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Appropriate Assessment Screening Report

PRESENTED TO

Reside (Castlepark) Ltd.
for a Proposed Large-scale Residential Development at Castlelands, Mallow, Co. Cork

October 24

Environmental Consultancy Services

DOCUMENT CONTROL SHEET

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1 INTRODUCTION

1.1 Background

Enviroguide Consulting was commissioned by Reside (Castlepark) Ltd to prepare an Appropriate Assessment Screening Report for a Proposed Large-scale Residential Development (LRD), located at Castlelands, Mallow, Co. Cork, hereafter referred to as 'Proposed Development' or 'Site', when referring to the application Site area within the red line boundary. If referring to the applicant's entire landholding, this will be clearly stated. This Report contains information to enable the Competent Authority to undertake Stage 1 Appropriate Assessment (AA) screening in respect of the Proposed Development.

1.2 Quality Assurance and Competence

Enviroguide Consulting is a multi-disciplinary consultancy specialising in the areas of the Environment, Waste Management and Planning. All Enviroguide consultants carry scientific or engineering qualifications and have a wealth of experience working within the Environmental Consultancy sectors, having undergone extensive training, and continued professional development.

Enviroguide Consulting as a company remains fully briefed in European and Irish environmental policy and legislation. Enviroguide staff members are highly qualified in their field. Professional memberships include the Chartered Institution of Wastes Management (CIWM), the Irish Environmental Law Association and Chartered Institute of Ecology and Environmental Management (CIEEM).

All surveying and reporting have been carried out by qualified and experienced ecologists and environmental consultants. CBH & GK, Ecologists with Enviroguide, undertook the habitat, fauna and flora surveys and desktop research for this Report. While EJD assisted both CBH and GK in the completion of the emergence bat surveys. TR carried out an additional site survey in July 2024, and SH provided updates to the report in accordance with the findings.

CBH is the author of this Report. CBH is an Ecologist with Enviroguide and has a BSc. (Hons) in Wildlife Biology from Munster Technological University (formerly ITT) and a wealth of experience in desktop research, literature review and reporting, as well as practical field and laboratory experience. CBH has prepared several Stage I and Stage II Appropriate Assessment Reports. Additionally, CBH has supported the preparations of several Biodiversity Chapters for Environmental Impact Assessment Reports. CBH is also a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

GK is a former Graduate Ecologist with B.Sc. (Hons) in Zoology from University College Cork who has experience in data collation, field surveys and report writing (including experience with GIS). GK has experience in completing Stage I AA Reports and has supported the preparation of various ecological reports.

EJD is a former Ecologist with Enviroguide Consulting. EJD has extensive experience in field surveying, including habitat, fauna, and flora surveys. As well as report writing experience in preparing several Stage I and Stage II Appropriate Assessment Reports.

TR has a B.Sc. in Environmental and Natural Resource Management (Hons) and a Post-Graduate Diploma in Environmental Management with GIS. TR is an experienced Ecologist who has specialised in ornithology and terrestrial mammals with over 8 years' experience in ecological consultancy along with a lifetime of personal interest and experience in wildlife management. TR has extensive field experience with further experience and competencies in desktop research, preparing AA Screening Reports (AA), Ecological Impact Assessment Reports (EcIAs), Bird Activity Reports and detailed Species-Specific Maps. His ability to deal with and understand a range of species, survey methods and habitats is excellent, having an in-depth knowledge and understanding of EU and Irish legislation.

SH has a B.Sc. (Hons) in Zoology and a Ph.D. in Marine Ecology from University College Dublin, and a wealth of experience in desktop research, bioinformatics analyses, literature review and reporting, as well as practical field and laboratory experience including habitat mapping, invasive species surveys, terrestrial fauna surveys (incl. mammal presence and bat activity surveys), freshwater and marine fish surveys and environmental DNA analysis. SH has prepared several Stage I and Stage II Appropriate Assessment Reports and Ecological Impact Assessments (EcIA). Additionally, SH has authored and supported the preparations of several Biodiversity Chapters for Environmental Impact Assessment Reports.

1.3 Description of Proposed Development

1.3.1 Proposed Development Description

The Proposed Development comprises the construction of 469 no. residential units, a creche, an interpretive centre/café, and all associated site development works.

1.3.2 Site location

The Site of the Proposed Development comprises a greenfield site located at Castle Park in the townland of Castlelands, Mallow, County Cork. The Site lies just east of Mallow town centre and is situated 26km northeast of Cork City. The Site currently comprises several agricultural fields and associated vegetated boundaries. The national road N20 runs ca.1km to the west of the Site, connecting the cities of Cork and Limerick, with St. Joseph's (L1220) local road present to the north. The Site is bound by agricultural fields to the northeast, east, and residential lands to the north and west. The Site comprises a public park which runs adjacent to the Blackwater River to the south. To the west of the Site, there is an existing housing estate which provides an access point into the scheme via Kingsfort Avenue. St. Joseph's local road will provide a second access point to the scheme further north.

The Site of the Proposed Development is located within Land Use Zoning consisting of residential zoned land parcel MW-R-01, *'Existing Residential/Mixed Residential and Other Uses'* zoned land and *'Green Infrastructure'* zoned Land within the Cork County Development Plan 2022-2028.

The location of the Site is presented in Figure 2 below.

1.3.2.1 Description of the Construction Phase

Given the size of the Proposed Development, all construction works will occur in a phased process. However, the entire Construction Phase will comprise the following elements:

- The works will involve the excavation of materials to facilitate the works.
- A site compound containing; site offices, canteen and toilet/changing facilities, temporary water supplies and wastewater disposal to the existing foul sewer network.
- Site access for the entirety of the Construction Phase will be via St. Joseph's Road, per the Site compound location shown in Figure 1.
- A secure compound and containers for storage of materials and plant;
- Temporary vehicle parking areas.
- A contained area for machinery refuelling and construction chemical storage.
- A contained area for washing out of concrete and mortar trucks.
- Security/heras fencing will be provided at the main site entrance and around all boundaries as required.
- Appropriate signage will be positioned at approach roads to the Site area so as to inform the public of the Site activities. Public access will not be permitted to the Site.
- All vehicles and personnel will be checked on entry to ensure no unauthorised access or fly-tipping.
- Water supply for the construction facilities will be taken from the mains supply which is adjacent to the Site in the existing Castlelands estate. Power for the pumps and small power requirements for construction activities will be supplied from diesel generators until the permanent site power supply is available.

