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NATURA IMPACT STATEMENT OF A PROPOSED RESIDENTIAL DEVELOPMENT AT DRUMALEE AND BILLIS, COOTEHILL ROAD, CAVAN, CO. CAVAN



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1 INTRODUCTION

1.1 BACKGROUND

Whitehill Environmental was appointed by WGG Architects and Surveyors Ltd to provide the necessary information to allow the competent authority (in this case Cavan County Council) to conduct an Article 6 (3) Appropriate Assessment for a proposed Large Scale Residential Development (LRD) at Drumalee and Billis, Cootehill Road, Cavan, Co. Cavan. This information is being submitted as a Natura Impact Statement (NIS). This NIS was undertaken on the basis that potential significant effects upon the European sites within the Zone of Influence of the proposed development cannot be ruled out. It will allow the Competent Authority (in this case Cavan County Council) to undertake an Appropriate Assessment determination as required under Article 6 (3) of the Habitats Directive.

The purpose of this NIS was to determine the appropriateness of the proposed project, in the context of the conservation status of the site or sites. In Ireland, an Appropriate Assessment takes the form of a Natura Impact Statement (NIS), which is a statement of the likely impacts of the plan or project on a Natura 2000 site. The NIS comprises a comprehensive assessment of the plan or project and it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans or projects on one or more Natura 2000 sites in view of the sites' conservation objectives.

1.2 THE AIM OF THIS REPORT

This Natura Impact Statement (NIS) has been prepared in accordance with the current guidance (DoEHLG, 2009, Revised February 2010), and it provides an assessment of the potential impacts of a proposed development at Drumalee and Billis, Cootehill Road, Cavan, Co. Cavan on certain European sites.

An NIS should provide the information required in order to establish whether or not a proposed development is likely to have a significant impact on certain Natura sites in the context of their conservation objectives and specifically on the habitats and species for which the Natura 2000 conservation sites have been designated.

Accordingly, a comprehensive assessment of the potential impacts of this proposed development on the relevant Natura 2000 sites was carried out in June 2024 by Noreen McLoughlin, MSc, MCIEEM of Whitehill Environmental. This assessment allowed areas of potential ecological value and potential ecological constraints associated with this proposed

development to be identified and it also enabled potential ecological impacts associated with the proposed development to be assessed and mitigated for.

1.3 REGULATORY CONTEXT

RELEVANT LEGISLATION

The Birds Directive (Council Directive 2009/147/EC) recognises that certain species of birds should be subject to special conservation measures concerning their habitats. The Directive requires that Member States take measures to classify the most suitable areas as Special Protection Areas (SPAs) for the conservation of bird species listed in Annex 1 of the Directive. SPAs are selected for bird species (listed in Annex I of the Birds Directive), that are regularly occurring populations of migratory bird species and the SPA areas are of international importance for these migratory birds.

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

Articles 6(3) and 6(4) of this Directive also call for the undertaking of an Appropriate Assessment for plans and projects not directly connected with or necessary to the management of, but which are likely to have a significant effect on any European designated sites (i.e. SACs and SPAs).

The Water Framework Directive (WFD) (2000/60/EC), which came into force in December 2000, establishes a framework for community action in the field of water policy. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003). The WFD rationalises and updates existing legislation and provides for water management on the basis of River Basin Districts (RBDs). RBDs are essentially administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD. The aim of the WFD is to ensure that waters achieve at least good status by 2027 and that status does not deteriorate in any waters.

Appropriate Assessment and the Habitats Directive

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – 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*. 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 sets 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 Appropriate Assessment Process

The aim of Appropriate Assessment is to assess the implications of a proposal in respect of a designated site's conservation objectives.

The 'Appropriate Assessment' itself is an assessment which must be carried out by the competent authority which confirms whether the plan or project in combination with other plans and projects will have an adverse impact on the integrity of a European site.

Screening for Appropriate Assessment shall be carried out by the competent authority as set out in Section 177U(1) and (2) of the Planning and Development Act 2000 (as amended) as follows:

'(1) A screening for appropriate assessment of a draft Land use plan or application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

(2) A competent authority shall carry out a screening for appropriate assessment under subsection (1) before—

(a) a Land use plan is made including, where appropriate, before a decision on appeal in relation to a draft strategic development zone is made, or

(b) consent for a proposed development is given.'

The competent authority shall determine that an Appropriate Assessment is not required if it can be excluded, that the proposed development, individually or in combination with other plans or project will have a significant effect on a European site.

Where the competent authority cannot exclude the potential for a significant effect on a European site, an Appropriate Assessment shall be deemed required.

Where an Appropriate Assessment is required, the conclusions of the Appropriate Assessment Report (Natura Impact Statement (NIS)) should enable the competent authority to ascertain whether the plan or proposed development would adversely affect the integrity of the European site. If adverse impacts on the integrity of a European site cannot be avoided, then mitigation measures should be applied during the appropriate assessment process to the point where no adverse impacts on the site remain. Under the terms of the Habitats Directive consent can only be granted for a project if, as a result of the appropriate assessment either (a) it is concluded that the integrity of any European sites will not be adversely affected, or (b)

after mitigation, where adverse impacts cannot be excluded, there is shown to be an absence of alternative solutions, and there exists imperative reasons of overriding public interest for the project should go ahead.

Section 177(V) of the Planning and Development Act 2000 (as amended) outlines that the competent authority shall carry out the Appropriate Assessment, taking into account the Natura Impact Statement (amongst any other additional or supplemental information). A determination shall then be made by the competent authority in line with the requirements of Article 6(3) of the Habitats Directive as to whether the plan or proposed development would adversely affect the integrity of a European site, prior to consent being given.

2 METHODOLOGY

2.1 APPROPRIATE ASSESSMENT

This NIS has been prepared with reference to the following:

- European Commission (2018). Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- European Commission (2021). Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- European Commission (2006). Nature and Biodiversity Cases: Ruling of the European Court of Justice.
- European Commission (2007). Clarification of the Concepts of: Alternative Solution, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission.
- Department of Environment, Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.

The EC Guidance sets out a number of principles as to how to approach decision making during the process. The primary one is 'the precautionary principle' which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty.

When considering the precautionary principle, the emphasis for assessment should be on objectively demonstrating with supporting evidence that:

- There will be no significant effects on a Natura 2000 site;
- There will be no adverse effects on the integrity of a Natura 2000 site;
- There is an absence of alternatives to the project or plan that is likely to have an adverse effect to the integrity of a Natura 2000 site; and
- There are compensation measures that maintain or enhance the overall coherence of Natura 2000.

This translates into a four stage process to assess the impacts, on a designated site or species, of a policy or proposal.

The EC Guidance states that "each stage determines whether a further stage in the process is required". Consequently, the Council may not need to proceed through all four stages in undertaking the Appropriate Assessment.

The four-stage process is:

Stage 1: Screening – The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant;

Stage 2: Appropriate Assessment – The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

Stage 3: Assessment of Alternative Solutions – The process which examines alternative ways of achieving objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;

Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain – An assessment of the compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

In complying with the obligations set out in Articles 6(3) and following the guidelines described above, this screening statement has been structured as a stage by stage approach as follows:

- Description of the proposed project;
- Identification of the Natura 2000 sites close to the proposed development;
- Identification and description of any individual and cumulative impacts on the Natura 2000 sites likely to result from the project;
- Assessment of the significance of the impacts identified above on site integrity. Exclusion of sites where it can be objectively concluded that there will be no significant effects;
- Description of proven mitigation measures.

