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Report in Support of Appropriate Assessment (AA) Screening

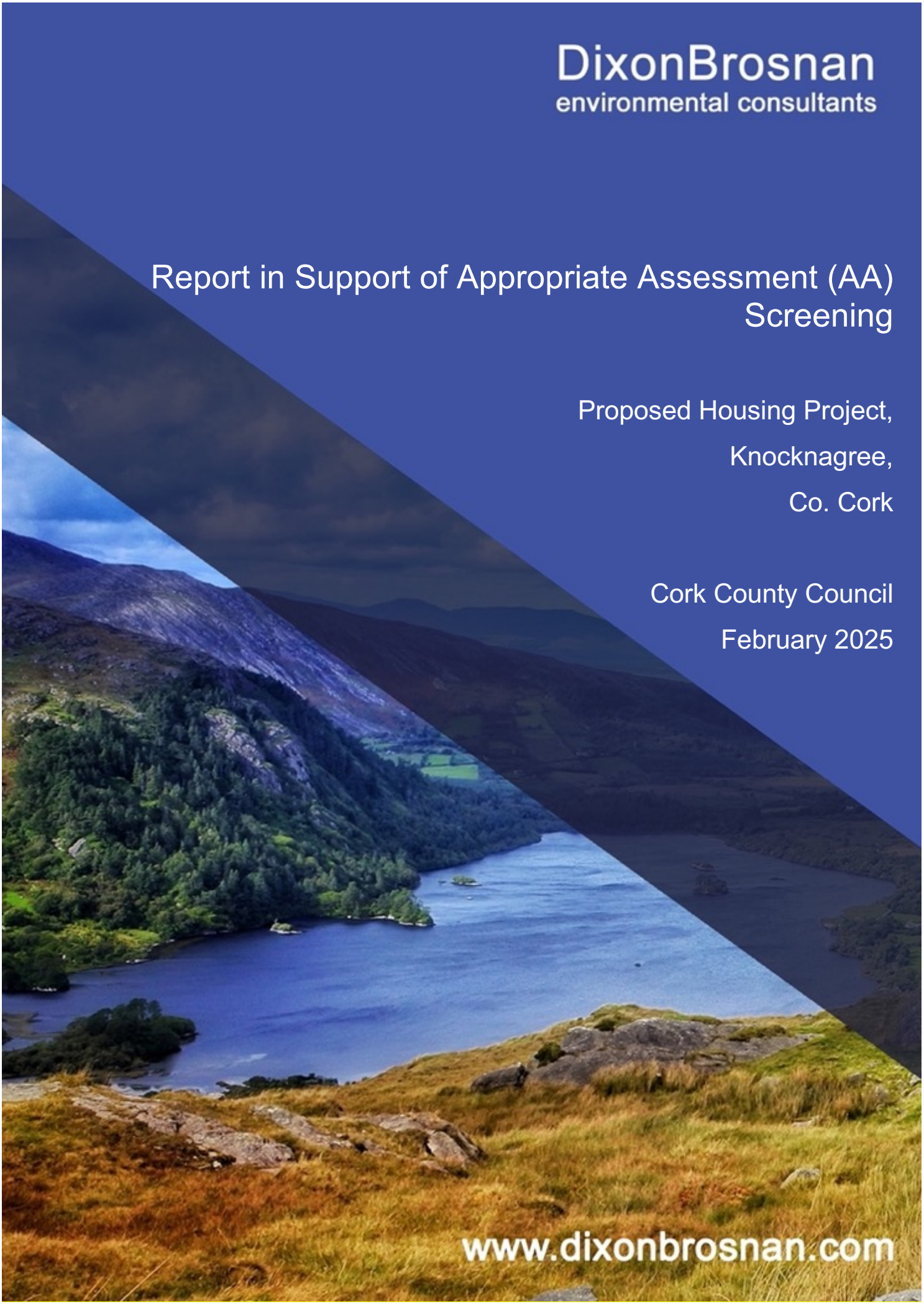
Proposed Housing Project,

Knocknagree,

Co. Cork

Cork County Council

February 2025



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1. Introduction

1.1 Background

The information in this report has been compiled by DixonBrosnan Environmental Consultants, on behalf of the applicant. It provides information on and assesses the potential for the proposed housing development at Knocknagree, Co. Cork to impact on any Natura 2000 sites within its zone of influence. The information in this report forms part of and should be read in conjunction with the Part VIII planning application documentation being submitted to Cork County Council in connection with the proposed development.

The Birds Directive (2009/147/EC) and the Habitats Directive (92/42/EEC) put an obligation on EU Member States to establish the Natura 2000 network of sites of highest biodiversity importance for rare and threatened habitats and species across the EU. In Ireland, the Natura 2000 network of European sites comprises Special Areas of Conservation (SACs, including candidate SACs) and Special Protection Areas (SPAs, including proposed SPAs). SACs are selected for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is selected correspond to the qualifying interests of the sites and from these the conservation objectives of the site are derived. The Birds and Habitats Directives set out various procedures and obligations in relation to nature conservation management in Member States in general, and of the Natura 2000 sites and their habitats and species in particular. A key protection mechanism is the requirement to consider the possible nature conservation implications of any plan or project on the Natura 2000 site network before any decision is made to allow that plan or project to proceed. Not only is every new plan or project captured by this requirement but each plan or project, when being considered for approval at any stage, must take into consideration the possible effects it may have in combination with other plans and projects when going through the process known as Appropriate Assessment (AA).

The obligation to undertake Appropriate Assessment (AA) derives from Article 6(3) and 6(4) of the Habitats Directive, and both involve a number of steps and tests that need to be applied in sequential order. Article 6(3) is concerned with the strict protection of sites, while Article 6(4) is the procedure for allowing derogation from this strict protection in certain restricted circumstances. As set out in Section 177U of the Planning and Development Act 2000 as amended, a screening for appropriate assessment of an application for consent for the proposed development must be carried out by the competent authority to assess, in view of best scientific knowledge, if the proposed development, individually or in combination with another plan or project is likely to have a significant effect on any European site. Each step in the assessment process precedes and provides a basis for other steps. The results at each step must be documented and recorded carefully so there is full traceability and transparency of the decisions made.

1.2 Aim of Report

The purpose of this report is to inform the AA process as required under the Habitats Directive (92/43/EEC) in instances where a plan or project may give rise to significant impacts on a Natura 2000 site. This report aims to inform the Appropriate Assessment process in

determining whether the development, both alone and in combination with other plans or projects, are likely to have a significant impact on the Natura 2000 sites in the study area, in the context of their conservation objectives and specifically on the habitats and species for which the sites have been designated.

This report has been prepared with regard to the following guidance documents, where relevant.

- *Managing Natura 2000 Sites: The Provision of Article 6 of the Habitats Directive 92/43/EEC* (European Commission (EC), 2018);
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodical Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission (EC), 2001);
- *Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC* (European Commission, (EC) 2007);
- *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (Department of Environment, Heritage and Local Government, 2010 revision);
- *Appropriate Assessment under Article 6 of the Habitats Directive; Guidance for Planning Authorities. Circular NPW 1/10 and PSSP 2/10* (Department of Environment, Heritage and Local Government, 2010);
- *Guidelines for Good Practice Appropriate Assessment of Plans under Article 6(3) Habitats Directive* (International Workshop on Assessment of Plans under the Habitats Directive, 2011);
- *Communication from the Commission on the precautionary principle. European Commission* (2000);
- CJEU Case C 164/17 Edel Grace Peter Sweetman v An Bord Pleanála,
- People Over Wind and Peter Sweetman *v*. Coillte Teoranta (People Over Wind) [2018] C-323/17 and
- Kelly -v- An Bord Pleanála & anor [2019] IEHC 84

1.3 Authors of Report

This report was prepared by Carl Dixon MSc. (Ecological Monitoring) and Dr. Sorcha Sheehy PhD (Ecology/Ornithology).

Carl Dixon holds an Honours Degree (BSc) in Ecology and a Masters (MSc) in Ecological Monitoring from UCC. He is a senior ecologist who has over 25 years' experience in ecological assessment. Prior to setting up DixonBrosnan Environmental Consultants in 2000, Carl set up and ran Core Environmental Services which included REPS planning for landowners and ecological assessments. Carl has particular experience in freshwater ecology, including electrofishing fish stock assessments and water quality assessments. He also has

considerable experience in habitat mapping and mammal ecology including survey work and reporting in relation to Badgers and bats. Other competencies include surveys for invasive species and bird surveys. Carl has extensive experience with regards to EIAR and NIS mitigation and impact assessment. He has experience in large-scale industrial developments with extensive experience in complex assessments as part of multi-disciplinary teams. Such projects include gas pipelines, incinerators, electrical cable routes, oil refineries and quarries.

Sorcha Sheehy PhD (Ecology/ornithology) is an ecologist and ornithologist who has worked for 15 years in environmental consultancy. She has worked on Screening/NISs for a range of small and large-scale projects with expertise in assessing impacts on birds. Sorcha's PhD research focused on bird behaviour at airports, where she studied bird avoidance behaviour and collision risk to aircraft. Her research involved field observations, post-mortem analysis and radar surveys. Sorcha has worked on bird collision risk assessments at airports throughout Ireland including Dublin airport, Cork airport, Shannon airport and Kerry airport. During her consultancy work Sorcha carried out field-based surveys and environmental reports including NIS, AA screening and EIARs. Notable projects include the Arklow Bank Wind Park, Indaver Ireland Waste Management Facility at Ringaskiddy, Irving Oil Whitegate Refinery (IOWR), Shannon LNG and Greenlink Interconnector.

2. Regulatory Context and Appropriate Assessment Procedure

2.1 Regulatory Context

The Habitats Directive (Council Directive 92/43/EEC on the *Conservation of Natural Habitats and of Wild Fauna and Flora*) aims to maintain or restore the favourable conservation status of habitats and species of community interest across Europe. The requirements of these directives are transposed into Irish law through the European Communities (Birds and Natural Habitats Regulations; S.I. No. 477 of 2011).

Under the Directive a network of sites of nature conservation importance have been identified by each Member State as containing specified habitats or species requiring to be maintained or returned to favourable conservation status. In Ireland the network consists of SACs and SPAs, and also candidate sites, which form the Natura 2000 network.

Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the *Conservation of Natural Habitats and of Wild Fauna and Flora* (as amended) (hereafter 'the Habitats Directive') requires that, any plan or project not directly connected with or necessary to the management of a designated 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. A competent authority (e.g. the EPA or Local Authority) can only agree to a plan or project after having determined that it will not adversely affect the integrity of the site concerned.

The possibility of a significant effect on a designated or "European" site has generated the need for an appropriate assessment to be carried out by the competent authority for the purposes of Article 6(3). A Stage Two Appropriate Assessment is required if it cannot be excluded, on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site. The first (Screening) Stage for appropriate assessment operates merely to determine whether

a (Stage Two) Appropriate Assessment must be undertaken on the implications of the plan or project for the conservation objectives of relevant European sites.

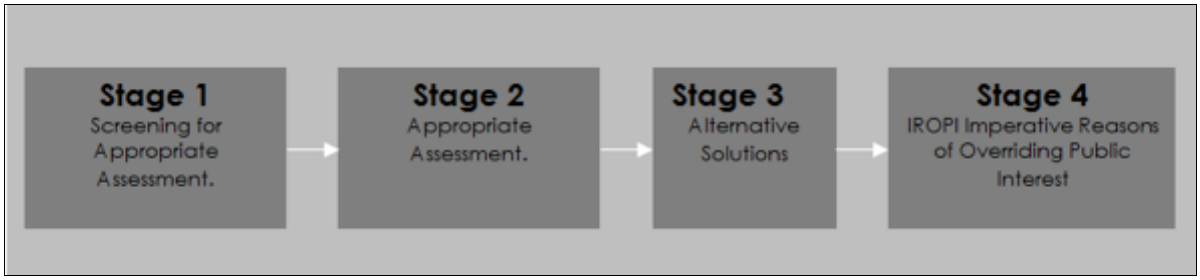
In accordance with the Precautionary Principle, the CJEU interpreted the word “likely” as meaning that as long as it cannot be conclusively demonstrated that a given effect will not occur, that effect is considered “likely” to occur. A likely effect considered to be “significant” only if it interrupts or causes delays in progress towards achieving the Conservation Objectives of the relevant European site(s).

In its judgment in People Over Wind, the CJEU concluded that the determination of whether or not AA is required in respect of a project must be completed without consideration of “measures that are intended to avoid or reduce the harmful effects of the envisaged project on the site concerned”.