For the duration of the Construction Phase, it is envisaged that the maximum working hours shall be 08:00 to 17:30 Monday to Friday (excluding bank holidays) and 08:00 to 14:00 Saturdays, and 08:00 to 14:00 periodically on Sundays & Bank Holidays.

On occasion, it may be necessary to carry out noisy activities outside of normal working hours. In such instances, prior consultation will be carried out with Cork County Council and local residents outlining the nature and reason for the works and their expected duration.

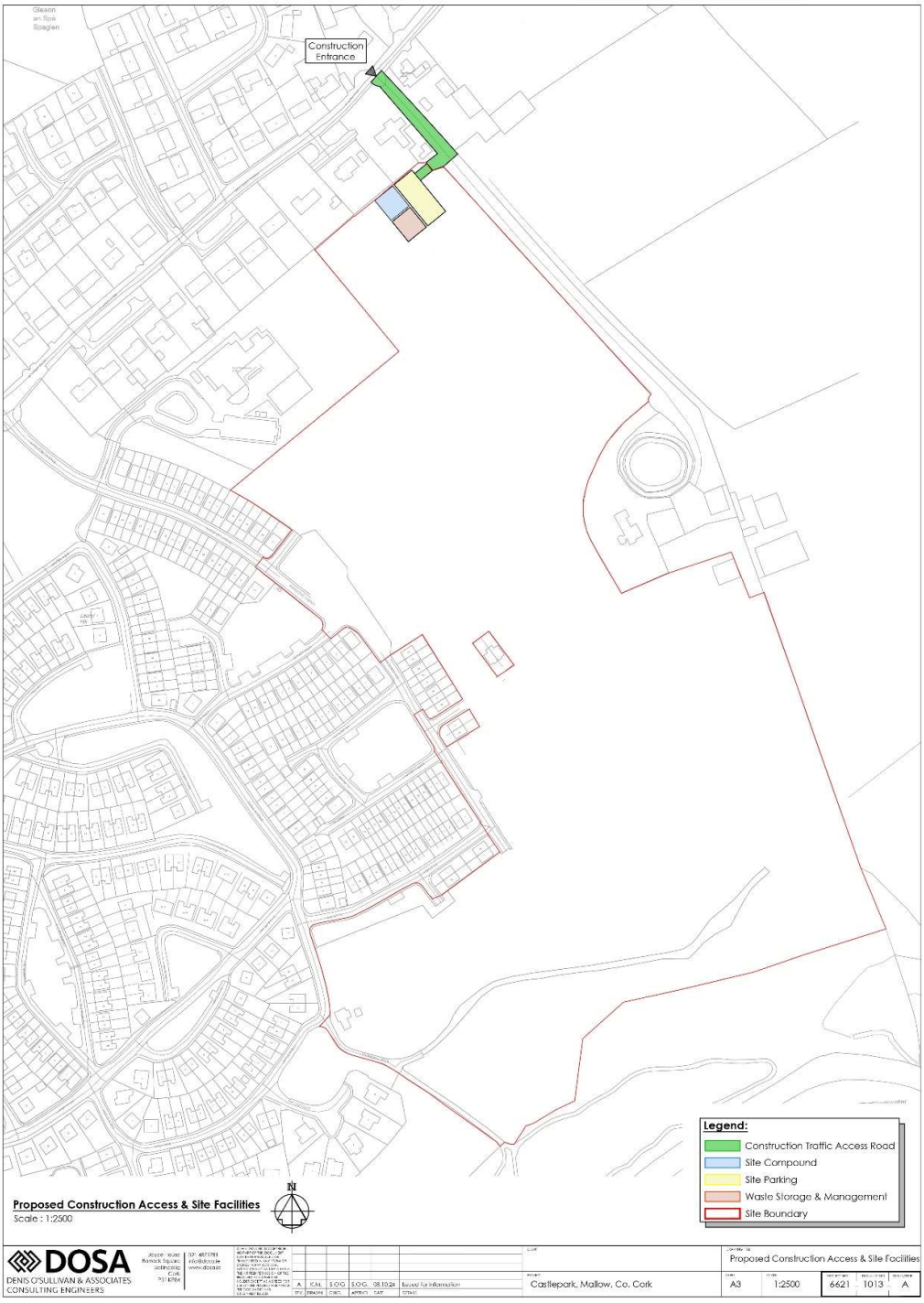

FIGURE 1. SITE ACCESS POINT AND LOCATION OF SITE COMPOUND (SOURCE: DOSA DRAWING 6621-1013-A).

1.3.2.2 Description of the Operational Phase

The Operational Phase will comprise residential and commercial use that is consistent with the neighbouring land use in the area, indefinitely.

1.3.3 Drainage and Water Supply

1.3.3.1 Surface water

The subject lands are drained naturally and have the benefit of direct access to the public stormwater network in the existing estate. The lands directly abut a stormwater network already laid within the existing estate along Kingsfort Avenue, Maple Square and Maple Avenue which outfalls directly into the River Blackwater as outlined in Figure 2 below. Prior to entering the existing system, the stormwater generated will be treated through a number of nature-based solutions in line with adopted SuDS measures as detailed below.