2.2 STATEMENT OF COMPETENCY

This NIS report was carried out by Noreen McLoughlin, BA, MSc, MCIEEM. Noreen has an honours degree in Zoology and an MSc in Freshwater Ecology from Trinity College, Dublin and she has been a full member of the Chartered Institute of Ecology and Environmental Management for over 18 years. Noreen has over 20 years' experience as a professional ecologist in Ireland and in that time has completed numerous AA reports for large- and small-scale developments.

2.3 STUDY AREA / ZONE OF INFLUENCE

The Zone of Influence (Zol) is a distance within which the proposed works could affect key ecological receptors. The Zol is likely to vary for each receptor, and ultimately it will depend on the source and type of the impact, the longevity of the impact, the sensitivity of the receptor and the presence of a pathway between the two. In this instance, the most significant impacts will arise from the construction works and the potential for these to generate pollution to local surface waters.

2.4 FIELD BASED STUDIES

A visit to the site of the proposed application at Lake Road, Collinstown was conducted on October 27th 2023, when field notes, species lists and photographs were taken. The site was surveyed in accordance with the Heritage Council's *Habitat Survey Guidelines* (Smith et al., 2010) and the Institute of Environmental Assessment's *Guidelines for Baselines Ecological Assessment* (IEA, 1995). Habitats within the application site were classified in accordance to Level 3 of *A Guide to Habitats in Ireland* (Fossit, 2000). These habitats are denoted in the text along with their habitat code, e.g., the habitat code for improved agricultural grassland is GA1. A species list was compiled and target notes were made.

2.5 DESK STUDIES

Information on the site and the area of the proposed development was studied prior to the completion of this statement. The following data sources were accessed in order to complete a thorough examination of potential impacts:

- National Parks and Wildlife Service - Aerial photographs and maps of designated sites, information on habitats and species within these sites and information on protected plant or animal species, conservation objectives, site synopses and standard data forms for relevant designated sites.
- Environmental Protection Agency (EPA)- Information pertaining to water quality, geology and licensed facilities within the area;

- Myplan.ie – Mapped based information;
- National Biodiversity Data Centre (NBDC) – Information pertaining to protected plant and animal species within the study area;
- Bing maps & Google Street View – High quality aerials and street images;
- WGG Architects and Surveyors – Plans and Information Pertaining to the Development
- Cavan County Council – Information on planning history in the area for the assessment of cumulative impacts.

2.6 ASSESSMENT METHODOLOGY

The proposed development was assessed to identify its potential ecological impacts and from this, the Zone of Influence (Zoi) of the proposed development was defined. Based on the potential impacts and their Zoi, the Natura 2000 sites potentially at risk from direct, indirect or in-combination impacts were identified. The assessment considered all potential impact sources and pathways connecting the proposed development to Natura 2000 sites, in view of the conservation objectives supporting the favourable conservation condition of the site's Qualifying Interests (QIs) or Special Conservation Interests (SCIs).

The conservation objectives relating to each Natura 2000 site and its QIs/SCIs are cited generally for SACs as "to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or Annex II species for which the SAC has been selected", and for SPAs "to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA".

As defined in the Habitat's Directive, the favourable conservation status of a habitat is achieved when:

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

The favourable conservation status of a species is achieved when:

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

Where site-specific conservation objectives (SSCOs) have been prepared for a European site, these include a series of specific attributes and targets against which effects on conservation condition, or integrity, can be measured. Where potential significant effects are identified, then these SSCO should be considered in detail.

3 STAGE I - SCREENING

3.1 DEVELOPMENT DESCRIPTION

Shire Development Partnership are applying to Cavan County Council for permission for a Large-scale Residential development (LRD) on lands at Drumalee and Billis Townlands, Cavan Town.

The development will consist of the provision of a total of 134no. residential units along with provision of a crèche. Particulars of the development comprise as follows:

- a) Site excavation works to facilitate the proposed development to include excavation and general site preparation works.
- b) The provision of a total of 109no. residential dwellings which will consist of 6no. 1bed units, 39no. 2 bed units, 59no. 3 bed units and 5no. 4 bed units.
- c) The provision of a total of 25no. duplex apartment units consisting of 15no.1 bed units and 10no. 2bed units.
- d) Provision of a single storey creche with associated parking, bicycle and bin storage.
- e) Provision of associated car parking at surface level via a combination of in-curtilage parking for dwellings and via on-street parking for the creche and duplex apartment units.
- f) Provision of electric vehicle charge points with associated site infrastructure ducting to provide charge points for residents throughout the site.
- g) Provision of associated bicycle storage facilities at surface level throughout the site and bin storage facilities.
- h) The provision of an internal culvert along with decommissioning of existing drainage channel within the site. Culvert works to include for provision of a headwall at the outfall to the watercourse.
- i) Creation of a new access point from the public road with associated works to include for a connections to the existing public footpath.
- j) Provision of internal access roads and footpaths and associated works to include for retaining walls and regrading of site levels as required.
- k) Provision of residential communal open space and public open space areas to include formal play areas along with all hard and soft landscape works with public lighting, planting and boundary treatments to include boundary walls, railings & fencing.
- l) Internal site works and attenuation systems which will include for provision of a hydrocarbon and silt interceptor prior to discharge.

- m) All ancillary site development/construction works to facilitate foul, water and service networks for connection to the existing foul via a rising main and provision of a foul pumping station, water connections and ESB network connection to include for provision of a substation

An extract from the Planning Drawings can be seen in Figure 1.



Figure 1 – Extract from Planning Drawings (as submitted by WGG Architects and Surveyors Ltd

WASTEWATER

There is no existing foul water drainage on site. The nearest Úisce Eireann gravity sewer to the site is located at the entrance to the Carraig Beag housing estate, approximate 200m southwest of the entrance to the site.

Due to the topography of the site and the surrounding lands it is not possible for the foul drainage network to comprise only of gravity sewers, as the Cootehill road rises significantly between the site and the existing Úisce Eireann infrastructure to the southwest. It is proposed to construct a foul water pumping station in the middle of the site towards the northwest side, approximately 75m from the entrance.

The foul water from the 143 units and creche will be collected using a suitably sized gravity sewer network and discharged to the proposed pumping station. Due to the volume of foul water that will be pumped from the site, the pumping main will have to discharge to a foul sewer with a minimum size of 225mm diameter to meet Úisce Eireann regulations. This means that the foul pumping main will have to discharge to the foul sewer at the entrance to Rocklands housing estate, a distance of approximately 450m from the pumping station. A Pre-connection Enquiry has been submitted to Úisce Eireann.

SURFACE WATER

There is an open drain/ small stream running along the southwest boundary of the site which turns north and runs into the centre of the site where it enters a culvert heading northwest. The culvert discharges to a small stream running along the northwest boundary of the site close to where the stream goes under the Cootehill Road via a culvert. The culvert running through the site appears to have been installed when the western half of the site was filled in.

It is proposed to construct a new 750mm culvert to divert the open drain that runs along the southwest boundary of the site from the point where it turns northward towards the centre of the site. The existing culvert running through the site would clash with the proposed building, road and services infrastructure significantly impacting the proposed development. The diverted culvert will run along the southwest and west boundary of the site where possible and be located such as to have minimal impact on the buildings, roads, and services of the proposed development. The new culvert will discharge to the stream running along the northwest boundary of the site approximately 10m downstream of the existing culvert discharge point which will be made redundant.

It is proposed to use permeable paved parking areas, gullies, downpipes, and a suitably sized network to collect all run-off from the proposed hardstand/roof areas. Permeable paving systems will reduce peak discharges into the drainage system and treat run off by providing a

70-90% removal efficiency rate for hydrocarbons and 60-95% removal of suspended solids thereby improving the quality of water being discharged. The surface water runoff will be discharged to the diverted culvert just prior to where the culvert discharges to the stream to minimise works to the stream bank. The discharge from the proposed development to the diverted culvert will be restricted to maximum value of 15l/s by means of a hydrobrake fitted to the first storm water manhole upstream of the discharge point. The Q-bar value was calculated using the UK suds website. When the discharge restriction is exceeded, all excess water will be attenuated in two new attenuation tanks located in green areas within the site.

