# Baunoge, Loughrea, Co. Galway

## Natura Impact Assessment

**May 2026**

**Prepared for:**

**Genesis Planning Consultants**

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# Document Status



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# Contract



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This report describes work commissioned by Genesis Planning Consultants, by an instruction dated 01/09/2025. The Client's representative for the contract was Ronan Woods of Genesis Planning Consultants. Mia Heigh (BSc) and Johanna Healy (BSc, MSc) of JBA Consulting carried out this work. Patricia Byrne BSc (Hons) PhD MCIEEM and Dominic Tilley (BSc, MSc, PhD) reviewed this work.

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## Abbreviations

| | |
|---|---|
| AA | Appropriate Assessment |
| CDP | County Development Plan |
| CIEEM | Chartered Institute of Ecology and Environmental Management |
| CJEU | Court of Justice of the European Union |
| DEHLG | Department of the Environment, Heritage and Local Government |
| EC | European Community |
| EIA | Environmental Impact Assessment |
| EPA | Environmental Protection Agency |
| EU | European Union |
| GSI | Geological Survey of Ireland |
| IROPI | Imperative Reasons of Overriding Public Interest |
| LAP | Local Area Plan |
| NBDC | National Biodiversity Data Centre |
| NIS | Natura Impact Statement |
| NPWS | National Parks and Wildlife Services |
| OPR | Office of the Planning Regulator |
| QI | Qualifying Interest |
| SAC | Special Area of Conservation |
| SPA | Special Protection Area |
| S-P-R | Source-Pathway-Receptor |
| WFD | Water Framework Directive |
| ZoI | Zone of Influence |

# Executive Summary



This Natura Impact Statement (NIS) has been prepared by JBA Consulting on behalf of Genesis Planning Consultants for a proposed residential development at Baunoge, Loughrea, Co. Galway. The development comprises of 107 residential units and a creche, with associated infrastructure including roads, drainage, and landscaping.

This NIS has been prepared in accordance with European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011), as amended. Seven Natura 2000 sites were identified within the project's Zone of Influence (ZoI), of which Lough Rea SAC and Lough Rea SPA were screened in for further assessment due to potential hydrological connectivity. Qualifying Interests include Hard oligo-mesotrophic waters with benthic vegetation of Chara spp., Coot, Shoveler, and Wetland and Waterbirds.

Potential impacts were identified during the construction phase, primarily via surface water and groundwater pathways, with possible indirect effects on water quality and associated habitats. No operational impacts are anticipated due to the design and embedded water management structures.

No Annex I habitats or supporting habitats for Qualifying Interest species were recorded within the site boundary. However, the site's high groundwater vulnerability and proximity to the KILCOGLAN_10 stream warranted detailed assessment.

A comprehensive source–pathway–receptor analysis was conducted. Mitigation measures have been proposed, including strict pollution control protocols, dust management, and implementation of a Construction and Environmental Management Plan (CEMP). Sustainable Urban Drainage Systems (SuDS) will be incorporated during the operational phase to prevent runoff impacts.

Following implementation of construction best practice and mitigation measures, no significant adverse effects on the integrity of Lough Rea SAC or SPA are anticipated, and no residual impacts are expected. It is concluded that the proposed development, alone or in combination with other plans or projects, will not adversely affect the integrity of any European site.

# 1 Introduction



## 1.1 Background

JBA Consulting Engineers and Scientists Ltd. (hereafter JBA) has been commissioned by Genesis Planning Consultants to undertake an Appropriate Assessment (AA) Screening and a Natura Impact Statement report in relation to the development of 107 residential units and a creche with associated ancillary works, such as foul and surface water drainage, internal roads and footpaths, boundary treatment and landscape works.

The proposed project is not directly connected with, or necessary to the management of any Natura 2000 site and may have potential likely significant effects upon the Natura 2000 sites identified in Section 4. Therefore, the proposed project is subject to the requirements of the AA process.

This Screening for Appropriate Assessment (AA) provides the results of the assessment conducted for the proposed project in accordance with Article 6(3) of the Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural habitats and of Wild Fauna and Flora). It provides information on, and assesses the potential, in view of best scientific knowledge for the works to have likely significant effects, either individually or in combination with other plans or projects, on any Natura 2000 site.

The Screening for AA assesses the potential, in view of best scientific knowledge, for the works to have likely significant effects, either individually or in combination with other plans or projects, on any Natura 2000 site.

## 1.2 Legislative Context

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora, known as the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 sites. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79 / 409 / EEC).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

*"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the*

*competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*



Article 6(4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case.

Article 6(4) states:

*"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and / or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."*

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of inter alia the European Communities (Birds and Natural Habitats) Regulations 2011-2015 (S.I. No. 477 / 2011) as amended.

## 1.3 Appropriate Assessment Process

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DoEHLG 2010). Office of the Planning Regulator (OPR) produced a Practice Note in 2021, PN01 - Appropriate Assessment Screening for Development Management (OPR 2021). More recent guidance is contained in EC (2021) Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. These guidance documents identify a staged approach to conducting an AA as shown in sections below.

### 1.3.1 Stage 1 - Screening for AA

The initial screening stage of the Appropriate Assessment is to determine:

- Whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation (Natura 2000 site)
- If it is likely to have a significant effect on the European designated site, either individually or in combination with other plans or projects.

For those sites where, potential likely significant effects are identified, either alone or in combination with other plans or projects, further assessment is necessary to determine if the proposals will have an adverse impact on the integrity of a European designated site, in view of the site's conservation objectives (i.e., the process proceeds to Stage 2).



### 1.3.2 Stage 2 - AA

This stage requires a more in-depth evaluation of the plan or project, and the potential direct and indirect impacts of them on the integrity and interest features of the European designated site(s), alone and in-combination with other plans and projects, taking into account the site's conservation objectives. Where required, mitigation or avoidance measures will be suggested.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation cannot be achieved, then a derogation from Article 6(3) may be sought in Stage 3, in accordance with the provisions of Article 6(4).

### 1.3.3 Stage 3 - Procedure under Article 6(4)

Article 6(4) allows for exceptions to the general rule of 6(3). It is up to the authority to decide whether a derogation from Article 6(3) can be applied.

The provisions of Article 6(4) entail three key requirements that must be met and documented:

Step 1- Identification of alternative solutions

Step 2- Comparative assessment of the alternatives considered

Step 3- Examining imperative reasons of overriding public interest (IROPI)

### 1.3.4 Court of Justice of the European Onion (CJEU) Rulings



The CJEU has been asked to issue rulings on development plans, which are used to inform this assessment.

The CJEU issued a ruling on the consideration of avoidance and reduction measures as a result of the case known as People over Wind, Peter Sweetman v Coillte Teoranta (Case C-323/17). This judgement stated that measures intended to reduce or avoid effects on a European site should only be considered within the framework of an AA, and it is not permissible to take into account such measures at the screening stage. In practice, this means that any activities that are not integral to the project (i.e. the project could conceivably take place without them) and have the effect of avoiding or reducing an impact on a European site, cannot be considered at the screening stage.

More recently, the decision of the CJEU in case C-721/21 (Eco Advocacy CLG v An Bord Pleanála), delivered in June 2023, found that Article 6(3) of the Habitats Directive must be interpreted as meaning that:

*"in order to determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site." (Para. 53(3) of the Judgement).*

This recent judgement therefore clarifies that features which have been incorporated into a project as standard features, inherent in that project, and irrespective of any effect on any European site may be taken into account for the purposes of a Stage 1 Screening for Appropriate Assessment under Article 6(3) of the directive.

The CJEU ruling in Grace & Sweetman (C-164/17) [2018] clarified the difference between avoidance and reduction (mitigation) measures and compensation. Measures intended to compensate for the negative effects of a project cannot be taken into account in the assessment of the implications of a project, and instead are considered under Article 6(4). This means that any project where an effect on the integrity of a Natura 2000 site remains and can only be offset by compensation, would need to proceed under Article 6(4), demonstrating "imperative reasons of overriding public interest".

The CJEU ruling in the case of Holohan v An Bord Pleanála (C-461/17) [2018] also clarified the importance in Appropriate Assessment of taking into account habitat types and species outside the boundary of the Natura 2000 site where implications of the impacts on those habitat and species may impact the conservation objectives of the Natura 2000 site. In this assessment functionally linked and supporting habitat for species outside of Natura 2000 sites are assessed where they could potentially impact the conservation objectives of any Natura 2000 sites within the Zone of Influence (ZoI).

## 1.4 Methodology



The Screening for Appropriate Assessment has been prepared having regard to the Birds and Habitats Directives, the European Communities (Birds and Natural Habitats) Regulations 2011 as amended and relevant jurisprudence of the EU and Irish courts. The following documents have also been used to provide guidance for the assessment:

- DEHLG (2009 rev 2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government (DEHLG 2010);
- Office of the Planning Regulator (2021) OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management (OPR 2021);
- European Communities (EC) (2019) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (European Commission 2019);
- EC (2021/ C 437/01) Commission notice Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC ;
- EC (2022) Guidance document on assessment of plans and projects in relation to Natura 2000 sites - A summary (European Commission 2022);
- EC (2021) Guidance document on the strict protection of species of Community interest under the Habitats Directive 92/43/EEC; and
- CIEEM (2024). Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal, Second Ed.

This report has been produced using currently available information, with the most up-to-date version available at the time.

### 1.4.1 Desktop Study

A desktop study was conducted of available published and unpublished information, along with a review of data available on the National Parks and Wildlife Service (NPWS), Botanical Society of Britain and Ireland (BSBI) and National Biodiversity Data Centre (NBDC) web-based databases, in order to identify key habitats and species (including legally protected and species of conservation concern) that may be present within ecologically relevant distances from the project as explained below. A baseline habitat assessment was performed using satellite imagery of the site. The data sources below were consulted for the desktop study:

- Aerial photography available from www.osi.ie and ESRI World Imagery.
- NPWS website (www.npws.ie) where Natura 2000 site synopses, data forms and conservation objectives were obtained along with Annex I habitat distribution data and status reports.
- Catchment data (www.catchments.ie)
- NBDC Biodiversity Maps (maps.biodiversityireland.ie)
- Environmental Protection Agency Maps (https://gis.epa.ie/EPAMaps)
- Geological Survey Ireland (GSI) website (www.gsi.ie)

- GSI - Groundwater data viewer (https://dcenr.maps.arcgis.com)
- BSBI Plant Records (bsbi.org/maps)
- National Planning Application Database (myplan.ie)
- Inland Fisheries Ireland (IFI) (https://opendata-ifigeo.hub.arcgis.com/)



### 1.4.2 Site Surveys

A series of ecological walkover surveys were conducted by JBA Ecologists. The following surveys have been conducted:

- General ecological walkover: 14/10/2025
- Wintering Bird Surveys 21/11/2025, 07/01/2026, and 13/02/2026:

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

- Heritage Council (2011). Best Practice Guidance for Habitat Survey and Mapping (Smith et al. 2011).
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA 2009).
- Bat Surveys for professional Ecologists: Good Practice Guidelines (4th Edition). Bat Conservation Trust (Collins 2024).

Aerial photographs and site maps assisted the survey. Habitats have been named and described following Fossitt (2000). Nomenclature for higher plants follows that given in The New Flora of the British Isles 4th Edition (Stace 2019). Identification of Irish plants generally follows Webb's An Irish Flora (Parnell and Curtis 2012).

## 1.5 Assessment Criteria

### 1.5.1 The Zone of Influence

The ZoI was used to identify Natura 2000 sites that could be impacted by the project. For each of these sites, the Qualifying Interests (QI) or Site of Community Importance (SCI) features and their associated conservation objectives were identified, and the possibility of likely significant effect was determined by a combination of location, ecological and hydrological connectivity, sensitivity of receptor and magnitude of the source of impact.

### 1.5.2 The Adverse Effect on Site Integrity Test

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of qualifying interest. The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level. Upon the conclusion of the AA, the competent authority may

grant consent to the plan or project only after having ascertained that it will not adversely affect the integrity of the Natura 2000 site(s) concerned.



An assessment of whether there could be an adverse effect on site integrity is done using the source-pathway-receptor model which is used to determine the risk of impact to a site or Qualifying Interests (QIs) (OPR 2021). Risk is the likelihood or expected frequency of a specified adverse consequence or impact.

Applied to the project it expresses the likelihood of an adverse impact arising because of the project activities. A hazard presents a risk when it is likely to affect something of value (i.e. the Natura 2000 sites and their QIs). It is the combination of the probability of the hazard occurring and its consequences that is the basis of a risk assessment which an NIS essentially is:

Risk = probability of an event x consequential damage

The source-pathway-receptor model is a useful tool to determine if a risk is present, and to help quantify the risk to see if the threshold of an adverse effect on site integrity is reached. For a risk to be present, all three elements must be present.

**Source:** The source considered in this NIS is the proposed works or activity that will occur as a result of the project. Key considerations in assessing the source are the nature and scale of the potential impacts that may arise, e.g. type of contaminants that may arise, the contaminant loading and other physical attributes. The point of occurrence is a critical reference point for assessing the attributes of the source of any potential adverse impacts.

**Pathway:** Pathways are established by surface water, ground water, and land and air connections. The pathway includes everything between the source and the receptor; from point of release of potential adverse impacts, such as contaminants, to the receptor. The location, nature, connectivity and extent of wells, groundwater dependent ecosystems, aquifers and faults can all influence the nature of a pathway. Rivers, streams and drainage ditches could all act as potential pathways for potential waterborne impacts. The pathway includes assessment of surface and groundwater bodies, and WFD status may be reviewed as relevant. Land and air pathways to be considered include those that may transfer direct physical impacts, noise and visual disturbance (vibrations) and dust or other airborne particles.

**Receptor:** The receptor is the QI features of the relevant Natura 2000 sites, their site-specific Conservation Objectives (COs) and the overall integrity of the Natura 2000 sites. To determine the significance of potential adverse impacts on the integrity of the Natura 2000 site, the COs of each site are assessed relative to the potential impacts that may occur because of the proposed works. If the project were to undermine or make these objectives more difficult to achieve, the conservation status of the QI features becomes harder to achieve, and the quality and condition of the site will be reduced, reducing the 'integrity' of the Natura 2000 site. Each Natura 2000 site will either have specific or generic conservation objectives.

The overall aim of COs is to maintain or restore the favourable conservation conditions of the Annex I habitats and/or the Annex II species for which a Natura 2000 site has been

selected. Site-specific objectives contain more detailed attributes, measures and targets, but generally favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is generally achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The conservation objectives for SPAs are also to maintain or restore the favourable conservation condition of the bird species listed as QIs for SPAs, which are defined by the following list of attributes and targets:

- Population trend: Measure of percentage change and whether the long-term population trend is stable or increasing.
- Distribution: Number, range, timing and intensity of use of areas. There is to be no significant decrease in the range, timing or intensity of use of areas by specific or generic bird species, other than that occurring from natural patterns of variation.