In Kelly vs An Bord Pleanala & anor, the High Court issued a judgment concluding that “as a matter of fact and law, that SUDS [Sustainable urban drainage system] are not mitigation measures which a competent authority is precluded from considering at the stage 1 screening stage”. The judgement further described the SUDS as not a measure that is intended to avoid or reduce the harmful effects of a particular development on a European site and a measure that is not required to be incorporated by reason of the potential effect of a development on a European site, but rather SUDS are required to be incorporated in developments for the reasons set out in the relevant regional drainage policies in light of the objectives of the Water Framework Directive and associated water quality Directives and Regulations.

2.2 Appropriate Assessment Procedure

The assessment requirements of Article 6(3) establish a stage-by-stage approach. This assessment follows the stages outlined in the 2001 European Commission publications “Assessment of plans and projects significantly affecting Natura 2000 sites: methodological guidance on the provisions of Articles 6(3) and 6(4) of the Habitats Directive 92/43/EEC” (2001) and Managing Natura 2000 Sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC Office for Official Publications of the European Communities, Luxembourg (EC, 2019);



The stages are as follows:

Stage One: Screening — the process which identifies any appreciable impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant;

Stage Two: 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 Three: Assessment of alternative solutions: The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site. It is confirmed that no reliance is placed by the developer on Stage Three in the context of this application for development consent;

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain — an assessment of 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 (it is important to note that this guidance does not deal with the assessment of imperative reasons of overriding public interest). Again, for the avoidance of doubt, it is confirmed that no reliance is placed by the developer on Stage Four in the context of this application for development consent.

It is the responsibility of the competent authority to make a decision on whether or not the proposed development should be approved, taking into consideration any potential impact upon any Natura 2000 site within its zone of influence.

3. Receiving Environment

3.1 Existing site

The proposed development site is located just north of Knocknagree Village, Co. Cork (**Figure 1**). The site is accessed via an existing track connected to the local road L1108. There are a number of single dwellings along the L1108 as well as the farmhouses and yards to the south of the site. The landscape around the site is rural in nature. Land use is largely agricultural and pastoral alongside areas of coniferous forestry.

Figure 1. Site location | Source OSI.ie

3.2 Proposed Development

The proposed development includes the following:

The construction of a new housing development consisting of:

- 7 No. Residential Units consisting of:
- 1 No. 3 bed, 5-person two storey house
- 2 No. 2 bed, 4-person two storey houses
- 4 No. 1 bed, 2-person single storey houses
- 11 No. car parking spaces including visitor parking and designated parking spaces for reduced mobility access.
- Soft landscaping including green spaces, planting, trees and amenity areas.
- Connection to public utilities
- All other associated ancillary development and works including footpaths, bin and bike stores and SuDS drainage.

The site layout is shown in **Figure 2** and additional site drawings are included in **Appendix 2** of this report.

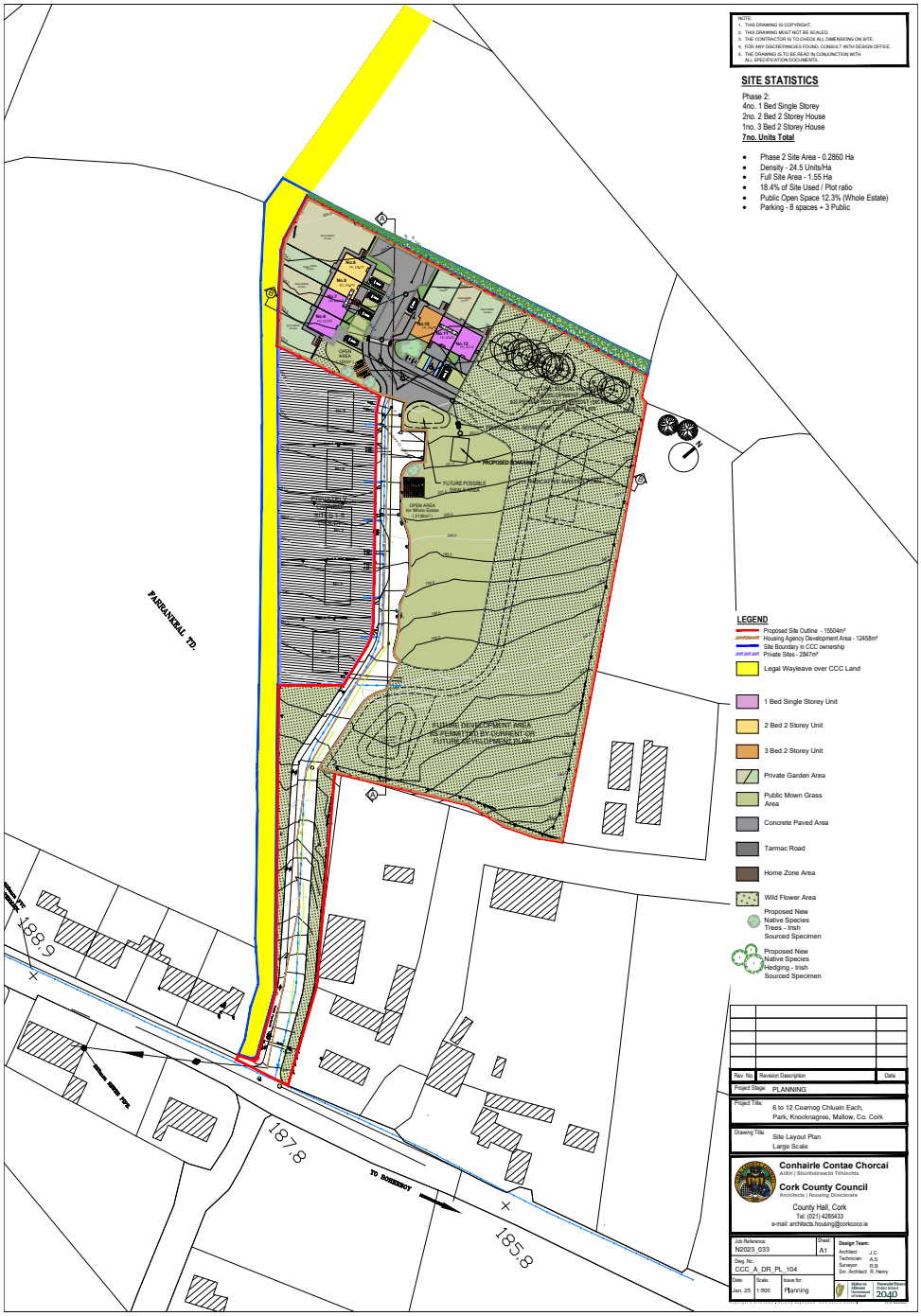


Figure 2. Site layout | Source Cork County Council

3.3 Storm Water Drainage

The site has been assessed for suitability for applying for SuDS (Sustainable Drainage Systems) measures for the development. The principal outcome of the study found that infiltration measures are suitable for the site.

SuDS measures proposed include rainwater butts, soakaways and trees. The surface water on the site will discharge to a soakaway via an oil interceptor. The soakaway will have a storage volume suitable for the infiltration test results.

The following text is included in the RKA Engineering services report which accompanies this application.

Exercise in looking at surface water drainage "effective area" runoff for the site.

Areas to be included in the "effective area" are surface areas of roofs, paths, roads, parking bays, lawns, gardens & green surfaces.

An impermeability factor of 1.0 is used for roofs, 0.9 is used for footpaths and hard standing areas, a factor of 0.2 is used for green areas and back gardens.

41720sqm of roofs x 1.0= 417sqm

1158sqm of footpaths and roads x 0.9= 1042sqm 1325sqm of green area contributing x 0.2= 265sqm

Overall Effective Runoff = Total Impermeable area = Ap = 1,724 m2

Proposed to use Infiltration Pluvial Cube system which consists of modular polypropylene units, low flow maintenance and self-cleaning channels.

Note prior to discharge to the soakaway, the rainwater runoff from the proposed overall development is proposed to go through a hydrocarbon interceptor & silt trap.

Sewers carrying domestic surface water from this proposed housing developments shall have a sewer minimum sewer size of 225mm and the gradients are to achieve self cleansing velocities.

The soakaway design in accordance with BRE365 is as follows: -

Infiltration testing in accordance with BRE365 was carried out by Priority Geotechnical Ltd. The results of the testing were variable, from 0.000647m/sec and 0.000411m/sec (0.0247m/min). It is recommended to install a soakaway to approximately 1.8m depth in the green area to the south of the houses. The proposed soakaway is designed for a 10yr storm with 10% allowance for climate change. The proposed plan area of the soakaway is 7.5m x 5m and minimum required depth of the soakaway is 287mm, therefore a 550mm deep system is selected.

The proposed surface water drainage proposal includes a gravity surface water collection system which incorporates an underground drainage pipe network.

All proposed drainage works is designed to comply with and be carried out in accordance with the current edition of the Recommendations for site development works for Housing Areas published by the Department of Environment and Local Government.

Drainage works also shall comply with Irish Water/Local Authority requirements.

3.4 Proposed Foul Wastewater discharge

The new site proposal includes 7 dwellings. As-built records and the Metroscan utility survey show a foul sewer in the public road serving the site. It is proposed to connect to this sewer for the development.

Sewers carrying domestic wastewater from this proposed housing development should be designed to carry a minimum wastewater volume of six times dry weather flows (6DWF).

Dry weather flows (DWF) is taken as 900 litres per dwelling (four persons per house and a per capita wastewater flow of 225 litres per head per day).

Total Dry weather flow (DWF) = 7 x 900/24/60/60 = 0.073l/s

Foul Pipe Network is designed to carry a minimum wastewater volume of six times dry weather flows (6DWF).

6 DWF = 6 x 0.073 = 0.4375 l/s

4. Screening

4.1 Introduction

This section contains the information required for the competent authority to undertake screening for AA for the proposed development.

The aims of this section are to:

- Determine whether the proposed development is directly connected with, or necessary to, the conservation management of any Natura 2000 Sites;
- Provide information on, and assess the potential for the proposed development to significantly effect on Natura 2000 Sites (also known as European sites); and
- Determine whether the proposed development, alone or in combination with other projects, is likely to have significant effects on Natura 2000 sites in view of their conservation objectives.

The proposed development is not directly connected with, or necessary to the conservation management of any Natura 2000 sites.

4.2 Study Area and Scope of Appraisal

Natura 2000 sites (European sites) are only at risk from significant effects where a source-pathway-receptor link exists between a development and a Natura 2000 site(s). This can take the form of a direct impact (e.g. where the development and/or associated construction works are located within the boundary of the Natura 2000 site(s) or an indirect impact where impacts

outside of the Natura 2000 site(s) affect ecological receptors within (e.g. impacts to water quality which can affect riparian habitats at a distance from the impact source).

The Likely zone of impact (ZoI) comprises the area within which the proposed development may potentially affect the conservation objectives or qualifying interests (QI) of a Natura 2000 site. There is no recommended likely zone of impact, and guidance from the National Parks and Wildlife Service (NPWS) recommends that the distance should be evaluated on a case-by- case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects (cumulative).

In ecological and environmental impact assessment, for an effect to occur there must be a risk enabled by having a source (e.g. construction works at a proposed development site), a 'receptor' (e.g. SAC or other ecologically sensitive feature), and a pathway between the source and the receptor (e.g. a watercourse which connects the proposed development site to the SAC). A 'receptor' is defined as the Special Conservation Interest (SCI) of SPAs or Qualifying Interest (QI) of SACs for which conservation objectives have been set for the European sites being screened.

Consideration is therefore given to the source-pathway-receptor linkage and associated risks between the proposed development and Natura 2000 sites. For a significant effect to occur there needs to be an identified risk whereby a source (e.g. contaminant or pollutant arising from construction activities) affects a particular receptor (i.e. Natura 2000 site) through a particular pathway (e.g. a watercourse which connects the proposed development with the Natura 2000 site).

The identification of risk does not automatically mean that an effect will occur, nor that it will be significant. The identification of these risks means that there is a possibility of environmental or ecological damage occurring. The level and significance of the effect depends upon the nature of the consequence, likelihood of the risk and characteristics of the receptor.

The precautionary principle is applied for the purposes of screening to ensure that consideration and pre-emptive action is undertaken where there is a lack of scientific evidence. It is noted that mitigation measures are not taken into account in the AA screening assessment process.

4.3 Field Study

A site survey was carried out on the 3rd of July 2024 to identify the habitats, flora and fauna present at the site. The surveys assessed the potential for all Qualifying Interests (QIs)/ Special Conservation Interests (SCIs) of European sites and third schedule invasive species to occur within the proposed site.

4.4 Source-Pathway-Receptor Model

The likely effects of the proposed development on any European site has been assessed using a source-pathway-receptor model, where:

- A 'source' is defined as the individual element of the proposed works that has the potential to impact on a European site, its qualifying features and its conservation objectives.

- A ‘pathway’ is defined as the means or route by which a source can affect the ecological receptor.
- A ‘receptor’ is defined as the SCI of SPAs or QI of SACs for which conservation objectives have been set for the European sites being screened.