The first attenuation (Attenuation Tank 1) tank will be located in the green area approximately in the middle of the site. The first storm manhole downstream of the attenuation tank will have a hydrobrake fitted which will limit the flow proceeding downstream to 16l/s. The second attenuation tank (Attenuation Tank 2) will be located in the green area on the western side of the site beside the entrance and the Cootehill Road. The two attenuation tanks are arranged to minimize the footprint of Attenuation Tank 1 in the middle of the site.

Attenuation tank 1 will have a minimum capacity of 411m³ and Attenuation tank 2 will have a minimum capacity of 478 m³. The attenuation tanks have been sized to cater for a 1 in 100-year storm event with an additional 20% capacity for climate change. The surface water runoff will pass through a petrol interceptor prior to being discharged or stored in either attenuation tank.

3.2 SITE LOCATION AND SURROUNDING ENVIRONMENT

The site in question is circa 4.8ha in area, and it is located on the northern outskirts of Cavan town, in the townlands of Drumalee and Billis. The site will be accessed via the creation of a new entrance east off the Cootehill Road (R188). The site is 1.8km north of Cavan town centre. The site is bounded to the west by the R188 and the rear gardens of dwellings that front on to this road, to the north by undeveloped agricultural land, to the east by a strip of undeveloped land / scrub that lies parallel to the N3, and to the south by the Carraig Beag and Rocklands residential estates.

The land-use to the south of the site predominantly consists of the sub-urban and urban areas of Cavan. Buildings and artificial surfaces and amenity grasslands and gardens are the habitats commonly associated with these areas. Beyond the urban fabric of Cavan, agriculture is the dominant land use and improved / semi-improved agricultural grassland is the dominant habitat. Other habitats represented locally include unimproved and wet grasslands, hedgerows, treelines and watercourses.

Site location maps are shown in Figures 2 and 3, whilst an aerial photograph of the site and its surrounding habitats is shown in Figure 4.



Figure 2 – Site Location Map (Site Pinned)



Figure 3 – Site Location Map

HABITATS WITHIN THE SITE

The application site does not lie within or immediately adjacent to any site that has been designated for nature conservation purposes. The site encompasses a triangular area of land that lies between the N3 to the east and the Cootehill Road to the west.

The site is a mosaic of habitats that have developed on foot of previous disturbances, quarrying and infilling works that took place on the site. Historical aerials taken before the construction of the N3 Cavan By-Pass showed that the site consisted of a number of small fields separated by hedgerows. Since the early 2000s, the site was cleared and infilled in areas. It is now characterised by a large and open area covered by a mosaic of transitioning habitats, including areas of Recolonising Bare Ground (ED3). The dominant habitat in the site is a willow / gorse scrub (WS1). This occurs throughout the site. There are also a number of spoil heaps on the site and these are largely colonised by willow / gorse scrub or unmanaged grass that is akin to the Fossit habitat Dry Meadows and Grassy Verges (GS2). This habitat also occurs in many areas throughout the site where scrub has not yet encroached. The Dry Meadows and Grassy Verge habitat merges with a Dry Calcareous and Neutral Grassland Habitat (GS1) in certain areas. Some areas of the site are quite wet where small surface water ponds are frequent.

The eastern perimeter of the site consists of a steep embankment that is colonised by a woodland / scrub habitat, and species such as birch *Betula* sp., willow *Salix* sp. and gorse *Ulex europaeus* are common. This is quite dense in some areas and it merges to the scrub habitats that lie on the lower levels along the eastern perimeter of the site.

There is a small drain (FW4) in the southern section of the site. There is also a stream (FW2) flowing along the western site boundary. The stream is flowing through a deep ditch on the site and it is heavily overshadowed by trees such as willow and birch.

Photos of the site are presented in Appendix II.

NOTABLE SPECIES RECORDS

An examination of the website of the National Biodiversity Data Centre, revealed that there are records for the presence of the following protected species from the relevant 1km squares (H4206, H4306) of this proposed development:

- Eurasian Badger *Meles meles*
- Red squirrel *Sciurus vulgaris*

All these species are protected under the Irish Wildlife Acts. None of these species were observed during the site survey. With the exception of a rabbit, no other mammal species were observed.

A separate bat survey of the site was carried out by Wildlife Surveys Ireland in September 2023. It was concluded that there were low levels of bat activity on the site. Three species of bat were found on the site, with one soprano pipistrelle social calling whilst Leisler's bat and the common pipistrelle were also noted. No bats were seen entering, exiting, or swarming at any trees, and no roosts were found.

An Invasive Species report of the site was also undertaken by Greentown Consultancy in February 2023. This survey confirmed the presence of two invasive species listed in Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011). These species included Japanese knotweed and Giant Hogweed.



Figure 4 – Aerial Photograph of the Application Site © Google

WATER FEATURES AND QUALITY

The application site is located within the Erne Hydrometric Area (36) and Catchment (36), and the Cavan Sub-Catchment (010) and Sub-Basin (010). The EPA refer to the stream that flows through the site as the Kinnypottle stream. This stream rises in lands to the north-east of Cavan. It flows south and along the western perimeter of the application site, through Cavan town until it joins the Cavan River. The stream is culverted for much of its journey through Cavan town. The Cavan River flows north until it meets the Annalee River, west of Butlersbridge.

The EPA have classed the ecological status of the Kinnypottle Stream and the Cavan River downstream of Cavan as poor. Under the requirements of the Water Framework Directive, this is unsatisfactory and all water bodies are obliged to meet good status within the 3rd cycle of the WFD (2027).

The application site is also located within the Cavan groundwater Body and the current status of this waterbody is good. Within the application site itself, the groundwater vulnerability is noted to be extreme / bedrock at surface.

3.3 NATURA 2000 SITES IDENTIFIED

In accordance with the guidelines issued by the Department of the Environment and Local Government, a list of Natura 2000 sites within 15km of the proposed development has been identified and described according to their site synopses, qualifying interests and conservation objectives. In addition, any other sites further than this, but potentially within its zone of interest were also considered. The zone of impact may be determined by an assessment of the connectivity between the application site and the designated areas by virtue of hydrological connectivity, atmospheric emissions, flight paths, ecological corridors etc.

For significant effects to arise, there must be a potential impact facilitated by having a *source*, i.e., the proposed development and activities arising out of its construction or operation, a *receptor*, i.e., the European site and its qualifying interests and a subsequent *pathway* or *connectivity* between the source and receptor, e.g., a water course. The likelihood for significant effects on the European site will largely depend on the characteristics of the source (e.g., nature and scale of the construction works), the characteristics of the existing pathway and the characteristics of the receptor, e.g., the sensitivities of the Qualifying Interests (habitats or species) to changes in water quality.

The site of the proposed development is within 15km of two sites that have been designated under the EU Habitats Directive and the EU Birds Directive. These designated areas and their closest points to the proposed development site are outlined in Table 1 and maps showing their locations relative to the application site are shown in Figures 5 and 6. A full description of these sites can be read online on the website of the National Parks and Wildlife Service.

