024 by Jake Matthews who identified one tree with high roosting potential, which underwent an additional presence/absence bat emergence survey on 28 August 2024. This involved two surveyors standing in view of identified PRFs, recording any emerging bats for evidence of the presence of a bat roost using Batlogger M bat detectors and were conducted in suitable weather conditions (i.e., little to no rain and wind, and temperatures >10°C).

Limitations

Desk Study

5.37 Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that important habitats or protected species not identified during the data search do in fact occur within the vicinity of the site but have not been previously recorded. Interpretation of maps and aerial photography has been carried out using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the field study area.

Field Surveys

5.38 There were no limitations encountered during the field survey from the previous 2019 application (AA/191263 & ABP-308009-20) and the April site survey. The 2023 and 2024 surveys were all carried out in suitable weather conditions and covered the optimal season for terrestrial habitat surveys (May - August). All areas of the Site were accessible during all the surveys.

ASSESSMENT APPROACH

5.39 The ecological evaluation and assessment within this chapter has been undertaken with reference to relevant parts of the 2018 Guidelines for Ecological Impact Assessment in the UK and Ireland developed by the Chartered Institute of Ecology and Environmental Management (CIEEM, September 2018). Although this is recognised as current good practice for ecological assessment, the guidance itself recognises that it is not a prescription about exactly how to undertake an ecological impact assessment (EcIA); rather, they "*provide guidance to practitioners for refining their own methodologies*". For the full guidance, refer to https://www.cieem.net/data/files/ECIA%20Guidelines.pdf. The approach to impact assessment also has regard to advice set out in the EPA guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR) published in 2022.

Important Ecological Features

5.40 Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and / or species rarity; the extent to which such habitats and / or species are threatened throughout their range, or to their rate of decline.

Determining Importance

5.41 The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known/ published accounts of distribution and rarity where available, and professional experience:

- International (European).
- National (Ireland).
- Regional (Leinster).
- County (Meath).
- Townland (Naul).
- Local (intermediate area between Site and Townland), and
- Site (the red line boundary of the development).

5.42 The above frame of reference is applied to the ecological features identified during the desk study and surveys to inform this report.

5.43 In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Examples of relevant lists and criteria include species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive), species protected under the Wildlife Acts 1976 - 2020 and Birds of Conservation Concern in Ireland 4 (Gilbert *et al.* 2021).

5.44 The approach to impact assessment, as set out in CIEEM guidelines, only requires that ecological features (habitats, species, ecosystems and their functions/processes), that are considered to be important and potentially affected by the proposed development are carried forward to detailed assessment. It is not necessary to carry out detailed assessment of receptors that are sufficiently widespread, unthreatened and resilient to impacts from the proposed development and will remain viable and sustainable. Therefore, for the purposes of this report, only ecological features of Local importance or greater and/or subject to legal protection have been subject to detailed assessment.

Impact Assessment

5.45 Where appropriate the impact assessment process involves the following steps:

- identifying and characterising potential impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

5.46 When describing impacts, reference has been made to the following characteristics, as appropriate:

- Positive or negative;
- Extent;
- Magnitude;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

5.47 The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of

habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or feature, e.g. the creation of roads which cause hydrological changes, which, in the absence of mitigation, could lead to the drying out of wet grassland.

5.48 Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:

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

Significant Effects

5.49 The 2018 CIEEM guidance sets out information in paragraphs 5.24 through to 5.28 of the guidance document which describes the concept of ecological significance. Significant effects are qualified with reference to an appropriate geographic scale, and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.

5.50 A significant effect, for the purposes of EcIA, is defined as an effect that is sufficiently important to require assessment and reporting so that the decision-maker is adequately informed as to the environmental consequences of permitting the project. Effects can be considered significant at a wide range of scales from international to local.

5.51 The nature of the identified effects on each assessed feature is characterised. This is considered, along with available research, professional judgement about the sensitivity of the feature affected, and professional judgement about how the impact is likely to affect the site, habitat, or population's structure and continued function. Where it is concluded that an effect would be likely to reduce the importance of an assessed feature, it is described as significant. The degree of significance of the effect takes into account the geographic context of the feature's importance and the degree to which its interest is judged to be affected.

Cumulative Effects

5.52 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a proposed development results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects.

5.53 Other plans and projects that should be considered when establishing cumulative effects are:

- proposals for which consent has been applied but which are awaiting determination;
- projects which have been granted consent, but which have not yet been started or which have been started but are not yet completed (i.e. under construction);
- proposals which have been refused permission, but which are subject to appeal, and the appeal is undetermined;
- constructed developments whose full environmental effects are not yet felt and therefore cannot be accounted for in the baseline; or

- developments specifically referenced in a National Policy Statement, a National Plan or a Local Plan.

Avoidance, Mitigation, Compensation & Enhancement

5.54 Where potentially significant effects have been identified, the mitigation hierarchy has been applied, as recommended in the CIEEM Guidelines on Ecological Impact Assessment (April 2022). The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied, residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement.

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

- **Avoidance** is used where an impact has been avoided, e.g. through changes in scheme design;
- **Mitigation** is used to refer to measures to reduce or remedy a specific negative impact in situ;
- **Compensation** describes measures taken to offset residual effects, i.e. where mitigation in situ is not possible; and
- **Enhancement** is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

BASELINE ECOLOGICAL CONDITIONS

5.56 This section sets out the current baseline conditions for the ecological features considered within the Site and provides a clear description of the changes that would occur as a result of the new consent using the findings of the desk study and field survey.

Sites Designated for Nature Conservation

5.57 Sites which have been designated for nature conservation are discussed in this section. These designations may include; Natura 2000 sites, Natural Heritage Areas, National Parks, Nature Reserves, Wildfowl Sanctuaries and Ramsar Sites.

5.58 The proposed development area is not within or directly adjacent to any site designated for nature conservation or subject to any nature conservation designations.

Natura 2000 Sites

5.59 There are no Natura 2000 Sites within or directly adjacent to the Site, refer to **Figure 5-3**. The North-west Irish Sea SPA (004236) is c. 7.2 km north-east of the Site is the closest Natura 2000 site when measured in a straight line and c. 11.8km along the actual river path; the River Nanny Estuary and Shore Special Protection Area (SPA) 004158 is c. 8.2 km northeast.

5.60 The Delvin River forms the southern border of the application Site, and it flows to the Irish Sea. An indirect hydrological connection also exists between the site and the North-West Irish SPA via groundwater recharge however, there is no potential for water-quality effects on the SPA given the large volumes of water within this coastal waterbody, the saline nature of these waters and the length of the hydrological flow path of 11.8km between the site and the SPA.

5.61 The project will result in the loss of some potential foraging habitats for golden plover which are a species of interest for the River Nanny Estuary and Shore SPA. However, the loss of foraging habitat will be small scale, is suitably distant from the core foraging areas in the SPA and alternative habitat is present and any loss will not be significant in the context of the SPA.

5.62 An Appropriate Assessment Screening report was prepared for this Project, and it concluded that the proposed development, individually or in combination with other plans or projects, will not have a likely significant effect on any Natura 2000 sites. Therefore, Natura 2000 sites are excluded from any further consideration in this Chapter.

Proposed Natural Heritage Areas (pNHAs) / Natural Heritage Areas (NHAs)

5.63 There are no nationally important Natural Heritage Areas (NHA) located within a 10km zone of influence of the Site. There are four proposed Natural Heritage Areas (pNHA) located within a 10 km zone of influence for the project (**Figure 5-4**). The nearest pNHAs is Bog of the Ring pNHA (001204) located approximately 3.5km east of the Site. Cromwell's Bush Fen pNHA (001576) is located c. 3.5km northwest of the Site. Knock Lake pNHA (001203) is located approximately 5.9km east of the Site and Laytown Dunes/Nanny Estuary pNHA (000554) is located c. 8.2km northeast of the Site.

5.64 The Delvin River, which flows along the southern border of the Site, does not enter any of the pNHAs listed above downstream of the Site. Therefore, there are no surface water hydrological connections between the Site and the pNHAs listed above.

5.65 Bog of the Ring pNHA, Knock Lake pNHA, and Laytown Dunes/Nanny Estuary pNHA are located on different river sub-catchments to the project Site. The Devlin and Stadalt Rivers act as hydrological barriers between the Site and these pNHAs.

5.66 Cromwell's Bush Fen pNHA is located on the same river sub-catchment (Delvin_SC_010) as the Site. However, they are located in different aquifers and the Stadalt River acts as a hydrological barrier between the Site and the pNHAs.

5.67 Therefore, proposed Natural Heritage Areas/Natural Heritage Areas are scoped out and excluded from any further consideration in this report.

Field Survey

5.68 The habitats and species recorded within the application site are described, classified and evaluated in this section of the report, and described further in the sections below.

Habitats

5.69 Habitats present within the Site, as recorded during the walkover surveys, are described in this section. Habitat classification follows that of 'A Guide to Habitats in Ireland' (Fossitt, 2000). A habitat map for the site is provided in **Figure 5-2**. Photographs of the site from the November 2023 field survey can be found in **Appendix 5-B** Site Photographs (Plates).

Arable Crops (BC1) / Tilled Land (BC3)

5.70 The majority of the application site (ca. 14.1 ha) is comprised of large fields that are cultivated and managed for the production of arable crops (**Plate 1**). The field margins are vegetated with ruderal species that are typical of such habitat.

5.71 Species recorded in these margins include; bramble *Rubus fruticosus* agg., broad-leaved dock *Rumex obtusifolius*, nettle *Urtica dioica*, cleavers *Gallium aparine*, dandelion *Taraxacum* sp., groundsel *Senecio vulgaris*, hogweed *Heracleum sphondylium*, ground elder *Aegopodium podagraria,* cow parsley *Anthriscus sylvestris,* bush vetch *Vicia sepium,* rape *Brassica napus*, common field speedwell *Veronica persica,* primrose *Primula vulgaris,* spear thistle *Cirsium vulgare*, cut-leaved geranium *Geranium dissectum*, lesser celandine *Ficaria verna* and ivy *Helix hedera*. The dominant grass species recorded here include typical grasses associated with agriculture such as; perennial rye-grass *Lolium perenne*, cock's-foot *Dactylis glomerata*, Yorkshire fog *Holcus lanatus*, Timothy *Phleum pratense,* creeping bent-grass *Agrostis stolonifera*.

5.72 Arable crops and tilled land are common and widespread habitats throughout Ireland, particularly in the east and southeast of the country. These habitats are also common in the lands surrounding the Site. Lands used to produce arable crops are homogenous in nature. These habitats are evaluated as being of negligible importance and are scoped out of further consideration in this report.

Mixed Broadleaved Woodland (WD1)

5.73 There is one area of mixed broadleaf woodland (**Plate 5**), one parcel (ca. 0.5 ha) south of where the internal access track meets the main body of the application site. The majority, ca. 0.45 ha, of this habitat is outside the Site.

5.74 The southern woodland is located on a steep bank which slopes into the Delvin River and is at a maximum height of ca. 20 m. Horse chestnut *Aesculus hippocastanum* and beech *Fagus sylvatica* dominate the canopy with sycamore *Acer pseudoplatanus* and ash *Fraxinus excelsior* also occurring. The understory species consist of hawthorn *Crataegus monogyna* and elder. Field layer species include bramble, lesser celandine, primrose, dog violet *Viola riviniana*, ivy, creeping buttercup *Ranunculus repens*, red dead-nettle *Lamium purpureum*, ground elder, bush vetch, cleavers, cow

parsley, herb Robert *Geranium robertianum* and ivy leaved toadflax *Cymbalaria muralis* on exposed rock.

5.75 This woodland is small in size and an isolated block within the landscape; however, it does represent one of the more diverse areas within or surrounding the Site. This habitat is evaluated as important at the Local Level.

Scrub (WS1)

5.76 This habitat can be found bordering the Site on the east and north of the main body of the Site (**Plate 4**). Another area of scrub is also present around the concrete batching facility across the R108 road. This habitat is dominated by bramble and gorse *Ulex europaeus* with some willow, hazel *Corylus avellana,* elder and young ash. This habitat occurs as small patches within the application Site.

5.77 This habitat is evaluated as being of negligible importance and can be scoped out of further consideration in this report.