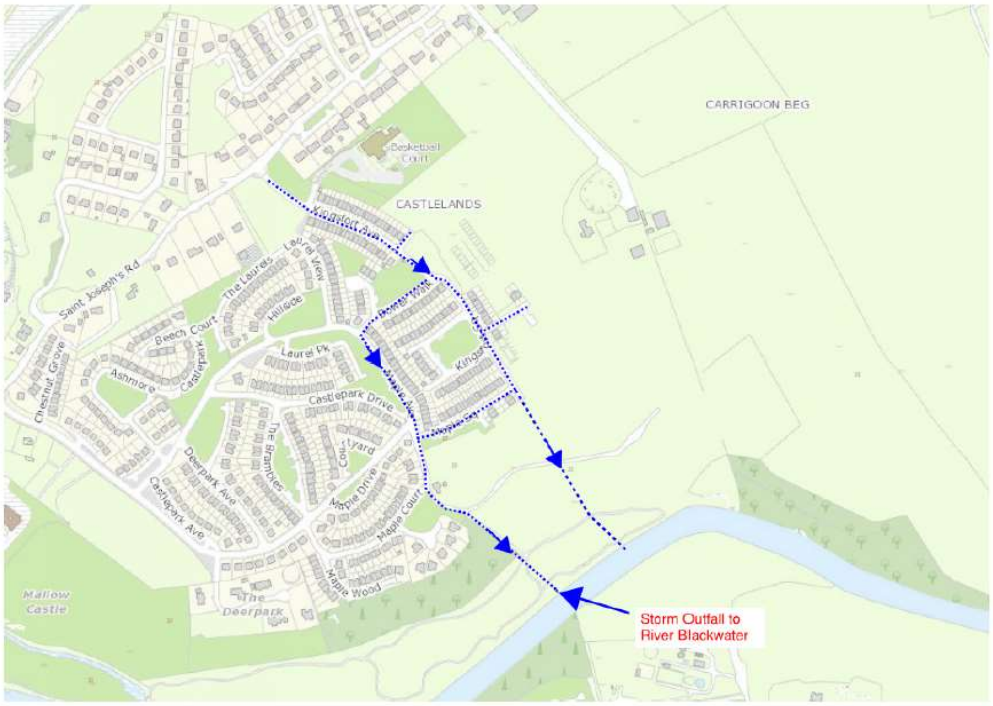

FIGURE 2. SHOWING THE LOCATION OF THE STORMWATER OUTFALL TO THE BLACKWATER RIVER FROM RESIDENTIAL ESTATE ADJACENT TO THE PROPOSED DEVELOPMENT (DOSA CONSULTING ENGINEERS, 2024).

The proposed surface/storm water drainage system has been designed to cater for all surface water runoff from all hard surfaces within the proposed development including roadways, roofs, parking areas etc.

Surface water generated from the proposed residential development will be conveyed through a proposed surface water network including SuDS and attenuated/managed on site prior to final discharge at Qbar greenfield run-off rates.

Surface water discharge rates from the proposed surface water drainage network will be controlled by a vortex flow control device (Hydrobrakes or equivalent) and associated attenuation tanks. Surface water discharge will also pass via a full retention fuel/oil separators (sized in accordance with permitted discharge from the site).

The proposed surface water drainage network will collect surface water runoff from the Site via a piped network prior to discharging off site via the attenuation tanks, flow control devices and separator arrangement as noted above. Prior to entering the existing system, the stormwater generated will be treated through a number of nature-based solutions in line with adopted SuDS measures.

1.3.3.1.1 SuDS Measures

The Site's surface water management infrastructure has been designed by DOSA Consulting Engineers in accordance with the Greater Dublin Strategic Drainage Study (GDSDS) which requires that the following design criteria be applied to all sites:

1. River water quality protection
2. River regime protection
3. Level of (surface) flooding for the Site
4. River flood protection

Following a comprehensive review of the above, the design approach for this project is detailed in the Infrastructure Report, and includes the following Sustainable Drainage Systems (SuDS) (DOSA Consulting Engineers, 2024a):

- Permeable Pavements
- Greenroofs
- Rainwater Harvesting
- Tree Pits
- Attenuation Tanks
- Flow Control Device
- Petrol Interceptor
- Swales
- Management Train

1.3.3.1.2 SuDS Statement

For the purposes of objectivity and clarity, mitigation measures are not considered in the impact prediction. As per the judgment of the Court (Second Chamber) on the 15th of June 2023 (see Eco Advocacy CLG v An Bord Pleanala (Case C 721/21)), 'Article 6(3) of Directive 92/43 must be interpreted as meaning that, in order to determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site'.

The above SuDS measures are incorporated into the surface water design of the Proposed Development as standard practice and as required by the current Cork County Development Plan (CDP) 2022-2028 objective WM 11-10. As such, although the SuDS measures will result in the removal of pollutants such as silt, and

hydrocarbons from surface waters, they have not been included in the project design for the purpose of mitigating impacts on any European sites.

1.3.3.2 Foul Drainage

The Proposed Development will be connected to the foul sewer network that is already laid within the existing estate along Kingsfort Avenue, Maple Square and Maple Avenue. There is a 225mm gravity foul sewer south of Castlelands estate, terminating at Riverbank Walk. All foul waters entering the network will be treated at Mallow WwTP.

As noted in the conclusions of the assimilative capacity assessment of Environmental Limit Values (ELVs) for the Wastewater Treatment Plant (WwTP): "*Given the proposed stringent ELV's and the network upgrades, the operational discharges will support appropriate water chemistry conditions and will therefore not hinder the restoration of the conservation objectives (and FPM Regulation standards) for macroinvertebrates, filamentous algae, phytobenthos, macrophytes and siltation. Thereby ensuring that the Ecological Quality Objectives as set out in the fourth schedule of the European Communities Environmental Objectives (Fresh Water Pearl Mussel) Regulations (S.I. No. 296 of 2009) can be maintained.*" Thus, it should be noted that the Mallow WwTP upgrade works are complete and have capacity for the Proposed Development connection to the existing network. The facility is currently operational with the upgrades in place and is pending their amended licence from the EPA.

1.3.4 Landscape Plan

The proposed landscaping of the Site has been prepared by Simon Ronan Landscape Architects (2024). The landscape plan incorporates three design pillars, which respond to the uniqueness of place and the existing site sources, these are: Ecology and Biodiversity, Connectivity, and Community.

The masterplan showcases an ecological approach, incorporating sustainable features such as rainwater harvesting, native plantings, and wildlife-friendly habitats, promoting a harmonious coexistence between residents and the environment. Community spaces, including the Central Park and the Great Lawn, provide a vibrant heart for social interactions and shared experiences. With its emphasis on preserving the rich heritage of Castlelands, the landscape offers an idyllic and sustainable living experience for residents. The Greenway is the central spine of the entire project, bringing nature in the core of the Development and allowing a fluent interconnection between all the different landscape moments. The landscape design provides for the following key features, all of which are connected throughout:

- The perseveration of an Archaeological Site to the West;
- Inclusion of lawns and meadow grassland;
- Urban park;
- Playground;
- Shared surfaces;
- Nature park;
- Greenway;
- North park;
- Private gardens;
- Allotments, and;

- A sports area.