Site Name & Code	Distance	Qualifying Interests / Special Conservation Interests	Screened In / Out
Lough Oughter and Associated Loughs SAC 000007	3km north-west / 7km downstream	- Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrocharition</i>-type vegetation - Bog woodland - Otter <i>Lutra lutra</i>	<i>Screened In - Having regards to the connectivity of the application site to this SAC, potential effects upon the QIs of this site arising during construction and operation cannot be ruled out.</i>
Lough Oughter Complex SPA 004049	3.4km west / 8.9km downstream	- Great Crested Grebe (<i>Podiceps cristatus</i>) - Whooper Swan (<i>Cygnus cygnus</i>) - Wigeon (<i>Anas penelope</i>) - Wetlands & Waterbirds	<i>Screened In - Having regards to the connectivity of the application site to this SPA, potential effects upon the QIs of this site arising during construction and operation cannot be ruled out.</i>

Table 1 – Designated Sites within 15km of the Proposed Development

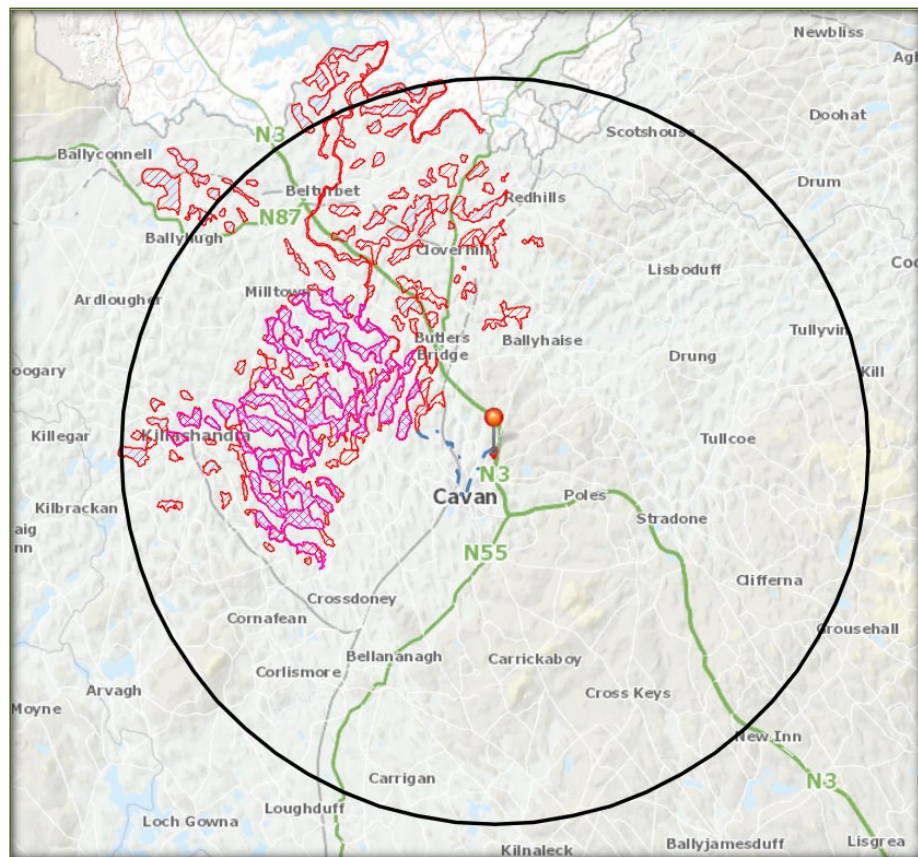


Figure 5 – Application Site (Pinned) in Relation to Designated Sites within 15km. SACs – Red Hatching, SPAs – Pink Hatching.

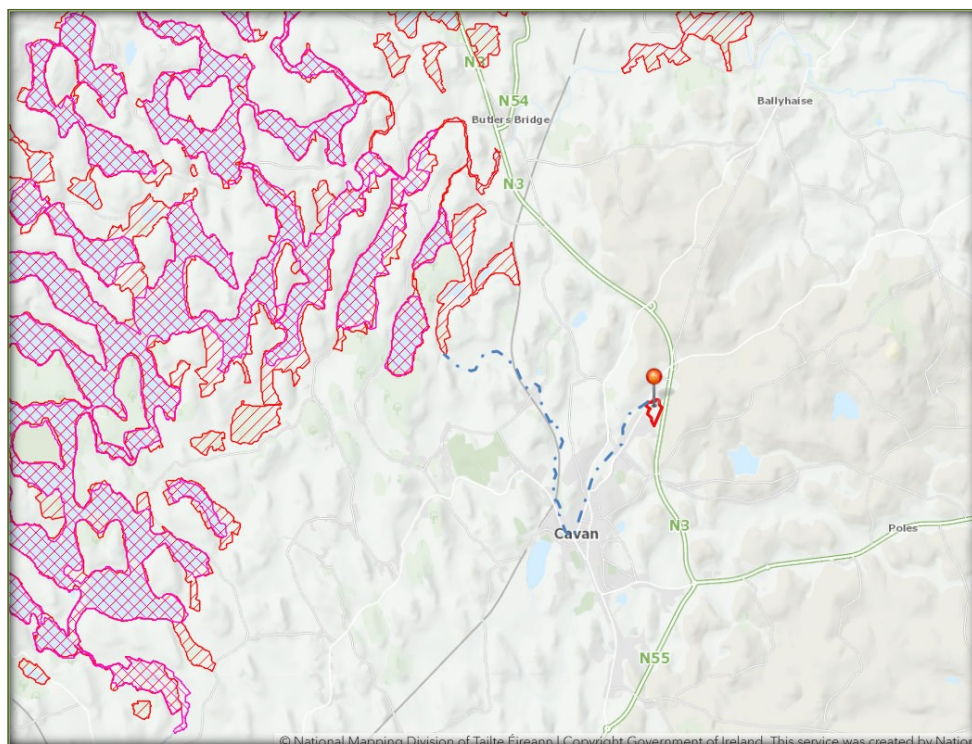


Figure 6 – Application Site (Pinned) in relation to the Lough Oughter and Associated Loughs SAC (Red Hatching) and SPA (Pink Hatching). Hydrological Connectivity Is Included

3.4 IDENTIFICATION OF POTENTIAL IMPACTS

The proposed development at Drumalee and Billis will occur on lands that are hydrologically connected to the Lough Oughdter and Associated Loughs SAC and Lough Oughter Complex SPA via the Kinnypottle Stream and the Cavan River. Therefore, taking a conservative approach, in a worst-case scenario and in the absence of mitigation, an accidental pollution event of a sufficient magnitude during construction or operation, either alone or in combination with other pollution sources, could potentially affect the surface water quality in these local watercourses to an extent that undermines the conservation objectives of certain qualifying interests of the European sites associated with Lough Oughter. A reduction in water quality locally has the potential to affect the aquatic habitats and natural conditions that are required to maintain or achieve the specific attributes and targets of the qualifying interests associated with the Lough Oughter and Associated Loughs SAC and the Lough Oughter SPA and the conservation objectives that have been set for these QIs.

Therefore, following an evaluation of the relevant information including the characteristics of the proposed development and the likelihood of significant effects on the sites and with regards to the tenets of the precautionary principal, it is considered in the opinion of this author that it is not possible to exclude, on the basis of objective information, that the proposed development, either individually or in combination with other plans or projects, will have a likely significant effect on the above European sites.

Only those features of the development that have the potential to affect the integrity and conservation objectives of the identified Natura sites and protected species have been considered. A number of factors were examined at this stage and dismissed or carried forward for Appropriate Assessment as relevant. The following areas were examined in relation to potential impacts and subsequent effects from the proposed development on the Natura 2000 sites identified:

- Deterioration of water quality in the Lough Oughter and Associated Loughs SAC and the Lough Oughter Complex SPA arising from pollution to surface or groundwaters during site preparation and construction.
- Deterioration of water quality in the Lough Oughter and Associated Loughs SAC and the Lough Oughter Complex SPA arising from pollution to surface or groundwaters during the operation of the proposed development.
- Cumulative impacts with other proposed/existing developments.