Hedgerow (WL1)

5.78 There is approximately 1.1 km of hedgerow on the boundaries and within the application site (**Plate 2**). These made up much of the site boundary and were well maintained with few gaps. It is anticipated that they are regularly managed through flailing and were generally maintained at a height and width of 1.5 m. Hedges are dominated by elder and hawthorn with willow and ash also occurring occasionally. Floral species recorded within the hedges include cleavers, groundsel, cow parsley, nettle, hogweed, common chickweed *Stellaria media,* ground elder, primrose, ivy, rape, bush vetch, ground ivy *Glechoma hederacea,* lesser celandine, spear thistle, *Rosa* sp., white clover *Trifolium repens*, field speedwell, broad-leaved dock *Rumex obtusifolius*, and cut-leaved geranium. Bramble and gorse have begun to dominate the hedgerow vegetation in places.

5.79 Hedgerows within the Site provide ecological connectivity to the larger hedgerow network in the surrounding area as well as to the Delvin River on the southern border of the Site. Hedgerows within the Site are evaluated as important at the Townland level.

Treelines (WL2)

5.80 Treelines cover a length of ca. 360 m along the boundaries of the Site. Ash is the dominant canopy species with occasional hawthorn and elder. Elder and hawthorn are dominant in the hedges under the treeline. The floral species recorded within field layer are similar to that recorded within the hedgerows.

5.81 It was noted that many of the ash trees exhibited ash dieback meaning that the composition of treelines is likely to change naturally over the coming years. The locations of trees with dieback should also be noted for health and safety reasons as falling trees could be hazardous.

5.82 Treelines provide many of the same ecological features of hedgerows but are less abundant on Site. Treelines are evaluated as important at the Local level.

Depositing/Lowland Rivers (FW2)

5.83 The Delvin River channel varies between 1.5 - 4 m wide where it flows to the south of the application site (**Plate 3**). The banks are typically ca. 2 m high and have been raised in the past with spoil dredged from the river channel. The bed of the river is a mixture of cobble, stone and gravel with low levels of deposition. There was a moderate to high rate of flow within the river at the time of survey which was dominated by glide type flow interspaced with small areas of riffle.

No instream vegetation was recorded within the Site and the emergent vegetation was dominated by reed canary-grass *Phalaris arundinacea*. Bankside vegetation includes small areas of bramble scrub, few young willow *Salix spp.* Trees and other common species recorded within the Site such as perennial rye-grass, Yorkshire fog, cow parsley, nettle, hogweed, bush vetch and cleavers.

5.84 The Delvin River along the Site boundary is evaluated as important at the Townland Level.

Drainage Ditches (FW4)

5.85 Drainage ditches are present within the centre and along the eastern boundary of the Site.

5.86 The central drainage ditch was the only one with a flow of water at the time of the previous 2019 survey. The drain is associated with an elder *Sambucus nigra* hedgerow, is ca. 50 cm wide and ca. 1 m deep with a slow flow of ca. 3 cm depth at the time of survey. The drainage channel was silty and there was no instream or emergent vegetation present. The ditch banks are dominated by ivy, ferns, nettle and lesser celandine. This ditch is culverted in places to allow farm access.

5.87 The remaining drainage ditches within the Site are 1.5-2 m deep; were dry at the time of the 2023 survey and are overgrown with vegetation such as bramble, gorse, and nettles. Other plant species recorded in this habitat include cow parsley, hogweed, lesser celandine, cleavers, field speedwell, fumitory *Fumaria* sp., spear thistle and willow.

5.88 Drainage ditches are a commonly occurring habitat and are sufficiently widespread and resilient. This habitat is evaluated as not important and can be scoped out of further consideration in this report.

Active Quarries and Mines (ED4)

5.89 This habitat is located within the existing permitted concrete batching facility (permitted under P. Ref. 80/572 & 22/153 (ABP-314881-22)) on the opposite side of the R108 from the internal access route for the main body of the Site (**Plate 6**). The batching plant is outside the redline planning application boundary but has been included for assessment for completeness. This area is comprised of artificial buildings and surfaces, spoilage heaps, and bare ground/recolonising bare ground. Ivy, ribwort plantain *Plantago lanceolata*, coltsfoot *Tussilago farfara*, horsetail *Equisetum arvense*, sycamore, broad-leaved dock, and invasive *Buddleia davidii* can be found around the offices at the concrete batching facility.

5.90 This habitat is evaluated as being of negligible importance and can be scoped out of further consideration in this report.

Species

5.91 Details of protected, rare and notable species records from the 2 km grid square O16F within which the Site is located. The records returned are of varying ages so for the purposes of preparing this report only the relevant records dated within the last 10 years.

5.92 **Table 5-3** provides a summary of records with the following sections setting out more specific consideration of protected, rare and notable species at the Site itself.

Table 5-3:
Rare and/or Protected Species Recorded Within 2 km grid square O16F

Species	Date of Last Record	No. of Records	Conservation Status	Dataset
Common Coot *Fulica atra*	2020	1	Protected Species: Wildlife Act Birds of Conservation Concern: Amber List	Birds of Ireland
Common Kingfisher *Alcedo atthis*	2022	5	EU Birds Directive: Annex I Protected Species: Wildlife Act Birds of Conservation Concern: Amber List	Birds of Ireland
Common Linnet *Carduelis cannabina*	2019	2	Protected Species: Wildlife Act Birds of Conservation Concern: Amber List	Birds of Ireland
Common Snipe *Gallinago gallinago*	2019	1	Protected Species: Wildlife Act Birds of Conservation Concern: Red List	Birds of Ireland
Eurasian Teal *Anas crecca*	2020	5	Protected Species: Wildlife Act Birds of Conservation Concern: Amber List	Birds of Ireland
Eurasian Woodcock *Scolopax rusticola*	2020	3	Protected Species: Wildlife Act Birds of Conservation Concern: Red List	Birds of Ireland
Great Cormorant *Phalacrocorax carbo*	2020	2	Protected Species: Wildlife Act Birds of Conservation Concern: Amber List	Birds of Ireland
House Martin *Delichon urbicum*	2022	2	Protected Species: Wildlife Act Birds of Conservation Concern: Amber List	Birds of Ireland
Little Egret *Egretta garzetta*	2022	2	EU Birds Directive: Annex I Protected Species: Wildlife Act Birds of Conservation Concern: Green List	Birds of Ireland
Little Grebe *Tachybaptus ruficollis*	2022	4	Protected Species: Wildlife Act Birds of Conservation Concern: Amber List	Birds of Ireland
Mallard *Anas platyrhynchos*	2022	4	Protected Species: Wildlife Act Birds of Conservation Concern: Amber List	Birds of Ireland
Merlin *Falco columbarius*	2020	2	EU Birds Directive: Annex I Protected Species: Wildlife Act Birds of Conservation Concern: Amber List	Birds of Ireland

Sand Martin *Riparia riparia*	2022	3	Protected Species: Wildlife Act Birds of Conservation Concern: **Amber List**	Birds of Ireland
Tufted Duck *Aythya fuligula*	2020	1	Protected Species: Wildlife Act Birds of Conservation Concern: **Amber List**	Birds of Ireland
Yellowhammer *Emberiza citrinella*	2021	6	Protected Species: Wildlife Act Birds of Conservation Concern: **Red List**	Birds of Ireland
Red Deer *Cervus elaphus*	2016	1	Protected Species: Wildlife Act	Mammals of Ireland 2016-2025
West European Hedgehog *Erinaceus europaeus*	2020	1	Protected Species: Wildlife Act	Hedgehogs of Ireland

Protected Flora

5.93 No protected flora species were noted on-site during the field survey. There are no records of protected flora species on NBDC on-site or in the surrounding area.

5.94 The flora species recorded on-site are common and widespread throughout Ireland and the habitats occurring on-site are unlikely to be associated with any protected flora species. Therefore, protected flora can be scoped out of further consideration in this report.

Invasive Species

5.95 The field surveys did not identify any invasive species in the existing Site or the proposed development area as listed on the under the Third Schedule of the EC Birds and Natural Habitats Regulations 2011.

5.96 Japanese Knotweed *Fallopia japonica* has been recorded in the NBDC grid square O16F, July 2013, and may spread to the Site without due care.

Amphibians

5.97 Amphibians, such as common frog *Rana temporaria* or smooth newt *Lissotriton vulgaris*, were not recorded during any of the ecological walkovers of the Site, 2019 - 2024. There are no records of these species on NBDC from the Site or surrounding area.

5.98 Although there were no dedicated surveys for frogs or newts, there is potential for the drainage ditches within the Site to offer suitable breeding habitat for common frog. Frog and its breeding sites are protected under the Wildlife Acts and Annex IV of the Habitats Directive. Given the presence of suitable habitat and the widespread and common distribution of frog throughout the island of Ireland it is possible that they occur within the Site.

5.99 The amphibian population of the Site would be evaluated as important at the Local level due to the possible presence of breeding common frog in the central drainage ditch.

Birds

5.100 In the previous site walkover in 2019, Yellowhammer was heard and seen. This species is Red Listed is Ireland due to a decline in its breeding range and population, which is now restricted to

the east and south. This species is strongly associated to the production of arable cereals as a foraging resource.

5.101 Sand martin was observed foraging over the Delvin River within the Site, however there was no evidence that they are breeding within the exposed sand piles within the existing sand and gravel pit and due to lack of suitable breeding habitat within the Site. Sand Martin is an amber listed species due to concerns over the European breeding population.

5.102 All other bird species recorded during the ecological site walkover in 2019 were green listed. Multiple buzzards *Buteo buteo* (ca 5) were observed and heard calling in groups; a group of three individuals circling over the north eastern boundary of the Site and a second group of two circling over the field to the southern of the Site. Pheasant *Phasianus colchicus* was heard alarm calling in an adjacent field outside of the Site to the west. Jackdaw *Corvus monedula* was frequently seen flying over the Site as was wood pigeon *Columba palumbus*. Other bird species recorded within the Site include common passerine species such as blackbird *Turdus merula*, chaffinch *Fringilla coelebs*, great tit *Parus major*, bullfinch *Pyrrhula pyrrhula* and goldfinch *Carduelis caruelis*.

5.103 The only birds recorded during the ecological site walkover in November 2023 were green listed species. Common buzzard, bullfinch, and robin were noted during the habitat assessment.

5.104 The majority of birds recorded during the breeding bird surveys were common passerine species that are green listed. Amber listed birds recorded during the breeding bird surveys with possible, probable, or confirmed breeding status were house sparrow *Passer domesticus*, willow warbler *Phylloscopus trochilus*, starling *Sturnus vulgaris*, and skylark *Alauda arvensis*. Red listed bird species recorded during the breeding bird surveys were yellowhammer and meadow pipit *Anthus pratensis*. A summary of the results from the breeding bird surveys is shown in **Table 5-4**. The full survey results are shown in **Appendix 5-E**.

5.105 Bird species in Ireland, their nests and eggs, are protected under the Wildlife Acts. The bird population of the Site would be evaluated as important at the Townland level as a variety of amber listed birds as well as the red listed species, yellowhammer and meadow pipit, are present within the Site and may be breeding there.