The conservation objectives for non-breeding birds QIs for SPAs are as follows:

- To maintain the favourable conservation condition of the non-breeding water bird Special Conservation Interest species listed for a SPA.
- To maintain the favourable conservation condition of the wetland habitat for a SPA as a resource for the regularly occurring migratory water birds that utilise it.

Each of the Natura 2000 sites within the ZoI have site specific Conservation Objectives (SSCO).

Site integrity is assessed on the basis of each conservation objective of each qualifying interest feature. Should any conservation objective be undermined by the proposed project, the potential for adverse effects at site integrity are present. Low-impact effects that are too small or short-lived to undermine the achievements of the conservation objectives are therefore not likely to adversely affect the site integrity.

### 1.5.3 In-Combination effects

After the assessment of potential impacts is conducted for the project alone, the potential of in-combination or cumulative effects, in relation to other plans and projects in the vicinity is

assessed. In relation to the assessment of potential in-combination effects, where there is no effect at all via a pathway, there is no possibility of in-combination effects. However, in-combination effects can result in an adverse effect on the integrity of a designated site, even when there is no adverse effect on the site arising from the project alone. This can especially be the case if the other plans and projects share similar pathways to the proposed project. Other plans or projects were searched for using the National Planning Application Database, EIA portal and Myplan.ie databases all accessed online. If no other plans or projects are identified, then the assessment is complete. Where other plans or projects are identified then initially a review is made of its AA screening, or AA, and if the Competent Authority for the plan or project has made a final determination of no effect on the integrity of any European site, either alone or in-combination, this determination is used in this assessment. Where there is not a full AA, or the findings are unclear or out of date, the plan or project documentation is checked for credible evidence of real (not hypothetical) risk to a European site.



Where potential likely significant effects are identified, the in-combination assessment is carried forwards to a Stage 2 Appropriate Assessment.

### 1.6 Competent Persons

The assessment was prepared by Ecologist Mia Heigh BSc.

The assessment has been reviewed by Senior Ecologist Dominic Tilley BSc MSc PhD and Principal Ecologist Patricia Byrne BSc (Hons) PhD MCIEEM. Patricia has over 10 years' experience in ecological consultancy and is a full Member of the Chartered Institute of Ecological and Environmental Management (CIEEM).

## 1.7 Limitations and Constraints



This NIS necessarily relies on some assumptions, and it was inevitably subject to some limitations. These would not affect the conclusion, but the following points are recorded to ensure the basis of the assessment is clear:

- The precautionary principle is utilised when determining potential ecological sensitivities within the proposed projects Zone of Influence (ZoI).
- Information on the works and conditions on site are based on the current knowledge at the time of writing. Changes to the site since this report was drafted cannot be accounted for. However, significant changes to the site are not foreseen to happen prior to the start of the project.
- This assessment is based on methodology for proposed works as described in this report. Where changes to methodology occur, an ecologist will need to be consulted to determine if the changes are likely to alter the ecological impacts and would therefore need reassessment.
- Data from biological record centres or online databases is historical information, datasets may be incomplete, inaccurate or missing. The absence of records for an area may be due to the under recording in the area and not necessarily imply the absence of species. These records are therefore to be treated as minimum information available for the area.

# 2 Project Description



## 2.1 The Project

The proposed residential development at Baunoge, Loughrea seeks to deliver a residential scheme on a 2.97-hectare site zoned for Phase 1 Residential Development under the Loughrea Local Area Plan. The proposal comprises of 107 residential units (mix of 1-4 bed homes) and a creche.

The Proposed Project is not directly connected with, or necessary to the management of any Natura 2000 site and there is the potential for likely significant effects upon the Natura 2000 sites identified in Section 4. Therefore, the proposed project is subject to the requirements of the AA process.

## 2.2 Site Location

Baunoge is a townland located to the southeast of Loughrea town centre, within the Civil Parish of Loughrea, in County Galway. The site is located to the north of Mountpleasant Cemetery. The site is surrounded by residential housing to the west and agricultural farmland to the east.

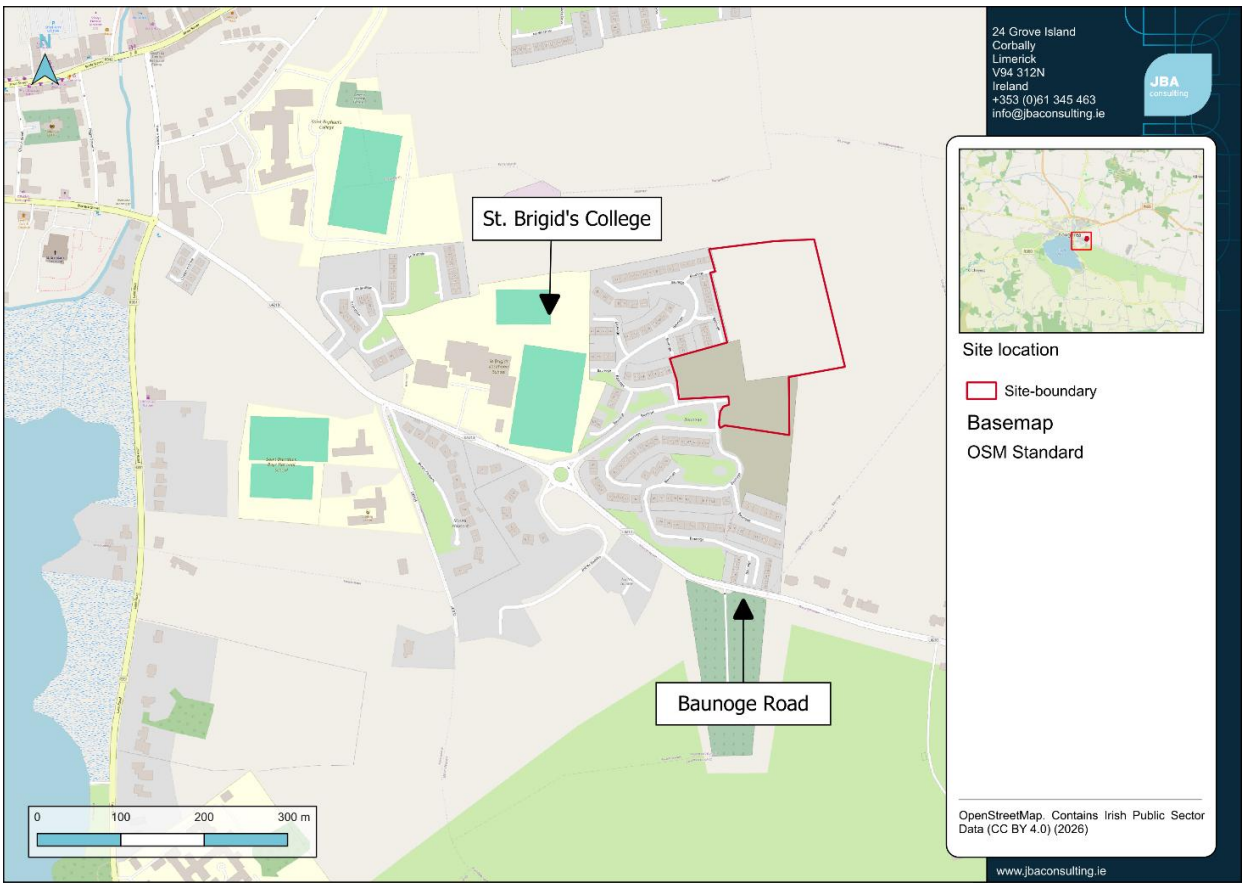



Figure 2-1: Site location and boundary

## 2.3 Proposed Works



The proposed works for the development include:

- A total of 107 units delivered across a 2.97-hectare site area.
- Inclusion of a crèche to serve as a key community amenity.
- Vehicular access via Baunoge Road.
- Public open spaces to be provided throughout the site area.
- All necessary service connections and associated infrastructure works included.


Figure 2-2: Proposed development layout

## 2.4 Zone of Influence

The Zone of Influence is considered using the Source-Pathway-Receptor model, therefore only designated sites that are connected to the project site are recorded and assessed.

This zone of influence uses the precautionary principle, as the work is primarily anticipated to only impact the footprint of the site.



Connections are assessed for impacts relating to noise disturbance (500m) (Cutts et al. 2013), air pollution (emissions and dust) (250m), and any supporting habitats for SAC/SPA species beyond this distance that may have QI species that utilise the site. The ZoI for air pollution was considered as per the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (IAQM 2024), including ex-situ habitats used by QI Species associated with local Natura 2000 sites.

The project will primarily affect the site only, but a wider area of influence is used for impacts relating to the following:

- Surface water – any downstream hydrological connections to Natura 2000 site(s) (10km);
- Groundwater - determined by the underlying aquifer - 2km considering groundwater conditions. The site is located 700m from Lough Rea, which connects with the Natura 2000 network.
- Air (disturbance) - noise disturbance to supporting ex-situ habitat(s) of QI and/or SCI species within or adjacent to the site (500m);
- Air (emissions and dust) - air pollution (250m) using IAQM guidance and the precautionary principle; and
- Land – physical disturbance to supporting ex-situ habitat(s) of QI and/or SCI species within or adjacent to the site.

As the groundwater at this site is intrinsically linked with adjacent surface waterbodies, a ZoI of 10 km for Natura 2000 sites will be considered and/or any Natura 2000 sites that may be hydrologically connected further than this 10 km radius.

## 2.5 AA Screening Summary and Conclusion

The proposed site is a mix of recolonising ground and agricultural grassland. The overall sub-urban location of the site means that some background level of disturbance occurs. The site is managed primarily for agricultural use. During the works dust emissions, sediment, and water runoff are likely to occur, with potential risk of water contamination. These may impact on the qualifying interests of Lough Rea SAC and Lough Rea SPA.

### 2.5.1 Description of likely impacts of the project



| Project Elements | Comment | | |
|---|---|---|---|
| Size and scale | 2.97ha site; 107 units, creche, associated works | | |
| Land-take | There will be no direct land take from any Natura 2000 sites. | | |
| Distance from Natura 2000 sites or key features of the site | **Natura 2000 site** | **Approximate direct distance** | **Approximate hydrological distance** |
| | Lough Rea SAC and Lough Rea SPA | 650m | 850m |
| Resource requirements | There will be no surface water nor groundwater abstraction on-site during operations. | | |
| Emissions (disposal to land, water or air) | **Construction Phase:**<br>Water: Potential runoff from site leading to contaminants entering the surface water.<br>Air: Potential release of dust settling on watercourses<br><br>**Operation Phase:**<br>Water: Drainage measures in place to prevent runoff.<br>Air: No change to current situation anticipated. | | |
| Excavation requirements | The maximum excavation depth of the proposed project is 12m. | | |
| Transportation requirements | **Transportation requirements**<br><br>**Temporary Impacts:**<br>There will be a change to the type of traffic to the site during the construction phase, with construction machinery being required.<br>**Permanent Impacts:**<br>There will be localised increase vehicle movement in the area. Given the scale of the proposed project, transportation requirements will not negatively impact the Natura 2000 sites identified within the ZoI. | | |
| Duration of construction | The expected duration of construction is 24 months.<br>Operation is expected to be permanent. | | |

### 2.5.2 Likely changes to the Natura 2000 sites



| Potential Impact | Comments |
|---|---|
| Reduction of habitat area | There will be no temporary or permanent reduction in habitat area (including supporting *ex-situ* habitats) for any of the Natura 2000 sites. |
| Disturbance to key species | **Temporary Impacts**<br>The construction works will temporarily increase noise level but this is unlikely to have significant effects on QI bird species.<br>**Permanent Impacts**<br>No disturbance to key species is anticipated during operation of the project. |
| Habitat or species fragmentation | There will be no temporary or permanent habitat or species fragmentation within any Natura 2000 sites. |
| Reduction in species density | There will be no temporary or permanent reduction in species density within any Natura 2000 sites, or any QIs / SCIs of these sites. |
| Changes in key indicators of conservation value | Without mitigation, there may be some impacts on water quality and indirect impacts on foraging opportunities for birds. |
| Climate change | Local traffic levels will increase slightly; active travel and EV provisions are in place to allow for reduce carbon transport. |

### 2.5.3 Description of likely impacts to the Natura 2000 sites as a whole

| Potential Impact | Comments |
|---|---|
| Interference with the key relationships that define the structure of the site | Interference with the key relationships that define the structure of the designated sites are not anticipated. |
| Interference with key relationships that define the function of the site | Interference with the key relationships that define the structure of the designated sites are not anticipated. |

### 2.5.4 Significance of the effects



| Potential Impact | Indicators |
|---|---|
| Loss | No Natura 2000 sites will experience a direct loss in habitat area. |
| Fragmentation | Fragmentation of habitat and/or species is not anticipated. |
| Disruption & disturbance | Disruption and/ or disturbance is not anticipated for QI / SCI species in Natura 2000 sites or supporting *ex-situ* foraging habitats. |
| Change to key elements of the site | Potential temporary changes to water quality may occur without mitigation measures. |

### 2.5.5 Unknown Impacts

Based upon best scientific judgement, there are no elements where the scale or magnitude of impacts is unknown.

### 2.5.6 Concluding Statement for Screening

In carrying out the AA screening, mitigation measures have not been taken into account. Following this initial screening of the proposed project, it was concluded that, using the precautionary principle significant impacts on the Lough Rea SAC and Lough Rea SPA could not be excluded via surface water, and groundwater pathways. This conclusion means that the project must proceed to Stage 2: Appropriate Assessment / Natura Impact Statement (NIS), and thus mitigation measures may be outlined and incorporated into the proposed construction works, in order to safeguard the integrity of the Natura 2000 site from any adverse significant effect via the source receptor-pathways highlighted in this report.

**The retained qualifying interests requiring mitigation are:**

- Lough Rea SAC:
  - Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140]
- Lough Rea SPA:
  - Coot *Fulica atra* [A125]
  - Shoveler *Spatula clypeata*, [A857]
  - Wetland and Waterbirds [A999]

If any changes occur in the design of these works, a new Screening for Appropriate Assessment is required.

# 3 Natura 2000 Sites



This section provides baseline information on the retained Natura 2000 sites within the Zone of Influence of the proposed works using the SPR model. A short description of the Natura 2000 sites is provided, along with details of the QIs and SCIs, their respective site-specific conservation objectives, and the attributes used to define favourable conservation status and site vulnerabilities.

These Natura 2000 sites are shown in Table 3-1 and mapped in Figure 3-1 below. The Natura 2000 site descriptions, QI/SCI, respective project-relevant threats/pressures for the sites and Conservation Objectives are also discussed.

This section provides baseline information on the Natura 2000 sites within the Zone of Influence (5km) of the proposed works or that are hydrologically linked to the site. A short description of the Natura 2000 sites is provided.