These impacts could give rise to negative effects upon the QIs of these sites. Any negative effects on the Lough Oughter and Associated Loughs SAC and the Lough Oughter Complex SPA could be significantly negative at an international scale.

3.5 SCREENING CONCLUSIONS

The proposed development is not directly connected with or necessary to the nature conservation management of the designated site. Therefore, following consideration of the location of the Lough Oughter and Associated Loughs SAC and the Lough Oughter Complex SPA in relation to the proposed development at Drumalee and Billis and the potential impacts that may occur, this project must proceed to the next stage of Appropriate Assessment, namely the Natura Impact Assessment.

4 STAGE II – APPROPRIATE ASSESSMENT

4.1 INTRODUCTION

The main objective of this stage (Stage 2, Natura Impact Statement) in the Appropriate Assessment process is to determine whether the proposed development at Drumalee and Billis (either alone or in combination with other plans, programmes and projects) will result in significant adverse impacts to the integrity of the Natura 2000 sites identified in the previous section with respect to the site's structure, function and/or conservation objectives. This stage also outlines the mitigation measures that should be taken in order to avoid any negative impacts of this proposed development upon the European sites that have been screened in.

In this section, the Natura 2000 sites identified in the previous section will be described in greater detail in terms of their characteristics and conservation objectives.

4.2 NATURA 2000 SITES IDENTIFIED

NPWS Site Summary

Lough Oughter and its associated loughs occupy much of the lowland drumlin belt in north and central Cavan between Upper Lough Erne, Cavan and Cavan town. The site is a maze of waterways, islands, small lakes and peninsulas including some 90 inter-drumlin lakes and 14 basins in the course of the Erne River. The area lies on Silurian and Ordovician strata with Carboniferous limestone immediately surrounding.

This site is a candidate Special Area of Conservation for natural eutrophic lakes and bog woodland, two habitats listed on Annex I of the E.U. Habitats Directive and for the otter, a species listed on Annex II of the same Directive. The site also contains areas of dry woodland, marsh, reedbed and wet pasture.

The Lough Oughter area contains important examples of two habitats listed on Annex I of the E.U. Habitats Directive and supports a population of the Annex II species, otter. The site as a whole is the best inland example of a flooded drumlin landscape in Ireland and has many rich and varied biological communities. Nowhere else in the country does such an intimate mixture of land and water occur over a comparable area, and many of the species of wetland plants, some considered quite commonplace in Lough Oughter and its associated loughs, are infrequent elsewhere.

Site Specific Conservation Objectives

Site Specific Conservation Objectives (SSCOs) for this site have recently been prepared (NPWS, 2021)¹. These SSCO's are outlined in Tables 2 – 4.

Natural Eutrophic Lakes with Magnopotamion & Hydrocharition-type Vegetation 3150

The SSCO for this habitat is to *restore* its favourable conservation condition which is generally defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes
Habitat distribution	Occurrence	Restore, subject to natural processes
Vegetation composition: Typical species	Occurrence	Typical species present, in good condition, and demonstrating typical abundances and distribution
Vegetation composition: characteristic zonation	Occurrence	All characteristic zones should be present, correctly distributed and in good condition
Vegetation distribution: maximum depth	Metres	Maintain maximum depth of vegetation, subject to natural processes
Hydrological regime: water level fluctuations	Metres	Maintain appropriate natural hydrological regime necessary to support the habitat
Lake substratum quality	Various	Maintain appropriate substratum type, extent and chemistry to support the vegetation
Transparency	Metres	Maintain/restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency
Nutrients	µg/l P; mg/l N	Restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species
Phytoplankton biomass	µg/l Chlorophyll a	Restore appropriate water quality to support the habitat, including good chlorophyll a status
Phytoplankton composition	EPA phytoplankton composition metric	Restore appropriate water quality to support the habitat, including good phytoplankton composition status
Attached algal biomass	Algal cover	Maintain/Restore trace/ absent attached algal biomass (<5% cover)
Water quality: macrophyte status	EPA macrophyte metric (The Free Index)	Restore good macrophyte status
Acidification status	pH units; mg/l	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes
Water colour	mg/l PtCo	Maintain/Restore appropriate water colour to support the habitat
Dissolved organic carbon (DOC)	mg/l PtCo	Maintain/Restore appropriate organic carbon levels to support the habitat
Turbidity	Nephelometric turbidity units/ mg/l SS/ other appropriate units	Maintain/Restore appropriate turbidity to support the habitat
Fringing habitat: area and condition	Hectares	Maintain?restore the area and condition of fringing habitats necessary to support the natural structure and functioning of the lake habitat

Table 2 – Natural Eutrophic Lakes with Magnopotamion and Hydrocharition-type Vegetation 3150

Potential Significant Effects

¹ NPWS (2021) Conservation Objectives: Lough Oughter and Associated Loughs SAC 000007. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage

This is a qualifying interest of the Lough Oughter and Associated Loughs SAC. Natural eutrophic lakes have nutrient levels that are higher than those of oligotrophic, dystrophic or mesotrophic lakes, resulting in higher natural productivity. They are typically species-rich. However, many such lakes have been damaged by over-enrichment with nutrients, resulting in hypertrophic conditions and a reduction in species-richness. The application site is upstream of a number of lakes which contain examples of this habitat. The closest of these is Coalpit Lough, which then leads to Derrygid Lough.

The downstream distance between the application site and this QI is almost 8km. Therefore, having regards to this separation distance, potential significant effects upon this QI are unlikely to arise. However, as there is hydrological connectivity and in the absence of mitigation, effects upon this QI cannot be ruled out with absolute certainty and mitigation measures should be included to prevent run-off from the works causing local deteriorations in water quality which could subsequently result in significant effects upon this habitat, either on their own or in combination with other proposed / existing developments.

Bog Woodland g1Do

The SSCO for this habitat is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Habitat area	Hectares	Area stable or increasing, subject to natural processes
Habitat distribution	Occurrence	No decline, subject to natural processes
Woodland size	Ha	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "woods at least 3ha in size
Woodland structure: canopy cover and height	Percentage cover; metres	Total canopy cover at least 30%; downy birch (<i>Betula pubescens</i>) comprises at least 50% of canopy cover; median canopy height at least 4m.
Woodland structure: community diversity and extent	Ha	Maintain diversity and extent of community types.
Woodland structure: tree size classes	Occurrence	Downy birch (<i>Betula pubescens</i>) present in each tree class size.
Woodland structure: regeneration	Occurrence	At least one downy birch (<i>Betula pubescens</i>) sapling of at least 1m tall present within each monitoring stop.
Woodland structure: senescent and dead wood	Occurrence	Senescent or dead wood present
Woodland structure: indicators of local distinctiveness	Occurrence; population size	No decline in distribution and in the case of red listed and other rare or localised species, population size.
Woodland structure: indicators of overgrazing	Occurrence	All four indicators of overgrazing absent.
Woodland structure: dwarf shrub cover	Percentage cover at a representative number of monitoring stops	Native dwarf shrub layer cover less than 50%; ling (<i>Calluna vulgaris</i>) cover less than 40%.

Woodland structure: bryophyte cover	Percentage cover at a representative number of monitoring stops	Bryophyte cover at least 50%; bog moss (<i>Sphagnum</i> spp) cover at least 25%.
Vegetation composition: positive indicator species	Number in a representative number of monitoring stops	Downy birch (<i>Betula pubescens</i>), bog moss (<i>Sphagnum</i> spp) and at least five other positive indicator species present
Vegetation composition: negative indicator species	Percentage cover at a representative number of monitoring stops	Both native and non-native invasive species absent or under control. Total cover should be less than 10%

Table 3 – SSCOs for Bog Woodland

Potential Significant Effects

This is a priority habitat and a qualifying interest of the Lough Oughter and Associated Loughs SAC. Bog woodland includes woodlands of intact ombrotrophic bogs, bog margins and cutover bog. It typically occurs on deep acid peat that is relatively well-drained in the upper layers and is commonly associated with former turf cutting activity or drainage. It may also occur in areas of cutover bog where most of the peat has been removed.