Table 5-4:
Summary of Breeding Bird Survey Results (May and June 2024)

Species (BTO Code)	Counts										Peak Count Across Both Surveys
	May					June					
	NB	POSS	PROB	CON	Total	NB	POSS	PROB	CON	Total	
Barn Swallow (SL)	0	0	0	0	**0**	9	0	0	0	**9**	**9**
Blackbird (B.)	0	5	0	0	**5**	0	1	2	0	**3**	**5**
Blackcap (BC)	0	6	0	0	**6**	0	4	0	0	**4**	**6**
Blue Tit (BT)	0	2	0	0	**2**	0	1	0	2	**3**	**3**
Bullfinch (BF)	0	0	0	0	**0**	0	1	0	0	**1**	**1**
Chaffinch (CH)	0	14	0	0	**14**	0	11	0	0	**11**	**14**
Chiffchaff (CC)	0	2	0	0	**2**	0	3	0	0	**3**	**3**
Dunnock (D.)	0	1	0	0	**1**	0	1	0	0	**1**	**1**
Garden Warbler (GW)	1	0	0	0	**1**	0	0	0	0	**0**	**1**
Goldfinch (GO)	1	0	0	0	**1**	10	1	0	0	**11**	**11**
Great Tit (GT)	0	2	0	0	**2**	0	1	0	5	**6**	**6**
Herring Gull (HG)	4	0	0	0	**4**	7	0	0	0	**7**	**7**
Hooded Crow (HC)	0	0	0	0	**0**	1	0	0	0	**1**	**1**
House Sparrow (HS)	0	0	2	0	**2**	0	0	0	0	**0**	**2**
Lesser Black-backed Gull (LB)	0	0	0	0	**0**	1	0	0	0	**1**	**1**
Mallard (MA)	0	0	0	0	**0**	3	0	0	0	**3**	**3**
Meadow Pipit (MP)	0	0	0	1	**1**	0	0	0	0	**0**	**1**
Pheasant (PH)	0	0	2	0	**2**	0	1	0	0	**1**	**2**
Robin (R.)	0	3	0	0	**3**	0	3	0	1	**4**	**4**
Rook (RO)	1	0	0	0	**1**	0	0	0	0	**0**	**1**
Skylark (S.)	0	0	0	0	**0**	0	1	0	0	**1**	**1**
Song Thrush (ST)	0	5	0	0	**5**	0	2	0	0	**2**	**5**
Starling (SG)	0	2	0	0	**2**	0	0	0	0	**0**	**2**
Willow Warbler (WW)	0	1	0	0	**1**	0	1	0	0	**1**	**1**
Wood Pigeon (WP)	0	3	4	0	**7**	11	12	0	0	**23**	**23**
Wren (WR)	0	10	1	1	**12**	0	8	0	3	**11**	**12**
Yellowhammer (Y.)	1	10	0	0	**11**	0	5	0	0	**5**	**11**
Total	**8**	**66**	**9**	**2**	**85**	**42**	**57**	**2**	**11**	**112**	**137**

NB: Non-breeding
POSS: Possible breeding
PROB: Probably breeding
CON: Confirmed breeding

Mammals

Bats

5.106 There are recent records (20) in the NBDC of common pipistrelle *Pipistrellus pipistrellus* bat from the 2 km grid squares in which the Site is located (O16F), and the habitats on Site can be described as having moderate bat landscape suitability (Lundy et al. 2011).

5.107 Overall, eighteen trees were found with roosting potential for bats. One of the eighteen trees was evaluated as having high suitability to support high numbers of roosting bats due to numerous PRFs found within it (Tree B2 (899)). The remaining seventeen were considered as having low bat roosting potential owing to their less suitable PRFs. None of the trees assessed for PRFs will be removed as part of the construction phase of the proposed project. Results and pictures from the potential roost assessment can be found in **Appendix 5-D**.

5.108 Static bat emergence surveys were carried out in August 2024. No bats were detected emerging from the tree during the survey. However, there was bat foraging and commuting activity within the vicinity of the emergence survey, and it cannot be excluded that a bat may use the tree as a temporary roost in the future. A summary of the bat emergence survey carried out on the tree with high roosting potential is shown in **Table 5-5** below. The full survey results are shown in **Appendix 5-F**.

Table 5-5:
Summary of Bat Emergence Survey Results

Species	Count	Behaviour Recorded
Common Pipistrelle (*Pipistrellus pipistrellus*)	2	Not recorded (heard not seen)
Leisler's Bat (*Nyctalus leisleri*)	25	Commuting and foraging
Soprano Pipistrelle (*Pipistrellus pygmaeus*)	32	Commuting, foraging, and social calls
Unknown	1	Foraging
Grand Total	60	

5.109 The hedgerow and treeline network on-site are assessed as having moderate suitability for foraging/commuting bats due to them being mostly continuous and having good connectivity with other suitable habitats in the surrounding landscape.

5.110 The bat assemblage of the Site is evaluated as important at the Local level and is assessed further in this report.

Other Mammals

5.111 During the previous survey in April 2019, three potential badger setts were identified in the hedgerows along the north-western perimeter of the site – see Target Notes 1 & 2 in the Habitats Map Figure 5-2. The follow-up 2023 and 2024 surveys identified only one potential sett which appeared to be long abandoned due to the overgrown vegetation surrounding the entrance (**Plate**

9). No other potential badger setts were identified. Another tunnel was identified (Target Note 4) and it was assessed as potentially being used by a fox as the size of its entrance does not indicate it is a badger sett (**Plate 10**).

5.112 A badger latrine (Target Note 3 and **Plate 7**) and signs of foraging (**Plate 8**) were found in the hedgerow along the west of the site during the 2023 survey. This is evidence that badgers are presently active on the Site and in the surrounding area.

5.113 The Site would be evaluated as important at the Local Level for badger due to the presence of potentially suitable breeding habitat on-site.

Invasive Species

5.114 The NBDC database revealed one record for invasive species (Japanese knotweed) within the 2 km grid square O16F within which the Site is located. This is a species listed under the Third Schedule of the EC Birds and Natural Habitats Regulations 2011.

5.115 No plant or animal invasive species listed under the Third Schedule of the Habitats Directive and subject to restrictions under Regulations 49 and 50 were observed during any the ecological site walkovers from in April 2019 to August 2024.

5.116 Invasive species are scoped out of further consideration in this report.

Summary of Important Ecological Features

5.117 Important ecological features to be carried forward for detailed assessment are summarised below. The importance of these features is summarised along with their legal status.

Mixed Broadleaved Woodland

5.118 This habitat is addressed in policy 40 of Chapter 8 – Cultural and Natural Heritage Strategy of the Meath County Development Plan 2021-2027:

"To protect and encourage the effective management of native and semi-natural woodlands, groups of trees and individual trees and to encourage the retention of mature trees and the use of tree surgery rather than felling, where possible, when undertaking, approving or authorising development."

5.119 The mixed broadleaved woodland adjacent to the Site is evaluated as important at the Local level.

Hedgerows

5.120 This habitat is addressed in policies 37 and 38 of Chapter 8 – Cultural and Natural Heritage Strategy of the Meath County Development Plan 2021-2027:

"To encourage the retention of hedgerows and other distinctive boundary treatments in rural areas and prevent loss and fragmentation, where practically possible. Where removal of a hedgerow, stone wall or other distinctive boundary treatment is unavoidable, mitigation by provision of the same type of boundary will be required," and "to promote and encourage planting of native hedgerow species in new developments and as part of the Council's own landscaping works."

5.121 The hedgerows on-site are evaluated as important at the Townland level.

Treelines

5.122 This habitat is addressed in policy 40 of Chapter 8 – Cultural and Natural Heritage Strategy of the Meath County Development Plan 2021-2027:

"To protect and encourage the effective management of native and semi-natural woodlands, groups of trees and individual trees and to encourage the retention of mature trees and the use of tree surgery rather than felling, where possible, when undertaking, approving or authorising development."

5.123 The treelines on-site are evaluated as important at the Local level.

Depositing/Lowland Rivers

5.124 This habitat is addressed in policy 47 of Chapter 8 – Cultural and Natural Heritage Strategy of the Meath County Development Plan 2021-2027:

"To protect the ecological, recreational, educational, amenity and flood alleviation potential of navigational and non-navigational waterways within the County, towpaths and adjacent wetlands."

5.125 In a study of the Delvin River conducted by Flynn Furney in 2008, and only found three-spined stickleback *Gasterosteus aculeatus* in the upper reaches of the river (above Naul) but there are some records from 30+ years ago of brown trout in this section of the river and the substrate of the upper reaches was frequently found to be unsuitable for salmonid habitat.

5.126 Flynn Furney also found no signs of otter during their survey and assessed that otter utilisation of the upper reach of the river above Naul is highly unlikely given both the physical impediments, water pollution and also the poor availability of suitable bank habitat.

5.127

5.128 The Delvin River, which flows adjacent to the Site is evaluated as important at the Townland level.

Amphibians

5.129 Amphibians such as common frog and smooth newt are protected under the Wildlife Acts 1976 as amended. The potential amphibian breeding habitat on-site is evaluated as important at the Local level.

Birds

5.130 All bird species, their nests and eggs, are protected under the Wildlife Acts 1976 as amended. The Site has potential breeding habitat for a variety of passerine species, including several amber listed species and red listed yellowhammer and meadow pipit. The bird species assemblage on-site is evaluated as important at the Townland level.

Bats

5.131 All bat species are protected under the Wildlife Acts 1976 as amended, and the Habitats Directive. The bat species assemblage on-site is evaluated as important at the Local level.

Badgers

5.132 Badgers are protected under the Wildlife Acts 1976 as amended. The potential badger breeding and foraging habitat on-site is evaluated as important at the Local level.

ASSESSMENT OF EFFECTS AND MITIGATION MEASURES

5.133 This section sets out the potential impacts and their effects on important ecological features. The information available from the desk study and fieldwork has been used to identify impacts and the significant effects including positive, negative, direct, indirect and cumulative effects. The following design principles and "designed-in" mitigation have informed the assessment of impacts.

- Within the design of the proposal good practice environmental and pollution control measures are employed with regard to current best practice guidance such as, but not limited to, the following:
  - EPA Environmental Management Guidelines (2006): Environmental Management in the Extractive Industry (Non-Scheduled Minerals); and
  - DoEHLG (Department of the Environment, Heritage and Local Government) April 2004: Quarries and Ancillary Activities Guidelines for Planning Authorities.
- Landscaping and restoration measures are proposed within the design of the development. These are listed in full in Chapter 2 – Project Description and Chapter 13 – Landscape of the EIAR and include features to minimise loss of and enhance the biodiversity on-site. Such measures include the proposed planting of hedgerows to replace those removed during the extraction operations.

5.134 Taking the above into account, the potential impacts of the proposed development are outlined in the following sections.

Do Nothing Impact

5.135 In the absence of the proposed development, it is likely that the site would continue to be used and managed for the production of arable crops.

Potential Impacts and Effects

Mixed Broadleaved Woodland

Potential Impacts

5.136 The small mixed broadleaved woodland adjacent to the Site is located outside the proposed extraction area of the sand and gravel pit. Therefore, this habitat will be retained and will not be directly impacted by the construction or operational works of the proposed development being as it will be suitably distant from the works.

Proposed Mitigation Measures

5.137 The mixed broadleaved woodland will be retained during the proposed development and will not be directly impacted as a result of the proposed development. Therefore, no mitigation measures are necessary.

Significance of Residual Effects

5.138 It is assessed that the residual effects on mixed broadleaved woodland will not be significant, as there will be no loss of this habitat as a result of the proposed development.

Hedgerows

Potential Impacts

5.139 A loss of approximately 180 m of native hedgerow is required to facilitate the proposed extraction of the sand and gravel on-site. This habitat is considered to be of ecological value due to its connectivity with the hedgerows in the surrounding landscape.

Proposed Mitigation Measures

5.140 A total of 430 m of native hedgerow will be planted within the site. 230m will be planted as part of Restoration Phase 1 (i.e. by year 5) and 200 m as part of Restoration Phase 3, (i.e. by year 12). A section of native hedgerow (c. 40 m) is proposed to be planted between the new wall and fencing along the upgraded boundary of the existing concrete batching facility with the R108 regional road as permitted by P. Ref. 22/153 (ABP-314881-22).

5.141 All vegetation removal must be carried out outside the bird nesting season of 1st March to 31st August.

Significance of Residual Effects

5.142 There will be some temporary loss of hedgerow to facilitate the proposed extraction development. The sections lost will be fairly short (max. 180 m less than the baseline at any one time) and they will be replaced by 470 m of replanted hedgerow. The replanting will ensure the replacement of hedgerows around the Site, and this will ensure the restoration of ecological corridors and connections with the surrounding environment.

5.143 There will be an overall increase of 290m of native hedgerow and, therefore, an increase in the biodiversity value of hedgerows on-site as a result of the proposed development.

Treelines

Potential Impacts

5.144 The treelines located along the Site boundary will be retained during the proposed development and, therefore, will not be directly impacted as a result of the proposed development.

Proposed Mitigation Measures

5.145 The treelines on-site will be retained during the proposed development. Therefore, no mitigation measures are necessary.

Significance of Residual Effects

5.146 It is assessed that the residual effects on treelines will not be significant, as there will be no loss of this habitat as a result of the proposed development.

Depositing/Lowland Rivers

Potential Impacts

5.147 There is potential for impacts on the water quality of the Devlin River and downstream aquatic habitats via the potential introduction of contamination via surface and groundwater pathways. Contamination may result from the following sources:

- Accidental release of hydrocarbons from machinery (i.e. leaks of fuel or oils from machinery); and
- The introduction of suspended sediments via surface water run-off.