A source-pathway-receptor model is a standard tool used in environmental assessment. In order for an effect to be likely, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism results in no likelihood for the effect to occur. The source-pathway-receptor model was used to identify a list of European sites, and their QIs/SCIs, with potential links to European sites. These are termed as ‘relevant’ European sites/QIs/SCIs throughout this report.

4.5 Likely Significant Effect

The threshold for a Likely Significant Effect (LSE) is treated in the screening exercise as being above a de minimis level. The opinion of the Advocate General in CJEU case C-258/11 outlines:

“the requirement that the effect in question be ‘significant’ exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European site are thereby excluded.

If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill.”

In this report, therefore, ‘relevant’ European sites are those within the potential ZoI of activities associated with the construction and operation of the proposed development, where LSE pathways to European sites were identified through the source-pathway-receptor model.

4.6 Screening Process

The screening for Appropriate Assessment will incorporate the following steps:

Definition of the zone of influence for the proposed works;

- Identification of the European sites that are situated (in their entirety or partially or downstream) within the zone of influence of the proposed works;
- Identification of the most up-to-date QIs and SCIs for each European site within the zone of influence;
- Identification of the environmental conditions that maintain the QIs/SCIs at the desired target of Favourable Conservation Status;
- Identification of the threats/impacts – actual or potential that could negatively impact the environmental conditions of the QIs/SCIs within the European sites;
- Highlighting the activities of the proposed works that could give rise to significant negative impacts; and
- Identification of other plans or projects, for which in-combination impacts would likely have significant effects.

4.7 Desktop Review

A desktop review facilitates the identification of the baseline ecological conditions and key ecological issues relating to Natura 2000 sites and facilitates an evaluation assessment of potential in-combination impacts. Sources of information used for this report include reports prepared for the Knocknagree area and information from statutory and non-statutory bodies. The following sources of information and relevant documentation were utilised:

- National Parks & Wildlife Service (NPWS) - www.npws.ie
- Environmental Protection Agency (EPA) – www.epa.ie
- National Biodiversity Data Centre – www.biodiversityireland.ie
- *Cork County Biodiversity Action Plan 2009-2014*;
- *Cork County Development Plan 2022;*
- Birdwatch Ireland - http://www.birdwatchireland.ie/
- Invasive Species Ireland - http://www.invasivespeciesireland.com/
- *Best Practice Guidance for Habitat Survey and Mapping* (Heritage Council, 2011)
- *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (National Roads Authority, 2009).
- *Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)* European Union, 2017

5. Natura 2000 Sites

5.1 Designated sites within a likely Zone of Impact

In accordance with the European Commission Methodological Guidance (EC 2018), a list of Natura 2000 sites that can be potentially affected by the project has been compiled. The proposed development site is not located within any Natura 2000 site. All SACs, candidate SAC's (cSAC) and SPAs sites within the likely zone of impact of the proposed development site have been identified in **Table 1** and shown in **Figure 3** and **Figure 4**.

There are no watercourses located within or adjacent to the proposed development site. The proposed development site is located within the Blackwater[Munster]_SC_010sub-catchment, and 1.5km east of the main channel of the River Blackwater. The main channel of the River Blackwater forms part of the Blackwater River (Cork/Waterford) SAC (located 1.1km west). Therefore, the proposed development site is potentially hydrologically connected to Blackwater River (Cork/Waterford) SAC via local surface and groundwater drainage.

Although unlikely given the distance involved, surface water run-off during the construction or operational phases of the proposed development could potentially impact on water quality within the River Blackwater. Wastewater from the site will ultimately discharge into the River Blackwater via the Knocknagree Wastewater Treatment Plant (WWTP) (licence A0344-01).

Habitats within or near the proposed development area could potentially provide *ex-situ* foraging grounds for qualifying species outside the Blackwater River (Cork/Waterford) SAC.

Therefore, a source-pathway-receptor link has been identified between the source (proposed development) and the receptor (Blackwater River (Cork/Waterford) SAC) via potential pathways (surface water runoff/discharge during construction/operation, wastewater discharges during operation as well as the spread of invasive species and disturbance to QI species).

The proposed development site is located 6.7km south of the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. Habitats within the proposed development site could potentially provide *ex-situ* habitats for Hen Harrier. Therefore, construction works could lead to a loss of/disturbance to *ex-situ* habitats for Hen Harrier. Therefore, a source-pathway-receptor link has been identified between the source (proposed development) and the receptors (Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA) via a potential pathway (loss of *ex situ* habitat or disturbance to SCI species).

Further information on these Natura 2000 sites is provided below and a full site synopsis included **Appendix 1**.

Given the distances involved and/or the lack of hydrological or other connections, no pathway for impact has been identified between the proposed development site and any other Natura 2000 site.

Table 1. Natura 2000 sites and their location relative to the proposed development site

Natura 2000 Sites	Site Code	Distance at closest point and potential source-pathway-receptor link	Qualifying Interests (* denotes a priority habitat)
Special Area of Conservation (SAC)			
Blackwater River (Cork/Waterford) SAC	002170	1.1km east. A source-pathway-receptor link has been identified between the source (proposed development site) and the receptor (Blackwater River (Cork/Waterford) SAC) via a potential pathway (surface water runoff/discharge during construction/operation, wastewater discharges during operation, spread of invasive species and disturbance to QI species during construction works).	Habitats Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Perennial vegetation of stony banks [1220] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritimi*) [1410] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0] Species *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029] *Austropotamobius pallipes* (White-clawed Crayfish) [1092] *Petromyzon marinus* (Sea Lamprey) [1095] *Lampetra planeri* (Brook Lamprey) [1096] *Lampetra fluviatilis* (River Lamprey) [1099] *Alosa fallax fallax* (Twaite Shad) [1103] *Salmo salar* (Salmon) [1106] *Lutra lutra* (Otter) [1355]

Natura 2000 Sites	Site Code	Distance at closest point and potential source-pathway-receptor link	Qualifying Interests (* denotes a priority habitat)
			Trichomanes speciosum (Killarney Fern) [1421]
Killarney National Park, Macgillycuddy's Reeks and Caragh River Catchment SAC	000365	7.1km south. Located in a separate catchment. No hydrological or other pathway identified.	Habitats 3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) 3130 Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation 4010 Northern Atlantic wet heaths with Erica tetralix 4030 European dry heaths 4060 Alpine and Boreal heaths 5130 Juniperus communis formations on heaths or calcareous grasslands 6130 Calaminarian grasslands of the Violetalia calaminariae 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 7130 Blanket bogs (* if active bog) 7150 Depressions on peat substrates of the Rhynchosporion 91A0 Old sessile oak woods with Ilex and Blechnum in the British Isles 91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* 91J0 Taxus baccata woods of the British Isles* Species 1024 Kerry Slug *(Geomalacus maculosus)* 1029 Freshwater Pearl Mussel *(Margaritifera margaritifera)* 1065 Marsh Fritillary *(Euphydryas aurinia)* 1095 Sea Lamprey *(Petromyzon marinus)* 1096 Brook Lamprey *(Lampetra planeri)* 1099 River Lamprey *(Lampetra fluviatilis)* 1106 Salmon *(Salmo salar)* 1303 Lesser Horseshoe Bat *(Rhinolophus hipposideros)* 1355 Otter *(Lutra lutra)* 1421 Killarney Fern *(Trichomanes speciosum)* 1833 Slender Naiad *(Najas flexilis)* 5046 Killarney Shad *(Alosa fallax killarnensis)*

Natura 2000 Sites	Site Code	Distance at closest point and potential source-pathway-receptor link	Qualifying Interests (* denotes a priority habitat)
Lower River Shannon SAC	002165	13.3km north. Located in a separate catchment. No hydrological or other pathway identified.	Habitats 1110 Sandbanks which are slightly covered by sea water all the time 1130 Estuaries 1140 Mudflats and sandflats not covered by seawater at low tide 1150 Coastal lagoons* 1160 Large shallow inlets and bays 1170 Reefs 1220 Perennial vegetation of stony banks 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 1310 Salicornia and other annuals colonising mud and sand 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) 1410 Mediterranean salt meadows (Juncetalia maritimi) 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* Species 1029 Freshwater Pearl Mussel *(Margaritifera margaritifera)* 1095 Sea Lamprey *(Petromyzon marinus)* 1096 Brook Lamprey *(Lampetra planeri)* 1099 River Lamprey *(Lampetra fluviatilis)* 1106 Salmon *(Salmo salar)* 1349 Common Bottlenose Dolphin *(Tursiops truncatus)* 1355 Otter *(Lutra lutra)*
Special Protection Area (SPA)			
Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA	004161	6.7km north. A source-pathway-receptor link has been identified between the source (proposed development site) and the receptor (Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA) via a potential pathway (loss of ex	Birds A082 Hen Harrier (*Circus cyaneus*)

Natura 2000 Sites	Site Code	Distance <u>at closest point</u> and potential source-pathway-receptor link	Qualifying Interests (* denotes a priority habitat)
		situ habitat or disturbance to SCI species).	

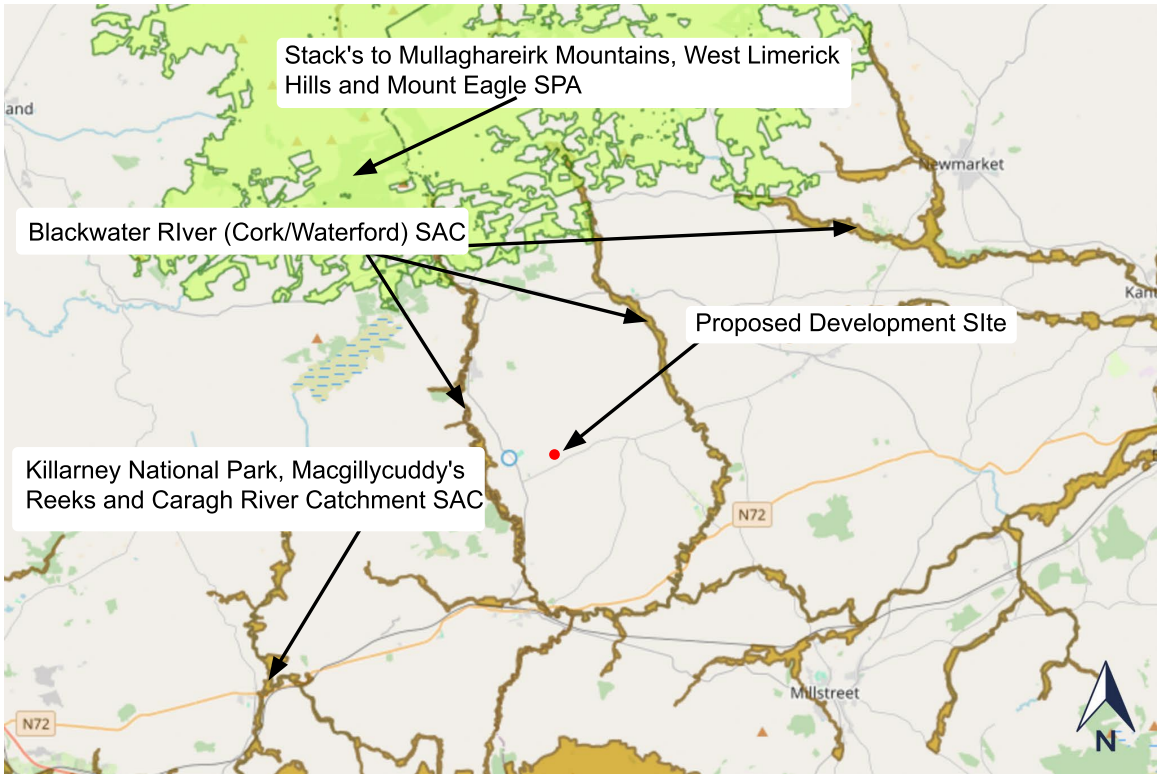


Figure 3. Natura 2000 sites within potential ZoI of the proposed development site | Source EPA Envision Mapping | Not to scale