Map 4 of the SSCO document illustrates the current known location of this habitat within the SAC, and it is stated that other locations of this habitat within the SAC are likely. An examination of aerial maps along with EPA soil maps shows that there are no areas of woodland on peat soil close to the application site and this habitat does not occur within the Zone of Influence of the application site. There are no areas of designated/non-designated bog woodland that have the potential to be impacted upon from this proposed development. Water quality is not a listed attribute for the maintenance of this habitat at favourable conservation condition.

Otter (1355)

The SSCO for this species is to *maintain* its favourable conservation condition which is defined by the following list of attributes and targets:

Attribute	Measure	Target
Distribution	% positive survey sites	No Significant Decline
Extent of Terrestrial Habitats	Hectares	No significant decline. Area mapped and calculated as 364.4ha along river banks/ lake shoreline/around ponds
Extent of Freshwater (River) Habitat	Km	No significant decline. Length mapped and calculated as 71.3km
Extent of Freshwater (Laker) Habitat	Hectares	No significant decline. Area mapped and calculated as 1,730.6ha.
Couching Sites and Holts	Number	No significant decline
Fish Biomass Available	Kg	No significant decline
Barriers to connectivity	Number	No significant increase

Table 4 – SSCOs for Otter

Potential Significant Effects

The otter occurs throughout the Lough Oughter system. The presence of this species is positively correlated with good water quality and deterioration of same will lead to impacts upon this species. Otters have two basic requirements – aquatic prey and safe refuges where they can rest. In freshwater areas, the diet of the otter comprises of a variety of fish from sticklebacks to salmon and eels, whilst crayfish and frogs can also be important. Impacts that reduce the availability or quality of, or cause disturbance to, their terrestrial or aquatic habitats are likely to affect otters. The main threats to otters in Ireland are thought to be: (1) habitat destruction, including river drainage and the clearance of bank-side vegetation; (2) pollution, particularly organic pollution resulting in fish kills; (3) disturbance of habitat due to recreational activities, and (4) accidental deaths (NPWS, The Otter Threat Response Plan, 2009).

Records for this species exist from the Zone of Influence of this application site and historical records for this species were noted from the Cavan River. It is known that the territory of the otter is quite large. However, the territory of female otters in mesotrophic rivers is approximately 7.5 +/- 1.5km in length (Ó Néill, L., 2008), whilst the territories of males otters in mesotrophic and oligotrophic rivers is approximately 13.2 +/- 5.3km in length, with a high degree of variability as territorial males respond quickly to social perturbation. Therefore, as otters occur within the Zone of Influence of the application site (downstream), mitigation measures will be included as part of this assessment to protect the overall status of the otter within the SAC and to prevent deteriorations in water quality which could affect this species.

THE LOUGH OUGHTER SPA 004049

Site Summary

The Lough Oughter SPA is of importance for both wintering and breeding birds. Of particular note is the internationally important population of Whooper Swan that is based in the area. The site also supports nationally important populations of a further four wintering species. The site is of especial importance for one of the highest breeding concentrations of Great Crested Grebe in the country. Of note is that three of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Greenland White-fronted Goose and Common Tern.

Site Specific Conservation Objectives

Site specific conservation objectives for this site have not yet been prepared and objectives for this site remain generic. Overall, the SSCOs for SPAs are largely similar. Therefore, the attributes and targets that should define the favourable conservation condition of the QIs for this site were taken from the most common attributes and targets used for the conservation objectives of SPA bird species in general. These are outlined in Table 5 below.

Parameter	Attribute	Measure	Target
Population	Population trend	Percentage change as per population trend assessment using waterbird count data collected through the Irish Wetland Bird Survey and other surveys	Long term population trend stable or increasing
Range	Distribution	Range, timing and intensity of use of areas used by waterbirds, as determined by waterbird surveys.	No significant decrease in the range, timing or intensity of use of areas by the QI, other than that occurring from natural patterns of variation

Table 5 – Conservation Objectives for SPAs

For wetlands, the conservation objectives are:

Parameter	Attribute	Measure	Target
Area	Habitat Area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 765 hectares, other than that occurring from natural patterns of variation

Table 6 – Conservation Objectives for SPAs (Wetlands)

Potential Significant Effects

The proposed development will not lead to any direct impacts or effects upon the bird species that are listed as QIs of this SPA. There will be no loss or fragmentation of their habitats within the SPA. The works are sufficiently removed from the SPA to ensure that significant effects upon the protected species arising from noise and visual disturbances will not arise. However, in order to prevent any deterioration in water quality during the construction and operation of the proposed development, mitigation measures will need to be included. Any deterioration in water quality in the Erne system could indirectly affect these bird species and the habitats and food chains that they depend on.

4.3 SUMMARY OF POTENTIAL IMPACTS

INTRODUCTION

The identification of potential effects and the assessment of their significance typically requires the identification of the type and magnitude of the effects. For example, will the impacts be short term or long term, direct, indirect or cumulative and will they occur during construction or operation.

In the screening section of this report, the following possible future impacts on Lough Oughter and Associated Loughs SAC / SPA were listed. These concerns are again listed below and they will be dealt with in more detail in this section.

1. Deterioration of water quality in the Lough Oughter and Associated Loughs SAC and the Lough Oughter Complex SPA arising from pollution to surface or groundwaters during site preparation and construction.
2. Deterioration of water quality in the Lough Oughter and Associated Loughs SAC and the Lough Oughter Complex SPA arising from pollution to surface or groundwaters during the operation of the proposed development.
3. Cumulative impacts with other proposed/existing developments.

Deterioration in Water Quality in Designated Areas During Construction

During the initial stages of the construction phase, extensive earthworks will be carried out to facilitate the construction of the foundations for the buildings and access road, the installation of services/drainage infrastructure etc. The resulting stockpiles of any displaced soils and sediments, in the absence of suitable mitigation, will be susceptible to erosion during this period. This could create a potential pathway for silt and sediment to migrate off-site into the surrounding water courses, including the Kinnypottle Stream, via wind-blown dust or run-off in times of inclement weather.

In addition, during construction there is also the possibility of a spillage of contaminants such as fuels, oils, chemicals and cement material, posing a potential risk to surface and groundwater quality, which is noted as extreme/bedrock at surface on site. Fuels, oils and chemicals have a number of hazardous properties, and the constituents of concrete are alkaline and corrosive. Each one of these substances could have a significant deleterious effect on water quality and aquatic life in the Kinnypottle Stream and its downstream receptors.

Any deterioration in ground or surface water locally could lead to deteriorations in water quality downstream in Lough Oughter and Associated Loughs SAC and the Lough Oughter SPA and subsequent significant negative effects upon the qualifying interests for which these sites have been designated for.

Deterioration in Water Quality in Designated Areas Post Construction

Negative impacts upon water quality in the Lough Oughter SAC / SPA arising from the operation of this proposed development have also been considered. The most likely source of pollution during the operation of the development is hydrocarbon contaminated surface water run-off. This may impact upon surface water or groundwater, which is extreme / bedrock at surface within the application site itself. Groundwater quality can impact upon surface water quality as these two resources mix at the hyporheic zone, which is the region just under a river or stream bed where there is a mixing of shallow ground water and surface water. Mitigation measures to prevent surface water run-off from contaminating the local watercourse will be undertaken.