The Landscape Plan includes the reinstatement of trees and grassland habitat lost due to Construction works. Whilst higher value trees will be retained, the majority of new trees planted as part of the Proposed Development will be native species and will comprise a mix of species already present on Site (Figure 6). In addition, the Proposed Development Site is located at a setback of 80m from the Blackwater River, and associated SAC, with the existing public park to the south intervening. The proposed nature park to the south of the Development, and the intervening public park directly south effectively provide a natural buffer between the Proposed Development Site and this important watercourse.

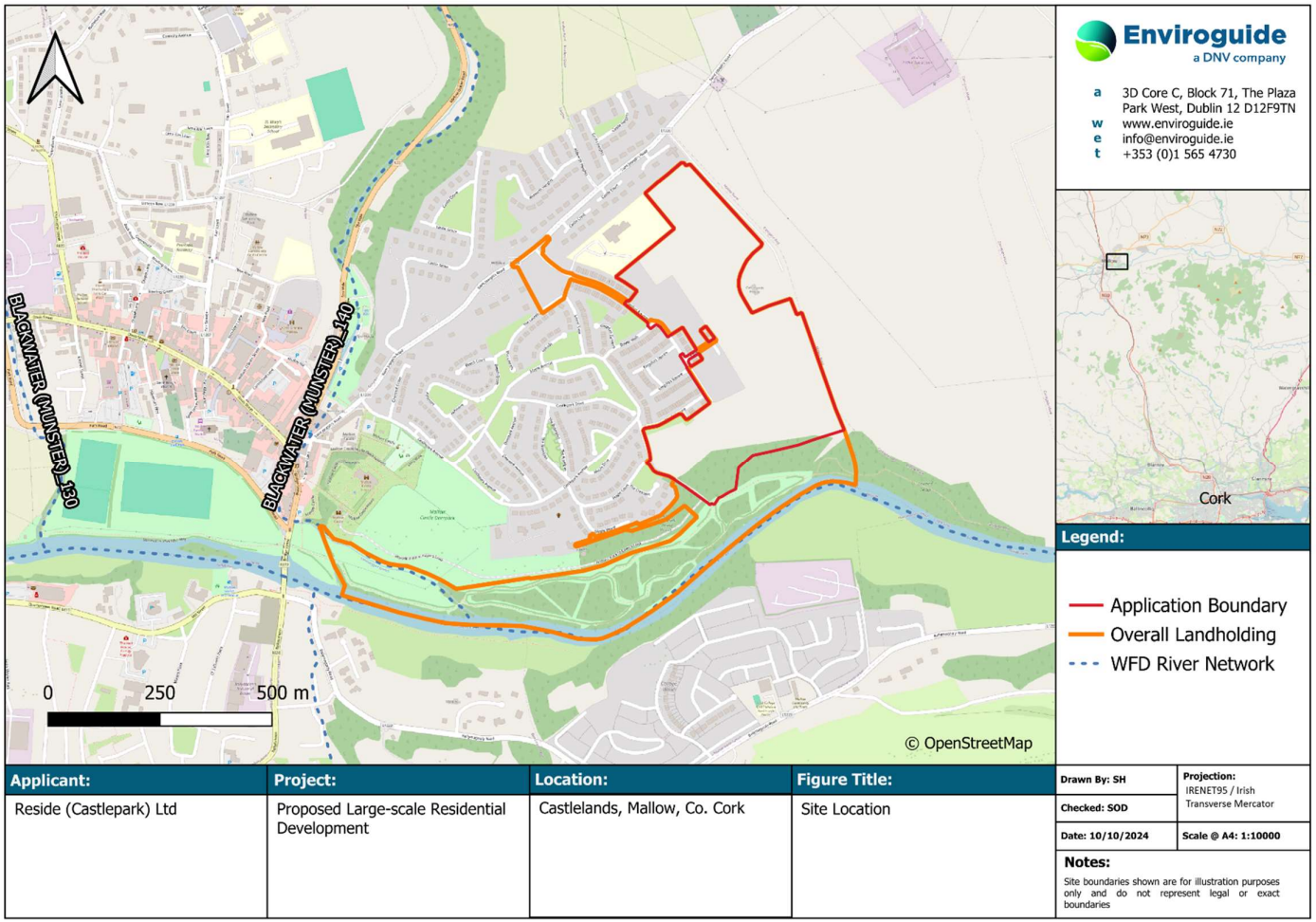

FIGURE 3. SITE LOCATION.

FIGURE 4. PROPOSED SITE LAYOUT (DEADY GAHAN, 2024).

FIGURE 5. MASTERPLAN LANDSCAPE PLAN (SIMON RONAN ARHCITECTS, 2024)

2 LEGISLATIVE AND POLICY CONTEXT

2.1 Legislative Background

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of Special Protection Areas (SPAs). The Habitats Directive has been transposed into Irish law through the EC (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011).

It is the responsibility of each Member State to designate SPAs and SACs, both of which will form part of the Natura 2000 Network, a network of protected sites throughout the European Community. These designated sites are referred to as "Natura 2000 sites" or "European sites". 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 (QIs) and Special Conservation Interests (SCIs) of the sites; from these the conservation objectives of the site are derived.

An AA is a required assessment to determine the likelihood of significant effects, based on best scientific knowledge, of any plans or projects on European sites. A screening for AA determines whether a plan or project, either alone or in combination with other plans and projects, is likely to have significant effects on a European site, in view of its conservation objectives.

This AA Screening has been undertaken to determine the potential for significant effects on relevant European sites. The purpose of this assessment is to determine, the appropriateness, or otherwise, of the Proposed Development in the context of the conservation objectives of such sites.

2.1.1 Legislative Context

The obligations in relation to Appropriate Assessment have been implemented in Ireland under Part XAB of the Planning and Development Act 2000, as amended ("the 2000 Act"), and in particular Section 177U and Section 177V thereof. The relevant provisions of Section 177U in relation to AA screening have been set out below:

"***177U.—*** *(1) A screening for appropriate assessment of a draft Land use plan or application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.*

(2)…

(3)…

(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site.

(5) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a proposed development, as the case may be, is not required if it can be excluded, on the basis of objective information, that the draft Land use plan or proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site."

An Appropriate Assessment is required under Article 6 of the Habitats Directive where a project or plan may give rise to significant effects upon a European site. Paragraph 3 states that:

"*6(3) Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site, in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

2.2 Policy Context

2.2.1 Cork County Development Plan (2022-2028)

While the County Development Plan in its entirety is relevant to this Development and can be referred to separately. Policies, principles and objectives of the Cork County Development Plan (CCDP) 2022 – 2028 that are of particular relevance to this Report are outlined in this section.