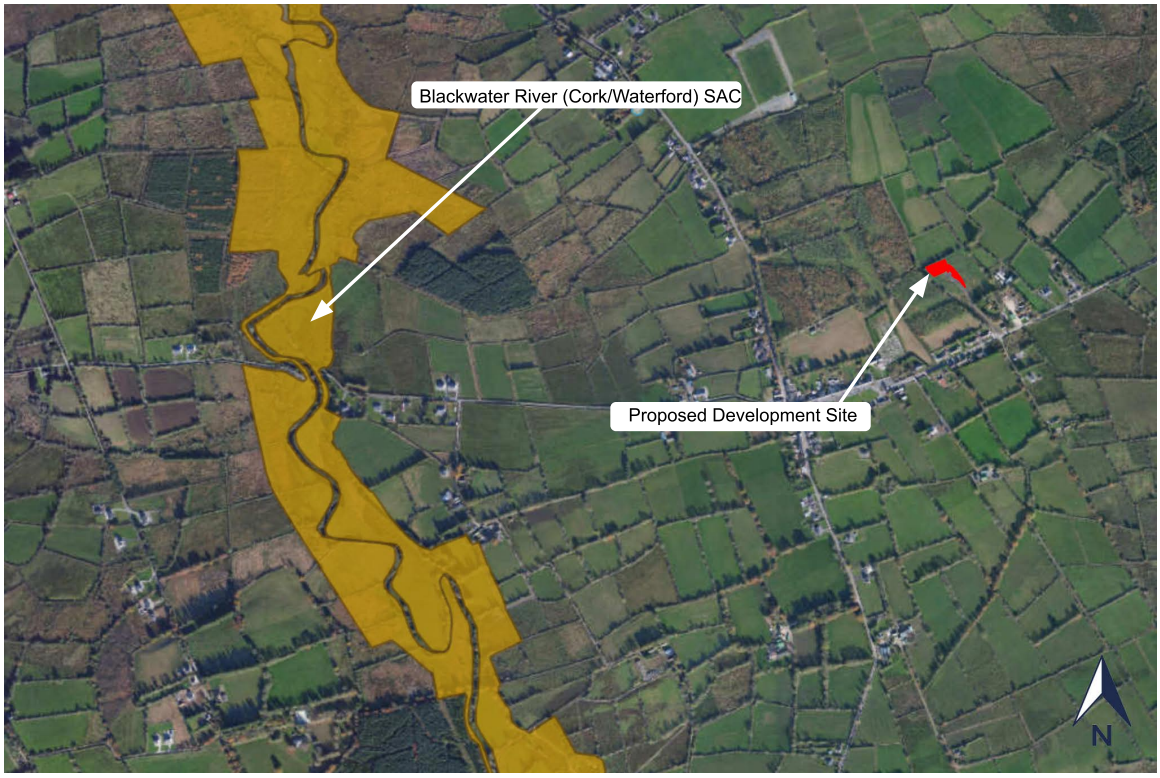


Figure 4. Location of proposed development relative and the Blackwater River (Cork/Waterford) SAC (brown shading) | Approximate red line boundary | Source EPA Envision Mapping | Not to scale

5.2 Natura 2000 Site Summaries

5.2.1 Blackwater River (Cork/Waterford) SAC

This very large site drains a major part of County Cork and five mountain ranges. The site supports a high diversity of Annex I habitats and Annex II species of the E.U. Habitats Directive, including Atlantic salmon and Otter. The site designated as the Blackwater River cSAC consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond and as far downstream as the tidal stretches into Youghal Harbour as well as the many tributaries along the way, the larger of which include the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The extent of the Blackwater and its tributaries in this site flows through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. The designated site covers a total area of 15,048 ha.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, over-grazing within the woodland areas, and invasion by non-native species, for example Rhododendron and Cherry Laurel.

Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore, it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater

Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

A full site synopsis for the River Blackwater (Cork/Waterford) SAC is included as **Appendix 1** of this report.

5.2.2 Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA

The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA is a very large site centred on the borders between the counties of Cork, Kerry and Limerick. The site is skirted by the towns of Newcastle West, Ballydesmond, Castleisland, Tralee and Abbeyfeale. The mountain peaks included in the site are not notably high or indeed pronounced, the highest being at Knockfeha (451m). The site consists of a variety of upland habitats, though almost half is afforested. The coniferous forests include first and second rotation plantations, with both pre-thicket and post-thicket stands present. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Hen Harrier.

A full site synopsis for the Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA is included as **Appendix 1** of this report.

5.3 Natura 2000 sites – Features of interests and conservation objectives.

The EU Habitats Directive contains a list of habitats (Annex I) and species (Annex II) for which SACs must be established by Member States. Similarly, the EU Birds Directive contains lists of important bird species (Annex I) and other migratory bird species for which SPAs must be established. Those that are known to occur at a site are referred to as 'qualifying interests' and are listed in the Natura 2000 forms which are lodged with the EU Commission by each Member State. A 'qualifying interest' is one of the factors (such as the species or habitat that is present) for which the site merits designation. The National Parks and Wildlife Service (NPWS) are responsible for the designation of SACs and SPAs in Ireland.

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network. European and national legislation places a collective obligation on Ireland and its citizens to maintain at favourable conservation status sites designated as Special Areas of Conservation and Special Protection Areas. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

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. Favourable conservation status of a habitat is achieved when its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that 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 current conservation objectives for the Blackwater River (Cork/Waterford) SAC, and the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA are detailed in the following publications:

NPWS (2012) *Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170, Version 1. NPWS, Department of Arts, Heritage & the Gaeltacht.*

NPWS (2022) Conservation Objectives: Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA 004161. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

The favourable conservation status of a species is achieved when population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or 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 species and/or habitats listed as qualifying interests for the Blackwater River (Cork/Waterford) SAC and the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA and specific conservation objectives are included in **Tables 2 - 4**.

Table 2. Qualifying Species for the Blackwater River (Cork/Waterford) SAC

Species code	Species		*Conservation objective*
1029	Freshwater Pearl Mussel	*Margaritifera margaritifera*	Restore
1092	White-clawed crayfish	*Austropotamobius pallipes*	Maintain
1095	Sea Lamprey	*Petromyzon marinus*	Restore
1096	Brook Lamprey	*Lampetra planeri*	Maintain
1099	River Lamprey	*Lampetra fluviatilis*	Maintain
1103	Twaite shad	*Alosa fallax*	Restore
1106	Atlantic Salmon	*Salmo salar*	Maintain
1355	Otter	*Lutra lutra*	Restore
1421	Killarney Fern	*Trichomanes speciosum*	Maintain

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

Table 3. Qualifying Habitats for the Blackwater River (Cork/Waterford) SAC

Habitat Code	Habitat	Conservation objective
1130	Estuaries	Maintain
1220	*Perennial vegetation of stony banks*	Maintain
1140	*Mudflats and sandflats not covered by seawater at low tide*	Maintain
1310	Salicornia and other annuals colonizing mud and sand	Maintain
1330	Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	Restore
1410	Mediterranean salt meadows (*Juncetalia maritimi*)	Maintain
3260	Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation	Maintain
91E0	Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (A*lno-Padion, Alnion incanae, Salicion albae*)	Restore
91J0	*Taxus baccata woods of the British Isles	Under Review
91A0	Old sessile oak woods with Ilex and Blechnum in British Isles	Restore

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

Table 4. Qualifying Species for the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA

Species code	Species		*Conservation objective*
A082	Hen Harrier	*Circus cyaneus*	Restore

Restore = Restore favourable conservation condition, Maintain = Maintain favourable conservation condition

6. Water Quality

6.1 River Basin Management Plan for Ireland (3rd Cycle)

The Water Framework Directive (WFD) sets out the environmental objectives which are required to be met through the process of river basin planning and implementation of those plans. Specific objectives are set out for surface water, groundwater and protected areas. The challenges that must be overcome in order to achieve those objectives are very significant. Therefore, a key purpose of the River Basin Management Plan (RBMP) is to set out priorities and ensure that implementation is guided by these priorities.

The third-cycle RBMP aims to build on the progress made during the first cycle. Key measures during the first cycle included the licensing of urban waste-water discharges (with an associated investment in urban waste-water treatment) and the implementation of the Nitrates Action Programme (Good Agricultural Practice Regulations). The former measure has resulted in significant progress in terms both of compliance levels and of the impact of urban waste-water on water quality. The latter provides a considerable environmental baseline which all Irish farmers must achieve and has resulted in improving trends in the level of nitrates and phosphates in rivers and groundwater. It is acknowledged, however, that sufficient progress has not been made in developing and implementing supporting measures during the first and second cycles.

Overall, RBMP assesses the quality of water in Ireland and presents detailed scientific characterisation of our water bodies. The characterisation process also takes into account wider water quality considerations, such as the special water-quality requirements of protected areas. The characterisation process identifies those water bodies that are At Risk of not meeting the objectives of the WFD, and the process also identifies the significant pressures causing this risk. Based on an assessment of risk and pressures, a programme of measures has been developed to address the identified pressures and work towards achieving the required objectives for water quality and protected areas. Data relating to the waterbodies is included in **Table 5**. The location of WFD monitoring locations relative to the proposed development site are illustrated in **Figure 5**.

Table 5. Water Framework Directive Data – Relevant data

Catchment: Blackwater Munster (Code 18)

This catchment includes the area drained by the River Blackwater and all streams entering tidal water between East Point and Knockaverry, Youghal, Co. Cork, draining a total area of 3,310km². The largest urban centre in the catchment is Mallow. The other main urban centres in this catchment are Fermoy, Mitchelstown, Youghal, Kanturk and Millstreet. The total population of the catchment is approximately 109,030 with a population density of 33 people per km². Several small coastal rivers drain the area to the southeast of Cork Harbour and the area at the eastern extreme of the catchment is drained by the Womanagh River which flows into the sea on the western side of Youghal Bay.

The proposed development site is located in the Blackwater_SC_010 sub-catchment.

2nd Cycle Summary

Ecological status has been consistently moderate in Blackwater (Munster)_040.

Moderate invertebrate status at RS18C040100 is the on Moderate Status for these three cycles. Two Section 4's and a quarry were noted upstream of the monitoring station, as well as evidence of clearfelling from aerial photography. However the impacts are unclear and further investigation is required. Impacts from Rathmore WWTP are unlikely, as the failing monitoring station is located approximately 4km upstream from the primary discharge point and 3km upstream from the Storm Water Overflow discharge location. Chemistry data from Kerry County Council downstream of the plant also indicates no impact.

Further characterisation is required to source the significant pressure in Blackwater (Munster)_040.

3rd Cycle Summary - Waterbodies relevant to the proposed project

Waterbody	Waterbodies Risk	Waterbody WFD Status 2016-2021	Pressures
Blackwater (Munster)_030	Not at risk	Good	None
Blackwater (Munster)_040	At risk	Moderate	Clearfelling

Source: EPA envision mapping and www.catchments.ie

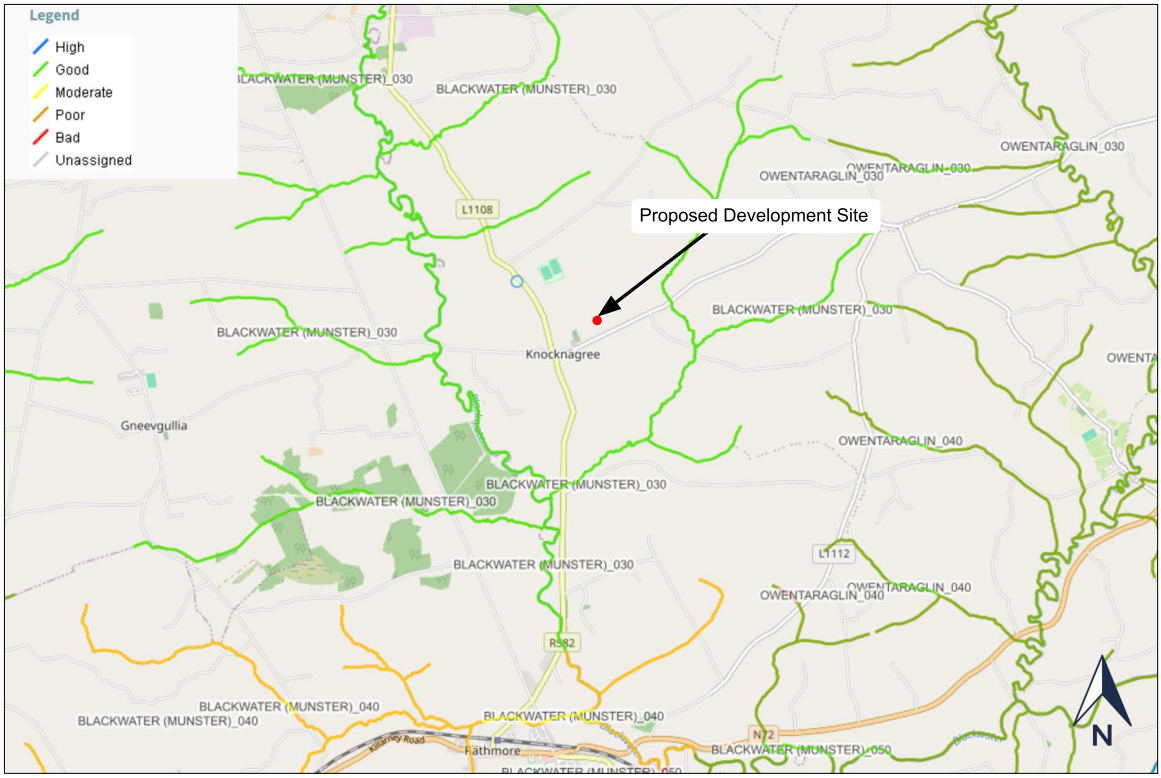


Figure 5. WFD Status 2016-2021 of waterbodies in the vicinity of the proposed development | Source: EPA Envision mapping https://gis.epa.ie/EPAMaps/) | not to scale

6.2 Urban Wastewater Treatment Directive

The Wastewater Discharge (Authorisation) Regulations 2007 (S.I. 684 of 2007) gives effect to the requirements of the Urban Waste Water Treatment Directive (Directive 91/271/EEC) and the Water Framework Directive (2000/60/EC) in Ireland. The Urban Wastewater Treatment Directive (UWWTD) lays down the requirements for the collection, treatment and discharge of urban waste-water and specifies the quality standards which must be met — based on agglomeration size — before treated waste-water is released into the environment.