Proposed Mitigation Measures

5.148 The following measures will be implemented during all phases of the project to prevent leaks and/or spills during the construction phase:

- No fuel will be stored on-site;
- All mobile machinery refuelling will be carried out using a mobile bowser;
- Drip trays will be used for all re-fuelling activities;
- All machinery maintenance and repairs will take off-site at the existing concrete batching plant facility;
- All plant will be regularly maintained and inspected daily for leaks of fuels, lubricating oil or other contaminating liquids;
- All petroleum-based products (lubricating oils, waste oils, etc.) will be stored on drip trays under cover to prevent pollution due to accidental leakages;
- Waste oil and grease containers will be stored under cover in storage container. Waste containers will be collected and disposed of by a suitably licenced contractor;
- An emergency spill response kit (with containment booms, absorbent materials and drip tray) will be available on-site to contain/ stop the migration of any accidental spillages, should they occur;
- Plant operators will be briefed during 'toolbox' talks and site induction on where the spill kit is kept and how and when it is deployed;
- Traffic management system at the site will reduce conflicts between vehicles, and the potential risk of collisions and associated fuel spills or oil leaks; and,
- Site speed limits will be implemented across the site to further reduce the likelihood and significance of collisions and hence the possibility of a fuel leak from such a collision.

5.149 The following mitigation measures will be implemented during all phases of the project to prevent the release of suspended sediments into waterways via surface water run-off:

- Prior to any overburden stripping or extraction a shallow cut-off drain will be installed along the southern boundary of the site to prevent any site run-off which my potentially contain suspended solids from flowing over ground to the adjacent Delvin River. The proposed cut-off drain will run parallel to the river and will be between 40 and 50m from the river channel leaving a significant buffer zone between the drain and the river. Water within the cut-off drain will be discharged to ground;
- In addition to the cut-off drain, a silt fence will be erected along the riverside edge of the drain to further ensure no run-off from the site has potential to reach the river;
- Soil stripping and restoration of worked out areas will be carried out on a progressive basis;
- The temporary soil / subsoil areas will be managed to minimise the risk of rain / wind erosion;
- Daily monitoring of the overburden stripping and soil storage areas will be completed by a suitably qualified person. All necessary preventative measures will be implemented to ensure no entrained sediment, or deleterious matter will enter the downstream receiving waters;
- Overburden stripping and landscaping works will be scheduled for periods of low rainfall (summer months) to reduce run-off and potential siltation;
- Landscaped areas and perimeter berms will be planted with trees and grasses as soon as possible after formation to reduce the potential of surface water erosion; and,

- Good construction practices such wheel washers and dust suppression on site roads, and regular plant maintenance will ensure minimal risk. The Construction Industry Research and Information Association (CIRIA) provide guidance on the control and management of water pollution from construction sites which provides information on these issues. This will ensure that surface water arising during the course of overburden stripping and landscaping activities will contain minimum sediment. Further information is provided in the Water Chapter of this EIAR.

Significance of Residual Effects

5.150 Given the nature and short timeframe for the construction phase, any effects on the water environment will be temporary and localised. There is no potential for the status of underlying groundwater bodies (GWBs) to be affected given the scale of the proposed works in comparison the overall scale of the GWBs. The works will also not result in any significant effects on the surface water environment due to the lack of any direct hydrological connection between the work areas and nearby watercourses. No significant effects on surface and groundwater will occur during the construction phase. Therefore, there is little potential to change the status of underlying GWBs.

5.151 There is the potential for the generation of suspended sediment in surface water runoff during the construction phase. However given the limited footprint of the proposed works, and also the lack of any watercourses in the immediate vicinity of the agricultural entrance and the high rates of groundwater recharge in the local area, it is assessed that the residual effects on depositing/lowland rivers will not be significant, provided the mitigation measures outlined are implemented.

Amphibians

Potential Impacts

5.152 Approximately 400 m of the drainage ditches on-site will require removal over the course of the phased development. This would result in the loss of potential breeding habitat for common frog and smooth newt within the Site.

5.153 The proposed development has been amended and will use a CDE Aquacycle Thickener Unit or similar type of unit to recycle process water from the aggregate washing process for re-use and thus eliminate the need for traditional settlement lagoons at the site. Therefore, there will be no lagoons which may be inhabited by amphibians on Site.

5.154 Prior to any overburden stripping or extraction a shallow cut-off drain will be installed along the southern boundary of the site. This may also be a potential breeding habitat for common frog and smooth newt.

Proposed Mitigation Measures

5.155 It is recommended that the ditches are removed between September-December. During this time there is unlikely to be any frogspawn, or tadpoles present within the drainage ditches and, as such, there will not be any direct impacts on any potential common frog population on-site.

5.156 If the drainage ditches must be removed between February-August, the following mitigation measures are recommended to prevent direct impacts on breeding frogs on-site:

- A pre-commencement survey will be carried out between February and end of March by an appropriately qualified ecologist to determine if frogspawn, breeding frogs or smooth newts are present within the ditch.

- If present, frogspawn and tadpoles will be captured and removed from the drainage ditches and translocated to the nearest area of available suitable habitat (i.e. another drainage ditch on-site or the Devlin River to the south of the Site), under licence from NPWS.
- Any capture and translocation shall be undertaken immediately in advance of the removal of drainage ditches to prevent further breeding of common frog or smooth newt taking place between translocation and ditch removal.

Significance of Residual Effects

5.157 The removal of approximately 400 m of potential common frog breeding habitat on-site is required to facilitate the proposed development. However, this habitat (drainage ditches) is a common and widespread habitat within the surrounding lands. In addition, the Delvin River located along the southern Site boundary provides a suitable alternative breeding habitat for common frog.

5.158 The mitigation measures outlined above will ensure that breeding common frog will not be directly impacted as a result of the proposed development.

5.159 It is assessed that the residual effects on amphibians will be significant at a Site level due to the permanent removal of potential frog breeding habitat.

Birds

Potential Impacts

5.160 A loss of approximately 180 m of native hedgerow is required to facilitate the proposed sand and gravel extraction development. This will result in the loss of potential breeding and foraging habitat for the bird assemblage on-site including amber and red listed species recorded during the breeding bird surveys.

5.161 A loss of approximately 12 ha of arable crop and tilled land is required to facilitate the proposed development (i.e. the extraction and soil storage areas). Yellowhammer, which were recorded during the breeding bird surveys, are typically associated with this type of habitat but are generally found close to the field boundaries rather than in the exposed open fields. Declines of this species have occurred where the production of arable crops has reduced. Crop cultivation will continue in the surrounding fields during the sand and gravel pit extraction operations. This will ensure that there will not be a complete loss of foraging habitat for yellowhammer during the project.

Proposed Mitigation Measures

5.162 Vegetation clearance will be carried out outside of the bird nesting season (1st March – 31st August inclusive).

5.163 A total of 470 m of native hedgerow will be planted within the site. Approx. 230 m will be planted as part of Restoration Phase 1 (i.e. by year 5) and 200 m as part of Restoration Phase 3, (i.e. by year 12). A section of native hedgerow (c. 40 m) is proposed to be planted between the new wall and fencing along the upgraded boundary of the existing concrete batching facility with the R108 regional road as permitted by P. Ref. 22/153 (ABP-314881-22).

5.164 Following extraction of sand and gravel the application area will be restored to agricultural use. This restoration will be carried out on a phased basis with each phase being restored as soon as possible once sand and gravel extraction has been completed.

5.165 Where appropriate, some vegetative cover beneficial for wild bird should be planted at the margins of the site to promote the continued presence of Yellowhammer and other granivorous species

5.166 It is recommended that the yellowhammer and other bird populations on-site is monitored annually during the proposed development using the Countryside Bird Survey methodology which will consist of:

- Two early morning survey visits between April and June.

Significance of Residual Effects

5.167 There will be some temporary loss of hedgerow to facilitate the proposed sand and gravel extraction development. The sections lost will be fairly short (max. 180 m less than the baseline at any one time) and they will be replaced by 470 m of replanted hedgerow. The replanting will ensure the replacement of hedgerows around the Site, and this will ensure the restoration and enhancement of potential breeding and foraging habitat for birds on-site.

5.168 There will be a temporary loss of potential foraging habitat (i.e. arable crops and tilled land) for yellowhammer on-site to facilitate the proposed development. The Site will be restored to agricultural use following completion of sand and gravel extraction on-site.

Bats

Potential Impacts

5.169 A loss of approximately 180 m of native hedgerow is required to facilitate the proposed sand and gravel extraction development. This will result in the loss of potential foraging habitat for the bat assemblage on-site.

5.170 No bats were recorded emerging from the tree with high roosting suitability on-site. However, it cannot be excluded that bats may utilise this tree as a temporary roost in the future. This tree will not be removed as part of the project and, therefore, there will be no direct impact on potential roosting bats within the tree.

5.171 During the construction and operational phases of the project there may be the requirement for additional lighting which could disrupt bat activity in the area.

Proposed Mitigation Measures

5.172 A total of 470 m of native hedgerow will be planted within the site. 230 m will be planted as part of Restoration Phase 1 (i.e. by year 5) and 200 m as part of Restoration Phase 3, (i.e. by year 12). A section of native hedgerow (c. 40 m) is proposed to be planted between the new wall and fencing along the upgraded boundary of the existing concrete batching facility with the R108 regional road as permitted by P. Ref. 22/153 (ABP-314881-22).

5.173 If additional lighting is required it is recommended that the use of less disruptive 2,700K colour temp is installed and used during evening works.

Significance of Residual Effects

5.174 There will be some temporary loss of hedgerow to facilitate the proposed sand and gravel extraction development. The sections lost will be fairly short (max. 180 m less than the baseline at any one time) and they will be replaced by 470 m of replanted hedgerow. The replanting will ensure the replacement of hedgerows around the Site, and this will ensure the restoration and enhancement of potential foraging habitat for bats on-site.

5.175 It is assessed that the residual effects on bats will not be significant.

Badgers

Potential Impacts

5.176 There was evidence of foraging badger on-site, however, there was no evidence of recent badger breeding activity on-site during the November 2023 survey. There will be a temporary loss of potentially suitable breeding and foraging for badger to facilitate the development.

5.177 It is not proposed to remove or destroy the inactive setts on-site that were identified during the 2019 survey. However, there is potential for disturbance of breeding badger and/or damage to badger tunnels on-site during the development.

Proposed Mitigation Measures

5.178 The following mitigation measures are recommended to prevent disturbance of breeding badger on-site:

- A pre-commencement survey will be carried out on the inactive badger setts prior to starting works to identify badger activity on-site and to determine if the setts have been re-occupied.
- If the setts are confirmed to be active, a 50 m exclusion zone will be placed around the sett entrances where no works will be carried out.
- If a badger sett is identified after the commencement of works, a 50 m exclusion zone will be immediately established around the sett entrance and all works within this exclusion zone will cease until the sett is determined to be inactive or the sett is removed following the below step.
- If works must be carried out within the 50 m exclusion zone of an active sett, there should be a general commitment to monitor and minimise effects on Badgers in line with best practice and in consultation with the local authority and NPWS.

Significance of Residual Effects

5.179 The loss of potential badger foraging and breeding habitat on-site will be short-term within the extraction phase and the area will be restored to agricultural use following completion of the project. This restoration will be carried out on a phased basis with each phase being restored as soon as possible once sand and gravel extraction has been completed. In addition, agricultural fields which are suitable for foraging and breeding badger are common and widespread in the landscape surrounding the Site.

5.180 It is assessed that the residual effects on badgers will not be significant.

Cumulative Effects

5.181 Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. Cumulative effects can occur where a project results in individually insignificant impacts that, when considered in-combination with impacts of other proposed or permitted plans and projects, can result in significant effects (CIEEM, 2018).

5.182 The following plans were reviewed for strategies and objectives that may act in-combination with the project:

- Meath County Development Plan 2021-2027
- Fingal Development Plan 2023-2029

5.183 There are no strategies or objectives in the Meath County Development Plan 2021-2027 or the Fingal Development Plan 2023-2029 that are likely to result in significant effects when considered in-combination with the proposed development.

5.184 A search of recent (within the last five years) planning applications from Meath and Fingal county councils was carried out in the vicinity of the Site. The majority of recent planning applications within the vicinity of the Site are for small-scale developments and extensions to already existing domestic buildings. These planning applications are sufficiently small in scale to not result in any significant adverse cumulative effects in combination with the project and have been scoped out of further consideration in this report.

5.185 Eight recent planning applications have been identified as being sufficiently large-scale to require further assessment for cumulative effects. These applications are considered in **Table 5-6** and **Table 5-7**.