Volume 1 of the CCDP (2022-2028) comprises the main policy material for the CDP, with the following chapters being of particular relevance to this report:

- Chapter 14 – Green Infrastructure and Recreation
- Chapter 15 – Biodiversity and the Environment
- Chapter 16 – Built and Cultural Heritage

Chapter 14 lists a number of objectives concerning green (and blue) infrastructure and recreation, which can be referred to. However, the countywide objectives for green and blue infrastructure, which underpin these objectives, include (GI-14-1):

- Create an integrated and coherent green infrastructure for the County by encouraging the retention and strengthening of substantial networks of green space in urban, urban fringe and the wider countryside to serve the needs of communities now and in the future and as a key contributor to climate mitigation and climate adaptation.

- Develop the green infrastructure network (including green corridors) to ensure the conservation and enhancement of biodiversity, including the protection of Natura 2000 European Sites, the provision of accessible parks, open spaces and recreational facilities (particularly within settlements), the sustainable management of water, the maintenance of landscape character and the protection and enhancement of architectural and archaeological heritage.
- Capitalise on and highlight the multifunctional benefits/opportunities (ecosystem services) that green and blue infrastructure can present. Seek to advance the use of nature based solutions as an alternative to traditional infrastructure. Seek to advance an ecosystem services approach and ecosystem services valuation as a decision-making tool in plans and projects.
- Recognise rivers and streams (and their wider riparian corridors) as one of the natural foundations for multi-functional green and blue infrastructure corridors. Seek to strengthen ecological linkages which watercourses have with other water dependent habitats as well as with hedges/treelines, woodland and scrub in the wider landscape.
- Ensure that all settlements have an adequate level of quality green and recreational infrastructure (active and passive) taking into account existing deficits, planned population growth as well as the need to serve their surrounding hinterlands.
- Achieve a net gain in green infrastructure through the protection and enhancement of existing assets and through the provision of new green infrastructure as an integral part of the planning process. Encourage the provision of different green infrastructure elements, such as trees in urban areas and green roofs in town centres, so that a net gain in green infrastructure is achieved over the lifetime of this Development Plan.
- Seek to increase investment in green infrastructure provision and maintenance by accessing relevant EU funding mechanisms and national funding opportunities including tourism related funding.
- Integrate the provision of green infrastructure with infrastructure provision and replacement, including walking and cycling routes, as appropriate, while protecting biodiversity and other landscape resources.
- Support initiatives and programmes which seek to strengthen the green and blue infrastructure and work with communities and other stakeholders in furthering the green and blue infrastructure concept.

The following objectives are outlined in Chapter 15 in relation to protecting biodiversity and the environment:

- BE-15-1: To support and comply with national and biodiversity protection policies.
- BE-15-2: To protect sites, habitats, and species.
- BE-15-3: Local Authority Plan making;
    - Ensure that biodiversity issues are considered at the earliest possible stages of plan making;
    - Ensure that plans and strategies comply with nature conservation legislation and policy as required, and;
    - Carry out ecological impact assessment of plans and strategies as appropriate.
- BE-15-4: Local authority development and projects;

  - Ensure that biodiversity protection is considered at design stage for works and development planned and progress in Cork County Council and that all such projects comply with nature conservation legislation and policy as required;
  - Fulfil appropriate assessment and environmental impact assessment requirements and carry out ecological impact assessments in relation to local authority plans and projects as appropriate.
- BE-15-5: Biodiversity on council owned land and managed land and property
- BE-15-6: Biodiversity and new development.
- BE-15-7: Control of invasive alien species.
- BE-15-8: Trees and Woodlands.
- BE-15-12: Air Quality.
- BE-15-13: Noise and light emissions.
- BE-15-17: Waste prevention and management.

The following objectives are outlined in Chapter 16 in relation to protecting built and cultural heritage:

- HE-16-1: County Heritage Plan;
  - To continue to implement the county heritage plan (2005) in partnership with relevant stakeholders and any successor of this document.
- HE-16-9: Archaeology and infrastructure schemes.
- HE-16-10: Management of monuments within development sites.
- HE-16-16: Protection of non-structural elements of built heritage;
  - Protect non-structural elements of built heritage. These can include designed garden/garden features, masonry walls, railings, follies, gates, bridges, shopfront and street furniture.
- HE-16-18: Architecture and conservation areas; Conserve and enhance the special character of the Architectural Conservation Areas included in this Plan. The special character of an area includes its traditional building stock, material finishes, spaces, streetscape, shopfronts, landscape and setting. This will be achieved by;
  - Protecting all buildings, structures, groups of structures, sites, landscapes and all other features considered to be intrinsic elements to the special character of the ACA from demolition and non-sympathetic alterations.
  - Promoting appropriate and sensitive reuse and rehabilitation of buildings and sites within the ACA and securing appropriate infill development.
  - Ensure new development within or adjacent to an ACA respects the established character of the area and contributes positively in terms of design, scale, setting and material finishes to the ACA.
  - Protect structures from demolition and non-sympathetic alterations.
  - Promoting high quality architectural design within ACAs.
  - Seek the repair and re-use of traditional shopfronts and where appropriate, encourage new shopfronts of a high quality architectural design.
  - Ensure all new signage, lighting advertising and utilities to buildings within ACAs are designed, constructed and located in such a manner they do not detract from the character of the ACA.

- Protect and enhance the character and quality of the public realm within ACAs. All projects which involve works within the public realm of an ACA shall undertake a character assessment of the said area which will inform a sensitive and appropriate approach to any proposed project in terms of design and material specifications. All projects shall provide for the use of suitably qualified conservation architects/designers.
- Protect and enhance the character of the ACA and the open spaces contained therein. This shall be achieved through the careful and considered strategic management of all signage, lighting, utilities, art works/pieces/paintings, facilities etc to protect the integrity and quality of the structures and spaces within each ACA.
- Ensure the protection and reuse of historic street finishes, furniture and features which contribute to the character of the ACA.