The priority objective for this river basin planning cycle is to secure compliance with the Urban Wastewater Treatment Directive and to contribute to the improvement and protection of waters in keeping with the water-quality objectives established by this Plan. Achieving this objective entails addressing waste-water discharges and overflows where protected areas (i.e. designated bathing waters and shellfish waters) or high-status waters are at risk from urban waste-water pressures.

As part of the proposed development wastewater discharging from the proposed development will be conveyed to the Knocknagree Wastewater Treatment Plant (WWTP) (licence A0344-01) for treatment prior to discharging into the Blackwater River.

7. Site Surveys

7.1 Habitats

A site walkover survey was carried out on the 3rd of July 2024. Habitat mapping was carried out in line with the methodology outlined in the Heritage Council Publication, *Best Practice*

Guidance for Habitat Survey and Mapping (Heritage Council, 2011). The terrestrial and aquatic habitats within or adjacent to the proposed development site was classified using the classification scheme outlined in the Heritage council publication *A Guide to Habitats in Ireland* (Fossitt, 2000) and cross referenced with Annex I Habitats where required.

A current overview of habitats recorded within the site is shown in **Figure 6** and the habitats recorded on site are described in **Table 6.** Site photographs are also included below. No Annex I habitats were recorded within the proposed development site. No protected species were recorded during the site visits. No aquatic habitats were recorded.

Table 6. Habitat present within proposed development site

Habitats	Comments
Improved agricultural grassland GA1	The proposed development site is dominated by improved agricultural grassland which is tightly grazed by horses. There is large amount of Rush within the grassland and generally diversity is low. Species recorded within the grassland include Clover, Meadow Grass, Perennial rye grass, Bent grass, Field thistle, Willow herb, Creeping buttercup, Sorrel, Dandelion, Ragweed, Buttercup, Yorkshire fog and Bramble. Some scrub encroachment has begun on the margins of the grassland where grazing is less intensive.  **Plate 1. Improved agricultural grassland dominates the site**

Habitats	Comments
	 **Plate 2. Rush growth extensive within grassland**
Treeline WL2 (non-native)	A line of Sitka spruce with occasional Leylandi runs along the northern boundary of the site.  **Plate 3. Conifer treeline along northern boundary of the site.**
Treeline WL2	Running along part of the access track to the site, a mixed treeline overhangs to track. Species recorded here include Hawthorn, Willow, Ash, Sycamore and Sitka spruce. Understory species include Gorse, Cocksfoot, Red fescue, Ragweed and Bramble.

Habitats	Comments
	 Plate 4. Treeline along access road
Dry meadows and grassy verges GS2	On the verges of the access track, there are narrow stripes of dry meadows/grassy verge habitat. Species recorded include Cocksfoot, Yorkshire fog, Willowherb, Bent grass, Ragwort, Elder, Foxglove. GS2 has links with Annex I: Corresponds to the annexed habitat, 'lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) (6510)'. However, this is not an example of this Annex I habitat.  Plate 5. Dry meadows and grassy verge at entrance to site (eastern side)  Plate 6. Western side of access track (treeline outside boundary)

Habitats	Comments
Treeline WL2 (outside proposed development site boundary)	To the west of the site (and the wayleave), there is an area of treeline adjoining an Ash plantation. The treeline is dominated by Ash and Hawthorn. Other species recorded include Sycamore and Bracken.  **Plate 7. Mature treeline to the west of the site**  **Plate 8. Mature trees overhanging wayleave to the west of the site.**
Buildings and artificial surfaces BL3/Recolonising bare ground ED3/Scrub WS1	The access road runs along the western boundary of the proposed development site. In the absence of active use and/or management, areas of recolonising bare ground have developed through cracks in the tarmac. Pockets of low growing scrub have become established on the margins of the road where the ground is more disturbed. Species recorded include Bramble, Gorse, Yorkshire fog, Ribwort plantain and Willowherb.

Habitats	Comments
	 **Plate 9. Areas of recolonising bare ground around tarmacked access road.**  **Plate 10. Pockets of low growing scrub on margin of access track**

Figure 6. Habitats within proposed development site

7.2 Otter

The National Biodiversity Data Centre's (NBDC) online database provides data on the distribution of species, including flora and fauna, within 10km grid squares. The proposed development site lies within 10km square W19 of Ordnance Survey Ireland's National Grid System. A review of existing NBDC records within a 10km radius of the study site (Grid Square X07) showed that Otter or signs of Otter have been recorded on 5 occasions, most recently in May 2018 (NBDC 29/08/24).

Otter have been recorded in the vicinity of the River Blackwater c.1km west of the proposed development site. Otter is a qualifying interest for the Blackwater River (Cork/Waterford)) SAC which is one of the most important sites in Ireland for this species. The most recent national Otter Survey recorded Otter in 98.8% of the site assessed within the Blackwater catchment.

There are no wetland habitats or watercourses within or in the vicinity of the proposed development site could provide foraging habitat for Otter. No holts or signs of Otter were recorded within 150m of the proposed works.

7.3 Birds

All birds recorded during the site visit are listed in **Table 7**. Bird species listed in Annex I of the Birds Directive are considered a conservation priority. During the survey, all birds seen or heard within the development site were recorded. Certain bird species are listed by BirdWatch Ireland as Birds of Conservation Concern in Ireland (BOCCI). These are bird species suffering declines in population size. BirdWatch Ireland and the Royal Society for the Protection of Birds have identified and classified these species by the rate of decline into Red and Amber lists (Gilbert *et al.* 2021). Red List bird species are of high conservation concern and the Amber List species are of medium conservation. Green listed species are regularly occurring bird species whose conservation status is currently considered favourable. Bird species listed in Annex I of the Birds Directive (2009/147/EC) are considered a conservation priority. Species recorded within the site, as well as their conservation status, are shown in **Table 9**.

Table 7. Bird Species recorded during site surveys.

Species		Birds Directive Annex	BOCCI*	
		I	Red List	Amber List
Turdus merula	Blackbird			
Hirundo rustica	Swallow			x
Corvus frugilegus	Rook			
Turdus philomelos	Song thrush			
Corvus corax	Raven			
Regulus regulus	Goldcrest			x
Anthus pratensis	Meadow pipit		x	
Troglodytes troglodytes	Wren			
Erithacus rubecula	Robin			
Cyanistes caeruleus	Blue tit			

* Gilbert G, Stanbury A and Lewis L (2021), "Birds of Conservation Concern in Ireland 2020 –2026". Irish Birds 43: 1-22

A number of BOCCI species were recorded during the site survey i.e. Meadow Pipit, Goldcrest and Swallow. The habitats within the proposed development site are likely to provide foraging habitat for these species. Areas of rush within the site could potentially provide nesting habitat for Meadow Pipit. The habitats within the proposed development site are not suitable for nesting Hen Harrier.

No Annex I species were recorded and/or no SCI species for the Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA were recorded i.e. Hen Harrier. Hen harrier

preferentially forage and roost heath/bog areas and afforested areas (Ruddock *et al* 2024). The grassland at the site is not suitable for nesting Hen Harrier and given the distance from the SPA this area does not provide critical habitat for Hen harrier. According to SNH guilelines, the core range for Hen Harrier is 2km (SNH 2016).

Overall, the proposed development site is of limited local value for bird species that are relatively common in the Irish countryside.

7.4 Invasive Species

No high-risk invasive species were recorded during the site survey.

8. Potential Impacts

Potential impacts could arise from the following:

- Potential impacts from loss of habitat.
- Potential impacts from noise and disturbance
- Potential impacts from surface water runoff/discharges
- Potential impacts from wastewater
- Spread of invasive species
- In-combination impacts

8.1 Potential impacts from loss of habitat

The proposed development site is located 1.1km east of the Blackwater River (Cork/Waterford) SAC. An ecological appraisal of the proposed development site indicates that it supports common habitats which are not of high value in the context of the Natura 2000 designation. The habitats recorded within the proposed development boundary do not correspond to habitats listed on Annex I of the Habitats Directive.

There are no suitable habitats for Otter within or in the vicinity (within 150m) of the proposed development site. Therefore, the proposed development will not result in *ex situ* habitat loss for Otter.

There are no suitable habitats for Harrier within the site. Therefore, the proposed development will not result in *ex situ* habitat loss for Hen Harrier.

The proposed development will not result in any significant deterioration in habitat quality, fragmentation or loss of habitat within the Blackwater River (Cork/Waterford) SAC and the Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. It is concluded that the proposed development will not result in any loss or deterioration of habitat within Natura 2000 sites. Therefore, potential significant effects from habitat loss on Natura 2000 sites can be screened out from further assessment.

8.2 Potential impacts from noise and disturbance

Potentially increased noise and disturbance associated with the construction works could cause disturbance/displacement of fauna. If of sufficient severity, there could be impacts on reproductive success. Disturbance can cause sensitive species to deviate from their normal,

preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

8.2.1 Otter

Otter is listed on Annex II of the Habitats Directive and is a conservation objective for the Blackwater River (Cork/Waterford) SAC. Potential impacts could arise due to disturbance of Otter as a result of increased noise and activity during site works. This could potentially lead to changes in feeding behaviour which if of sufficient severity could impact on reproductive success. If significant, disturbance of breeding Otter could have an impact on overall populations within the Blackwater River (Cork/Waterford) SAC.

The main channel of the River Blackwater, located c.1.5km west of the site, is known to provide habitat for Otter. However, no signs of Otter were recorded within the proposed development site boundary or within 150m of the site. Otter is generally considered to be a nocturnal or crepuscular species, i.e. individuals are predominantly active at night, with peaks in activity shortly after dusk at just before dawn (Chanin 2003, OPW 2006). Therefore, apart from their breeding and resting sites, Otters are not considered to be sensitive to noise and light impacts during daylight hours. Furthermore, the occurrence of Otters in Irish towns and cities suggests that this species is able to habituate to human activities. There are no wetland/aquatic habitats within the proposed development site and no potential foraging habitat for Otter. The site is located c. 1.5km from the River Blackwater. Given the distance from Otter habitats, the common nature of habitats onsite, the small scale of the proposed development and its location adjacent to an existing road, no significant noise and disturbance to Otter is predicted to occur. Other QI species for the Blackwater River (Cork/Waterford) SAC are confined to watercourses.

It is concluded that the proposed development will not result in any disturbance to QI species for the Blackwater River (Cork/Waterford) SAC. Therefore, potential significant effects from noise/disturbance to the Blackwater River (Cork/Waterford) SAC can be screened out from further assessment.

8.2.2 SCI Birds

No valuable habitat for SCI species i.e. Hen Harrier was recorded within or adjacent to the proposed development site. The proposed development site is located c. 6.7km from the Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. The construction phase of the project will lead to a temporary increase in noise and disturbance. Baseline noise will return to background levels following construction. Given the lack of valuable habitat for SCI species on or near the proposed development site, no impact on birds listed as qualifying interests for the Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA is predicted to occur.

It is concluded that the proposed development will not result in any disturbance to SCI species for the the the Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA. Therefore, potential significant effects from noise/disturbance to the the the Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA can be screened out from further assessment.

8.3 Potential impacts from Surface Water Runoff

Potential impacts on aquatic habitats which can arise from surface water emissions during the construction phase of the proposed development include increased silt levels in surface water run-off, inadvertent spillages of hydrocarbons from fuel and hydraulic fluid. During operation, increases in hard surfaces could potentially impact flood risk and hydrological processes downstream.

Inadvertent spillages of hydrocarbon and/or other chemical substances during construction could introduce toxic chemicals into the aquatic environment via direct means, surface water run-off or groundwater contamination. Silt can be extremely harmful to aquatic invertebrates and fish, particularly qualifying species for the Blackwater River (Cork/Waterford) SAC such as Freshwater Pearl Mussel. Significant impacts on fish stocks could impact on Otter due to a reduction in prey availability.