Table 5-6:
Recent Planning Applications from Fingal County Council in the Vicinity of the Site

Planning Ref. Number	Development Description	Assessment of Cumulative Effects
F19A/0399	Construction of 6 no. four bedroom detached single storey dwelling houses, 8 no. 3 bedroom semi-detached single storey dwelling houses and 6 no. 2 bedroom semi-detached single storey dwelling houses along with associated site development works and minor amendments to the development permitted under planning register reference F17A/0762 that are required to facilitate the proposed development. The application site comprises an area previously approved for the construction of 8 no. 3 bedroom detached single storey dwelling houses under planning register reference F17A/0762 and an additional area of land (0.357 hectares) to the North of Castle Manor and to the South of Weston Avenue.	The site of this planning application is located approximately 800m south-east of the Site. It was concluded in the chief executive's order accompanying this application that an EIAR was not required, and that this development is unlikely to have any adverse impacts on the environment. Therefore, cumulative effects can be excluded.
F21A/0130	The development will consist of the erection of 7 No. flood-lighting poles, 18m in height with 6 No. flood-lights poles & associated site works.	The site of this planning application is located approximately 400m south-east of the Site. It was concluded in the chief executive's order accompanying this application that an EIAR was not required, and that this development is unlikely to have any adverse impacts on the environment. Therefore, cumulative effects can be excluded.
PARTXI/008/21	The Naul Village Park Development Project and main ancillary Infrastructure: - Universal access to events space at Seamus Ennis Centre; - 17 no car parking spaces; - Ducting for EV charging; - Extensive landscape planting using predominately pollinator friendly trees, shrubs and perennials; -	The site of this planning application is located approximately 800m south-east of the Site. The EIAR accompanying this application concluded that the proposed development would not result in any significant

	12 no. Bicycle parking spaces; - Recreation and fitness area; - Drinking fountain; - Reflective garden; - New path network; - Sustainable Urban Drainage Infrastructure (SuDS) to ensure surface water is attenuated within the site Boundary treatments; - New vehicular entrance; - All ancillary site works Heritage and Music Themed Playground: - Sand based play; - Hill slide; - Log ladder; - Castle themed playhouse; - Basket swing; - Speaking tube; - Musical play pieces; - Cliff sided mound with climbing wall	ecological impacts following the implementation of the recommended mitigation measures. Therefore, cumulative effects can be excluded.
F23A/0236	The development will consist of the following: Proposed development of a 2-storey extension to the existing school building, comprising of a link corridor, 2no ground floor Special Education need (SEN) classrooms with ancillary accommodation, an enclosed sensory garden and 3no first floor general classrooms, car park modifications and extension to provide 18no spaces, and associated site and drainage works to include provision of a waste water treatment system.	The site of this planning application is located approximately 1400m south of the Site. The EIAR accompanying this application concluded that the proposed development would not result in any significant ecological impacts following the implementation of the recommended mitigation measures. Therefore, cumulative effects can be excluded.
F23A/0515	The development will consist of a general storage shed. A walkway / running track around GAA grounds with lighting and all associated site works. (2 x 20w led lights per pole with motion sensor operation).	The site of this planning application is located approximately 400m south-east of the Site. It was concluded in the chief executive's order accompanying this application that an EIAR was not required as the development does not meet the threshold to require one. This development is considered to be sufficiently small in scale as to not result in cumulative effects. Therefore, cumulative effects can be excluded.

Table 5-7:
Recent Planning Applications from Meath County Council in the Vicinity of the Site

Planning Ref. Number	Development Description	Assessment of Cumulative Effects
23117	An agricultural machinery storage shed and all associated site works. Significant further information/revised plans submitted on this application. Significant further information/revised plans submitted on this application.	The site of this planning application is located approximately 330m east of the Site. It was concluded in the planning report accompanying this application that an EIAR was not required, and that this development is unlikely to have any adverse impacts on the environment. Therefore, cumulative effects can be excluded.

AA190449	the construction of a split level dwelling with new entrance, septic tank with a percolation area, private bored well and all associated site works. Significant further information/revised plans submitted on this application	The site of this planning application is located approximately 550m south-west of the Site. The planning application report accompanying this application does not state that an EIAR is required with this application and no EIAR is provided alongside this application. This development is considered to be sufficiently small in scale as to not result in cumulative effects. Therefore, cumulative effects can be excluded.
AA200814	permission sought for dwelling house, wastewater treatment system and percolation area, joint access lane to site and all associated site works	The site of this planning application is located approximately 750m north-east of the Site. It was concluded in the planning report accompanying this application that an EIAR was not required, and that this development is unlikely to have any adverse impacts on the environment. Therefore, cumulative effects can be excluded.

Proposed Monitoring

5.186 It is recommended that the breeding bird population on-site is monitored annually during the proposed development using the Countryside Bird Survey methodology which will consist of:

- Two early morning survey visits between April and June.

5.187 Trail cameras can be used to monitor potential badger activity near the locations where previous old setts have been reported. Static bats detectors should also be employed to monitor the movement of bats to ensure the construction and operational works are not effecting the local bat populations.

Proposed Mitigation and Enhancement Measures

5.188 The following measures will be implemented during all phases of the project to prevent leaks and/or spills during the construction phase:

- No fuel will be stored on-site;
- All mobile machinery refuelling will be carried out using a mobile bowser;
- Drip trays will be used for all re-fuelling activities;
- All machinery maintenance and repairs will take off-site at the existing concrete batching plant facility;
- All plant will be regularly maintained and inspected daily for leaks of fuels, lubricating oil or other contaminating liquids;
- All petroleum-based products (lubricating oils, waste oils, etc.) will be stored on drip trays under cover to prevent pollution due to accidental leakages;

- Waste oil and grease containers will be stored under cover in storage container. Waste containers will be collected and disposed of by a suitably licenced contractor;
- An emergency spill response kit (with containment booms, absorbent materials and drip tray) will be available on-site to contain/ stop the migration of any accidental spillages, should they occur;
- Plant operators will be briefed during 'toolbox' talks and site induction on where the spill kit is kept and how and when it is deployed;
- Traffic management system at the site will reduce conflicts between vehicles, and the potential risk of collisions and associated fuel spills or oil leaks; and,
- Site speed limits will be implemented across the site to further reduce the likelihood and significance of collisions and hence the possibility of a fuel leak from such a collision.

5.189 The following mitigation measures will be implemented during all phases of the project to prevent the release of suspended sediments into waterways via surface water run-off:

- Prior to any overburden stripping or extraction a shallow cut-off drain will be installed along the southern boundary of the site to prevent any site run-off which my potentially contain suspended solids from flowing over ground to the adjacent Delvin River. The proposed cut-off drain will run parallel to the river and will be between 40 and 50m from the river channel leaving a significant buffer zone between the drain and the river. Water within the cut-off drain will be discharged to ground
- In addition to the cut-off drain, a silt fence will be erected along the riverside edge of the drain to further ensure no run-off from the site has potential to reach the river;
- access track drainage works will be carried out along the northern edge of the track to provide a linear filter drain with the access track cambered towards the filter drain to allow any surface water runoff percolate to the ground. This will prevent any surface water run-off from the access road in a southerly direction towards the Delvin river;
- Soil stripping and restoration of worked out areas will be carried out on a progressive basis;
- The temporary soil / subsoil areas will be managed to minimise the risk of rain / wind erosion;
- Daily monitoring of the overburden stripping and soil storage areas will be completed by a suitably qualified person. All necessary preventative measures will be implemented to ensure no entrained sediment, or deleterious matter will enter the downstream receiving waters;
- Overburden stripping and landscaping works will be scheduled for periods of low rainfall (summer months) to reduce run-off and potential siltation;
- Landscaped areas and perimeter berms will be planted with trees and grasses as soon as possible after formation to reduce the potential of surface water erosion; and,
- Good construction practices such wheel washers and dust suppression on site roads, and regular plant maintenance will ensure minimal risk. The Construction Industry Research and Information Association (CIRIA) provide guidance on the control and management of water pollution from construction sites which provides information on these issues. This will ensure that surface water arising during the course of overburden stripping and landscaping activities will contain minimum sediment.

5.190 A total of 470 m of native hedgerow will be planted within the site. 230 m will be planted as part of Restoration Phase 1 (i.e. by year 5) and 200 m as part of Restoration Phase 3, (i.e. by year 12). A section of native hedgerow (c. 40 m) is proposed to be planted between the new wall and fencing along the upgraded boundary of the existing concrete batching facility with the R108 regional road

as permitted by P. Ref. 22/153 (ABP-314881-22). This will provide replacement habitat for nesting/foraging birds and foraging/commuting bats.

5.191 It is recommended that the ditches are removed between September-January. During this time there is unlikely to be any frogspawn, or tadpoles present within the drainage ditches and, as such, there will not be any direct impacts on any potential common frog population on-site.

5.192 If the drainage ditches must be removed between February-August, the following mitigation measures are recommended to prevent direct impacts on breeding frogs on-site:

- A pre-commencement survey will be carried out between February and end of March by an appropriately qualified ecologist to determine if frogspawn, breeding frog or smooth newts are present within the ditch. eDNA surveys should be used as a quick method to confirm presence/absence of these protected species.
- If present, frogspawn, tadpoles, frog and smooth newt will be captured and removed from the drainage ditches and translocated to the nearest area of available suitable habitat (i.e. another drainage ditch on-site or the Devlin River to the south of the Site), under licence from NPWS.
- Any capture and translocation shall be undertaken immediately in advance of the removal of drainage ditches to prevent further breeding of common frog taking place between translocation and ditch removal.

5.193 Vegetation clearance will be carried out outside of the bird nesting season (1st March – 31st August inclusive).

5.194 Following extraction of sand and gravel the application area will be restored to agricultural use. This restoration will be carried out on a phased basis with each phase being restored as soon as possible once sand and gravel extraction has been completed. The stored overburden and topsoil will be spread on the contoured area and seeded with a mix of suitable grasses to create pasture and when this operation is completed the site will have fully reverted back to agricultural land and will blend in with the surrounding topography and provide additional foraging opportunities for breeding birds on-site.

5.195 The following mitigation measures are recommended to prevent disturbance of breeding badger on-site:

- A pre-commencement survey will be carried out on the inactive badger setts prior to starting works to identify badger activity on-site and to determine if the setts have been re-occupied. Trails cameras should be erected to detect any activity at the potential sett locations.
- If the setts are confirmed to be active, in agreement with the Project Ecologist a 50 m exclusion zone will be placed around the sett entrances where no works will be carried out, or the route of the road is adjusted to avoid the sett.
- If a badger sett is identified after the commencement of works, a 50 m exclusion zone will be immediately established around the sett entrance and all works within this exclusion zone will cease until the sett is determined to be inactive or the sett is removed following the below step.
- If works must be carried out within the 50 m exclusion zone of an active sett, there should be a general commitment to monitor and minimise effects on Badgers in line with best practice and in consultation with the local authority and NPWS.

Summary of Effects

Ecological Feature	Potential Impacts	Proposed Mitigation	Residual Effects
Depositing /Lowland Rivers	Introduction of contaminants into ground and surface water.	Measures to prevent hydrocarbon spillage and introduction of suspended sediments.	Not significant
Hedgerows	Loss of habitat.	Replanting of 470 m of native hedgerow.	Not significant
Amphibians	Loss of breeding habitat and potential for direct disturbance	Removal of ditches between September-January. Pre-commencement frogspawn survey and translocation if ditch removal required between February-August.	Significant at Site Level
Birds	Loss of breeding/foraging habitat. Disturbance.	Vegetation clearance carried out outside of the bird nesting season (1st March – 31st August inclusive). Phased restoration of Site back to agricultural use. The overburden and topsoil storage areas will be seeded with a cereal mix.	Not significant
Bats	Loss of foraging/commuting habitat.	Replanting of 470 m of native hedgerow.	Not significant
Badgers	Loss of foraging/breeding habitat. Disturbance and/or destruction of badger setts	Phased restoration of Site back to agricultural use. Pre-commencement survey of badger sett entrances. Setting up 50 m exclusion zone around any active setts and application for derogation licence from NPWS for sett exclusion and destruction if required.	Not significant

CONCLUSIONS

5.196 SLR Consulting (Ireland) Limited conducted an Ecological Impact Assessment to inform the wider Environmental Impact Assessment process and production of an Environmental Impact Assessment Report to accompany the planning application by Kilsaran Concrete Unlimited Company for the proposed sand and gravel pit development.