Table 3-1: Natura 2000 sites within the ZoI of the proposed site

| Site Name | Code | Direct Distance | Indirect Hydrological Distance |
|---|---|---|---|
| Lough Rea SAC | 000304 | 650m | 850m (Surface & Ground water) |
| Lough Rea SPA | 004134 | 650m | 850m (Surface & Ground water) |

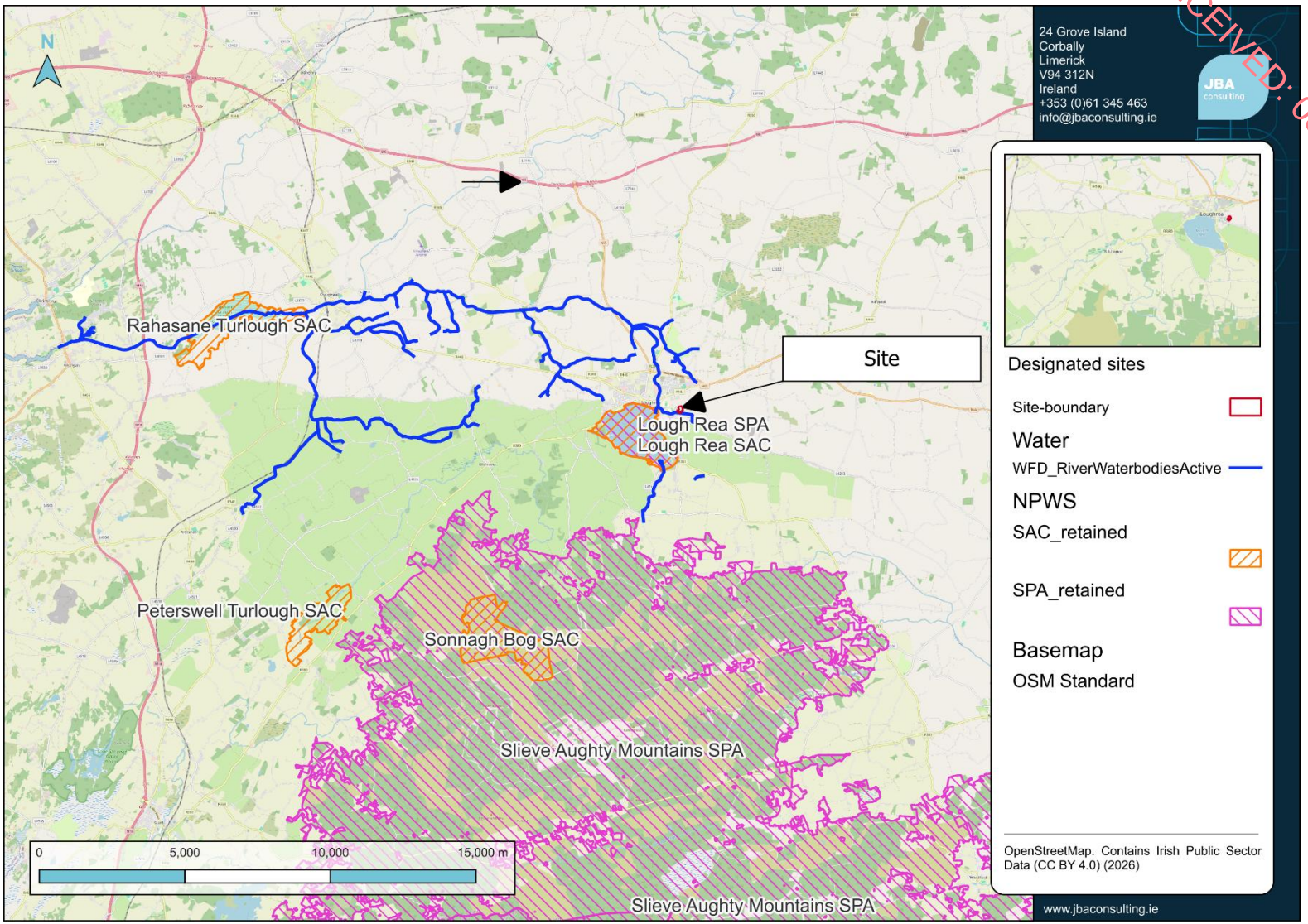



Figure 3-1: Natura 2000 sites identified within the Zone of Influence

## 3.1 Lough Rea SAC [000304]

### 3.1.1 Site Summary

This SAC is a hard water lake situated directly south of the town of Loughrea, Co. Galway. The lake is 2.5 km at its longest axis. The underlying geology of the area is of Carboniferous limestone and water transparency is very high. The lake, which is fed by springs and by a stream, reaches a maximum depth of 15 m. The site is largely surrounded by intensively farmed pasture and consequently the main threat to the lake comes from agricultural run-off. The lake is also vulnerable to nutrient input from the town of Loughrea. Lough Rea is a hard water lake, a habitat listed on Annex I of the E.U. Habitats Directive. The lake is also important for birds, and holds nationally and internationally important numbers of a number of species. (NPWS 2013).

### 3.1.2 Site Vulnerability (Threats and Pressures)

| Threats and pressures | Rank | Project Relevance |
|---|---|---|
| Continuous urbanisation | High | Yes |
| Diffuse pollution to surface waters due to household sewage and waste waters | High | Yes |
| Disposal of inert materials | High | No |
| Agricultural intensification | Medium | No |
| Paths, tracks, cycling tracks | Medium | No |
| Storage of materials | Medium | No |
| Flooding and rising precipitations | Low | No |
| Forest planting on open ground (native trees) | Low | No |
| Invasive non-native species | Low | No |
| Pollution to surface waters by storm overflows | Low | Yes |
| Removal of hedges and copses or scrub | Low | No |

### 3.1.3 Conservation Objectives

#### 3.1.3.1 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp [3140]

To maintain the favourable conservation condition of Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. in Lough Rea SAC, which is defined by the following list of attributes and targets (NPWS 2019):

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Habitat area | Hectares | Area stable or increasing, subject to natural processes | Lough Rea is an important hard-water lake with one of the deepest euphotic zones (10–11 m). Favourable/Good condition in 2012 and 2018. Extent measured as: (1) lake area; (2) extent of vegetation communities/zones. Supporting documents: O'Connor (2015), Pentecost (2009). |
| Habitat distribution | Occurrence | No decline, subject to natural processes | Habitat 3140 occurs in Lough Rea within the SAC (Map 3). |
| Typical species | Occurrence | Typical species present, in good condition, with typical abundances and distribution | Typical species lists in NPWS (2013) and O'Connor (2015). Species recorded in 2012 include: Krustenstein, Ophrydium versatile, Chara aculeolata, C. contraria, C. curta, C. rudis, C. tomentosa, C. virgata, Littorella uniflora, Myriophyllum alterniflorum, M. spicatum, Potamogeton pectinatus. |
| Vegetation composition: characteristic zonation | Occurrence | All characteristic zones present, correctly distributed, in good condition | Lough Rea is dominated by charophytes and krustenstein. C. contraria dominant in mid/deep water; C. rudis barely present; no C. denudata recorded. |
| Vegetation distribution: maximum depth | Metres | Maintain maximum depth of vegetation (10–11 m), subject to natural processes | Maximum depth 10–11 m in 2012; >8.5 m in 2018 during low water levels. |
| Hydrological regime: water level fluctuations | Metres | Maintain appropriate hydrological regime | Water levels influenced by groundwater. Excessive fluctuations can uproot vegetation, increase turbidity, alter substratum, and release nutrients. |
| Lake substratum quality | Various | Maintain appropriate substratum type, extent, chemistry | Substrata include marl, limestone, rock, cobble, gravel, mud, peat. Further research needed on calcium, iron, nutrients. |

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Water quality: transparency | Metres | Maintain appropriate Secchi transparency; no decline | Target for hard-water lakes: >6 m. Lough Rea Secchi depth: 5.2 m (2012), 4 m (2018). |
| Water quality: nutrients | µg/l P; mg/l N | Maintain/restore nutrients to sufficiently low levels | Target: WFD High Status / oligotrophic. Annual average TP should be low; ammonia thresholds apply. Lough Rea passed TP targets in 2010–12 and 2012–15. |
| Water quality: phytoplankton biomass | µg/l chlorophyll a | Maintain appropriate water quality | Target: WFD High Status. Lough Rea achieved high status in 2007–09, 2010–12, 2013–15. |
| Water quality: phytoplankton composition | EPA metric | Maintain high status | Passed in 2007–09 and 2012–15; failed in 2010–12. |
| Water quality: attached algal biomass | Algal cover | Maintain trace/absent (<5% cover) | Nutrient enrichment increases epiphytic algae that out-compete submerged vegetation. |
| Water quality: EPA macrophyte metric | Macrophyte status (Free Index) | Maintain high macrophyte status | Target: High Status (EQR ≥ 0.45). Lough Rea has had high status since 2007. |
| Acidification status | pH units; mg/l alkalinity/cations | Maintain appropriate pH, alkalinity, cations | Max pH < 9.0. Acidification not a major threat; eutrophication can raise pH. |
| Water colour | mg/l PtCo | Maintain appropriate colour | Hard-water lakes typically <10 mg/l PtCo; Lough Rea recorded 3 mg/l. |
| Dissolved organic carbon | mg/l | Maintain appropriate DOC | DOC linked to colour and acidification; increases often due to peatland disturbance. |
| Turbidity | NTU / mg/l SS | Maintain appropriate turbidity | Turbidity affects light penetration and sedimentation on vegetation. |
| Fringing habitat | Hectares | Maintain area and condition of fringing habitats | Lough Rea has reedbed, freshwater marsh, wet grassland, fen (south-west), and wet woodland. |



### 3.2 Lough Rea SPA [004077]

Lough Rea is situated directly south of the town of Loughrea, Co. Galway. The underlying geology of the area is of Carboniferous limestone and water transparency is very high. The lake, which is fed by springs and by a stream, reaches a maximum depth of 15 m. Lough

Rea is an important ornithological site for the nationally important populations of Shoveler and Coot and the regionally/locally important populations of a further ten species that it holds. (NPWS 2010).



### 3.2.1 Site Vulnerability (Threats and Pressures)

| Threats and pressures | Rank | Project Relevance |
|---|---|---|
| Urbanised areas, human habitation | High | Yes |
| Fertilisation | Medium | No |
| Leisure fishing | Medium | No |
| Sylviculture, forestry | Medium | No |
| Hunting | Low | No |
| Nautical sports | Low | No |

### 3.2.2 Conservation Objectives

The conservation objectives for each qualifying interest specify key attributes, measures and targets that are used in order to achieve the conservation goals. (NPWS 2025).

#### 3.2.2.1 Shoveler Anas clypeata A056

To restore the Favourable conservation condition of Shoveler at Lough Rea SPA, which is defined by the following list of attributes and targets:

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Population trend | Number of individuals | Long-term population trend stable or increasing | Shoveler is a wintering species in Ireland. Lough Rea supports a nationally important population. |
| Distribution | Range within the site | No significant decrease in the range, timing, or intensity of use of areas by Shoveler, other than that occurring from natural patterns | Birds use shallow lake margins and wetland edges for feeding and roosting. |
| Supporting habitat: area | Hectares | Maintain the area of habitats used by Shoveler | Includes open water, fringing wetlands, and feeding areas around the lake. |

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Supporting habitat: quality | Habitat condition | Maintain the quality and availability of feeding and roosting habitats | Habitat quality depends on water quality, vegetation structure, and low disturbance. |
| Disturbance | Level of disturbance | Human-related disturbance should be minimal, especially during sensitive periods | Disturbance can displace birds from feeding and roosting areas. |



#### 3.2.2.2 Coot Fulica atra A125

To maintain the Favourable conservation condition of Coot at Lough Rea SPA, which is defined by the following list of attributes and targets:

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Population trend | Number of individuals | Long-term population trend stable or increasing | Coot is a wintering species in Ireland. Lough Rea supports a nationally important population. |
| Distribution | Range within the site | No significant decrease in the range, timing, or intensity of use of areas by Coot, other than natural variation | Birds use open water and vegetated lake margins for feeding and roosting. |
| Supporting habitat: area | Hectares | Maintain the area of habitats used by Coot | Includes open water, fringing wetlands, and feeding areas around the lake. |
| Supporting habitat: quality | Habitat condition | Maintain the quality and availability of feeding and roosting habitats | Habitat quality depends on water quality, aquatic vegetation, and low disturbance. |
| Disturbance | Level of disturbance | Human-related disturbance should be minimal, especially during sensitive periods | Disturbance can displace birds from feeding and roosting areas. |

#### 3.2.2.3 Wetlands A999

To maintain the Favourable conservation condition of Wetland habitats in Lough Rea SPA as a resource for the regularly-occurring migratory waterbirds that utilise these areas. This is defined by the following list of attributes and targets:

| Attribute | Measure | Target | Notes |
|---|---|---|---|
| Wetland habitat area | Hectares | No significant loss to wetland habitat within the SPA, other than that occurring from natural patterns of variation | Any significant loss to the wetland habitat within the SPA would likely negatively impact the regularly occurring migratory waterbirds that utilise this wetland habitat. Such loss of wetland habitat would likely reduce the diversity and abundance of waterbird species that the wetland can support. This, in turn, could negatively impact the Conservation Objectives for waterbird species listed as Special Conservation Interests in the SPA or other regularly-occurring migratory waterbird species |
| Wetland habitat quality and functioning | Quality and function of the wetland habitat | No significant impact on the quality or functioning of the wetland habitat within the SPA, other than that occurring from natural patterns of variation | Any significant impact on the quality, functioning and accessibility of the wetland habitat within the SPA would likely negatively impact the regularly occurring migratory waterbirds that utilise this wetland habitat. Impacts on wetland quality, functioning and accessibility would likely reduce the diversity and abundance of waterbird species that the wetland can support. This, in turn, could negatively impact the Conservation Objectives for waterbird species listed as Special Conservation Interests in the SPA or other regularly-occurring migratory waterbird species |



Potential impacts on the integrity of the SAC could arise through groundwater connection due to the extreme groundwater vulnerability on site that creates a subsurface pathway for potential effects. The surface water confluence being downstream of the confluence between the Knockanina Stream and St Claren River, it is unlikely to lead to significant effects on the SAC.

**Likely significant effects from the development on the QI of the Lough Rea SAC cannot be excluded. Lough Rea SAC is Screened-In for further consideration.**

# 4 Existing Environment

## 4.1 Baseline Conditions

The baseline ecology and existing conditions for the development site was obtained through a series of ecological surveys and database queries conducted between October 2025 and February 2026.

## 4.2 Habitats

Based on satellite imagery and confirmed by the site visits, the site was largely made up of two habitats. The southern part of the site is predominantly comprised of recolonising bare ground, whilst the north of the site consists of agricultural grassland. The habitats recorded are presented in Table 4-1 & Figure 4-1.

No EU Habitats Directive Annex I habitats were found to be present within the site boundary.

The habitats present on are not suitable for the QI birds of Lough Rea SPA and therefore do not present suitable ex-situ habitat for these species. The pond present on site is not of suitable size and does not present suitable cover for those bird species.