There are no watercourses or drainage ditches within the proposed development site or in the vicinity of the proposed development site. The closest watercourses for the proposed development are the River Blackwater (c.1.5km west) and the Tooreenclassagh Stream (900m east). Both watercourses are separated from the proposed development by large areas of agricultural grassland.

As detailed in **Section 3.3**, during operation surface water will be managed in accordance with the principles of Sustainable Drainage Systems (SuDS) as embodied in the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS). It is proposed to discharge attenuated surface-water runoff to a soakaway/underground infiltration tank, designed to cater for a 1 in 100 year rainfall event. Prior to discharge to the soakaway, the rainwater runoff from the proposed development is proposed to go through a hydrocarbon interceptor & silt trap. It is noted that the SuDS measures have been built into the project designs as is standard for all new developments. These are not considered to be mitigation measures (see Eoin Kelly v An Bord Pleanála [2019] IEHC 84).

The proposed development is approximately 50km from the sea and the site elevation is approximately 205m OD, hence tidal flooding is not a risk at this site. The site is locally elevated within its environs, it approximately 15m higher than the public road about 150m to the south of the site, therefore pluvial flooding is not deemed a risk. Fluvial flooding is not a risk at the site. the Tooreenclassagh Stream approximately 900m to the east of the site has a floodplain, this is approximately 30m lower than the proposed site. It is noted that these SuDS measures will keep runoff from the site at greenfield rates and prevent flooding on the downstream.

It is noted that environmental control measures will be implemented during construction in line with standard guidelines (i.e. Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (Department of Environment, Heritage and Local Government, July 2006), CIRIA document – 133 Waste Minimisation in Construction, CIRIA document – Guidelines Control of Water Pollution from Construction Sites – Guide to Good Practice)). Whilst the implementation of such measures during construction will assist in minimizing impacts on the local environment, the implementation of these measures has not been taken into consideration in this screening report when reaching a conclusion as to the likely impact of the development on Natura 2000 sites.

The proposed development is small in scale and there is no potential for significant hydrocarbon/silt spillage during construction works. There are no watercourses onsite and during construction, surface water runoff would be largely absorbed to ground before reaching any watercourse. The Blackwater River (Cork/Waterford) SAC is located c. 1.1km from the proposed development site. Any minor runoff to surface waters absorbed to grassland prior to reaching local watercourses and there are no likely significant effects on QI species or habitats. Given the small scale of the works, there is no potential for significant silt or hydrocarbon spillages or potential to impact on the conservation objectives of the Blackwater River (Cork/Waterford) SAC.

Given the small scale of the proposed development, the project design measures and the distance from local watercourses no significant risk of impact on the conservation objective of the Blackwater River (Cork/Waterford) SAC is predicted to occur from surface water runoff during the construction or operational phase. Therefore, potential significant effects from surface water runoff during construction and operation on Natura 2000 sites can be screened out from further assessment.

8.4 Potential Impacts from Wastewater Discharges

The proposed housing development could potentially result in an increase in nutrients discharging to the River Blackwater via the Knocknagree Wastewater Treatment Plant (WWTP) (licence A0344-01). Increased nutrients can potentially impact on aquatic habitats by changing baseline ecological conditions.

At the time of publishing this report, there was no compliance/monitoring documentation available for Knocknagree WWTP. Based on the information from the EPA Envision mapping, the design population equivalent (PE) of Knocknagree WWTP is 300PE. The agglomeration PE in 2013 was 400PE. The addition of 7 houses (@2.7PE per dwelling) would bring this to 418.9PE. It is noted that there may have been additional discharges to this WWTP between 2013 and 2024.

Based on the most recent WFD data, any discharges from the WWTP do not appear to be having an observable negative local effect on the River Blackwater. Water quality along this section of the Blackwater i.e. Blackwater (Munster)_030 (see **Section 6.1**) is *Good* and *Not at risk.*

A pre-connection enquiry has been submitted to Uisce Eireann (UE). The response from UE, received in January 2024 notes the following re the connection to the wastewater network.

Feasible without infrastructure upgrade by Uisce Éireann:

Please note that current Uisce Éireann records do not show the public wastewater network extending to the proposed connection point highlighted as part of this submission. It will be necessary to verify the existence of these network extents, including the ownership status, capacity and ultimate connectivity to the current public wastewater infrastructure as part of any future connection application process.

There does not appear to currently be an observable negative effect on the Water Framework Status of the River Blackwater at Knocknagree. Given the above, no significant effect on local water quality is predicted to occur from wastewater discharges during the operational phase and there will be no impact on the conservation objectives of the Blackwater River

(Cork/Waterford) SAC. Potential significant effects on the Blackwater River (Cork/Waterford) SAC from wastewater discharges have been screened out.

8.5 Spread of Invasive Species

No high-risk or other invasive species were recorded within the proposed development. Therefore, there is no risk to Blackwater River (Cork/Waterford) SAC via impacts from the spread of invasive species.

8.6 In-combination Impacts

In-combination impacts refer to a series of individual impacts that may, in combination, produce a significant effect. The underlying intention of this in-combination provision is to take account of in-combination impacts from existing or proposed plans and projects and these will often only occur over time.

Article 6(3) of the Habitats Directive requires that:

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.

It is therefore required that the potential impacts of the proposed development are considered in-combination with any other relevant plans or projects. An assessment of plans and projects with the potential for in-combination effects in association with the proposed development was undertaken. A search of planning applications in the vicinity of the proposed development was undertaken in September 2024 to examine projects with potential for in combination effects. Other projects or developments which could potentially cause in-combination impacts are listed in **Table 8**.

Table 8. Other developments near site and potential in-combination impacts

Plans and Projects	Key Policies/Issues/Objectives Directly Related to the Conservation of the European Network	
River Basin Management Plan 2022-2027	The project should comply with the environmental objectives of the Irish RBMP which are to be achieved generally by 2027. • Ensure full compliance with relevant EU legislation • Prevent deterioration • Meeting the objectives for designated protected areas • Protect high status waters • Implement targeted actions and pilot schemes in focus sub-catchments aimed at: targeting water bodies close to meeting their objective and addressing	The implementation and compliance with key environmental policies, issues and objectives of this management plan will result in positive in-combination effects to European sites. The implementation of this plan will have a positive impact for the biodiversity. It will not contribute to in-combination impacts with the proposed development.

Plans and Projects European Network	Key Policies/Issues/Objectives Directly Related to the Conservation of the	
	more complex issues which will build knowledge for the third cycle.	
Inland Fisheries Ireland Corporate Plan 2021-2025 The Inland Fisheries Act 2010.	To ensure that Ireland's fish populations are managed and protected to ensure their conservation status remains favourable. That they provide a basis for a sustainable world class recreational angling product, and those pristine aquatic habitats are also enjoyed for other recreational uses. To develop and improve fish habitats and ensure that the conditions required for fish populations to thrive are sustained and protected. To grow the number of anglers and ensure the needs of IFI's other key stakeholders are being met in a sustainable conservation focused manner. EU (Quality of Salmonid Waters) Regulations 1988. All works during development and operation of the project must aim to conserve fish and other species of fauna and flora habitat; biodiversity of inland fisheries and ecosystems and protect spawning Salmon and trout.	The implementation and compliance with key environmental issues and objectives of this corporate plan will result in positive on-combination effects to European sites. The implementation of this corporate plan will have a positive impact for biodiversity of inland fisheries and ecosystems. It will not contribute to in-combination or cumulative impacts with the proposed development.
Irish Water Capital Investment Plan 2020-2024	Proposals to upgrade and secure water services and water treatment services countrywide.	Likely net positive impact due to water conservation and more effective treatment of water.
Water Services Strategic Plan (WSSP, 2015)	Irish Water has prepared a Water Services Strategic Plan (WSSP, 2015), under Section 33 of the Water Service No. 2 Act of 2013 to address the delivery of strategic objectives which will contribute towards improved water quality and biodiversity requirements through reducing: • Habitat loss and disturbance from new / upgraded infrastructure; • Species disturbance; • Changes to water quality or quantity; and • Nutrient enrichment /eutrophication.	The WSSP forms the highest tier of asset management plans (Tier 1) which Irish Water prepare and it sets the overarching framework for subsequent detailed implementation plans (Tier 2) and water services projects (Tier 3). The WSSP sets out the challenges we face as a country in relation to the provision of water services and identifies strategic national priorities. It includes Irish Water's short, medium and long-term objectives and identifies strategies to achieve these objectives. As such, the plan provides the context for subsequent detailed implementation plans (Tier 2) which will document the approach to be used for key water service areas such as water resource management, wastewater compliance and sludge

Plans and Projects European Network	Key Policies/Issues/Objectives Directly Related to the Conservation of the	
		management. The WSSP also sets out the strategic objectives against which the Irish Water Capital Investment Programme is developed. The current version of the CAP outlines the proposals for capital expenditure in terms of upgrades and new builds within the Irish Water owned assets. The overarching strategy was subject to AA and highlighted the need for additional plan/project environmental assessments to be carried out at the tier 2 and tier 3 level. Therefore, no significant in-combination effects have been identified.
WWTP discharges	Ballyclough, Ballydesmond, Ballyduff WWTP, Ballyhooley, Banteer WWTP, Boherbue WWTP, Bweeng, Castlemagner, Cecilstown, Clondulane, Cullen, Dromahane WWTP, Fermoy WWTP, Freemount, Kanturk WWTP, Kilbrin, Killavullen WWTP, Kilworth, Kiskeam, Knocknagree, Lismore WWTP, Lombardstown, Mallow WWTP, Meelin, Millstreet WWTP, Nad, Newmarket, Rathcool, Rathmore WWTP	Discharges from municipal WWTPs are required to meet water quality standards. Irish Water Capital Investment Plan 2014-2016 and 2017 – 2021 proposes to upgrade water treatment services countrywide.
Other developments in the vicinity	Cork County Council planning database was consulted to identify any proposed or permitted developments in proximity to the proposed developments site (01/09/24) within the past 48 months There have been no developments within the vicinity of the proposed development within this 48-month period.	Future developments will only be granted permission where discharges from same meet with relevant water quality standards. These developments are located within an existing village and no in-combination disturbance is predicted to occur. Given the nature, extent and scale of the proposed project, it is not anticipated that it will act in-combination with the plans or projects outlined, or other plans or projects, to give rise to in-combination impacts on Natura 2000 sites.

In the absence of any significant impact associated with this project no in-combination impacts on water quality have been identified. Similarly, no significant in-combination impacts in relation to noise and disturbance have been identified. No other significant in-combination impacts have been identified. There are no projects which could have a potential significant in-combination effect along with the proposed development.

Given the nature, extent and scale of the proposed project, it is not anticipated that it will act in-combination with the plans or projects outlined, or other plans or projects, to give rise to in-combination impacts on the Blackwater River (Cork/Waterford) SAC or Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA.

9. Screening conclusion and statement

This AA screening report has been prepared to assess whether the proposed development, individually or in-combination with other plans or projects, and in view of best scientific knowledge, is likely to have a significant effect on any European site(s).

The screening exercise was completed in compliance with the relevant European Commission guidance, national guidance, and case law. The potential impacts of the proposed development have been considered in the context of the European sites potentially affected, their qualifying interests or special conservation interests, and their conservation objectives.

Through an assessment of the source-pathway-receptor model, which considered the ZoI of effects from the proposed development and the potential in-combination effects with other plans or projects, the following findings were reported:

- The proposed housing development at Knocknagree, Co. Cork, either alone or in-combination with other plans and/or projects, does not have the potential to significantly affect any European Site, in light of their conservation objectives.

In accordance with the Habitats Directive, an Appropriate Assessment (AA) Screening has been carried out on the project, in relation to any potential impacts European sites. The findings of the AA screening noted that no significant effects on any Natura 2000 sites are likely and it was not necessary to undertake any further stage of the Appropriate Assessment process.

Therefore, a Stage 2 Appropriate Assessment is deemed not to be required.