5.197 The proposed development of a sand and gravel pit at Naul townland will result in localised effects on the ecology of the Site.

5.198 There will be no effect on sites designated for nature conservation as a result of the proposed development. There will be a loss of arable crop and hedgerow within the site as a result of the proposed development. These habitats will be returned as part of the restoration plan of the proposed project. The restoration plan will result in a net increase in the amount of hedgerow in comparison to the current quantity.

5.199 The red listed bird species yellowhammer was recorded within the Site. This species is of conservation concern as is strongly associated to arable crop. Badger sett entrances, which were not currently active were recorded on the boundary of the Site. Mitigation measures for both of these species were recommended as part of the proposed development. Monitoring of yellowhammer during the development has also been proposed. No species will be significantly affected beyond Site Level (i.e. the lowest level) as part of the proposed development.

APPENDICES

Appendix 5-A
Relevant Legislation and Planning Policy

Relevant Legislation[11]

EIA Directive

The EIA Directive, Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment as amended by Council Directive 97/11/EC of 3 March 1997, Directive 2003/35/EC of 26 May 2003 and Directive 2009/31/EC of 23 April 2009, now codified in Directive 2011/92/EU of 13 December 2011 and amended in Directive 2014/52/EU of 16 April 2014, is designed to ensure that projects likely to have significant effects on the environment are subject to a comprehensive assessment of environmental effects prior to development consent being given. The EIA Directive was first transposed into Irish law by the European Communities (Environmental Impact Assessment) Regulations, 1989 (S.I. No. 349 of 1989) which amended the Local Government (Planning and Development) Act, 1963 (and other legislation) to provide for environmental impact assessment.

Habitats and Birds Directive

The Habitats Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora was adopted in 1992 and aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

The Natura 2000 network of protected areas is known as Special Areas of Conservation (SAC) and Special Protection Areas (SPA). In general terms, they are considered to be of exceptional importance in terms of rare, endangered or vulnerable habitats and species within the European Community. The requirements of the Habitats Directive have been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I. No. 477/2011]. This legislation affords protection to both Special Protection Areas and Special Areas of Conservation.

Special Areas of Conservation (SAC) are designated under the Conservation of Natural Habitats and of Wild Fauna and Flora Directive 92/43/EEC (Habitats Directive) which is transposed into Irish law by the EC (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). Special Protection Areas (SPA) are classified under the Birds Directive (2009/147/EC on the Conservation of Wild Birds). Article 6(3) of the Habitats Directive requires an 'appropriate assessment' to be undertaken for any plan or project that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. An 'appropriate assessment' is an evaluation of the potential impacts of a plan or project on the integrity of a Natura 2000 site, and the incorporation, where necessary, of measures to mitigate or avoid negative effects.

National Legislation

Flora and fauna in Ireland are protected at a national level by the Wildlife Acts 1976 to 2018 and the Floral (Protection) Order 2015. Natural Heritage Areas (NHA) are areas that are considered to be important for the

[11] Please note that the summary of relevant legislation provided here is intended for general guidance only. The original legislation should be consulted for definitive information.

habitats present or for the species of plants and animals supported by those habitats. Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they were formally proposed for designation. Section 19(1) of the Act states that '*Where there is a subsisting natural heritage area order in respect of any land, no person shall carry out, or cause or permit to be carried out, on that land any works specified in the order or any works which are liable to destroy or to significantly alter, damage or interfere with the features by reason of which the designation order was made*'.

In addition, a list of proposed NHAs (pNHAs) was published in 1995 but to date these have not had their status confirmed. Prior to statutory designation, pNHAs are subject to limited protection under various agri-environment and forestry schemes and under local authority planning strategies such as County Development Plans.

Meath County Development Plan 2021-2027

The relevant planning policies and objectives as extracted from Volume 1 of the Meath County Development Plan 2021-2027 (Chapter 6 – Infrastructure Strategy and Chapter 8 – Cultural and Natural Heritage Strategy) are set out below:

Policy/Objective	Description
Chapter 6 - Objectives **INF OBJ 19**	To ensure that developments permitted by the Council which involve discharge of wastewater to surface waters or groundwaters comply with the requirements of the EU Environmental Objectives (Surface Waters) Regulations and EU Environmental Objectives (Groundwater) Regulations.
Chapter 8 - Policies **HER POL 27**	To protect, conserve and enhance the County's biodiversity where appropriate.
HER POL 28	To integrate in the development management process the protection and enhancement of biodiversity and landscape features wherever possible, by minimising adverse impacts on existing habitats (whether designated or not) and by including mitigation and/or compensation measures, as appropriate.
HER POL 31	To ensure that the ecological impact of all development proposals on habitats and species are appropriately assessed by suitably qualified professional(s) in accordance with best practice guidelines – e.g. the preparation of an Ecological Impact Assessment (EcIA), Screening Statement for Appropriate Assessment, Environmental Impact Assessment, Natura Impact Statement (NIS), species surveys etc. (as appropriate)
HER POL 32	To permit development on or adjacent to designated Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas, Statutory Nature Reserves or those proposed to be designated over the period of the Plan, only where the development has been subject to the outcome of the Appropriate Assessment process and has been carried out to the satisfaction of the Planning Authority, in consultation with National Parks and Wildlife.
HER POL 33	To have regard to the views and guidance of the National Parks and Wildlife Service in respect of proposed development where there is a possibility that such development may have an impact on a designated European or National site or a site proposed for such designation.
HER POL 34	To undertake appropriate surveys and collect data to provide an evidence-base to assist the Council in meeting its obligations under Article 6 of the Habitats Directives (92/43/EEC) as transposed into Irish Law, subject to available resources.

HER POL 35	To ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites and to require an appropriate level of ecological assessment by suitably qualified professional(s) to accompany development proposals likely to impact on such areas or species.
HER POL 36	To consult with the National Parks and Wildlife Service and take account of their views and any licensing requirements, when undertaking, approving or authorising development which is likely to affect plant, animal or bird species protected by law.
HER POL 37	To encourage the retention of hedgerows and other distinctive boundary treatments in rural areas and prevent loss and fragmentation, where practically possible. Where removal of a hedgerow, stone wall or other distinctive boundary treatment is unavoidable, mitigation by provision of the same type of boundary will be required.
HER POL 38	To promote and encourage planting of native hedgerow species in new developments and as part of the Council's own landscaping works.
HER POL 39	To recognise the archaeological importance of townland boundaries including hedgerows and promote their protection and retention.
HER POL 40	To protect and encourage the effective management of native and semi-natural woodlands, groups of trees and individual trees and to encourage the retention of mature trees and the use of tree surgery rather than felling, where possible, when undertaking, approving or authorising development.
HER POL 41	To protect trees the subject of Tree Preservation Orders (see Map 9.3), Champion and Heritage Trees identified on the Tree Register of Ireland and Heritage Tree Database when undertaking, approving, or authorising development.
HER POL 42	To promote the preservation of individual trees or groups of trees as identified on the Heritage Maps in Volume 2 and to manage these trees in line with arboricultural best practice.
HER POL 43	To promote best practice in the control of invasive species in the carrying out its functions in association with relevant authorities including TII and the Department of Transport, Tourism and Sport.
HER POL 44	To require all development proposals to address the presence or absence of invasive alien species on proposed development sites and (if necessary) require applicants to prepare and submit an Invasive Species Management Plan where such a species exists to comply with the provisions of the European Communities (Birds and Natural Habitats) Regulations 2011-2015.
HER POL 45	To ensure that peatland areas which are designated (or proposed for designation) as NHAs, SACs or SPAs are conserved for their ecological, climate regulation, archaeological, cultural and educational significance.
HER POL 47	To protect the ecological, recreational, educational, amenity and flood alleviation potential of navigational and non-navigational waterways within the County, towpaths and adjacent wetlands.
HER POL 48	To manage, enhance and protect the wetlands of the County having regard to the 'County Meath Wetland Survey 2010' and ensure that there is an appropriate level of assessment in relation to proposals which would involve draining, reclaiming or infilling of wetland habitats.

Chapter 8 – Objectives **HER OBJ 30**	To implement, in partnership with the Department of Culture, Heritage and the Gaeltacht, relevant stakeholders and the community, the objectives and actions of Ireland's National Biodiversity Action Plan 2017 - 2021 which relate to the remit and functions of Meath County Council.
HER OBJ 31	To implement, in partnership with the Department of Culture, Heritage and the Gaeltacht, relevant stakeholders and the community, the objectives and actions of the County Meath Biodiversity Plan 2015-2020 and any revisions thereof.
HER OBJ 32	To actively support the implementation of the All Ireland Pollinator Plan 2021-2025 and any revisions thereof.
HER OBJ 33	To ensure an Appropriate Assessment in accordance with Article 6(3) and Article 6(4) of the Habitats Directives (92/43/EEC) and in accordance with the Department of Environment, Heritage and Local Government Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities, 2009 and relevant EPA and European Commission guidance documents, is Meath County Development Plan 2021-2027 Chapter 8 carried out in respect of any plan or project not directly connected with or necessary for the management of the site but likely to have a significant effect on a Natura 2000 site(s), either individually or in-combination with other plans or projects, in view of the site's conservation objectives.
HER OBJ 34	To protect and conserve the conservation value of candidate Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas and proposed Natural Heritage Areas as identified by the Minister for the Department of Culture, Heritage and the Gaeltacht and any other sites that may be proposed for designation during the lifetime of this Plan in accordance with the provisions of the Habitats and Birds Directives and to permit development in or affecting same only in accordance with the provisions of those Directives as transposed into Irish Law.
HER OBJ 35	To ensure that development does not have a significant adverse impact, incapable of satisfactory avoidance or mitigation, on plant, animal or bird species protected by law.
HER OBJ 39	To work in partnership with relevant stakeholders on a suitable peatland site(s) to demonstrate best practice in sustainable peatland conservation, management and restoration techniques and to promote their heritage and educational value subject to Ecological Impact Assessment and Appropriate Assessment Screening, as appropriate, having regard to local and residential amenities.
HER OBJ 40	To work in partnership with Waterways Ireland and relevant stakeholders to encourage best practice biodiversity management of canal and towpath habitats.
HER OBJ 60	To encourage, pursuant to Article 10 of the Habitats Directive (92/43/EEC), the management of features of the landscape, such as traditional field boundaries, important for the ecological coherence of the Natura 2000 network and essential for the migration, dispersal and genetic exchange of wild species.

Appendix 5-B
Site Photographs (Plates)

Plate 1: Arable land / tilled land comprising the bulk of the Site

Plate 2: Boundary hedgerows with trees

Plate 3: Lowland depositing river

Plate 4: Boundary / offsite scrub

Plate 5: Boundary / offsite woodland

Plate 6: Active quarry and mine habitat comprising spoil and bare ground / recolonising bare ground / buildings and artificial surfaces

Plate 7: Badger latrine noted at ITM 712012 761137

Plate 8: Badger foraging activity noted at ITM 712012 761137

Plate 9: Previously identified badger sett entrance located at ITM 712028 761363. Considered disused during the 2023 updated survey