In addition to the above, policies and objectives of the Cork County Development Plan 2022 – 2028 (Volume three – North Cork) (CCDP) that are of relevance to this AA Screening Report are outlined in Section 2.4, those of particular note are listed below:

- Sustainable population growth and supporting development in Mallow, while securing the objectives of the relevant River Basin Management Plan, and the River Blackwater Special Area of Conservation (MW-GO-02).
- New development should be sensitively planned and designed to protect the green infrastructure, biodiversity, and landscape assets of Mallow town (MW-GO-03).
- All new development will need to make provision for Sustainable Urban Drainage Systems (SuDS) and provide adequate storm water infrastructure. Surface water Management and Disposal should be planned in an integrated way in consideration with land use, water quality, amenity and habitat enhancements as appropriate (MW-GO-04).
- Protect and enhance the habitat, landscape, visual and amenity qualities of the River Blackwater and its flood plain so that they can contribute to the environmental diversity of the area for future generations and be used for recreation and other compatible uses during the lifetime of the Plan (MG-GO-13).
- All proposals for development within the areas identified as being at risk of flooding will need to comply with Objectives in this Plan. In planning development located upstream of/adjacent to the defended area in Mallow, due regard must also be had to the potential flood impacts of development, and its potential impact on the defended area in particular (MW-GO-14).

2.2.2 Cork County Biodiversity Action Plan (2014-2019)

Cork County Biodiversity Action Plan (2014-2019) is set out to protect and improve biodiversity through the following aims, objectives and action plans:

- Objective 1 – To review biodiversity information for County Cork and to prioritise habitats and species for conservation action.
- Objective 2 – To collect data and use it to inform conservation action and decision making.

- Objective 3 – To incorporate positive action for biodiversity into local authority actions and policy.
- Objective 4 – To promote best practice in biodiversity management and protection.
- Objective 5 – To facilitate the dissemination of biodiversity information.
- Objective 6 – To raise awareness of County Cork's biodiversity and encourage people to become involved in its conservation.

Note that this Action Plan has not been updated since its term, however the Planning Authority intends to commence the process of reviewing the County Biodiversity Action Plan within 12 months of the adoption of the County Development Plan.

2.2.3 Stages of Appropriate Assessment

This AA Screening Report (the "Screening Report") has been prepared by Enviroguide Consulting. It considers whether the Proposed Development is likely to have a significant effect on a European site and whether a Stage 2 AA is required.

The AA process is a four-stage process. Each stage requires different considerations, assessments, and tests to ultimately arrive at the relevant conclusion for each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

The four stages of an AA, can be summarised as follows:

- **Stage 1: *Screening***. The Screening for AA considers whether a plan or project is directly connected to or necessary for the management of a European site, or whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a European site in view of its conservation objectives.

- **Stage 2: *Natura Impact Statement (NIS).*** Where Stage 1 determines that significant effects are likely, uncertain or unknown, the preparation of a NIS is required. The NIS must include a scientific examination of evidence and data to classify potential impacts on any European site(s) in view of their conservation objectives in the absence of mitigation. The NIS will identify appropriate mitigation to remove the potential for likely significant adverse effects on any European site(s). If the competent authority determines that the plan or project would have an adverse effect on the integrity of any European site(s) despite mitigation, it can only grant consent after proceeding through stages 3 and 4.

- **Stage 3: *Assessment of alternative solutions***. If the outcome of Stage 2 is negative i.e., adverse impacts to the sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned. This stage examines alternative solutions to the proposal.

- **Stage 4: *Assessment where no alternative solutions exist and where adverse impacts remain***. The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a European site, where no less damaging solution exists.

The Habitats Directive promotes a hierarchy of avoidance, mitigation, and compensatory measures. First the project should aim to avoid any negative effects on European sites by identifying possible effects early in the planning stage and designing the project to avoid such effects. Second, mitigation measures should be applied, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If the project is still likely to result in adverse effects, and no further practicable mitigation is possible, a refusal for planning permission may be recommended. In this case, the project will generally only be considered where no alternative solutions are identified and the project is required for IROPI, or, in the case of priority habitats, considerations of health or safety, or beneficial consequences of primary importance for the environment or to other IROPI. Then compensation measures are required for any remaining adverse effects.

3 METHODOLOGY

3.1 Guidance

This Screening Report has been prepared in accordance with the following guidance:

- *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 & PSSP 2/10;
- *Communication from the Commission on the precautionary principle* (European Commission, 2000);
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2019);
- *Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC* Brussels, 28.9.2021 C (European Commission, 2021); and
- *Appropriate Assessment Screening for Development Management, OPR Practice Note PN01, Office of the Planning Regulator March 2021 (OPR, 2021).*

3.2 Screening Steps

Screening for AA involves the following steps:

- Establish whether the plan or project is directly connected with or necessary for the management of a European site;
- Description of the baseline existing environment at the Site of the Proposed Development;
- Identification of relevant European site(s) potentially affected;

- Identification and description of potential effects on the relevant European site(s);
- Assessment of the likely significance of the effects identified on the conservation objectives of the relevant European site(s);
- Description and characterisation of other projects or plans that in combination with the Proposed Development have the potential for having significant effects on the conservation objectives of the European site; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects.

It should be noted that any targeted ecological mitigation measures and/or measures intended or included for the purposes of avoiding adverse effects arising as a result of the Proposed Development on any European site **have not been considered** as part of this Screening Report.

3.3 Desk Study

A desktop study was carried out to collate and review available information, datasets and documentation sources relevant for the completion of the NIS. The desk-top study, completed in October 2024, relied on the following sources:

- Information on the network of European sites, relevant boundaries, QIs and conservation objectives, obtained from the National Parks and Wildlife Service (NPWS) at *www.npws.ie* and the European Environment Agency (EEA) at *https://natura2000.eea.europa.eu/;*
- Information on the status of EU protected habitats and species in Ireland, obtained from the NPWS Article 17 reports;
- Text summaries of the relevant European sites taken from the respective Site Synopses for each site, available at *www.npws.ie*;
- Information on waterbodies, catchment areas and hydrological connections obtained from the Environmental Protection Agency (EPA) at www.*gis.epa.ie*;
- Information on bedrock, groundwater, aquifers and their statuses, obtained from Geological Survey Ireland (GSI) at *www.gsi.ie*;
- Information on underlying soils, obtained from Teagasc or EPAs National Soils Map at *https://www.teagasc.ie/* and *https://gis.epa.ie/EPAMaps/*;
- Water quality. Guidance standard on monitoring freshwater pearl mussel (*Margaritifera margaritifera*) populations and their environment (I.S. EN 16859:2017).
- Satellite imagery and mapping obtained from various sources and dates including Google, Digital Globe, Bing and Ordnance Survey Ireland; and
- Information on the extent, nature and location of the Proposed Development, provided by the applicant and their design team, including information garnered from any site investigations (SI) (for example; any specific hydrological, hydrogeological, flood risk, or Arboricultural assessments) where they were undertaken.