References

Department of Environment, Heritage and Local Government, 2010 revision *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* ();

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European Commission (2000) *Communication from the Commission on the precautionary principle.*

European Commission (EC), 2001. *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodical Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* ();

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Scottish Natural Heritage (SNH) 2016. Assessing Connectivity with Special Protection Areas (SPAs) Guidance

Appendices

Appendix 1 Site synopses

Blackwater River (Cork/Waterford) SAC (Site Code 2170) Site Synopsis

The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. In times of heavy rainfall the levels can fluctuate widely by more than 12 feet on the gauge at Careysville. The peaty nature of the terrain in the upper reaches and of some of the tributaries gives the water a pronounced dark colour. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour and many tributaries, the larger of which include the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The portions of the Blackwater and its tributaries that fall within this SAC flow through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. Nearby towns include Rathmore, Millstreet, Kanturk, Banteer, Mallow, Buttevant, Doneraile, Castletownroche, Fermoy, Ballyduff, Rathcormac, Tallow, Lismore, Cappoquin and Youghal.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [1130] Estuaries
- [1140] Tidal Mudflats and Sandflats
- [1220] Perennial Vegetation of Stony Banks
- [1310] Salicornia Mud
- [1330] Atlantic Salt Meadows
- [1410] Mediterranean Salt Meadows
- [3260] Floating River Vegetation
- [91A0] Old Oak Woodlands
- [91E0] Alluvial Forests*
- [1029] Freshwater Pearl Mussel (Margaritifera margaritifera)
- [1092] White-clawed Crayfish (Austropotamobius pallipes)
- [1095] Sea Lamprey (Petromyzon marinus)
- [1096] Brook Lamprey (Lampetra planeri)
- [1099] River Lamprey (Lampetra fluviatilis)
- [1103] Twaite Shad (Alosa fallax)
- [1106] Atlantic Salmon (Salmo salar)
- [1355] Otter (Lutra lutra)
- [1421] Killarney Fern (Trichomanes speciosum)

The conservation objectives for the site are detailed in: NPWS (2012) Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170, Version 1. NPWS, Department of Arts, Heritage & the Gaeltacht (dated 31 July 2012). The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest.

The Blackwater rises in boggy land in east Kerry, where Namurian grits and shales build the low heather-covered plateaux. Near Kanturk the plateaux enclose a basin of productive Coal Measures. On leaving the Namurian rocks the Blackwater turns eastwards along the northern slopes of the Boggeragh Mountains before entering the narrow limestone strike vale at Mallow. The valley deepens as first the Nagles Mountains and then the Knockmealdowns impinge upon it. Interesting geological features along this stretch of the Blackwater Valley include limestone cliffs and caves near the villages and small towns of Killavullen and Ballyhooly; the Killavullen caves contain fossil material from the end of the glacial period. The associated basic soils in this area support the growth of plant communities which are rare in Cork because in general the county's rocks are acidic. At Cappoquin the river

suddenly turns south and cuts through high ridges of Old Red Sandstone. The Araglin valley is predominantly underlain by sandstone, with limestone occurring in the lower reaches near Fermoy.

Wet woodlands are found where river embankments have broken down and channel edges are subject to daily inundation. This is particularly evident in the steep-sided valley of the River Bride, between Cappoquin and Youghal. The river side of the embankments was often used for willow growing in the past (most recently at Cappoquin) so that the channel is lined by narrow woods of White and Almondleaved Willow (Salix alba and S. triandra), with isolated Crack Willow (S. fragilis) and Osier (S. viminalis). Rusty Willow (S. cinerea subsp. oleifolia) spreads naturally into the sites and occasionally, as at Villierstown on the Blackwater and Sapperton on the Bride, forms woods with a distinctive mix of woodland and marsh plants, including Gypsywort (Lycopus europaeus), Guelder-rose (Viburnum opulus), Bittersweet (Solanum dulcamara) and various mosses and algae. These wet woodlands form one of the most extensive tracts of the wet woodland habitat in the country.

A small stand of Yew (Taxus baccata) woodland occurs within the site. This is on a limestone ridge at Dromana, near Villierstown. While there are some patches of the wood with a canopy of Yew and some very old trees, the quality is generally poor due to the dominance of non-native and invasive species such as Sycamore (Acer pseudoplatanus), Beech (Fagus sylvatica) and Douglas Fir (Pseudotsuga menzsisii). However, it does have the potential to develop into a Yew dominated stand in the long term and the site should continue to be monitored.

Marshes and reedbeds cover most of the flat areas beside the rivers and often occur in mosaic with the wet woodland. Common Reed (Phragmites australis) is ubiquitous and is harvested for thatching. There is also much Marsh-marigold (Caltha palustris) and, at the edges of the reeds, the Greater and Lesser Pond-sedge (Carex riparia and C. acutiformis). Hemlock Water-dropwort (Oenanthe crocata), Wild Angelica (Angelica sylvestris), Reed Canary-grass (Phalaris arundinacea), Meadowsweet (Filipendula ulmaria), Common Nettle (Urtica dioica), Purple Loosestrife (Lythrum salicaria), Common Valerian (Valeriana officinalis), Water Mint (Mentha aquatica) and Water Forget-me-not (Myosotis scorpioides) are all also found.

At Banteer there are a number of hollows in the sediments of the floodplain where subsidence and subterranean drainage have created isolated wetlands, sunk below the level of the surrounding fields. The water rises and falls in these holes depending on the water table and several different communities have developed on the acidic or neutral sediments. Many of the ponds are ringed with Rusty Willow, rooted in the mineral soils but sometimes collapsed into the water. Beneath the densest stands are woodland herbs like Yellow Pimpernel (Lysimachia nemorum), with locally abundant Common Water-starwort (Callitriche stagnalis) and Marsh Ragwort (Senecio aquaticus). One of the depressions has Silver Birch (Betula pendula), Ash (Fraxinus excelsior), Crab Apple (Malus sylvestris) and a little Pedunculate Oak (Quercus robur) in addition to the willows.

Floating river vegetation is found along much of the freshwater stretches within the site. The species list is quite extensive, with species such as water-crowfoots, including Pond Water-crowfoot (Ranunculus peltatus), Canadian Pondweed (Elodea canadensis), pondweed species, including Broad-leaved Pondweed (Potamogeton natans), water-milfoil species (Myriophyllum spp.), Common Club-rush (Scirpus lacustris), water-starwort species (Callitriche spp.), Lesser Water-parsnip (Berula erecta) particularly on the Awbeg, Water-cress (Nasturtium officinale), Hemlock Waterdropwort, Fine-leaved Water-dropwort (O. aquatica), Common Duckweed (Lemna minor), Yellow Water-lily (Nuphar lutea), Unbranched Bur-reed (Sparganium emersum) and the moss Fontinalis antipyretica all occurring.

The grasslands adjacent to the rivers of the site are generally heavily improved, although liable to flooding in many places. However, fields of more species-rich wet grassland with species such as Yellow Iris (Iris pseudacorus), Meadowsweet, Meadow Buttercup (Ranunculus acris) and rushes (Juncus spp.) occur occasionally. Extensive fields of wet grassland also occur at Annagh Bog on the Awbeg. These fields are dominated by Tufted Hair-grass (Deschampsia cespitosa) and rushes.

The Blackwater Valley has a number of dry woodlands; these have mostly been managed by the estates in which they occur, frequently with the introduction of Beech and a few conifers, and sometimes of the invasive species Rhododendron (Rhododendron ponticum) and Cherry Laurel (Prunus laurocerasus). Oak woodland is well developed on sandstone about Ballinatray, with the acid oak woodland community of Holly (Ilex aquifolium), Bilberry (Vaccinium myrtillus), Great Wood-rush (Luzula sylvatica) and the ferns Dryopteris affinis and D. aemula occurring in one place. Irish Spurge (Euphorbia hyberna) continues eastwards on acid rocks from its headquarters to the west, but there are also many plants of richer soils, for example Wood Violet (Viola reichenbachiana), Goldilocks Buttercup (Ranunculus auricomus), Broad-leaved Helleborine (Epipactis helleborine) and Red Campion (Silene dioica). Oak woodland is also found in Rincrew, Carrigane, Glendine, Newport and Dromana. The spread of Rhododendron is locally a problem, as is over-grazing. A few limestone rocks stand over the river in places showing traces of a less acidic woodland type with Ash, False Brome (Brachypodium sylvaticum) and Early-purple Orchid (Orchis mascula).

In the vicinity of Lismore, two deep valleys cut in Old Red Sandstone join to form the Owenashad River before flowing into the Blackwater at Lismore. These valleys retain something close to their original cover of oak with Downy Birch (Betula pubescens), Holly and Hazel (Corylus avellana) also occurring. There has been much planting of Beech (as well as some of coniferous species) among the oak on the shallower slopes and here both Rhododendron and Cherry Laurel have invaded the woodland.

The oak wood community in the Lismore and Glenmore valleys is of the classic upland type, in which some Rowan (Sorbus aucuparia) and Downy Birch occur. Honeysuckle (Lonicera periclymenum) and Ivy (Hedera helix) cover many of the trees while Great Wood-rush, Bluebell (Hyacinthoides non-scripta), Wood-sorrel (Oxalis acetosella) and, locally, Bilberry dominate the ground flora. Ferns present on the site include Hard Fern (Blechnum spicant), Male Fern (Dryopteris filix-mas), the bucklerferns D. dilatata and D. aemula, and Lady Fern (Athyrium felix-femina). There are many mosses present and large species such as Rhytidiadelphus spp., Polytrichum formosum, Mnium hornum and Dicranum spp. are noticeable. The lichen flora is important and includes 'old forest' species which imply a continuity of woodland here since ancient times. Tree Lungwort (Lobaria spp.) is the most conspicuous and is widespread.

The Araglin valley consists predominantly of broadleaved woodland. Oak and Beech are joined by Hazel, Wild Cherry (Prunus avium) and Goat Willow (Salix caprea). The ground flora is relatively rich, with Pignut (Conopodium majus), Ramsons (Allium ursinum), Garlic Mustard (Alliaria petiolata) and Wild Strawberry (Fragaria vesca). The presence of Ivy Broomrape (Orobanche hederae), a local species within Ireland, suggests that the woodland, along with its attendant Ivy, is long established.

Along the lower reaches of the Awbeg River, the valley sides are generally cloaked with mixed deciduous woodland of estate origin. The dominant species is Beech, although a range of other species are also present, e.g. Sycamore, Ash and Horsechestnut (Aesculus hippocastanum).

In places the alien invasive species Cherry Laurel dominates the understorey. Parts of the woodlands are more semi-natural in composition, being dominated by Ash, with Hawthorn (Crataegus monogyna) and Spindle (Euonymus europaea) also present. However, the most natural areas of woodland appear to be the wet areas dominated by Alder and willows (Salix spp.). The ground flora of the dry woodland areas features species such as Pignut, Wood Avens (Geum urbanum), Ivy and Soft Shield-fern (Polystichum setiferum), while the ground flora of the wet woodland areas contains characteristic species such as Remote Sedge (Carex remota) and Opposite-leaved Golden-saxifrage (Chrysosplenium oppositifolium). In places along the upper Bride, scrubby, semi-natural deciduous woodland of willow, oak and Rowan occurs, with abundant Great Wood-rush in the ground flora.

The Bunaglanna River passes down a very steep valley, flowing in a north-south direction to meet the Bride River. It flows through blanket bog to heath and then scattered woodland. The higher levels of moisture here enable a vigorous moss and fern community to flourish, along with a well-developed epiphyte community on the tree trunks and branches.

At Banteer a type of wetland occurs near the railway line which offers a complete contrast to the others. Old turf banks are colonised by Royal Fern (Osmunda regalis) and Eared Willow (Salix aurita), and between them there is a sheet of Bottle Sedge (Carex rostrata), Marsh Cinquefoil (Potentilla palustris), Bogbean (Menyanthes trifoliata), Marsh St. John's-wort (Hypericum elodes) and the mosses Sphagnum auriculatum and Aulacomnium palustre. The cover is a scraw (i.e. floating vegetation) with characteristic species like Marsh Willowherb (Epilobium palustre) and Early Marshorchid (Dactylorhiza incarnata).

The soil high up the Lismore valleys and in rocky places is poor in nutrients but it becomes richer where streams enter and also along the valley bottoms. In such sites Wood Speedwell (Veronica montana), Wood Anemone (Anemone nemorosa), Enchanter's-nightshade (Circaea lutetiana), Barren Strawberry (Potentilla sterilis) and shield-fern (Polystichum sp.) occur. There is some Ramsons, Three-nerved Sandwort (Moehringia trinervia) and Early-purple Orchid (Orchis mascula) locally, with Opposite-leaved Golden-saxifrage, Meadowsweet and Bugle (Ajuga reptans) in wet places. A stand of Hazel woodland at the base of the Glenakeeffe valley shows this community well.

The area has been subject to much tree felling in the recent past and re-sprouting stumps have given rise to areas of bushy Hazel, Holly, Rusty Willow and Downy Birch. The ground in the clearings is heathy with Heather (Calluna vulgaris), Slender St John's-wort (Hypericum pulchrum) and the occasional Broom (Cytisus scoparius) occurring.

The estuary and the habitats within and associated with it form a large component of the site. Very extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. The main expanses occur at the southern end of the site, with the best examples at Kinsalebeg in Co. Waterford, and between Youghal and the main bridge north of it across the river in Co. Cork. Other areas occur along the tributaries of the Licky in east Co. Waterford, and Glendine, Newport, Bride and Killahaly Rivers in Waterford west of the Blackwater. There are also large tracts along the Tourig River in Co. Cork. There are narrow bands of intertidal flats along the main river as far north as Camphire Island. Patches of green filamentous algae (Ulva sp. and Enteromorpha sp.) occur in places, while fucoid algae are common on the more stony flats, even as high upstream as Glenassy or Coneen.