Table 4-1: List of habitats recorded within and around the proposed project area

| Habitat name | Fossitt code | Annex I link | Annex I present on site? |
|---|---|---|---|
| Recolonising bare ground | ED3 | None | NA |
| Other artificial lakes and ponds | FL8 | None | NA |
| Improved agricultural grassland | GA1 | None | NA |
| Treelines | WL2 | None | NA |
| Hedgerows | WL1 | None | NA |

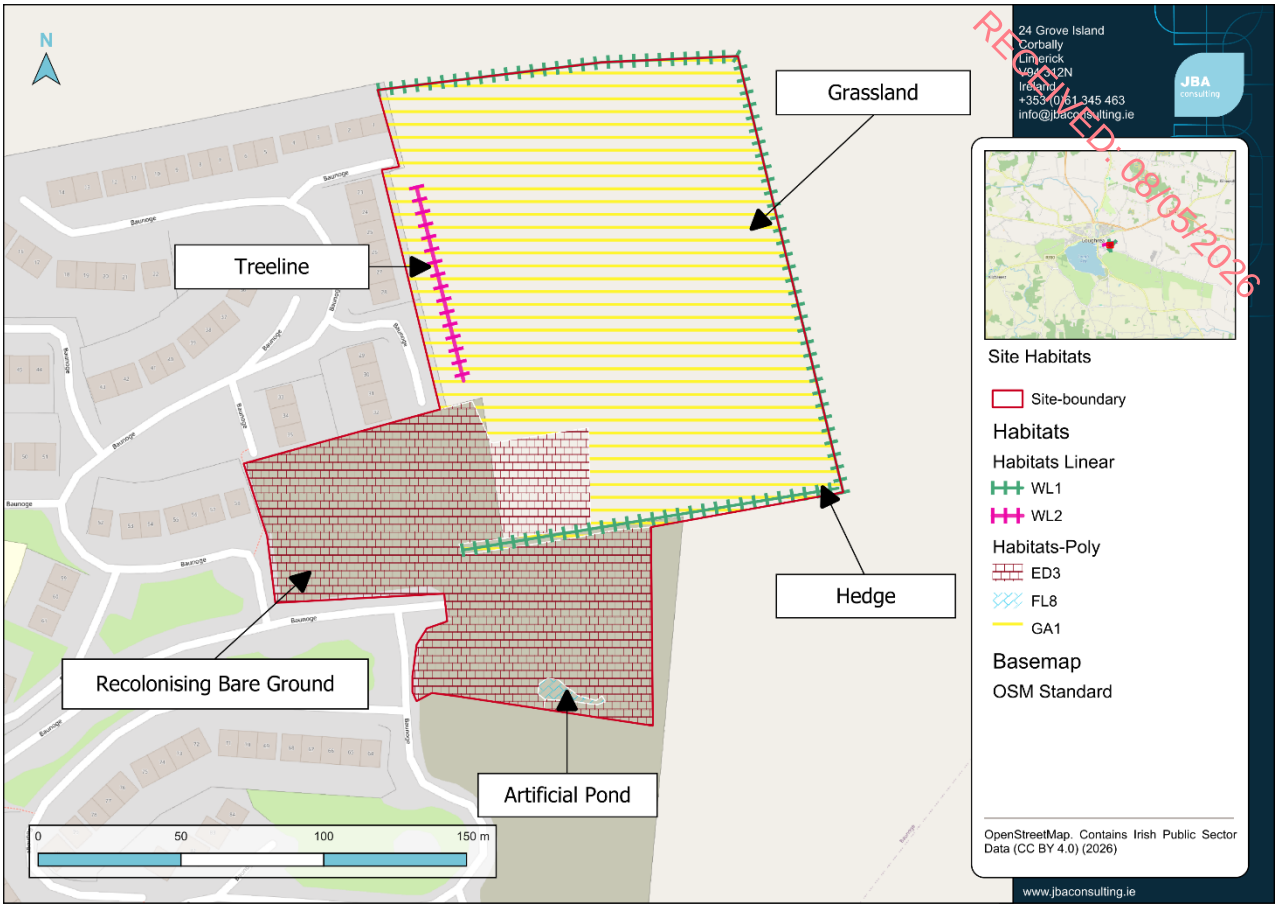



Figure 4-1: Habitats

### 4.2.1 Other Artificial Lakes and Ponds (FL8)

An artificial pond has formed in the southern part of the site, likely as a result of abandoned site clearance works. Evidence suggests a trench was excavated to bury some cleared vegetation, with multiple tree stumps and branches dumped within the feature. The pond supported aquatic and marginal vegetation including Broad-leaved Pondweed *Potamogeton natans*, Yellow Iris *Iris pseudacorus*, stonewort *Chara sp.*, Water-starwort *Callitriche sp.*, and Jointed Rush *Juncus articulatus*. Woody species such as Sycamore *Acer pseudoplatanus* are present within the dumped material within the pond.


Figure 4-2: Pond habitat

## 4.3 Protected Species



This section outlines the records of protected flora and fauna collected from the NBDC database. A custom polygon covering the proposed site and a 5km buffer was queried for NBDC records since 01/01/2015, and with the full list of protected species listed in Appendix A. Species that are largely of those relevant to the EU Habitats and Bird Directives, are presented in Table 4-2. Those species highlighted in bold are Qualifying Interests of the Natura 2000 sites within the ZoI.

Table 4-2: EU Habitats and Bird Directives Protected Species recorded within 5km of the site in the last 10 years

| Species name | Date of last record | Designation |
|---|---|---|
| **Coot *Fulica atra*** | **24/12/2024** | **Protected Species: EU Birds Directive & Wildlife Acts** |
| Curlew *Numenius arquata* | 31/01/2024 | Protected Species: EU Birds Directive & Wildlife Acts |
| Gadwall *Mareca strepera* | 18/12/2021 | Protected Species: EU Birds Directive & Wildlife Acts |
| Goldeneye *Bucephala clangula* | 20/01/2023 | Protected Species: EU Birds Directive & Wildlife Acts |
| Great Northern Diver *Gavia immer* | 13/11/2021 | Protected Species: EU Birds Directive Annex I, & Wildlife Acts |
| Greylag Goose *Anser anser* | 30/12/2020 | Protected Species: EU Birds Directive & Wildlife Acts |
| Kingfisher *Alcedo atthis* | 01/06/2022 | Protected Species: EU Birds Directive Annex I, & Wildlife Acts |
| Lapwing *Vanellus vanellus* | 28/12/2024 | Protected Species: EU Birds Directive & Wildlife Acts |
| Little Egret *Egretta garzetta* | 01/03/2024 | Protected Species: EU Birds Directive Annex I & Wildlife Acts |
| Long-tailed Duck *Clangula hyemalis* | 16/12/2023 | Protected Species: EU Birds Directive & Wildlife Acts |
| Mallard *Anas platyrhynchos* | 28/12/2024 | Protected Species: EU Birds Directive & Wildlife Acts |
| Peregrine *Falco peregrinus* | 06/10/2018 | Protected Species: EU Birds Directive Annex I, & Wildlife Acts |
| Pheasant *Phasianus colchicus* | 12/05/2024 | Protected Species: EU Birds Directive & Wildlife Acts |
| Pintail *Anas acuta* | 06/01/2024 | Protected Species: EU Birds Directive & Wildlife Acts |
| Pochard *Aythya ferina* | 26/12/2024 | Protected Species: EU Birds Directive & Wildlife Acts |

| Species name | Date of last record | Designation |
|---|---|---|
| Rock Dove *Columba livia* | 06/10/2018 | Protected Species: EU Birds Directive & Wildlife Acts |
| Scaup *Aythya marila* | 26/12/2024 | Protected Species: EU Birds Directive & Wildlife Acts |
| **Shoveler *Spatula clypeata*** | **28/12/2024** | **Protected Species: EU Birds Directive & Wildlife Acts** |
| Snipe *Gallinago gallinago* | 17/03/2021 | Protected Species: EU Birds Directive & Wildlife Acts |
| Teal *Anas crecca* | 20/01/2019 | Protected Species: EU Birds Directive & Wildlife Acts |
| Tufted Duck *Aythya fuligula* | 28/12/2024 | Protected Species: EU Birds Directive & Wildlife Acts |
| White-tailed Eagle *Haliaeetus albicilla* | 27/11/2020 | Protected Species: EU Birds Directive >> Annex I, & Wildlife Acts |
| Whooper Swan *Cygnus cygnus* | 03/11/2019 | Protected Species: EU Birds Directive >> Annex I, & Wildlife Acts |
| Wigeon *Mareca penelope* | 22/01/2023 | Protected Species: EU Birds Directive & Wildlife Acts |
| White-clawed Crayfish *Austropotamobius pallipes* | 31/12/2021 | Protected Species: EU Habitats Directive Annex II & Annex V, & Wildlife Acts |
| Marsh Fritillary *Euphydryas aurinia* | 30/05/2020 | Protected Species: EU Habitats Directive Annex II, & Wildlife Acts |
| Brown Long-eared Bat *Plecotus auritus* | 28/08/2017 | Protected Species: EU Habitats Directive Annex IV, & Wildlife Acts |
| Common Pipistrelle *Pipistrellus pipistrellus sensu stricto* | 09/10/2015 | Protected Species: EU Habitats Directive Annex IV, & Wildlife Acts |
| Daubenton's Bat *Myotis daubentonii* | 08/10/2015 | Protected Species: EU Habitats Directive Annex IV, & Wildlife Acts |
| Natterer's Bat *Myotis nattereri* | 28/08/2017 | Protected Species: EU Habitats Directive Annex IV, & Wildlife Acts |
| Soprano Pipistrelle *Pipistrellus pygmaeus* | 20/06/2019 | Protected Species: EU Habitats Directive Annex IV, & Wildlife Acts |
| Whiskered Bat *Myotis mystacinus* | 20/06/2019 | Protected Species: EU Habitats Directive Annex IV, & Wildlife Acts |
| Leisler's Bat *Nyctalus leisleri* | 28/08/2017 | Protected Species: EU Habitats Directive Annex IV, & Wildlife Acts |
| Irish Hare *Lepus timidus subsp. hibernicus* | 09/02/2023 | Protected Species: EU Habitats Directive Annex IV, & Wildlife Acts |
| Irish Stoat *Mustela* | 11/07/2024 | Protected Species: EU Habitats Directive |

| Species name | Date of last record | Designation |
|---|---|---|
| *erminea subsp. hibernica* | | Annex IV, & Wildlife Acts |
| Otter *Lutra lutra* | 15/05/2016 | Protected Species: EU Habitats Directive Annex II & Annex IV, & Wildlife Acts |
| Pine Marten *Martes martes* | 21/12/2021 | Protected Species: EU Habitats Directive Annex V, & Wildlife Acts |



Shoveler and Coot are Qualifying Interests of Lough Rea SPA. However, there is no supporting habitat for either of these EU protected species within the boundary of the development site or within the vicinity of this site boundary.

### 4.4 Protected Flora on Site

During the site walkover, no signs of flora listed on the Flora (Protection) Order 2022 were recorded.

## 4.5 Survey Results



### 4.5.1 Wintering Bird Surveys

Details of the wintering bird surveys (14.10.2025, 21.11.2025, 7.01.2026, 13.02.2026), as set out in Technical Note are presented in the associated technical note.

No QI bird species of Lough Rea SPA were recorded.

Only the expected assemblage of garden and farmland birds was recorded including Goldfinch, Wren, Robin, and Blackbird.

## 4.6 Invasive Species

A full list of non-native species recorded on the NBDC database in the last 10 years within a 5km radius of the site is listed in Appendix B. Provided in Table 4-3 is a list of the non-native species recorded in this database search result that is either of high impact or is scheduled by invasive non-native species regulations.

Table 4-3: Invasive Non-native Species recorded within 5km of the project boundary within the last 10 years

| Species name | Date of last record | Designation |
|---|---|---|
| Himalayan Knotweed *Persicaria wallichii* | 17/10/2020 | Medium Risk Invasive Species EU Regulation No. 1143/2014<br>Regulation S.I. 477 & Regulation S.I. 374/2024 (Ireland) |
| Japanese Knotweed *Reynoutria japonica* | 08/08/2017 | High Impact Invasive Species Regulation S.I. 477 Regulation S.I. 374/2024 (Ireland) |

No schedule species were recorded during the ecological surveys. However, the following invasive species were recorded during the walkovers:

- Buddleja *Buddleja davidii*. Medium Risk Invasive Species.
- *Cotoneaster* sp. Medium Risk Invasive Species (Figure 4-3)


Figure 4-3: Cotoneaster on site

## 4.7 Elevation and Slope

The site is in an area of low-lying topography in the local area, with an average elevation of 104m. The site slopes gradually in a North-east to South-west direction towards Lough Rea.

## 4.8 Surface Water



The site lies in the Kilcogan_SC_010 subcatchment, which is part of the Galway Bay South East (WFD Code: 29) catchment.

The Knockanina Stream runs along the south of the site and joins St Cleran River the watercourse that discharges from Lough Rea St Cleran River which become Dunkellin in the locality of Craughwell. All of these watercourses come under the EPA code of KILCOLGAN_XX, where XX is the different section numbers.

The Knockanina stream is open channelled upstream and culverts at the boundary line, running underneath Loughrea town to an outfall point at the confluence of Lough Rea and St Cleran River which flows northwest, away from Lough Rea. Water quality of the KILCOLGAN_ waterbody was described as having a 'Moderate' overall condition and 'At risk' in the 2019-2024 monitoring period (EPA 2025). The water quality of the Lough Rea lake waterbody was described as having a 'Moderate' overall condition and 'Not At risk' in the same monitoring period.