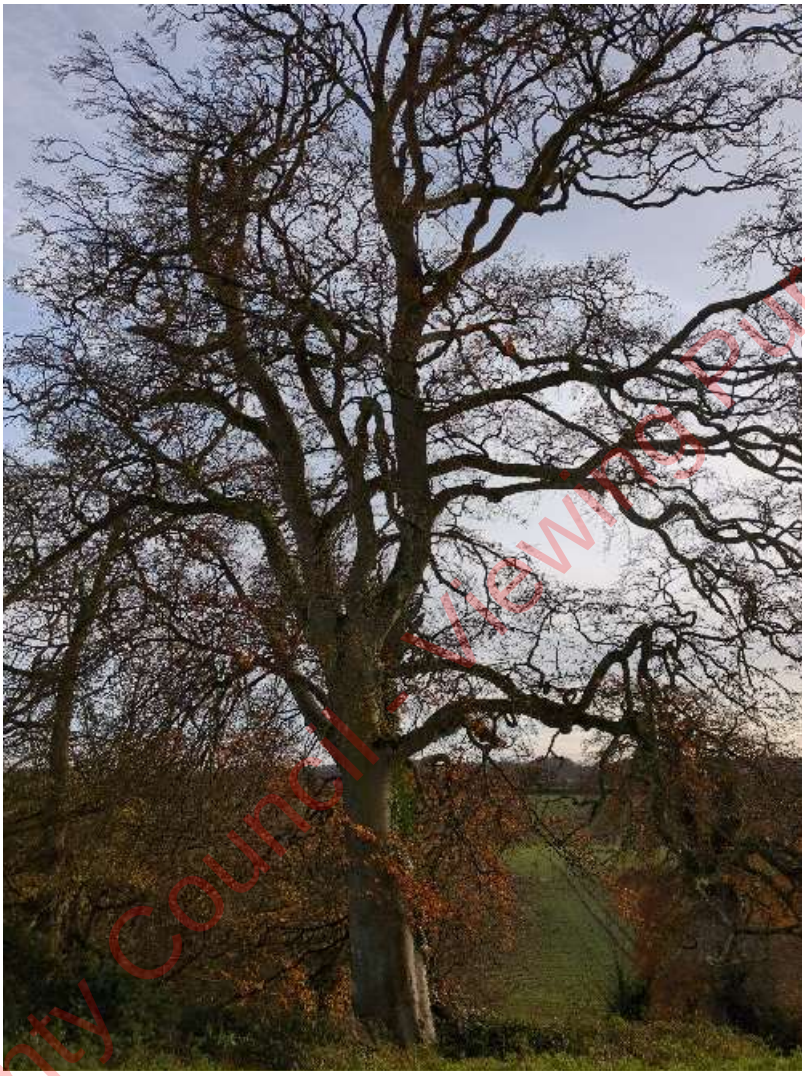
Plate 10: Mammal (possible fox) tunnel entance

Appendix 5-C
BCT Guidelines (2023) for assessing the potential suitability of proposed development sites for bats

Suitability	Description of Roosting Habitats	Description of Communing and Foraging Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features on site likely to be used by commuting or foraging bats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough spaces, shelter, protection, appropriate conditions and / or suitable surrounding habitat to be used on a regular basis or by large numbers of bats (i.e., unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as gappy hedgerow or unvegetated stream, but isolated, i.e., not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat bit unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, hedgerows, lines of trees, and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-line watercourses and grazed parkland. Site is close to and connected to known roosts.

Appendix 5-D
Preliminary Roost Assessment of Trees On-site

Tree B1 (891)



B1 comprised a mature beech, located at approximate ITM coordinates 712486 761175. Although no PRFs could be identified from the ground inspection, the tree was significantly mature and complex, and it cannot be discounted that PRFs may exist, obscured from view.

Overall, B1 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B2 (899)

Tree B2 comprised a mature sycamore, located at approximate ITM coordinates 712567 761193.

The stem or a significant branch of B2 appeared to have snapped with the deadwood much noted on the floor adjacent to the tree. The main stem was covered with dense ivy, which obscured any PRFs from most aspects other than the northern aspect where the damage from the snapped stem was obvious.

Here, two large entry points into the main stem were noted, which are anticipated to lead into a larger cavity within the stem, which could potentially support larger numbers of bats, including a maternity roost and / or hibernating bats during winter.

It should also be noted that a significant entry point led into a potential cavity within large broken branch / stem that was located on the floor. This branch / stem has been included in the assessment of B2.

Overall, B2 was assessed as having **high bat roosting potential**, and it may also support hibernating bats.

Tree B3 (900)

B3 comprised a semi-mature ash tree, located at approximate ITM coordinates 712508 761215. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B3 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B4 / B5 (882)

B4 / B5 comprised a two semi-mature ash, located at approximate ITM coordinates 712126 760931. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B4 / B5 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B6 (859)

B6 comprised a mature ash, located at approximate ITM coordinates 712236 761613. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B6 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B7 (858)

B7 comprised a mature ash, located at approximate ITM coordinates 712254 761623. It was covered with dense ivy, which obscured potential PRFs. One snapped branch with a potential cavity leading further into the branch was located midway up the tree on its southern aspect may provide a PRF for low numbers of roosting bats.

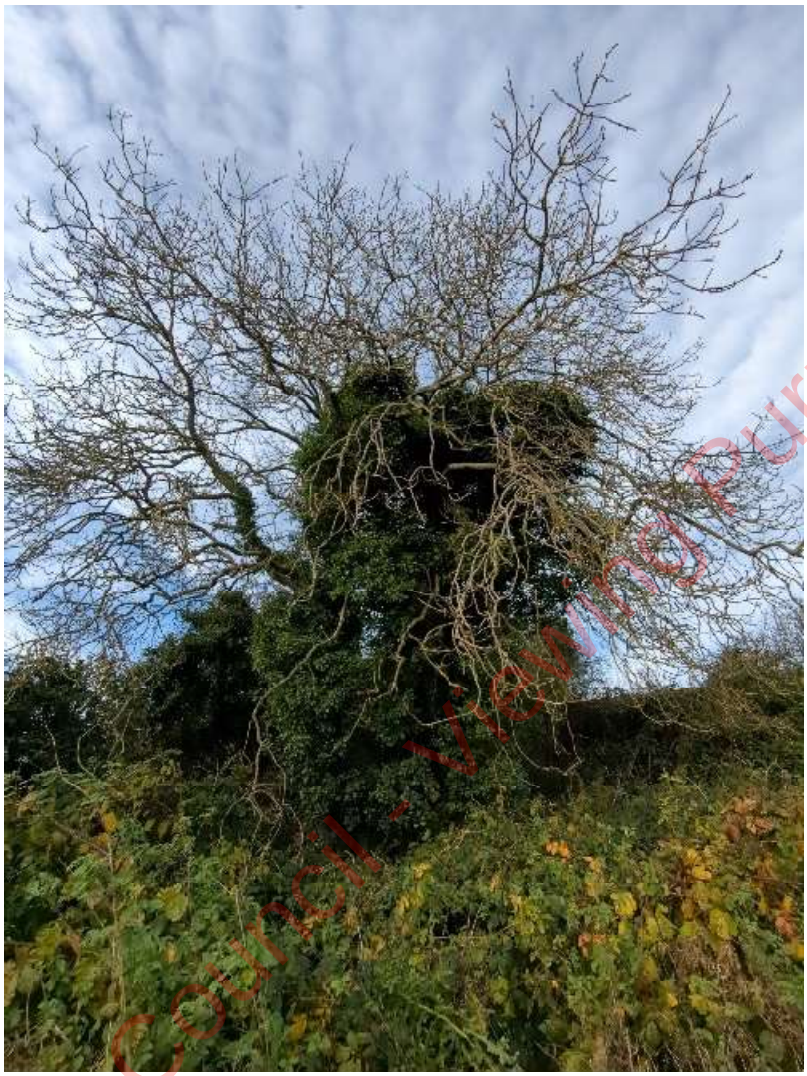
Overall, B7 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B8 (856)

B8 comprised a mature ash, located at approximate ITM coordinates 712342 761448. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B8 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B9 (866)



B9 comprised a mature ash, located at approximate ITM coordinates 711942 761523. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B9 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B10 871

B10 comprised a semi-mature ash, located at approximate ITM coordinates 711986 761446. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B10 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B11 872

B11 comprised a three-stemmed semi-mature ash, located at approximate ITM coordinates 711993 761427. All three stems were covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B11 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B12 874

B12 comprised a multi-stemmed semi-mature ash, located at approximate ITM coordinates 712070 761304. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B12 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B13 878

B13 comprised a three semi-mature ash, located at approximate ITM coordinates 712046 761085. All three trees were covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B13 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree (B14) 879

B14 comprised a semi-mature ash, located at approximate ITM coordinates 712070 761052. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B14 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B15 (888)

B15 comprised a semi-mature ash, located at approximate ITM coordinates 712202 761212. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B15 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B16 (892)

B16 comprised a mature unidentified tree, located at approximate ITM coordinates 712497 761194. Apparent deadwood with loose and peeling bark and potential access points were noted at the very top of the tree. A more detailed inspection of these PRFs was not possible from ground level. However, give the location of the PRF it is anticipated that it would be susceptible to being impacted by rain, and therefore, less suitable for roosting bats.

Overall, B16 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B17 (893)

B17 comprised a semi-mature ash, located at approximate ITM coordinates 712512 761191. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B17 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Tree B18 (901)

B18 comprised a semi-mature sycamore, located at approximate ITM coordinates 712495 761242. It was covered with dense ivy. Although no PRFs could be identified it cannot be discounted that the dense ivy may hide PRFs underneath the areas it covers.

Overall, B18 was assessed as having **low bat roosting potential**, possibly supporting low numbers or individual and opportunistically roosting bats.

Appendix 5-E
Breeding Bird Survey Data and Transect Routes

Records Collected During the Breeding Bird Survey on 01/05/2024

BTO Code	Common Name	Quantity	Sex	Behaviour	Flight Direction	Notes
ch	Chaffinch	1		Singing		
y.	Yellowhammer	1		Singing		
b.	Blackbird	1		Calling		
mp	Meadow Pipit	1		Nest		flushed from cropland
b.	Blackbird	1		Singing		
wr	Wren	1		Singing		
hs	House Sparrow	2				possible HS in bramble, at least 2
b.	Blackbird	1	Female			
y.	Yellowhammer	1		Singing		
ch	Chaffinch	2				juveniles
y.	Yellowhammer	1	Male			flew in from north (further north than other record)
ch	Chaffinch	1	Male	Calling		
gt	Great Tit	1				
y.	Yellowhammer	1	Male	Calling|Singing		
bc	Blackcap	1		Singing		
st	Song Thrush	1		Singing		
gw	Garden Warbler	1			North east	
ww	Willow Warbler	1		Singing		
ch	Chaffinch	1		Singing		
wr	Wren	1		Singing		
ch	Chaffinch	1		Calling		
wp	Woodpigeon	1				
wr	Wren	1		Singing		
wr	Wren	1		Singing		
b.	Blackbird	1	Male			
ph	Pheasant	2				pair - flushed
y.	Yellowhammer	1		Singing		
go	Goldfinch	1			North west	
d.	Dunnock	1				
wp	Woodpigeon	1				
wr	Wren	1		Singing|Nest		
b.	Blackbird	1		Singing		
wr	Wren	1		Singing		

bc	Blackcap	1		Singing		
ch	Chaffinch	1	Male			
y.	Yellowhammer	1		Calling		
ch	Chaffinch	1	Female			
ch	Chaffinch	1		Calling		
ch	Chaffinch	1	Male			
r.	Robin	1		Singing		
st	Song Thrush	1				
y.	Yellowhammer	1	Male	Calling		perched
wr	Wren	1		Nest		possible nest return
r.	Robin	1		Singing		
wp	Woodpigeon	1				
st	Song Thrush	1		Singing		
bc	Blackcap	1		Singing		
wp	Woodpigeon	2				
bc	Blackcap	1		Singing		
wr	Wren	1		Singing		
st	Song Thrush	1		Singing		
wp	Woodpigeon	2				
y.	Yellowhammer	1	Male			perched at top of tree
cc	Chiffchaff	1		Singing		
ch	Chaffinch	1		Singing		
gt	Great Tit	1		Singing		
y.	Yellowhammer	1			East	
cc	Chiffchaff	1		Singing		
bt	Blue Tit	1		Calling		
y.	Yellowhammer	1		Singing		
hg	Herring Gull	3			North west	
bt	Blue Tit	1		Singing|Foraging		
wr	Wren	1		Singing		
bc	Blackcap	1		Singing		
wr	Wren	1		Singing		
wr	Wren	1		Singing		
hg	Herring Gull	1			North west	
ch	Chaffinch	1		Singing		
y.	Yellowhammer	1	Male	Singing		
ro	Rook	1			West	
r.	Robin	1		Singing		
ch	Chaffinch	1				
bc	Blackcap	1		Singing		
wr	Wren	1		Singing		
ch	Chaffinch	1		Singing		

st	Song Thrush	1		Singing		
sg	Starling	2				

1st breeding bird survey transect route 1 May 2024

Records Collected During the Breeding Bird Survey on 27/06/2024

BTO Code	Common Name	Quantity	Sex	Behaviour	Flight Direction	Notes
sl	Swallow	4		Foraging		
wp	Woodpigeon	10				
y.	Yellowhammer	1		Calling		
s.	Skylark	1		Foraging		
go	Goldfinch	8			North	
cc	Chiffchaff	1		Singing		
st	Song Thrush	1		Singing		
wr	Wren	1		Singing		
wp	Woodpigeon	1		Singing		
cc	Chiffchaff	1		Singing		
bc	Blackcap	1		Singing		
ch	Chaffinch	1		Singing		
st	Song Thrush	1		Singing		
r.	Robin	1				
sl	Swallow	5		Foraging		
ch	Chaffinch	2		Calling|Singing		
hc	Hooded Crow	1			East	
y.	Yellowhammer	1		Calling		
y.	Yellowhammer	1		Singing		
r.	Robin	1		Foraging		