The above list is not exhaustive, and as such, a comprehensive list of all the specific documents and information sources consulted in the completion of this report is provided in Section 6 References.

3.4 Field surveys

A range of field surveys have been carried out at the Site to date. These are summarised in Table 1. Full details on the methods and results of the field surveys listed are included within the Ecological Impact Assessment (EcIA) Report submitted with this application under separate cover. With the exception of the preliminary habitat and invasive flora surveys undertaken in February 2023, all surveys were carried out at the appropriate time of year by suitably qualified ecologists. Note that an updated site walkover was carried out in July 2024, within the appropriate season for habitat and invasive flora surveys. No limitations to field surveys were encountered which

would prevent robust conclusions being drawn as to the potential impacts of the Proposed Development.

TABLE 1. FIELD SURVEYS UNDERTAKEN AT THE PROPOSED DEVELOPMENT SITE.

Survey	Surveyor	Dates
Preliminary Habitat and Invasive Flora Survey	Enviroguide Consulting (CBH, GK)	07th February 2023
Mammal Survey	Enviroguide Consulting (CBH, GK)	07th February 2023
Bird Scoping Survey	Enviroguide Consulting (CBH, GK)	07th February 2023
Preliminary Bat Roost Assessment Survey	Enviroguide Consulting (CBH, GK)	07th February 2023
Bat Roost Emergence Survey (Building C)	Enviroguide Consulting (CBH, GK)	11th May 2023
Bat Roost Emergence Survey (Building A)	Enviroguide Consulting (CBH, GK, EJD)	15th May 2023
Breeding Bird Survey	Enviroguide Consulting (CBH, GK)	15th May 2023
Mammal Survey	Enviroguide Consulting (CBH, GK)	15th May 2023
Habitat and Invasive Flora Survey	Enviroguide Consulting (CBH, GK)	29th May 2023
Bat Roost Emergence Survey (Building A)	Enviroguide Consulting (CBH, GK)	29th May 2023
Site walkover to establish site conditions and to inform surface water mitigation strategy	Enviroguide Consulting (TR)	15th July 2024

3.5 Identification of Relevant European sites

The Zone of Influence (ZOI) for a project is the area over which ecological features may be affected by changes as a result of the Proposed Development and associated activities. This is likely to extend beyond the development site, for example where there are ecological or hydrological links beyond the site boundaries (CIEEM, 2018). Furthermore, ZOI in relation to European sites is described as follows in the 'OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management' (OPR, 2021):

> "*The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km).*"

Thus, to identify the European sites that potentially lie within the ZOI of the Proposed Development, a Source-Path-Receptor (S-P-R) method was adopted, as described in OPR PN01 (OPR 2021). This note was published to provide guidance on screening for AA during the planning process, and although it focuses on the approach a planning

authority should take in screening for AA, the methodology is also readily applied in the preparation of Screening Reports such as this.

The relevant European sites were identified based on the following:

- Identification of potential sources of effects based on the Proposed Development description and details, including changes to potentially suitable *ex-situ* habitats at the Site (e.g., habitats utilised by Special Conservation Interest (SCI) bird species outside of their designated SPAs);
- Use of up-to-date GIS spatial datasets for European designated sites and water catchments – downloaded from the NPWS website (www.npws.ie) and the EPA website (www.epa.ie) to identify European sites which could potentially be affected by the Proposed Development; and
- Identification of potential pathways between the Site of the Proposed Development and any European sites within the ZOI of any of the identified sources of effects.
    - The catchment data were used to establish or discount potential hydrological connectivity between the Proposed Development and any European sites.
    - Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Proposed Development and any European sites.
    - Air and land connectivity assessed based on Proposed Development details and proximity to European sites.
    - Consideration of potential indirect pathways, e.g., impacts to flight paths, *ex-situ* habitats, etc.

3.6 Assessment of Significant Effects

The conservation objectives of the European sites identified to lie within the ZOI were reviewed and assessed in order to establish whether the construction and operation of the Proposed Development has the potential to have a negative impact on any of the qualifying interests and/or conservation objectives listed for the site.

The assessment framework is taken from the best practice guidelines issued by the European Commission, i.e., "*Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*".

The potential for significant effects that may arise from the Proposed Development was considered through the use of key indicators:

- Habitat loss or alteration.
- Habitat/species fragmentation.
- Disturbance and/or displacement of species.

- Changes in population density.
- Changes in water quality and resource.

In addition, information pertaining to the conservation objectives of the European sites, the ecology of the designated habitats and species and known or perceived sensitivities of the habitats and species were considered.

3.7 Limitations

No limitations were encountered which would prevent robust conclusions from being drawn as to the potential impacts of the Proposed Development and therefore the likely significant effects on the European site, in view of the site's conservation objectives. However, it should be noted that vegetation clearance was undertaken prior to the Enviroguide Site assessment, and therefore a precautionary approach shall be applied where required.

4 STAGE 1 SCREENING

4.1 Management of European Sites

The Proposed Development is not directly connected with or necessary to the management of European sites.

4.2 Existing Environment

4.2.1 Hydrology

The Site of the Proposed Development is located within the Blackwater (Munster) river catchment and the Blackwater [Munster]_SC_090 sub catchment. The Site lies within the Blackwater (MUNSTER)_140 sub basin (EPA, 2024). The Site's existing topography is relatively flat in areas but falls to a steep slope towards the southern portion of the site as it connects to the existing public park. The Site, which slopes naturally to the south, drains freely towards the Blackwater River, with ground elevations ranging from 87.5 meters above Ordnance Datum (mOD) in the north of the Site to 43mOD to the south of the Site (Figure 6). As such, is an important site in the context of supporting the hydrological regime of the Blackwater River. There are no drainage ditches, sewers/drains or waterbodies present at the Site.