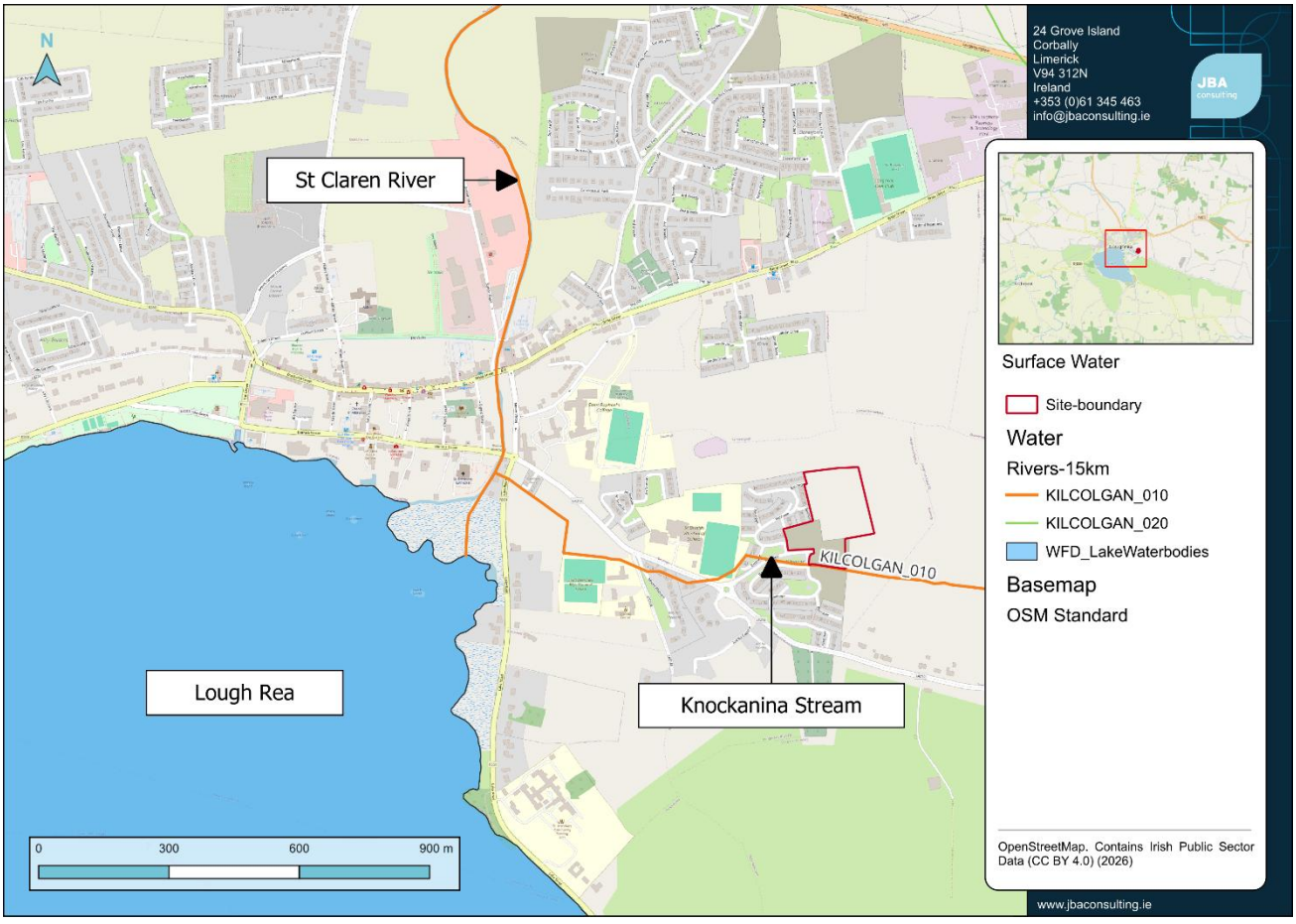



Figure 4-4: Surface waterbodies in relation to the development

## 4.9 Groundwater Bodies

The site lies over the Rahasane Turlough (WFD: IE_WE_G_0100) groundwater body (Figure 4-5). The overall groundwater status of the Rahasane Turlough groundwater body

is 'Good' as of the 2019-2024 monitoring period. However, it is classed as being 'At risk'. Table 4-4 details the underlying geology of the development site and the groundwater conditions.



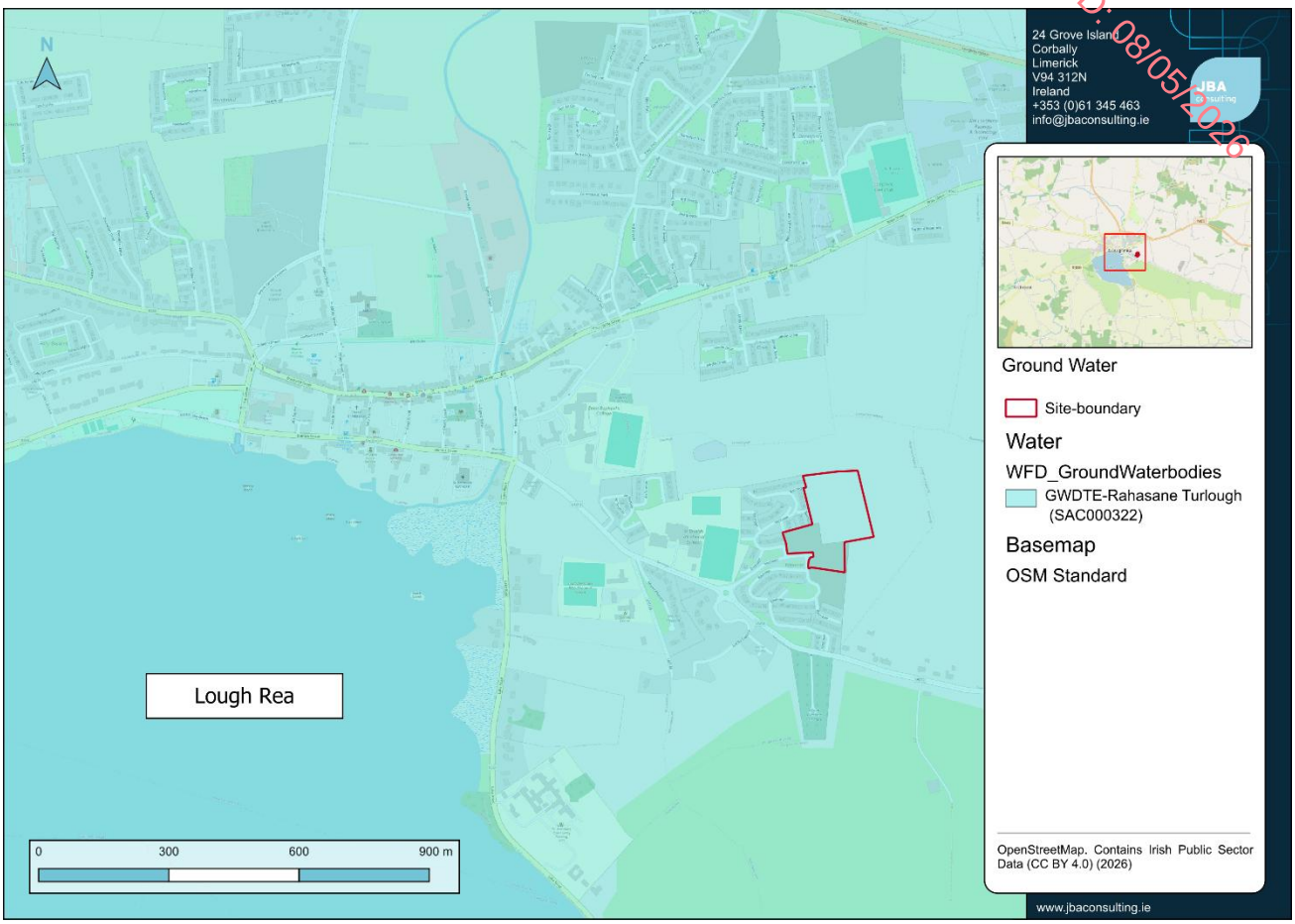



Figure 4-5: Groundwater bodies in relation to the proposed development

Table 4-4: Underlying Groundwater and Geological conditions

| Feature | Source | |
|---|---|---|
| WFD Groundwater Body | EPA | Rahasane Turlough (IE_WE_G_0100) |
| Teagasc Soils | GSI | River, Urban, and Faoldroim |
| Subsoils (Quaternary Sediments) | GSI | Till derived chiefly from limestone. |
| Subsoil permeability | GSI | Moderate permeability |
| Bedrock Geology | GSI | Waulsortian Limestones. Massive unbedded lime-mudstone. |
| Bedrock Aquifer | GSI/EPA | Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones |
| Groundwater Recharge | GSI | The recharge coefficient in the site is 85% with an average recharge of 200 mm/yr<br>Moderate permeability subsoils that are overlain by made ground. |

| Feature | Source | |
|---|---|---|
| Groundwater Vulnerability | GSI/EPA | The area of site to the North is in an area of Extreme groundwater recharge. The remainder of the site to the South is in an area of High groundwater vulnerability. |



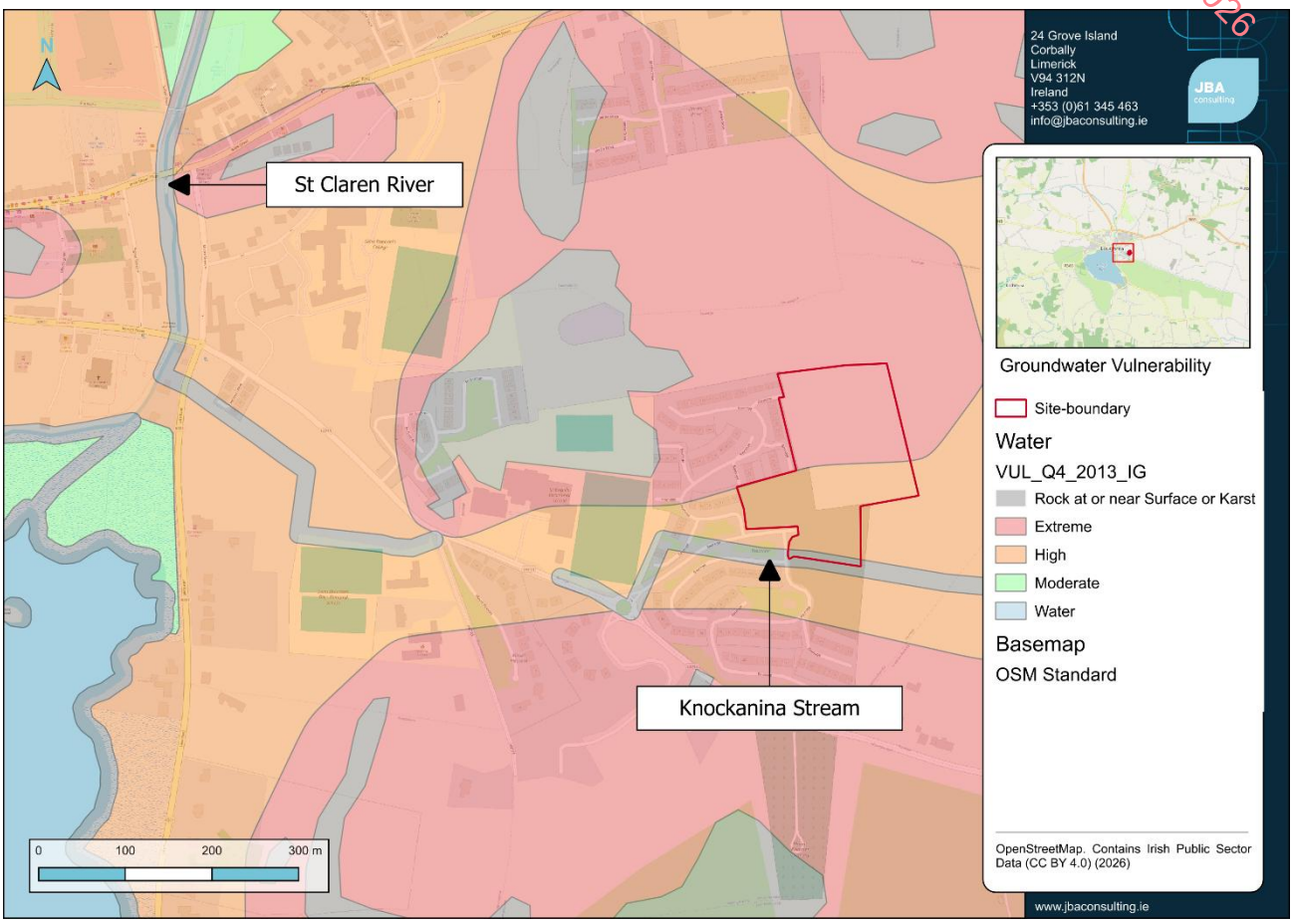



Figure 4-6: Groundwater vulnerability in relation to the proposed development

The moderate permeability of the subsoil coupled with high to extreme vulnerability and a moderate recharge rate, means there is a potential for surface waters to enter the groundwater from the proposed development (Figure 4-6). The presence of urban ground may also make these flow paths even more unpredictable. In the absence of directly adjacent surface waters, this flow path may create a linkage between the development and the Natura 2000 network, largely through the Kilcolgan River and Lough Rea to the West. The limestone bedrock may facilitate rapid groundwater movement from the project site to the river.

# 5 Other Relevant Plans and Projects



## 5.1 Cumulative Effects

Cumulative effects are the combined impacts on ecosystems, habitats, species, or ecological processes that result from the incremental effects of a proposed project or activity, when added to other past, present, or reasonably foreseeable future actions. These effects may be the sum of individual impacts; their interactions or a combination leading to outcomes that are greater, more persistent, or more widespread than anticipated.

No plans or projects were retained at the AA screening stage and no cumulative effects are anticipated from this proposed development.

# 6 Appropriate Assessment

## 6.1 Introduction

This section of the NIS presents the detailed assessment of potential direct and indirect impacts on Lough Rea SAC and the Lough Rea SPA:

- Hard oligo-mesotrophic waters with benthic vegetation of *Chara spp*. [3140]
- Coot *Fulica atra* [A125]
- Shoveler *Spatula clypeata* [A857]
- Wetland and Waterbirds [A999]

Section 6.2 assesses the screened in Natura 2000 sites in more detail and examines where potential adverse impacts may arise from the sources of impact identified.
Where potential adverse impacts are identified, avoidance and mitigation measures are proposed; these are discussed in Section 7.

## 6.2 Potential Sources of Impact

The sources of impact on the aquatic receptors are a release of sediment, release of chemicals, hydrocarbons and other pollutants, affecting water quality and habitat structure. These would be as the result of construction works.

### 6.2.1 Construction Phase

During the construction phase of the project there is potential for water contamination, release of sediment and pollutants, and dust emissions. Surface water runoff may also mobilise sediment and introduce it to the watercourse.

Excavations: excavations for foundations have the potential for groundwater strike.

Cut and Fill: excavations will lead to the clearance of ground cover presenting a risk of sediment release. Furthermore, whilst the majority of the cut will be< 2.5m, maximum cut depth is expected to reach over 10m. This presents a risk for groundwater strike and therefore contamination.

Transport of materials: transport of excavation materials has the potential to lead to the release of dust, which may settle on the watercourses.

Refuelling: vehicles and machinery refuelling/ maintenance may lead to the release of hydrocarbons and other pollutants, due to accidental spillage.

Construction: the pouring of concrete and use of cementitious materials may lead to airborne particles, and leachates.

**During construction phase impacts on retained QIs cannot be excluded and therefore mitigation measured are required.**

### 6.2.2 Operational Phase

The site surface water drainage will discharge to the existing foul water sewer network running along Baunoge Road, located within the proposed development boundary. The proposed foul sewer will be constructed in accordance with Uisce Éireann standards.

The proposed storm water drainage network has been designed to cater for all surface water run-off from hard surfaces within the proposed development and nature-based Sustainable Urban Drainage Systems to minimise storm water runoff and intercept at source any pollutant. SuDS measures include soakaway areas, tree pit, filter strip, petrol interceptor, perforated kerbs and rain garden. Any high-level overflow from rain fall events will connect to the main surface water drainage system. Once the project is implemented, the wastewater and stormwater will be collected in existing sewer networks and directed towards the Loughrea Wastewater Treatment plant, which has available capacity.