The area of saltmarsh within the site is small. The best examples occur at the mouths of the tributaries and in the townlands of Foxhole and Blackbog. Those found are generally characteristic of Atlantic salt meadows. The species list at Foxhole consists of Common Saltmarsh-grass (Puccinellia maritima), small amounts of Greater Seaspurrey (Spergularia media), glasswort (Salicornia sp.), Sea Arrowgrass (Triglochin maritima), Annual Sea-blite (Suaeda maritima) and Sea Purslane (Halimione portulacoides) - the latter a very recent coloniser. Some Sea Aster (Aster tripolium) occurs, generally with Creeping Bent (Agrostis stolonifera). Sea Couch (Elymus pycnanthus) and small isolated clumps of Sea Club-rush (Scirpus maritimus) are also seen. On the Tourig River additional saltmarsh species found include sea-lavenders (Limoniun spp.), Thrift (Armeria maritima), Red Fescue (Festuca rubra), Common Scurvygrass (Cochlearia officinalis) and Sea Plantain (Plantago maritima). Oraches (Atriplex spp.) are found on channel edges. Species such as Saltmarsh Rush (Juncus gerardi) and Sea Rush (J. maritimus) are found in places in this site also, and are indicative of Mediterranean salt meadows. Areas of Salicornia mud are found at the eastern side of the townland of Foxbole above Youghal, at Blackbog, along the Tourig and Kinsalebeg esturaies.

The shingle spit at Ferrypoint supports a good example of perennial vegetation of stony banks. The spit is composed of small stones and cobbles and has a well-developed and diverse flora. At the lowest part, Sea Beet (Beta vulgaris subsp. maritima), Curled Dock (Rumex crispus) and Yellow Horned-poppy (Glaucium flavum) occur, while at a slightly higher level Sea Mayweed (Matricaria maritima), Cleavers (Galium aparine), Rock Samphire (Crithmum maritimum), Sea Sandwort (Honkenya peploides), Spear-leaved Orache (Atriplex prostrata) and Babington’s Orache (A. glabriuscula). Other species present include Sea Rocket (Cakile maritima), Herb-Robert (Geranium robertianum), Red Fescue and Kidney Vetch (Anthyllis vulneraria). The top of the spit is more vegetated and supports lichens and bryophytes, including Tortula ruraliformis and Rhytidiadelphus squarrosus.

The site supports several Red Data Book plant species, i.e. Starved Wood-sedge (Carex depauperata), Killarney Fern (Trichomanes speciosum), Pennyroyal (Mentha pulegium), Bird's-nest Orchid (Neottia nidus-avis), Golden Dock (Rumex maritimus) and Bird Cherry (Prunus padus). The first three of these are also protected under the Flora (Protection) Order, 2015, while the Killarney Fern is also listed on Annex II of the E.U. Habitats Directive. The following plants, relatively rare nationally, are also found within the site: Toothwort (Lathraea squamaria) - associated with woodlands on the Awbeg and Blackwater; Summer Snowflake (Leucojum aestivum) and Flowering Rush (Butomus umbellatus) on the Blackwater; Common Calamint (Calamintha ascendens), Red Campion, Sand Leek (Allium scorodoprasum) and Wood Club-rush (Scirpus sylvaticus) on the Awbeg.

The site is also important for the presence of several E.U. Habitats Directive Annex II animal species, including Sea Lamprey (Petromyzon marinus), Brook Lamprey (Lampetra planeri), River Lamprey (L. fluviatilis), Twaite Shad (Alosa fallax fallax), Freshwater Pearl Mussel (Margaritifera margaritifera), Otter (Lutra lutra) and Salmon (Salmo salar). The Awbeg supports a population of White-clawed Crayfish (Austropotamobius pallipes). This threatened species has been recorded from a number of locations and its remains are also frequently found in Otter spraints, particularly in the lower reaches of the river. The freshwater stretches of the Blackwater and Bride Rivers are designated salmonid rivers. The Blackwater is noted for its enormous run of salmon over the years. The river is characterised by significant pools, streams, glides, and generally, a good push of water coming through except in very low water. Spring salmon fishing can be carried out as far upstream as Fermoy and is highly regarded especially at Careysville. The Bride, main Blackwater upstream of Fermoy, and some of the tributaries are more associated with grilse fishing.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. The bat species Natterer's Bat, Daubenton's Bat, Whiskered Bat, Brown Long-eared Bat and Pipistrelle, can be seen feeding along the river, roosting under the old bridges and in old buildings.

Common Frog, a Red Data Book species that is also legally protected (Wildlife Act, 1976), occurs throughout the site. The rare bush cricket Metrioptera roselii (Order Orthoptera) has been recorded in the reed/willow vegetation of the river embankment on the Lower Blackwater River. The Swan Mussel (Anodonta cygnea), a scarce species nationally, occurs at a few sites along the freshwater stretches of the Blackwater.

Several bird species listed on Annex I of the E.U. Birds Directive are found on the site. Some use it as a staging area, others are vagrants, while others use it more regularly. Internationally important numbers of Whooper Swan (average peak 174, 1994/95-95/96) and nationally important numbers Bewick's Swan (average peak 5, 1996/97-2000/01) use the Blackwater Callows. Golden Plover occur in regionally important numbers on the Blackwater estuary (average peak 885, 1984/85-86/87) and on the River Bride (absolute maximum 2,141, 1994/95). Staging Terns visit the site annually, with >300 Sandwich Tern and >200 Arctic/Common Tern (average peak 1974-1994). The site also supports populations of the following: Red Throated Diver, Great Northern Diver, Barnacle Goose, Ruff, Wood Sandpiper and Greenland Whitefronted Goose. Three breeding territories for Peregrine Falcon are known along the Blackwater Valley. This, the Awbeg and the Bride River are also thought to support at least 30 pairs of Kingfisher. Little Egret breed at the site (12 pairs in 1997, 19 pairs in 1998).

The site holds important numbers of wintering waterfowl. Both the Blackwater Callows and the Blackwater Estuary Special Protection Areas (SPAs) hold internationally important numbers of Black-tailed Godwit (average peak 847, 1994/95-95/96 on the callows, average peak 845, 1974/75-93/94 in the estuary). The Blackwater Callows also hold Wigeon (average peak 2,752), Teal (average peak 1,316), Mallard (average peak 427), Shoveler (average peak 28), Lapwing (average peak 880), Curlew (average peak 416) and Black-headed Gull (average peak 396) (counts from 1994/95-95/96). Numbers of birds using the Blackwater Estuary, given as the mean of the highest monthly maxima over 20 years (1974-94), are Shelduck (137 +10 breeding pairs), Wigeon (780), Teal (280), Mallard (320 + 10 breeding pairs), Goldeneye (11-97), Oystercatcher (340), Ringed Plover (50 + 4 breeding pairs), Grey Plover (36), Lapwing (1,680), Knot (150), Dunlin (2,293), Snipe (272), Black-tailed Godwit (845), Bar-tailed Godwit (130), Curlew (920), Redshank (340), Turnstone (130), Black-headed Gull (4,000) and Lesser Black-backed Gull (172). The greatest numbers (75%) of the wintering waterfowl of the estuary are located in the Kinsalebeg area on the

east of the estuary in Co. Waterford. The remainder are concentrated along the Tourig estuary on the Co. Cork side.

The river and river margins also support many Heron, non-breeding Cormorant and Mute Swan (average peak 53, 1994/95-95/96 in the Blackwater Callows). Heron occurs all along the Bride and Blackwater Rivers: 2 or 3 pairs at Dromana Rock; approximately 25 pairs in the woodland opposite; 8 pairs at Ardsallagh Wood and around 20 pairs at Rincrew Wood have been recorded. Some of these are quite large and significant heronries. Significant numbers of Cormorant are found north of the bridge at Youghal and there are some important roosts present at Ardsallagh Wood, downstream of Strancally Castle and at the mouth of the Newport River. Of note are the high numbers of wintering Pochard (e.g. 275 individuals in 1997) found at Ballyhay quarry on the Awbeg, the best site for Pochard in Co. Cork.

Other important species found within the site include Long-eared Owl, which occurs all along the Blackwater River, and Barn Owl, a Red Data Book species, which is found in some old buildings and in Castlehyde, west of Fermoy. Reed Warbler, a scarce breeding species in Ireland, was found for the first time in the site in 1998 at two locations. It is not known whether or not this species breeds on the site, although it breeds nearby to the south of Youghal. Dipper occurs on the rivers.

Land use at the site is mainly centred on agricultural activities. The banks of much of the site and the callows, which extend almost from Fermoy to Cappoquin, are dominated by improved grasslands which are drained and heavily fertilised. These areas are grazed and used for silage production. Slurry is spread over much of this area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of E.U. Habitats Directive Annex II animal species within it. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the Blackwater and its tributaries, and there are a number of angler associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. Other recreational activities such as boating, golfing and walking are also popular. Water skiing is carried out at Villierstown. Parts of Doneraile Park and Anne's Grove are included in the site: both areas are primarily managed for amenity purposes. There is some hunting of game birds and Mink within the site. Ballyhay quarry is still actively quarried for sand and gravel. Several industrial developments, which discharge into the river, border the site.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, over-grazing within the woodland areas, and invasion by non-native species, for example Rhododendron and Cherry Laurel.

Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore, it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

SITE NAME: STACK'S TO MULLAGHAREIRK MOUNTAINS, WEST

LIMERICK HILLS AND MOUNT EAGLE SPA

SITE CODE: 004161

The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA

is a very large site centred on the borders between the counties of Cork, Kerry and

Limerick. The site is skirted by the towns of Newcastle West, Ballydesmond,

Castleisland, Tralee and Abbeyfeale. The mountain peaks included in the site are not notably high or indeed pronounced, the highest being at Knockfeha (451 m). Other mountains included are Mount Eagle, Knockanefune, Garraunbaun, Taur, Rock Hill, Knockacummer, Mullaghamuish, Knight's Mt, Ballincollig Hill, Beennageeha Mt, Sugar Hill, Knockanimpuba and Knockathea, amongst others. Many rivers rise within the site, notably the Blackwater, Owentaraglin, Owenkeal, Glenlara, Feale, Clydagh, Allaghaun, Allow, Oolagh, Galey and Smerlagh.

The site consists of a variety of upland habitats, though almost half is afforested. The coniferous forests include first and second rotation plantations, with both pre-thicket and post-thicket stands present. Substantial areas of clear-fell are also present at any one time. The principal tree species present are Sitka Spruce (Picea sitchensis) and Lodgepole Pine (Pinus contorta). A substantial part (28%) of the site is unplanted blanket bog and heath, with both wet and dry heath present. The vegetation of these habitats is characterised by such species as Ling Heather (Calluna vulgaris), Bilberry (Vaccinium myrtillus), Common Cottongrass (Eriophorum angustifolium), Hare's-tail Cottongrass (Eriophorum vaginatum), Deergrass (Scirpus cespitosus) and Purple Moor-grass (Molinia caerulea). The remainder of the site is mostly rough grassland that is used for hill farming. This varies in composition and includes some wet areas with rushes (Juncus spp.) and some areas subject to scrub encroachment.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for Hen Harrier.

This SPA is a stronghold for Hen Harrier and supports the largest concentration of the species in the country. A survey in 2005 recorded 45 pairs, which represents over 20% of the all-Ireland total. A similar number of pairs had been recorded in the 1998-2000 period. The mix of forestry and open areas provides optimum habitat conditions for this rare bird, which is listed on Annex I of the E.U. Birds Directive.

The early stages of new and second-rotation conifer plantations are the most frequently used nesting sites, though some pairs may still nest in tall heather of unplanted bogs and heath. Hen Harriers will forage up to c. 5 km from the nest site, utilising open bog and moorland, young conifer plantations and hill farmland that is not too rank. Birds will often forage in openings and gaps within forests. In Ireland, small birds and small mammals appear to be the most frequently taken prey.

Short-eared Owl, a very rare species in Ireland, has been known to breed within the site. Nesting certainly occurred in the late 1970s and birds have been recorded intermittently since. The owls are considered to favour this site due to the presence of Bank Voles, a favoured prey item. Merlin also breed within the site but the size of the population is not known. Red Grouse is found on some of the unplanted areas of bog and heath – this is a species that has declined in Ireland and is now Red-listed. The Stack's to Mullaghareirk Mountains, West Limerick Hills and Mount Eagle SPA is of ornithological importance because it provides excellent nesting and foraging habitat for breeding Hen Harrier and is one the top sites in the country for the species. The presence of three species, Hen Harrier, Merlin and Short-eared Owl, which are listed on Annex I of the E.U. Birds Directive is of note.

Appendix 2. Site drawings