Cumulative Impacts

The potential for cumulative impacts arising from other significant existing or permitted infrastructure are assessed here. Cumulative impacts encompass the combined effects of multiple developments or activities on a range of receptors. Potential cumulative impacts associated with the existing and permitted significant infrastructure within the same water catchments as the proposed development should be considered.

As part of the Appropriate Assessment, in addition to the proposed works, other relevant projects and plans in the region must also be considered. This step aims to identify at this stage any possible significant in-combination or cumulative effects / impacts of the proposed works on the Natura 2000 sites with other such plans and projects.

Cavan County Development Plan

Planning policy at the local level is provided by the Cavan County Development Plan 2022–2028. This plan contains a number of policies relevant to the ecology and nature conservation in Co. Cavan. These are summarised below:

Policy / Objective NHEP1 - To protect, conserve, manage, enhance and safeguard natural amenity assets and natural heritage features for future generations while maximising their recreational, amenity and tourism potential for the present generation by resisting development that could have a negative impact.

NHEP2 - To maximise the social, economic and environmental benefits that may be derived from the conservation and management of Cavan's Natural Heritage and green infrastructure.

NHEP4 - To protect, manage, conserve and seek to enhance the County's biodiversity.

NHEP5 - To integrate biodiversity consideration into all County activities through the County Biodiversity Action Plan process.

NHEP6 - To ensure the protection of species of flora and fauna afforded legal protection under Irish and European Legislation.

NHEP7 - To assess the impact of biodiversity of proposals for large developments, particularly those on Greenfield sites, or in environmentally sensitive areas. Such developments must include measures for the enhancement and protection of biodiversity.

NHEO2 - To promote the conservation of biodiversity outside of designated areas, including features such as wetlands, woodlands, hedgerows and uplands.

Future Plans / Other Projects

The Cavan County Council planning map tool was used to identify any future plans or projects in the Drumalee and Billis area which may potentially impact in combination with the proposed works on the designated sites identified. A search was made for applications in Drumalee and Billis / Cavan within the last three years. In this time, a number of other planning applications were permitted and these mostly related to small scale domestic developments.

In relation to current and future planning applications, Cavan County Council, as the competent authority, will screen each application for AA. Any new application will be examined and the requirement for screening for AA (NIS) will be determined on a case by case basis to comply with the requirements of Article 6 of the Habitats Directive. Therefore, it is not considered that there will be any significant adverse in combination effects with the proposed works and any other development.

In summary, it is considered that with the implementation of effective mitigation (see Section 5) to avoid/negate any potential adverse impacts, there will be no potential for cumulative impacts arising in combination with any other plans or project which would be of significance in respect of impacts affecting the conservation objectives or integrity of Lough Oughter and Associated Loughs SAC and the Lough Oughter Complex SPA.

5 MITIGATION MEASURES

In order to protect certain designated sites and species and in order to avoid any reductions in water quality in the area surrounding the proposed development site, a number of site-specific mitigation measures have been recommended and these must be implemented and followed. Additional measures have also been suggested that will help to protect the local biodiversity of the surrounding area and to ensure the protection of local wildlife.

The implementation of these site-specific mitigation measures will ensure the protection of Natura 2000 habitats and species, and the local non-designated ecological receptors. The primary parties responsible for the implementation of these measures include the applicants, the project manager and the construction contractors.

It is recommended that these measures are incorporated into a Construction and Environmental Management Plan. This should be presented to the Local Authority prior to the commencement of any works on site. These mitigation measures are also presented in the accompanying EclA.

Pre-Construction and Construction - General

- Prior to the commencement of any site works, the applicant and the contractors must be made aware of the overall sensitivity of this site. They must be made familiar with the overall content of this NIS and the EclA and they must be made aware of the mitigation measures contained in the NIS and the EclA.
- Site preparation and construction should be confined to the development site only and should adhere to all the mitigation measures outlined in this NIS.
- Work areas must be kept to the minimum area required to carry out the proposed works and the area must be clearly marked out in advance of the proposed works.
- Site preparation and construction should adhere to best practice and should conform to any relevant guidelines in the Inland Fisheries Ireland publication *Requirements for the Protection of Fisheries Habitats during Construction and Development Works at River Sites* (www.fisheriesireland.ie). Any instream works, including the placement of the discharge pipe from the attenuation area into the Kinnypottle Stream, must be done outside of the closed season (only in June-September) and in consultation with Inland Fisheries Ireland.

- Additional guidelines in the CIRIA (Construction Industry Research and Information Association) Publications including C532 – Control of Water Pollution from Construction, guidance for Consultants and Contractors should also be followed.

Pollution Control

- The site plan allows for the retention of an open green space on the site side of the Kinnypottle Stream for much of the site. This buffer zone must be at least 10m and it will provide the best protection for the Kinnypottle Stream during construction and operation of the proposed development. The green space and buffer zone should be developed as per the plan submitted.
- It is recommended that the existing bankside riparian vegetation along the Kinnypottle Stream is retained during construction. All works within 10m of the banks of this stream must be avoided. This area must be fenced off prior to the commencement of any construction works on site. There must be no storage of any materials, spoil or machinery within this buffer area.
- A silt fence should be maintained along the boundary of the Kinnypottle at minimum 10m out from the banks. The silt fence should comply with the Design Criteria outlined in CIRIA C648 Control of Water Pollution from Linear Construction Projects.
- Cut-off drains should be provided to intercept clean runoff water and divert away from the site work areas.
- All silt fences should be inspected on a daily basis and repairs or replacements carried out as required.

Management of Aggregate / Concrete

- Works must not take place in periods of heavy precipitation.
- Wet concrete is corrosive and can cause serious pollution to watercourses. Best practice in bulk-liquid concrete management must be employed addressing pouring and handling, secure shuttering, adequate curing times etc.
- Cement dust must be controlled as it is alkaline and harmful to the surrounding ecology. Activities which result in the creation of cement dust should be controlled by dampening down areas.
- Washwater from cleaning ready-mix concrete wagons and mixers may be contaminated. Wagons and mixers must be washed off site or in a bunded, designated area.
- Raw or uncured waste concrete should be disposed of by removal from the site in a location in a manner that shall not impact on any watercourse.

- Stockpile areas for sands and gravel should be kept to a minimum size, well away from the drains and watercourses.
- All waste associated with the development should be disposed of in an environmentally friendly manner. Registered contractors should only be used for removal to a registered site. This includes any excavated soil.

Management of Hydrocarbons

- All fuels, lubricants and hydraulic fluids should be kept in secure bunded areas remotely from any watercourse and open excavations. The bunded area should accommodate 110% of the total capacity of the containers within it. Containers should be properly secured to prevent unauthorised access and misuse.
- All refuelling and lubrication of equipment should take place on sealed and bunded surfaces to avoid the potential for accidental spillage of hydrocarbons.
- An effective spillage procedure should be put in place with all staff properly briefed.
- Spill kits should be present in all plant machinery.
- Oil booms and oil soakage pads should be kept on site to deal with any accidental spillage.
- Any waste oils or hydraulic fluids should be collected, stored in appropriate containers and disposed of offsite in an appropriate manner.
- Storage areas, machinery depots and site offices should be located remotely from watercourses.
- All plant and machinery should be regularly maintained and serviced to minimise release of hydrocarbons.

Site Operation, Landscaping and Protection of Biodiversity

- During operation, only clean surface water should be allowed into any culvert, drain or soakaway. It should be treated via serviced sediment and oil interceptor traps, prior to discharge into any local drainage channel or soakaway.
- Additional Natura Based Solutions could be incorporated as part of the overall SuDS plan for the site, e.g., swales, rain gardens, tree pits etc. This will reduce run-off from the site into the Kinnypottle Stream.
- All existing boundary hedgerows / treelines should be retained and incorporated into the development where possible.
- Where trees and mature vegetation must be removed, including the scrub habitats within the site, it should be done outside of the bird nesting season (March – August). If mature trees are to be removed, they should be checked by a bat specialist prior to felling.