Permeable paving is to be used across the development, which should allow for rainwater to naturally flow into the ground, reducing the impact of the operational phase of the development on the groundwater body.

The normal operation of the site once construction is completed will not lead to excessive dust emissions.

**During the operational phase impacts on retained QIs are unlikely to occur due to the design of the drainage system and therefore mitigation measured are not likely to be required.**

### 6.2.3 Cumulative Impacts

The identified developments in proximity to the proposed development site were either not accompanied by an AAR / NIS or screened out due to lack of connectivity to designated sites.

As these developments are not expected to have any impacts on the designated sites due to the absence of pathways, then the proposed development cannot act in combination. Therefore, there is no potential for cumulative impacts to occur with other local projects.

### 6.2.4 Do Nothing Impact

If the proposed project does not go ahead there will be no change to the current use of the area and no impact from construction or operations on the screened in QIs of the Lower River Shannon SAC are therefore anticipated.

## 6.3 Summary

This Proposed Development is located in a a suburban setting, adjacent to existing housing. The area is primarily used for agricultural purposes and has a network of drainage ditches. Due to the direct hydrological connection between the site and the nearby SAC and

SPA, in the absence of mitigation, significant effects through surface water pathways, groundwater pathways and air cannot be excluded, and mitigation measures are required. Mitigation measures for this project can be by design, and/or integrated during the construction phase.



# 7 Mitigation

As impacts from the development on Lough Rea SAC and Lough Rea SPA cannot be excluded, mitigation measures to prevent significant effects on the designated sites are required.

## 7.1 Mitigation for Construction Phase

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

### 7.1.1 Environmental Clerk of Works

Oversight of the works is required by an Environmental Clerk of Works (ECoW). The ECoW will be a competent ecologist with experience in surface water management and dust mitigation.

The role of the ECoW is to:

- ensure that the mitigation measures prescribed are incorporated and adhered to
- monitor the effectiveness of the mitigation measures in protecting the ecology of the environment around the site and any connected Natura 2000 sites.

The ECoW will have the power to give a stop-works instruction if it is apparent through their monitoring that the mitigation measures are not achieving the desired effects.

### 7.1.2 Construction and Environmental Management Plan

A Construction and Environmental Management Plan (CEMP) has been prepared for the proposed development. The CEMP covers mitigation measures that will reduce the impact of noise, vibration, dust, emissions, drainage and water quality, and waste management. The CEMP also outlines the measures to be taken in the event of an environmental emergency, such as chemical/oil spills. The CEMP has been drawn up with reference to Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan.

The CEMP also strictly adheres to legislation and best practice environmental guidance including but not limited to the following / or the most up to date versions of:

- Water Framework Directive (2000/60/EC)

- European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009)
- Local Government (Water Pollution) Acts 1977-1990
- CIRIA (C512): Environmental Handbook for Building and Civil Engineering Projects (CIRIA 2000)
- CIRIA Guidance C532 Control of water pollution from construction sites. Guidance for consultants and contractors (Masters-Williams 2001)
- CIRIA Guidance C750D: Groundwater control: design and practice (CIRIA 2016)
- CIRIA Guidance C811: Environmental good practice on site guide (Kwan et al. 2023a)



### 7.1.3 Site Compound

The construction compound will be located within the site boundary and at least 50m from the watercourse. Only plant and materials necessary for the construction of the works will be permitted to be stored at the compound location.

Site establishment by the Contractor will include the following:

- Setting up of access control to the site, including prior to commencement of construction works, removal of construction debris from the existing site compound away from the watercourse and the construction footprint will be fenced off leaving a natural vegetation buffer between the construction footprint and the watercourse
- Construction traffic alert signage on both sides of the road as you approach the compound
- Site offices
- Site facilities (canteen, toilets, drying rooms, etc.)
- Office for construction management team
- Secure compound for the storage of all on-site machinery and materials
- Temporary car parking facilities
- Permanent and temporary fencing; 2.4m hoarding will be required along the construction site
- Site Security to restrict unauthorized entry
- An environmental manager or a dedicated yard foreperson nominated by the site manager to act as environmental manager will be responsible to ensure compliance with environmental requirements
- The construction site compound will include provision for dust control, surface water control and wheel washing facilities
- Bunded storage of fuels and refuelling area. The bunded areas will be used for the storage of hazardous materials only, for example diesel, oils, lubricants, paints etc. The bunds will be sized to contain 110% of the largest vessel contained within the bunded area. The diesel tanks will be double skinned and stored within the bunded area. Correct filling procedures for plant and vehicles will be demonstrated during the toolbox talks

- A separate container will be located in the Contractor's compound to store absorbents used to contain spillages of hazardous materials. The container will be clearly labelled, and the contents of the container will be disposed of by a licenced waste contractor at a licenced site. All waste management records including waste transportation and disposal records will be maintained on site by the environmental manager. Contractors will be made aware of the presence of the hazardous waste container and instructions of when and how to use same.
- A maintenance programme for the bunded areas will be managed by the environmental manager. The removal of rainwater from the bunded areas will be their responsibility. Records will be maintained of materials taken off site for disposal
- The environmental manager will be responsible for maintaining all training records
- The environmental manager will liaise with the ECoW and provide all necessary records to comply with any planning conditions
- The contents of any tank will be clearly marked on the tank, and a notice displayed requiring that valves and trigger guns be locked when not in use
- Drainage collection system for washing area to prevent run-off into surface water system
- When not in use for construction purposes, all materials, plant and machinery will be stored in the site compound

### 7.1.4 Water Quality

Mitigation measures to reduce the impact on surface and groundwater are included in the CEMP. Measures that are included in the CEMP include silt-fences and strainers to prevent silt runoff, and measures to contain fuel and chemical spills.

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

- C532 Control of water pollution from construction sites. Guidance for consultants and contractors.
- CIRIA C698F - Site Handbook for the Construction of SUDS.
- Inland Fisheries Ireland 2016 'Guidance on Protection of Fisheries During Construction Works In and Adjacent to Waters'.

Mitigation measures include:

- Adoption of a surface water plan including appropriate erosion and silt controls to prevent any flow of surface water from the site into the stormwater system (e.g. trenches, settling ponds, silt fence).
- Works will not take place during periods of high rainfall, and shall be scaled back or suspended if heavy rain is forecast during excavation works.
- The delineation of trench works by a fence, outside of which no access shall be permitted.

- Material stockpiles will be kept at least 10m from any watercourses or manholes and silt fences will be erected at the toe of stockpiles to prevent run-off into watercourses.
- The silt fences will be monitored daily by the main contractor and silt removed where required. Damaged fences will be repaired immediately.
- The solid barrier will be supplemented by an embedded silt fence which can be located either side or both of the solid barrier. The silt fence will separate the works north of the watercourse and will further prevent silt laden surface water runoff from entering the watercourse. The silt fence will comprise wooden posts with geotextile membrane buried approximately 250mm below ground level.
- The open trench for connection of foul and surface pipes to water services needs to be carried out during a period of dry weather. Rainfall needs to be monitored and works carried out during consecutive dry days.
- Oil booms and oil soakage pads will be maintained on-site to enable a rapid and effective response to any accidental spillage or discharge. These shall be disposed of correctly and records will be maintained by the environmental manager of the used booms and pads taken off site for disposal.
- Surface and/or ground water generated from the works during construction will be discharged to a temporary settlement pond and as necessary pumped into a silt buster to treatment.
- A minimum of a 10m buffer from the edge of the open stream will be applied. No works will occur in that buffer zone.

Fail-safe site drainage and bunding through drip trays on plant and machinery will be provided to prevent discharge of chemical spillage from the sites to surface water.

### 7.1.5 Pollution Control and Spill Prevention

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

- Emergency response awareness training for all project personnel on-site works.
- Appropriate and sufficient spill control materials will be installed at strategic locations within the site. Spills kits for immediate use will be kept in the cab of mobile equipment.
- Spill kits will be stored in the site compound with easy access for delivery to site in the case of an emergency.
- Should any spill resulting in water contamination, the EPA and IFI shall be informed immediately so that measures can be put in place downstream to minimise and prevent further ecological impacts.
- A minimum stock of spill kits will be maintained at all times and site vehicles will carry spill kits at all times. Spill kits must include suitable spill control materials to deal with the type of spillage that may occur and where it may occur. Typical contents of an on-site spill kit will include the following as a minimum:
- Absorbent granules.
- Absorbent mats/cushions.

- Absorbent booms.
- Track-mats, geotextile material and drain covers.
- All potentially polluting substances such as oils and chemicals used during construction will be stored in containers clearly labelled and stored with suitable precautionary measures such as bunding within the site compound.
- All tank and drum storage areas on the site will, as a minimum, be bunded to a volume not less than the following:
- 110% of the capacity of the largest tank or drum within the bunded area, or
- 25% of the total volume of substances which could be stored within the bunded area.
- The site compound fuel storage areas and cleaning areas will be rendered impervious and will be constructed to ensure no discharges will cause pollution to surface or ground waters.
- Designated locations for refuelling are within Site Compound.
- Potentially contaminated run off from plant and machinery maintenance areas will be managed within the site compound surface water collection system.
- Damaged or leaking containers will be removed from use and replaced immediately.
- Disposal:
- Used material disposed of in accordance with the Waste Management Plan. All used spill materials will be placed in a bunded container in the contractor's compound. The material will be disposed of by a licenced waste contractor at a licenced facility. Records will be maintained by the environmental site manager.
- Plant:
- Absorbent material shall be used with pumps and generators at all times.
- Regular inspections and maintenance of plant and machinery checking for leaks, damage or vandalism will be made on all plant and equipment.

### 7.1.6 Concrete Management Procedures

Cement can have serious detrimental effects on aquatic ecology and water quality through altering pH and increasing sediment load. This can lead to reduced growth rate of aquatic flora, increased toxicity towards fish and other organisms. Therefore, it is paramount that any concrete mixing on site is prevented from entering the waterways. This includes wash water from the cleaning of equipment (EirGrid 2016).

The following measures will be implemented to prevent liquid concrete/cement entering freshwater aquatic environments.

- Concrete delivery, concrete pours and related construction methodologies will be part of the procedure agreed with the contractor to mitigate any possibility of spillage or contamination of the local environment. Particular attention will be paid during the pouring process in order to avoid leakages or spills of concrete.
- Batch loads of concrete will be delivered on an as needed basis, the concrete will be delivered in ready mix trucks.

- Concrete batching will take place off site or in a designated area with impermeable surface.
- The use of secondary protection shuttering for concrete pours.
- All pours to be carried out in dry weather conditions; and that all trucks be cleaned prior to leaving respective depots.
- A geotextile sheet will be laid within the boundaries of the foundation to prevent pollutant entries into the groundwater, with permeability of less than 1x10-8 m/s.
- Washout of concrete plant will occur off site at a designated impermeable area with waste control facilities. Trucks should return to point of origin and not be washed out on site).
- If wash out is required, guidance on procedures detailed in the CEMP must be followed and will be aligned with the guidance in the following documents:
    - Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan (NRA 2007) which gives advice on distances to water courses.
    - NRA Guidance on concrete wash out: Advice Note - Washout Areas (NRA n.d.) which advices on good practice in a practical manner.
    - C811 Environmental good practice on site guide (fifth edition). (Kwan et al. 2023b) which includes best practices for concrete including advice on pours, storage, dust and washout water.
    - Managing concrete wash waters on construction sites: good practice and temporary discharges to ground or to surface waters (EA 2011) which includes advice dependent on the size of the project.
    - Water Run-Off from Construction Sites (WAT-SG-75), (SEPA 2021) which also has a hierarchy of methods: ***Isolate, Collect, Reuse, Dispose*** and guidance at each stage.

Should washout need to be carried out on site, this will be limited (e.g. hand tools, and potentially chutes, and all the concrete washout water and solids will be retained in a lined skip or impermeable lined wash out pits, so that the wash material does not reach the soil surface and then migrate to surface waters or into the ground water.

The collected concrete washout water and solids will be neutralised and emptied on a regular basis and transported to a licenced facility.

- Raw, uncured or waste concrete will be stored appropriately, and away from watercourses, prior to disposal by licenced contractor.
- The contactor's construction methodology will require the use of precast elements where practical; the use of secondary protection shuttering for concrete pours; all pours to be carried out in dry weather conditions;
- The contractor will be required to use experienced operators for the work;
    - provide an appropriate level of continuous monitoring during any concrete pours by experienced management;

    - and have method statements approved by the client prior to commencing works.
- Do not discharge gully pot residues to surface water or groundwater.
- Collect washdown water from the washing of equipment that has come into contact with concrete in an impervious (lined) container.
- On-site batching of concrete is not envisaged, but ready to use mortar silos is possible. These systems involve the delivery and storage of dry cement and aggregates in silos, water is added at the point of delivery to make mortar or plaster. The following controls shall be put in place for the on-site batching of concrete, mortar and render:
    - The plant shall be maintained in good condition and regular inspections will be undertaken, including of hydraulic hoses.
    - Delivery of cement shall be by means of a sealed system to prevent escape of cement.
    - The plant shall be situated on a paved area at least 20m from any temporary or permanent drainage features.
    - Emergency procedures shall be in place to deal with accidental spillages of cement or mortar.
- The weather forecast will be checked prior to the pouring of the concrete, and no such works will be undertaken when bad weather is forecast. Any works at any time when water levels that may cause inundation of the works area will be avoided. Concrete will not be poured at times when rain is predicted as this may lead to run off and over spillage. Concrete (including waste and wash down) will be contained and managed appropriately to prevent pollution of watercourses. Pouring will occur in the dry, with appropriate curing times (48 hours) before re-flooding.

The contractor will be required to use experienced operators for the work, provide an appropriate level of continuous monitoring during any concrete pours by experienced management, and have method statements approved by the client prior to commencing works.

Works will be carried out using recommendations from current guidance and relevant codes of practise as outlined in:

- EA (2011) Managing concrete wash waters on construction sites: good practice and temporary discharges to ground or to surface waters.

### 7.1.7 Dust Minimisation

The pro-active control of fugitive dust it is necessary to ensure that the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released will contribute towards the achievement of no dust nuisance occurring during the

construction phase. The key features with respect to control of dust emissions and nuisance dust will be:



- The implementation of a Dust Management Plan which sets out a number of practical measures to control fugitive dust;
- The specification of a site policy on dust and the identification of the site management responsibilities for dust issues;
- A dust suppression system consisting of a fine mist spray will be available on site.
- During periods of dry weather, the site access routes will be kept damp to minimise dust generation from construction traffic.
- Minimisation of extent of working areas at any one time.
- Netting and/or hard surface hoarding around the perimeter of the site will minimise dust migration from the site at low levels.
- Stockpiling of imported materials will be limited to the volumes required to practically meet the construction schedule.
- Excavated materials will be removed from site as soon as possible to minimise potential for stockpiles to create windblown dust.
- Transport of crushed stone or other material which has significant potential to cause dust will be undertaken in tarpaulin-covered vehicles where necessary.
- Daily inspections by the main contractor will be carried out to identify potential sources of dust generation along with implementation measures to remove causes where found.
- Ensure re-wetting of areas to control dust does not result in run-off to stormwater.
- If road sweepers are used to control dust in hardstanding areas, ensure that the collected material is disposed to waste collection rather than to drains (i.e. washings).