b.	Blackbird	2				
wp	Woodpigeon	5			South west	
d.	Dunnock	1		Singing		
wr	Wren	1		Singing		
ch	Chaffinch	1		Calling		
go	Goldfinch	1			South east	
b.	Blackbird	1	Male			
wr	Wren	1		Singing		
wr	Wren	3		Family		
ch	Chaffinch	1		Singing		
y.	Yellowhammer	1		Calling		
r.	Robin	1				
bf	Bullfinch	1	Female			
ch	Chaffinch	1				
lb	Lesser Black-backed Gull	1			South west	
cc	Chiffchaff	1		Singing		
ww	Willow Warbler	1		Singing		
wr	Wren	1		Singing		
wp	Woodpigeon	1				
wp	Woodpigeon	1			North west	
ch	Chaffinch	1				
bt	Blue Tit	2		Family		juv.
bc	Blackcap	1		Singing		
bc	Blackcap	1		Singing		
r.	Robin	1		Foraging		juv
gt	Great Tit	5		Family|Calling		
ma	Mallard	3			South east	
ch	Chaffinch	1		Singing		
hg	Herring Gull	6			West	
wr	Wren	1		Singing		
gt	Great Tit	1		Calling		
bt	Blue Tit	1		Calling		
y.	Yellowhammer	1		Singing		
ch	Chaffinch	1		Calling		
wr	Wren	1				flushed
ch	Chaffinch	1		Singing		
go	Goldfinch	1			North east	
hg	Herring Gull	1			North west	
ph	Pheasant	1		Calling		
ch	Chaffinch	1		Singing		
go	Goldfinch	1		Singing		
wp	Woodpigeon	5			North west	
wr	Wren	1		Singing		

bc	Blackcap	1		Singing		
wr	Wren	1		Singing		

2nd breeding bird survey transect route 21 June 2024

Appendix 5-E
Bat Emergence Survey Data

Records Collected During the Bat Emergence Survey on 28/05/2024

Species	Time	Comments
Leisler's Bat	21:55	Heard not seen
Leisler's Bat	22:04	Commuting
Soprano Pipistrelle	22:04	Heard not seen
Leisler's Bat	22:06	Heard not seen
Unknown	22:06	Foraging
Soprano Pipistrelle	22:07	Heard not seen
Leisler's Bat	22:09	Heard not seen
Soprano Pipistrelle	22:09	Foraging
Soprano Pipistrelle	22:10	Foraging
Leisler's Bat	22:12	Foraging
Soprano Pipistrelle	22:12	Foraging
Soprano Pipistrelle	22:12	Commuting
Soprano Pipistrelle	22:13	Heard not seen
Leisler's Bat	22:14	Heard not seen
Soprano Pipistrelle	22:14	Foraging - 3 bats social calls
Soprano Pipistrelle	22:16	Heard not seen
Soprano Pipistrelle	22:17	Foraging
Leisler's Bat	22:18	Heard not seen
Soprano Pipistrelle	22:18	Foraging
Soprano Pipistrelle	22:20	Heard not seen
Soprano Pipistrelle	22:24	Foraging
Soprano Pipistrelle	22:28	Foraging
Soprano Pipistrelle	22:28	Foraging
Leisler's Bat	22:30	Heard not seen
Soprano Pipistrelle	22:30	Foraging
Soprano Pipistrelle	22:31	Foraging
Soprano Pipistrelle	22:33	Heard not seen
Leisler's Bat	22:34	Heard not seen
Soprano Pipistrelle	22:36	Heard not seen
Soprano Pipistrelle	22:37	Foraging
Leisler's Bat	22:38	Heard not seen
Leisler's Bat	22:40	Heard not seen
Soprano Pipistrelle	22:40	Foraging
Leisler's Bat	22:42	Heard not seen
Soprano Pipistrelle	22:43	Foraging
Leisler's Bat	22:44	Heard not seen
Soprano Pipistrelle	22:44	Heard not seen
Soprano Pipistrelle	22:45	Heard not seen
Leisler's Bat	22:46	Heard not seen

Soprano Pipistrelle	22:46	Foraging
Soprano Pipistrelle	22:48	Foraging
Leisler's Bat	22:49	Heard not seen
Leisler's Bat	22:51	Heard not seen
Soprano Pipistrelle	22:51	Foraging
Leisler's Bat	22:54	Heard not seen
Soprano Pipistrelle	22:54	Foraging
Leisler's Bat	22:55	Heard not seen
Soprano Pipistrelle	22:55	Heard not seen
Leisler's Bat	22:57	Foraging
Leisler's Bat	22:59	Heard not seen
Common Pipistrelle	23:00	Heard not seen
Leisler's Bat	23:02	Heard not seen
Soprano Pipistrelle	23:02	Heard not seen
Leisler's Bat	23:04	Heard not seen
Soprano Pipistrelle	23:04	Heard not seen
Leisler's Bat	23:06	Heard not seen
Soprano Pipistrelle	23:06	Heard not seen
Common Pipistrelle	23:07	Heard not seen
Leisler's Bat	23:08	Heard not seen
Leisler's Bat	23:39	

FIGURES

N

0 2 4 6 km

NOTES

1. Base Mapping: OpenStreetMap © (www.openstreetmap.org/copyright)

LEGEND

Application Site Boundary

Client Land Interest Area

SLR CONSULTING
7 DUNDRUM BUSINESS PARK
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KILSARAN CONCRETE UNLIMITED COMPANY
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

SAND & GRAVEL DEVELOPMENT
AT NAUL TOWNLAND, CO. MEATH

SITE LOCATION

FIGURE 5-1

Scale	Date
1:150,000 @ A3	OCT 2024

SLR Projects\0036 Kilsaran Concrete\064988 Naul S&G EIAR

N

1

2

3

4

0 250 500 m

NOTES

1. Base Mapping: OpenStreetMap © (www.openstreetmap.org/copyright)

LEGEND

- Client Land Interest Area
- Application Site

Habitats

- BC1 - Arable Crops
- BC3 - Tilled Land
- BL3 - Buildings and Artificial Surfaces
- ED4 - Active Quarries and Mines
- WS1 - Scrub
- FW2 - Lowland/Depositing River
- FW4 - Drainage Ditches
- WL1 - Hedgerows
- WL2 -Treelines

Target Notes

1. Disused badger sett.

2. Disused badger sett.

3. Badger latrine.

4. Mammal tunnel. Too small for badger, potentially used by fox.

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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

SAND & GRAVEL DEVELOPMENT
AT NAUL TOWNLAND, CO. MEATH

Habitat Map

FIGURE 5-2

Scale: 1:7,000 @ A3

Date: OCT 2024

SLR Projects\0036 Kilsaran Concrete\064988 Naul S&G EIAR

N

River Boyne and River Blackwater SAC
River Boyne and River Blackwater SPA
River Nanny Estuary and Shore SPA
North-West Irish Sea SPA
Skerries Islands SPA
Rogerstown Estuary SPA
Rogerstown Estuary SAC
Malahide Estuary SAC

0 2 4 6 km

NOTES

1. Base Mapping: OpenStreetMap © (www.openstreetmap.org/copyright)

LEGEND

- Client Land Interest Area
- Application Site Boundary
- Special Protection Areas (SPAs)
- Special Areas of Conservation (SACs)
- 5 km and 10 km Buffers

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KILSARAN CONCRETE UNLIMITED COMPANY
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

SAND & GRAVEL DEVELOPMENT
AT NAUL TOWNLAND, CO. MEATH

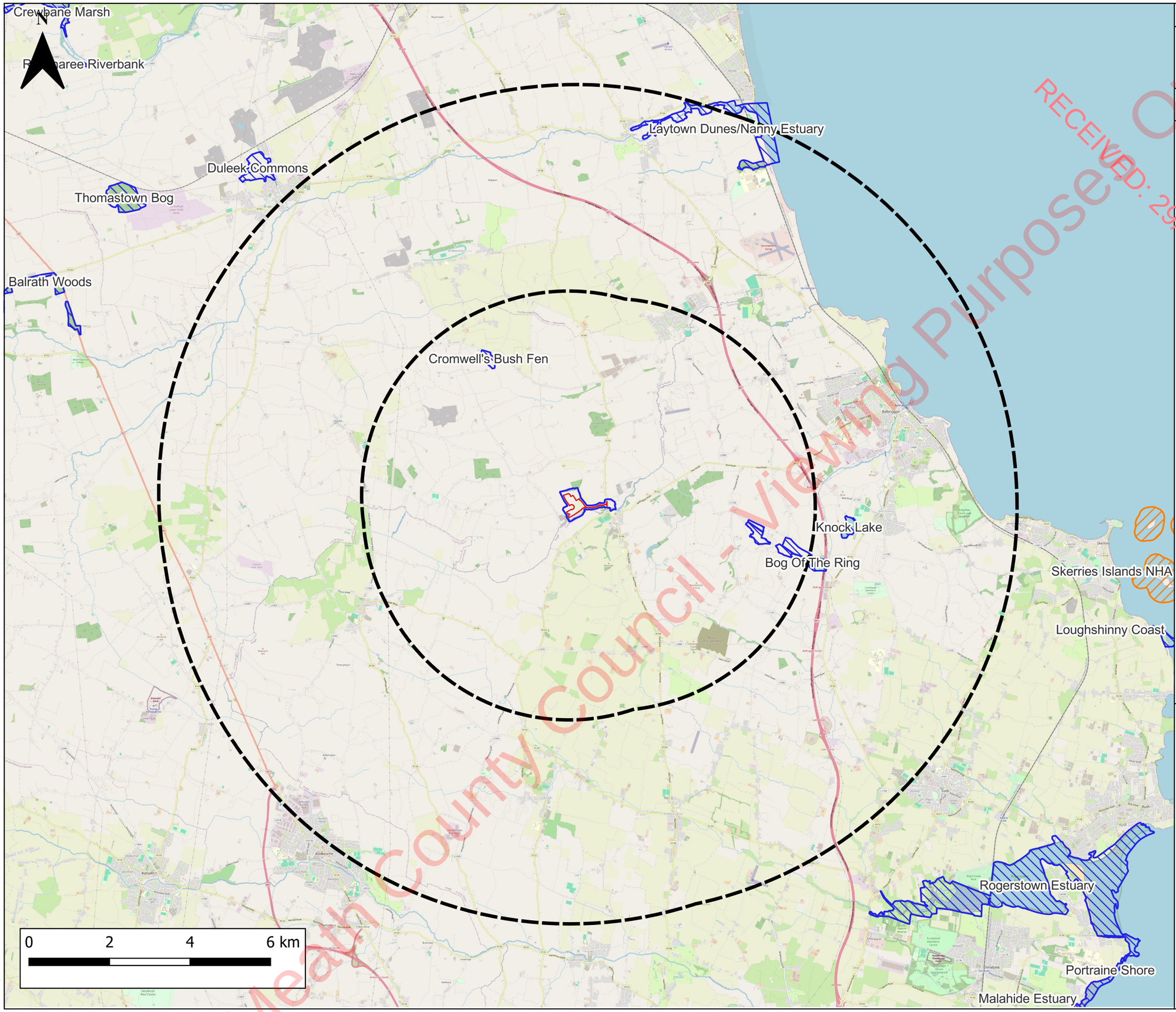
Natura 2000 Sites

FIGURE 5-3

Scale: 1:150,000 @ A3

Date: OCT 2024

SLR Projects\0036 Kilsaran Concrete\064988 Naul S&G EIAR



NOTES

1. Base Mapping: OpenStreetMap © (www.openstreetmap.org/copyright)

LEGEND

- Client Land Interest Area
- Application Site Boundary
- Natural Heritage Areas (NHAs)
- Proposed Natural Heritage Areas (pNHAs)
- 5 km Buffer
- 10 km Buffer

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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

SAND & GRAVEL DEVELOPMENT
AT NAUL TOWNLAND, CO. MEATH

Natural Heritage Areas

FIGURE 5-4

Scale	Date
1:150,000 @ A3	OCT 2024

SLR Projects\0036 Kilsaran Concrete\064988 Naul S&G EIAR