- During the landscaping of the site, only native trees and shrubs should be used, or those shrubs or trees that provide high value to insects or birds. Green areas should be managed for the enhancement of biodiversity, e.g., green space verges could be managed at a low intensity level to promote a natural vegetated strip which would be of higher value to pollinators compared to a regularly cut lawn. This could be incorporated in specific areas throughout the site, whilst still allowing for sufficient cut grass for amenity areas. Guidelines in the All-Ireland National Pollinator Plan should be followed in identifying suitable areas of the benefit of pollinators in the site.
- The riparian zone of the Kinnypottle Stream should also be managed at a low intensity level to promote biodiversity. It is recommended that grass cutting does not take place right up to the stream edge. This biodiversity zone should be identified in the overall landscaping plan for the site. A mixture of native grasses and herbaceous plants could be allowed to develop here to support the riparian corridor and the ecosystem services that this provides.
- The removal of vegetation with herbicides should be avoided.

Protection of Terrestrial Mammals

The following mitigation measures for the protection of terrestrial mammals in the site have been recommended:

- It is important that construction works are not permitted within the root zone of the southern and western boundary of the proposed development site. No storage of soil, construction material is permitted within the root zone of these two boundaries.
- It is also important to protect the stream/drain (Kinnypottle Stream) along the western boundary to prevent pollution and disturbance during construction and operation works. A landscape buffer is also recommended of at least 10m to protect this habitat and to ensure that it is suitable for mammal usage post-development. Therefore, no works or lighting spillage (from public lighting) is permitted within the 10m buffer zone.
- It is also recommended that the mature treeline habitat of the eastern and southern boundary of the site is retained, conserved and protected from the proposed development. A road is proposed for along the eastern boundary as infrastructure of the proposed development and therefore it is important that public lighting in this area is wildlife friendly and where possible, landscaping is undertaken to fill in any gaps in vegetation.
- It is important to ensure that a landscape plan is put in place which aims to retain the treeline/hedgerow integrity of the boundary of the proposed development site. Any

planting should include native deciduous trees. In general, the following should also be followed:

- Any semi-natural habitats that can be retained should be protected from potential damage during the construction phase and post-construction phase and these should reconnect to linear habitat features in the adjacent landscape.
- The use of chemicals (weed killers, *etc.*) should be kept to a minimum within the development zone and should not be used in near woodlands.
- The operation of the survey area will increase human activity within the area (e.g. noise and lighting). In order to reduce impact on local mammal populations the following is recommended:
 - Dark zones: areas where there is minimum lighting especially (and where lighting is needed, such lighting is wildlife friendly) along the linear habitats and wooded boundary along the national road. These zones need to be continuous so that there is no light barrier within the mammal friendly zones to reduce mammal trespass.
 - Dark zones: the stream along the western boundary should remain as a dark zone and public lighting is not permitted within 10m of this area. It is also recommended that tall native vegetation is planted to ensure that there is a 10m buffer to allow mammals to traverse within minimum disturbance from the operation of the proposed development.
 - Physical barriers: where there is fencing *etc.*, access points within the boundary fencing should be inserted at strategic points (e.g. along known mammal trials) and of a size to permit large mammals such as badgers and foxes to safely traverse through the mammal friendly zones. It is important to ensure that terrestrial mammals can freely move in the landscape without being trapped along barriers/boundary fences.
- Mammals in Ireland are primarily nocturnal and therefore increasing lighting will reduce the favourability of the survey area for local mammal populations. Therefore, it is recommended that any lighting installed is low level LED lighting with directional luminaires to reduce light spillage. The proposed lighting plan should be designed to be wildlife friendly (e.g. 2200 Kelvin LED lighting or less). This meets the BCT guidelines in relation to bats and therefore will be suitable for other nocturnal mammals.
- The soil heap located along the western boundary should be retained and buffered from the proposed development with landscaping and works not permitted within 15-20m of it.

Lighting

Although the bat survey identified only low levels of bat activity on the site, the addition of bat boxes as recommend could increase the overall use of the site by bats. In this case, the lighting scheme of the site should adhere to the following guidelines below. These guidelines will also protect nocturnal terrestrial mammals that use the site.

- Mammal friendly lighting should be employed on site to reduce impacts upon nocturnal species, including bats. The recommendations outlined in the guidance “Bats and Lighting Guidance Notes for: Planners, Engineers, Architects and Developers” should be followed. See https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf.
- Luminaire design is extremely important to achieve an appropriate lighting regime. Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires for any new lighting within the site. This is taken from the most recent BCT Lighting Guidelines (BCT, 2018).
- All luminaires used must lack UV/IR elements to reduce impact.
- LED luminaires should be used due to the fact that they are highly directional, lower intensity, and have good colour rendition and dimming capability.
- A warm white spectrum (<2700 Kelvins) should be used to reduce the blue light component of the LED spectrum).
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
- Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible. For this proposed development scheme bollard lighting could be used.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should be mounted on the horizontal, i.e. no upward tilt.
- As a last resort, accessories such as baffles, hoods or louvres should be used to reduce light spill and direct it only to where it is needed.

6 APPROPRIATE ASSESSMENT CONCLUSION

This current NIS has been undertaken to evaluate the potential impacts of the proposed development with regard to the effects upon the conservation objectives and qualifying interests (including the habitats and species) of the Lough Oughter and Associated Loughs SAC and the Lough Oughter Complex SPA. It is considered that following mitigation, that the proposed project does not have the potential to significantly affect the conservation objectives of these aforementioned Natura 2000 sites and the integrity of these sites as a whole will not be adversely impacted.

The qualifying interests of the site and their potential to be impacted upon from the potential development were listed in Section 4.2. It is considered that these potential impacts can be successfully mitigated against. With implementation of the mitigation measures there will be no deterioration in water quality or impacts upon natural eutrophic lakes, there will be no loss or disturbances to any habitat that is used by the otter and there will be no direct or indirect impacts upon the bird species that use the lake.

In light of the above, it is considered that the proposed works do not have the potential to significantly affect the conservation objectives or qualifying interests of Lough Oughter and Associated Loughs SAC and the Lough Oughter Complex SPA. The integrity of the site will not be adversely affected. Table 7 follows the integrity of the SAC / SPA checklist, which shows that the integrity of the site would not be affected by the proposed development.

Conservation Objective: Does the project have the potential to:	Yes / No
Cause delays in progress towards achieving the conservation objectives of the site?	N
Interrupt progress towards achieving the conservation objectives of the site?	N
Disrupt those factors that help to maintain the favourable conditions of the site?	N
Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site?	N
Other Objectives: does the project have the potential to:	
Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?	N

Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?	N
Interfere with predicted or expected natural changes to the site (such as water dynamics or chemical composition)?	N
Reduce the area of key habitats?	N
Reduce the population of key species?	N
Change the balance between key species?	N
Reduce diversity of the site?	N
Result in disturbance that could affect population size or density or the balance between key species?	N
Result in fragmentation?	N
Result in loss or reduction of key features (e.g. tree cover, tidal exposure, annual flooding, etc.)	N

Table 7 – Integrity of Site Checklist (From NPWS, Information Checklist for AA, Box 6, EC (2002))

Appendix I: REFERENCES AND FURTHER READING

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Appendix II: PHOTOGRAPHS



Grassland / Scrub Habitats within the Site



Access Track within the Site



Scrub / Recolonising Bare Grounds



Kinnypottle Stream



Recolonising Bare Ground Habitats