The site ECoW will provide guidance if and when necessary, and provide any extra measure necessary should sensitive ecological receptors start using the site.

## 7.2 Embedded mitigation

Embedded mitigation will focus on drainage systems to prevent water runoff from the site. Once the development is complete, water runoff will be managed via SuDS, and water retaining measures that are designed to withstand storm and flood events.

This water retention will allow for potential contaminants to be filtered and for sediments to be retained before the waters discharge into the drainage network. Water retention allows for a slow control release minimising the risk of contamination to surface a groundwater networks.

The drainage system will be equipped with oil interceptors of sufficient size for the area, and for extreme weather events. Attenuation tanks have been designed for a 1 in a 100-year storm event + 20% climate change allowance. The discharge rate will be controlled

with an inline HydroBrake fitted in the outlet manhole from the new attenuation tank and will control flow to the drainage network. Details of the specification are provided in the Surface drainage plan.

Best practice guidance for SuDS considered includes but not limited to the following:

- CIRIA C753: *The SuDS Manual* (Woods Ballard et al. 2015) (www.ciria.org)



## 7.3 Operational Impacts

The embedded mitigation measures, including the SuDS will retain water, and filter sediments and particulate matter from entering foul water network and/or running off the site. Any amount that does flow off site will be minimal and is not expected to be in sufficient quantity to impact the QI species or habitats.

**Therefore, no operational impacts are anticipated.**

## 7.4 Residual Impacts

The residual impacts are the impacts remaining after all mitigation measures have been put in place. Provided the recommendations in the Construction and Environmental Management Plan, construction best practices and implemented mitigation measures, combined with the designed drainage features are followed, then it is unlikely for there to be any residual impacts.

**Therefore, no adverse effects on Lough Rea SAC and Lough Rea SPA and the associated qualifying interests are likely**.

## 7.5 Summary of Impacts and Mitigation

Table 7-1 presents a summary of the potential impacts on the attributes of the designated features of the Lough Rea SAC and SPA along with the mitigation measures and residual impacts. The table takes into consideration the attributes of these qualifying interests that may be impacted by the works, and cumulative and/or in-combination impacts that may arise. Where potentially significant adverse effects are identified, avoidance and mitigation measures are proposed to offset these impacts.

Table 7-1: Summary of impacts and mitigation measures

| Qualifying Interest | Potential source of impact | Relevant CO | Impact on Attribute and Target Prior to Mitigation/Avoidance | Avoidance/Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|
| **Lough Rea SAC** | | | | | |
| Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140] | Surface water, groundwater, dust | Typical species | Release of suspended solids and other pollutants will likely impact on water quality and therefore species present.<br>Release of suspended solids and other pollutants will likely impact on water quality and therefore species present. | Mitigation measures for preservation of water quality and pollution control are outlined in Sections 7.1.4 to 7.1.7<br>Including measures to control cement and concrete pouring procedures, measures to minimise dust emissions, measures to prevent runoff, silt fencing to prevent silt laden water entering stream | No residual effects anticipated |
| | | Vegetation composition: characteristic zonation | | | |
| | | Water quality: transparency | Release of suspended solids and other pollutants will likely impact on water quality and turbidity. | | |
| | | Water quality: nutrients | Release of suspended solids and other pollutants will likely change the nutrient load in the water. | | |
| | | Water quality: phytoplankton biomass | Impact on water quality will likely impact on aquatic community composition and biomass.<br>Impact on water quality will likely impact on aquatic | | |
| | | Water quality: phytoplankton composition | | | |

| Qualifying Interest | Potential source of impact | Relevant CO | Impact on Attribute and Target Prior to Mitigation/Avoidance | Avoidance/Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|
| | | | community composition and biomass. | | |
| | | Water quality: attached algal biomass | Release of suspended solids and other pollutants will likely change the nutrient load in the water potentially causing algal blooms. | | |
| | | Water quality: macrophyte status | Impact on water quality will likely impact on aquatic community composition and biomass. | | |
| | | Acidification status | Release of suspended solids and other pollutants may impact on water pH. | | |
| | | Water colour | Release of suspended solids and other pollutants will likely impact turbidity. | | |
| | | Dissolved organic carbon (DOC) | Release of suspended solids and other pollutants may impact on water chemistry. | | |
| **Lough Rea SPA** | | | | | |
| A056 Shoveler *Anas* | Surface water, Groundwater, | Forage spatial distribution, extent and | Release of suspended solids and other pollutants may impact on water quality and indirectly on foraging | Mitigation measures for preservation of water quality and pollution control as | No residual effects anticipated |

| Qualifying Interest | Potential source of impact | Relevant CO | Impact on Attribute and Target Prior to Mitigation/Avoidance | Avoidance/Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|
| *clypeata* A125 Coot *Fulica atra* | Dust | abundance | potential for birds. | outlined in Sections 7.1.4 to 7.1.7. | |
| A999 Wetlands & Waterbirds | | Wetland habitat quality and functioning | Release of suspended solids and other pollutants may impact on water quality and habitat quality. | | |

# 8 Conclusions

The proposed project is identified as having potential impacts on the QIs of the following Natura 2000 sites:

- Lough Rea SAC
- Lough Rea SPA

The assessment identified the following QIs within the ZoI:

- Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140]
- Coot *Fulica atra* [A125]
- Shoveler *Spatula clypeata* [A857]
- Wetland and Waterbirds [A999]

Adverse effects may occur during the construction phase through surface water, groundwater and dust emission pathways; the drainage design is such that operations phase impacts are not anticipated.

It is concluded that provided that the mitigation measures outlined above and in the CEMP are strictly adhered to, adverse effects as a result of the proposed development are not likely to occur on Lough Rea SAC and Lough Rea SPA.

This report presents an NIS for the proposed development. It outlines the information required for the competent authority to screen for appropriate assessment and to determine whether or not the proposed development, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European sites.

No significant effects are likely on Natura 2000 sites, their features of interest or conservation objectives. The proposed project will not will adversely affect the integrity of European sites.

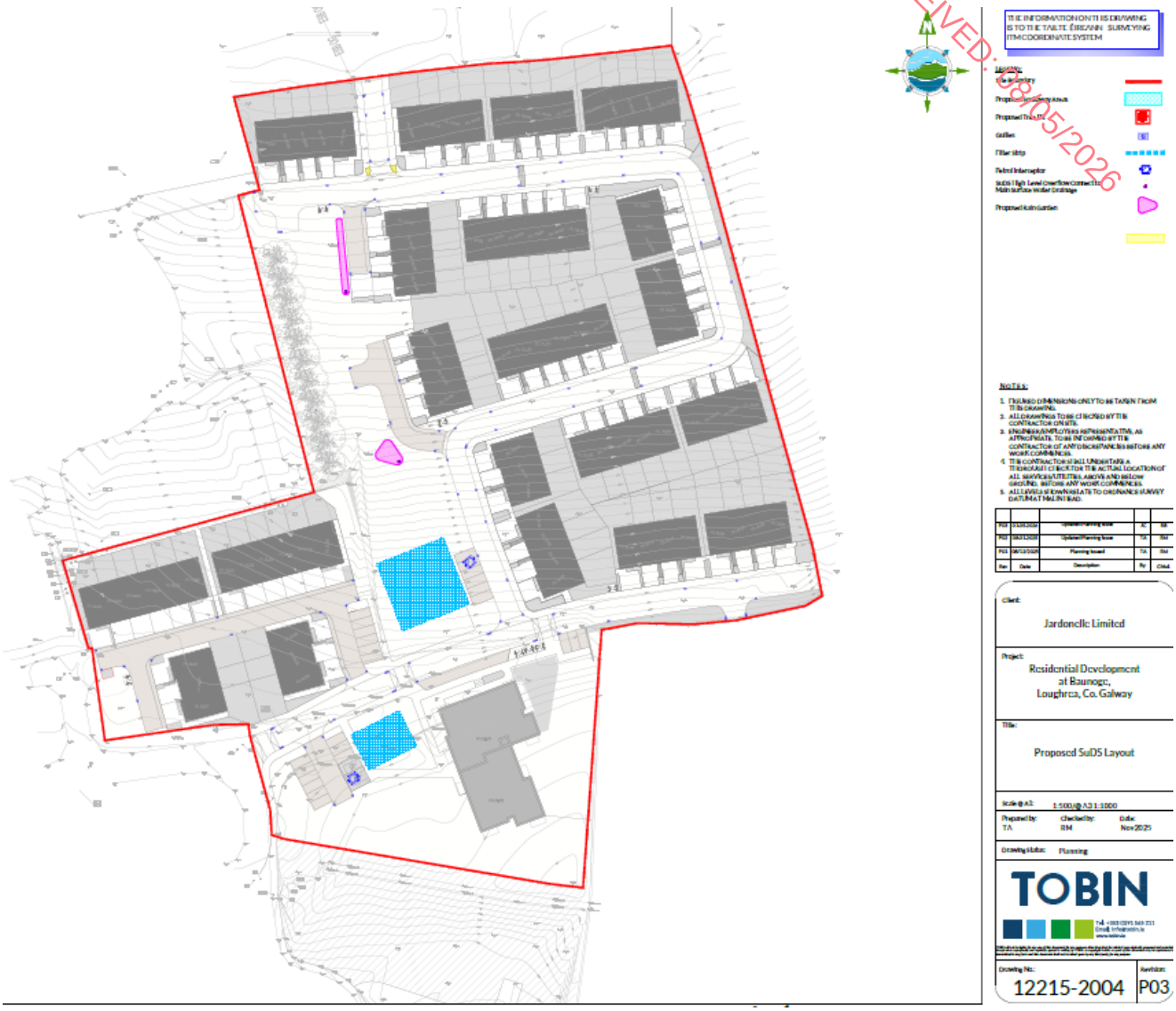
To confirm this conclusion, a checklist on methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC from (European Commission 2021) has been completed with regards to conservation objectives in Table 8-1.

Table 8-1: Assessing the effects on the integrity of the Natura 2000 sites

| Does the plan or project have the potential to: | Yes/No |
|---|---|
| Hamper or cause delays in progress towards achieving the site's conservation objectives? | No – Following mitigation, no significant adverse residual impacts have been identified that will prevent achievements of the conservation objectives of the assessed sites. |
| Reduce the area, or quality, of protected habitat types or habitats of protected species present on the site? | No - Potential adverse impacts to key external supporting habitat of QI species or QI protected habitat area of Lough Rea SAC & SPA can be avoided provided the works adhere to the mitigation proposed as defined above. |
| Reduce the population of the protected species significantly present on the site? | No – Potential impacts to the designated species of the Lough Rea SAC & SPA can be avoided provided the works adhere to the mitigation as defined above. |
| Result in disturbance that could affect the population size or density or the balance between species? | No – Potential impacts to the species for which Lough Rea SAC & SPA is designated are not expected as impacts can be avoided by implementing the mitigation measures detailed. |
| Cause the displacement of protected species significantly present on the site and thus reduce the distribution area of those species and the site? | No – The proposed works will be undertaken away from the Lough Rea SAC & SPA boundaries. No QI species found on the proposed development site. |
| Result in fragmentation of Annex I habitats or habitats of species? | No – No Annex I habitats are present on site and no QI species have been identified as utilising the habitats on site. |
| Result in a loss or reduction of key features, natural processes or resources that are essential for the maintenance or restoration of relevant habitats and species in the site (e.g. tree cover, tidal exposure, annual flooding, prey, food resources)? | No – The proposed works will not cause a loss of key features or resources. No adverse impacts to maintenance or restoration of habitats and species are expected as impacts can be avoided by strictly implementing the mitigation measures detailed. |
| Disrupt the factors that help maintain the favourable conditions of the site or that are needed to restore these to a favourable condition with the site? | No - Potential impacts relating to water quality have been identified which could impact on the functioning and dynamics of the site, however, these are not expected to be significant given the mitigation measures detailed to ensure potential impacts are effectively mitigated. |
| Interfere with the balance, distribution and density of species that are the | No - No potential impacts to the balance, distribution and density of any indicators |

| Does the plan or project have the potential to: | Yes/No |
| --- | --- |
| indicators of the favourable conditions of the site? | provided that mitigation measures are adhered to. |

# A Proposed Drainage Plan



# B NBDC Records



## B.1 Records within the last 10 years of protected species within 5km of the proposed development

| Species name | Date of last record | Designation |
|---|---|---|
| **Birds** | | |
| Barn Owl *Tyto alba* | 31/03/2021 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Black-headed Gull *Chroicocephalus ridibundus* | 28/12/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Common Gull *Larus canus* | 06/09/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Common Sandpiper *Actitis hypoleucos* | 04/07/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Coot *Fulica atra* | 28/12/2024 | Wildlife Acts \|\| EU Birds Directive \|\| Birds of Conservation Concern - Amber List |
| Cormorant *Phalacrocorax carbo* | 28/12/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Curlew *Numenius arquata* | 31/01/2024 | Wildlife Acts \|\| EU Birds Directive \|\| Birds of Conservation Concern - Red List |
| Dunlin *Calidris alpina* | 25/02/2021 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Gadwall *Mareca strepera* | 18/12/2021 | Wildlife Acts \|\| EU Birds Directive \|\| Birds of Conservation Concern - Amber List |
| Goldcrest *Regulus regulus* | 16/07/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Goldeneye *Bucephala clangula* | 20/01/2023 | Wildlife Acts \|\| EU Birds Directive \|\| Birds of Conservation Concern - Red List |
| Great Crested Grebe *Podiceps cristatus* | 28/12/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Great Northern Diver *Gavia immer* | 13/11/2021 | Wildlife Acts \|\| EU Birds Directive >> Annex I Bird Species \|\| Birds of Conservation Concern - Amber List |
| Greenfinch *Chloris chloris* | 11/03/2019 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |

| Species name | Date of last record | Designation |
|---|---|---|
| Grey Wagtail *Motacilla cinerea* | 06/09/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Greylag Goose *Anser anser* | 30/12/2020 | Wildlife Acts \|\| EU Birds Directive \|\| Birds of Conservation Concern - Amber List |
| Herring Gull *Larus argentatus* | 14/11/2024 | Wildlife Acts \|\| EU Birds Directive >> Annex II Bird Species \|\| Birds of Conservation Concern - Amber List |
| House Martin *Delichon urbicum* | 06/09/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| House Sparrow *Passer domesticus* | 24/01/2020 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Kestrel *Falco tinnunculus* | 09/04/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Kingfisher *Alcedo atthis* | 09/09/2024 | Wildlife Acts \|\| EU Birds Directive >> Annex I Bird Species \|\| Birds of Conservation Concern - Amber List |
| Lapwing *Vanellus vanellus* | 28/12/2024 | Wildlife Acts \|\| EU Birds Directive \|\| Birds of Conservation Concern - Red List |
| Lesser Black-backed Gull *Larus fuscus* | 26/12/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Linnet *Linaria cannabina* | 22/06/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Little Egret *Egretta garzetta* | 01/03/2024 | Wildlife Acts \|\| EU Birds Directive >> Annex I Bird Species |
| Little Grebe *Tachybaptus ruficollis* | 26/12/2024 | Wildlife Acts |
| Long-tailed Duck *Clangula hyemalis* | 16/12/2023 | Wildlife Acts \|\| EU Birds Directive \|\| Birds of Conservation Concern - Red List |
| Mallard *Anas platyrhynchos* | 28/12/2024 | Wildlife Acts \|\| EU Birds Directive \|\| Birds of Conservation Concern - Amber List |
| Meadow Pipit *Anthus pratensis* | 12/12/2020 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Mistle Thrush *Turdus viscivorus* | 26/12/2024 | Wildlife Acts |

| Species name | Date of last record | Designation |
|---|---|---|
| Mute Swan *Cygnus olor* | 28/12/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Oystercatcher *Haematopus ostralegus* | 06/10/2018 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Peregrine *Falco peregrinus* | 06/10/2018 | Wildlife Acts \|\| EU Birds Directive >> Annex I Bird Species |
| Pheasant *Phasianus colchicus* | 12/05/2024 | Wildlife Acts \|\| EU Birds Directive |
| Pintail *Anas acuta* | 06/01/2024 | Wildlife Acts \|\| EU Birds Directive \|\| Birds of Conservation Concern - Amber List |
| Pochard *Aythya ferina* | 26/12/2024 | Wildlife Acts \|\| EU Birds Directive >> Annex II, Section I & Annex III, Section II Bird Species \|\| Birds of Conservation Concern - Red List |
| Robin *Erithacus rubecula* | 26/12/2024 | Wildlife Acts |
| Rock Dove *Columba livia* | 06/10/2018 | Wildlife Acts |
| Sand Martin *Riparia riparia* | 17/06/2022 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Scaup *Aythya marila* | 26/12/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Shoveler *Spatula clypeata* | 28/12/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Skylark *Alauda arvensis* | 16/04/2020 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Snipe *Gallinago gallinago* | 17/03/2021 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Sparrowhawk *Accipiter nisus* | 12/03/2022 | Wildlife Acts |
| Spotted Flycatcher *Muscicapa striata* | 22/05/2019 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Stonechat *Saxicola rubicola* | 17/06/2022 | Wildlife Acts |
| Swallow *Hirundo rustica* | 06/09/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Swift *Apus apus* | 04/07/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Red List |
| Teal *Anas crecca* | 20/01/2019 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |

| Species name | Date of last record | Designation |
|---|---|---|
| Tufted Duck *Aythya fuligula* | 28/12/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| Wheatear *Oenanthe oenanthe* | 19/09/2020 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| White-tailed Eagle *Haliaeetus albicilla* | 27/11/2020 | Wildlife Acts \|\| EU Birds Directive >> Annex I \|\| Birds of Conservation Concern - Red List |
| Whooper Swan *Cygnus cygnus* | 03/11/2019 | Wildlife Acts \|\| EU Birds Directive >> Annex I Bird Species \|\| Birds of Conservation Concern - Amber List |
| Wigeon *Mareca penelope* | 22/01/2023 | Wildlife Acts \|\| \|\| Birds of Conservation Concern - Amber List |
| Willow Warbler *Phylloscopus trochilus* | 18/07/2024 | Wildlife Acts \|\| Birds of Conservation Concern - Amber List |
| **Invertebrates** | | |
| White-clawed Crayfish *Austropotamobius pallipes* | 31/12/2021 | EU Habitats Directive >> Annex II & Annex V \|\| Wildlife Acts |
| Marsh Fritillary *Euphydryas aurinia* | 30/05/2020 | EU Habitats Directive >> Annex II \|\| Vulnerable |
| **Reptiles** | | |
| Common Lizard *Zootoca vivipara* | 22/01/2023 | Wildlife Acts |
| **Mammals** | | |
| Badger *Meles meles* | 12/04/2017 | Wildlife Acts |
| Brown Long-eared Bat *Plecotus auritus* | 28/08/2017 | EU Habitats Directive >> Annex IV \|\|Wildlife Acts |
| Common Pipistrelle *Pipistrellus pipistrellus sensu stricto* | 09/10/2015 | EU Habitats Directive >> Annex IV \|\|Wildlife Acts |
| Daubenton's Bat *Myotis daubentonii* | 08/10/2015 | EU Habitats Directive >> Annex IV \|\|Wildlife Acts |
| Pipistrelle *Pipistrellus pipistrellus sensu lato* | 28/08/2017 | EU Habitats Directive >> Annex IV \|\|Wildlife Acts |
| Leisler's Bat *Nyctalus leisleri* | 28/08/2017 | EU Habitats Directive >> Annex IV \|\| Wildlife Acts |
| Natterer's Bat *Myotis nattereri* | 28/08/2017 | EU Habitats Directive >> Annex IV \|\| Wildlife Acts |
| Soprano Pipistrelle *Pipistrellus pygmaeus* | 20/06/2019 | EU Habitats Directive >> Annex IV \|\| Wildlife Acts |
| Whiskered Bat *Myotis* | 20/06/2019 | EU Habitats Directive >> Annex IV \|\| |

| Species name | Date of last record | Designation |
|---|---|---|
| *mystacinus* | | Wildlife Acts |
| Hedgehog *Erinaceus europaeus* | 20/10/2023 | Wildlife Acts |
| Otter *Lutra lutra* | 15/05/2016 | EU Habitats Directive >> Annex II & Annex IV \|\|Wildlife Acts |
| Pine Marten *Martes martes* | 21/12/2021 | EU Habitats Directive >> Annex V \|\| Wildlife Acts |



## B.2 Records within the last 10 years of invasive species within 5km of the proposed development

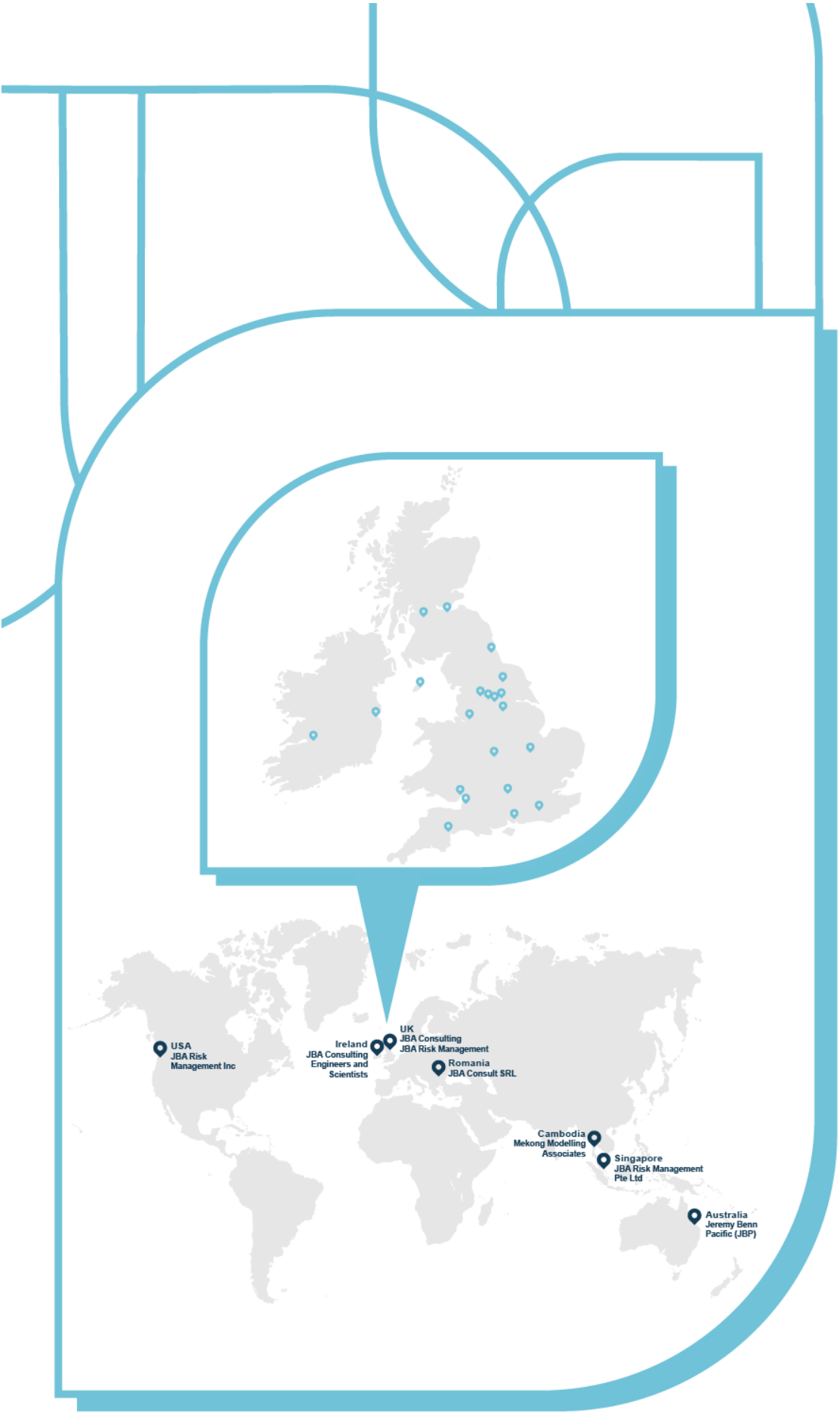
| Species name | Date of last record | Designation |
|---|---|---|
| **Birds** | | |
| Greylag Goose Anser *anser* | 30/12/2020 | Regulation S.I. 477/2011 & Regulation S.I. 374/2024 |
| **Flora** | | |
| Himalayan Knotweed *Persicaria wallichii* | 17/10/2020 | EU Invasive Alien Species Regulation No. 1143/2014 & Regulation S.I. 477/2011 & Regulation S.I. 374/2024 \|\| Medium Risk Invasive Species |
| Japanese Knotweed *Reynoutria japonica* | 08/08/2017 | EU Invasive Alien Species Regulation No. 1143/2014, Regulation S.I. 477/2011 & Regulation S.I. 374/2024 \|\| High Risk Invasive Species |
| **Invertebrates** | | |
| Jenkins' Spire Snail *Potamopyrgus antipodarum* | 15/09/2018 | Medium Risk Invasive Species |

# References



CIRIA. 2000. C512: Environmental Handbook for Building and Civil Engineering Projects. CIRIA Guidance.
CIRIA. 2016. Groundwater Control: Design and Practice (Second Edition) (C750D). https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C750D&Category=DOWNLOAD.
Collins, J., ed. 2024. Bat Surveys for Professional Ecologists: Good Practise Guidelines (3rd Edition) Bat Conservation Trust. 4th edn. The Bat Conservation Trust, London.
Cutts, N., K. Hemingway, and J. Spencer. 2013. “Waterbird Disturbance Mitigation Toolkit. Informing Estuarine Planning and Construction Projects.” https://tide-toolbox.eu/tidetools/waterbird_disturbance_mitigation_toolkit/.
DoEHLG. 2010. Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government.
EA. 2011. “Managing Concrete Wash Waters on Construction Sites: Good Practice and Temporary Discharges to Ground or to Surface Waters.”
EirGrid. 2016. EirGrid Evidence Based Environmental Studies Study 6: Water Quality & Aquatic Ecology. https://www.eirgridgroup.com/site-files/library/EirGrid/EirGrid-Evidence-Based-Study-6-Water-Quality-and-Equatic-Ecology-Main-Report.pdf.
EPA. 2025. Water Quality in Ireland 2019-2024. Water Quality. https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/water-quality-in-ireland-2019-2024.php.
Fossitt, Julie A. 2000. A Guide to Habitats in Ireland. The Heritage Council.
IAQM. 2024. Guidance on the Assessment of Dust from Demolition and Construction. Institute of Air Quality Management.
Kwan, J., Claire Dickinson, and Cecilia MacLeod. 2023a. “C811 Environmental Good Practice on Site Guide (Fifth Edition).” CIRIA. https://www.ciria.org/ItemDetail?iProductCode=C811d&Category=DOWNLOAD.
Kwan, J., Claire Dickinson, and Cecilia MacLeod. 2023b. “C811 Environmental Good Practice on Site Guide (Fifth Edition).” CIRIA. https://www.ciria.org/ItemDetail?iProductCode=C811d&Category=DOWNLOAD.
Masters-Williams, H. 2001. Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors (C532D). Guidance document. CIRIA. http://www.ciria.org/ItemDetail?iProductCode=C532D&Category=DOWNLOAD.
NPWS. 2010. “Site Synopsis: Lough Rea SPA 004134.” National Parks and Wildlife Service.
NPWS. 2013. “Site Synopsis: Lough Rea SAC 000304.” National Parks and Wildlife Service. https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY000304.pdf.
NPWS. 2019. “Conservation Objectives: Lough Rea SAC 000304.” National Parks and Wildlife Service. https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000304.pdf.
NPWS. 2025. “Conservation Objectives: Lough Rea SPA 004134.” National Parks and Wildlife Service.
NRA. 2007. “Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan.” National Roads Authority. https://www.tii.ie/media/egql0gow/guidelines-for-the-creation-and-maintenance-of-an-environmental-operating-plan.pdf.
NRA. 2009. National Roads Authority Guidelines for Assessment of Ecological Impacts of National Road Schemes. Transport Infrastructure Ireland. http://www.tii.ie/technical-

services/environment/planning/Guidelines-for-Assessment-of-Ecological-Impacts-of-National-Road-Schemes.pdf.
NRA. n.d. “Advice Note - Washout Areas.” National Roads Authority. https://www.tii.ie/media/0sdouncq/advice-note-washout-areas.pdf.
OPR. 2021. “OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management.” Preprint, Office of the Planning Regulator.
Parnell, J., and T. Curtis. 2012. Webb’s An Irish Flora. 8th ed. Trinity College Dublin. http://www.corkuniversitypress.com/product-p/9781859184783.htm.
SEPA. 2021. “Sector Specific Guidance: Water Run-off from Construction Sites. (WAT-SG-75).” Scottish Environment Protection Agency. https://www.sepa.org.uk/media/340359/wat-sg-75.pdf.
Smith, George F., Paul O’Donoghue, Katie O’Hora, and Eamonn Delaney. 2011. “Best Practice Guidance for Habitat Survey and Mapping.” The Heritage Council: Ireland.
Stace, Clive. 2019. New Flora of the British Isles. 4th ed. C&M Floristics.
Woods Ballard, B., S. Wilson, H. Udale-Clarke, et al. 2015. The SuDS Manual. CIRIA C753 C753. CIRIA.

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