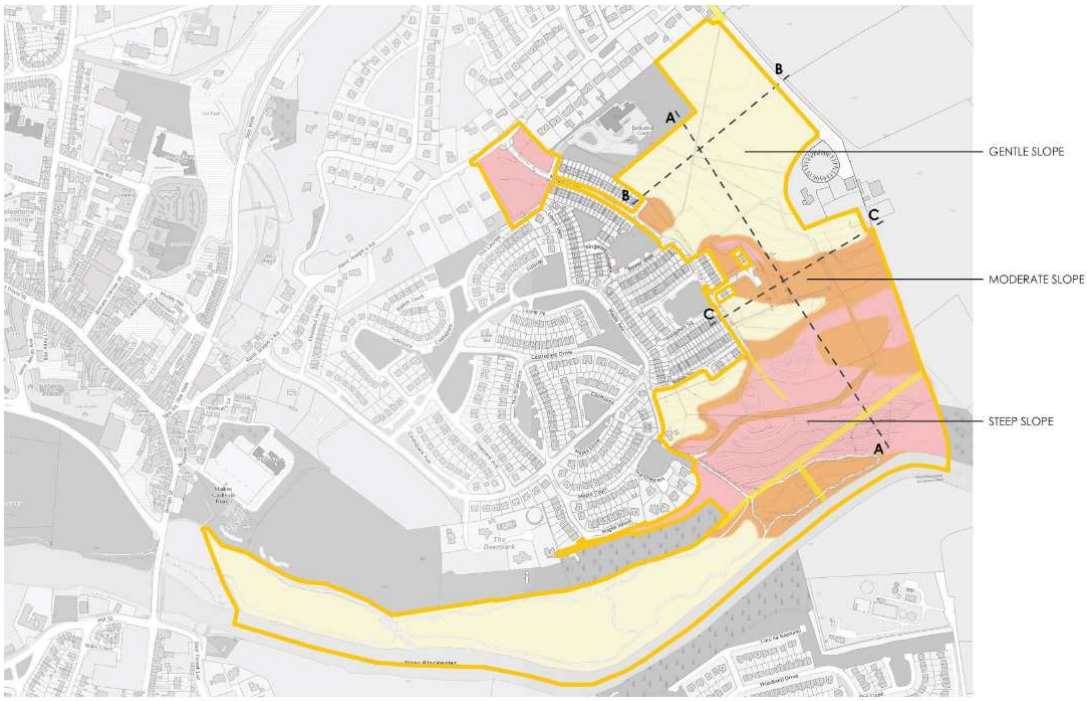

FIGURE 6. SHOWING THE TOPOGRAPHY OF THE SITE OF THE PROPOSED DEVELOPMENT AND CLIENT LANDHOLDING.

The closest mapped (EPA, 2024) surface waterbody to the Site is the Blackwater River (IE_SW_18B021800) which is located 80m directly South of the Site, adjacent to the existing parklands located to the south (the parklands lie within the clients overall landholding but outside of the Site boundary for this Development). This river is a 5th

order river which flows west to east, before converging with the Upper Blackwater M Estuary transitional waterbody (EU Code: IE_SW_020_0500) approximately 57.76km downstream of the Site. Upper Blackwater M Estuary transitional waterbody flows initially east before turning south and converging with the Lower Blackwater M Estuary/Youghal Harbour transitional waterbody (EU Code: IE_SW_020_0100) a further 18.15km downstream. The Lower Blackwater M Estuary/Youghal Harbour transitional waterbody flows, in a southerly direction, a further 13.60km downstream before discharging to the Youghal Bay coastal waterbody (EU Code: IE_SW_020_0000).

The WFD status (2016-2021) for the Blackwater River is *Good*, while the river waterbody risk is currently *Not at Risk* (EPA, 2024). The Blackwater River forms part of the Blackwater River (Cork/Waterford) SAC (002170).

There are two EPA monitoring points at the Mallow Viaduct (Station ID: RS18B021510 and RS18B021500) which are located ca. 2km to west of the Site and upstream of where the East Baltydaniel watercourse joins the Blackwater River. These stations recorded a Q-value of 3-4, *Moderate* in 2021.

The EPA water quality monitoring data for the stations on the Blackwater River located closest to the Site is summarised in Table 2. The latest reported Q-value results indicate that water quality in the Blackwater River in the vicinity of the Site is good.

TABLE 2. EPA MONITORING STATIONS AND ASSIGNED Q VALUES (2021).

EPA Monitoring Station name	Station Code	Location from Site	Distance from Site	Assigned Q value
Rly Br, Mallow (LHS)	RS18B021500	West	1.2km	4 “Good”
Rly Br, Mallow (RHS)	RS18B021510	West	1.2km	3-4 “Moderate”
Northeast of Ballymagooly	RS18B021800	Southeast	2.3km	4 “Good”

4.2.2 Geology and Hydrogeology

The Site of the Proposed Development is situated on the Mitchelstown groundwater body (IE_SW_G_082), which is classified as having “Good” status (WFD Status 2016-2021). The aquifer type in the area is Regionally Important Aquifer-Karstified (Diffuse) (Rkd). The underlying bedrock is mapped by GSI and is classified as ‘Pale-grey massive mud-grade limestone’ to the north and ‘Massive unbedded lime-mudstone’ to the south (New Codes: CDHAZE/CDWAUL) (GSI, 2024).

The subsoil beneath the Site is Shale and Sandstone Till (Namurian) with Bedrock at or Close to the Surface to the east (EPA, 2024). The SIS National Soils data classifies the Site as Urban (GSI, 2023). According to the Teagasc soil maps the soils beneath the Proposed Development Site consist of Deep well drained mineral soils (GSI, 2024). Corine (2018) land cover at the Site comprises ‘Agricultural Areas’ with ‘Urban Areas’ extending west from the Site, and ‘Agricultural Areas’ extending east from the Site.

The Proposed Development is located on a regionally important gravel aquifer – Karstified diffuse (EPA, 2024). The groundwater vulnerability across the Site is

mapped as having 'Extreme' vulnerability to contamination from human activity, with 'High' vulnerability to the west at the existing Castlelands estate, and 'Rock at or near Surface or Karst' in the east and south of the Site (GSI, 2024).

The quaternary sediments beneath the majority of the Site are mapped as Till derived from Namurian sandstones and shales, while the subsoil beneath the eastern boundary of the Site is mapped as Bedrock outcrop or subcrop (Rck) (GSI, 2024).

The Waterbody Status for river, groundwater, transitional and coastal water bodies relevant to the Site as recorded by the EPA (2024) in accordance with European Communities (Water Policy) Regulations 2003 (SI no. 722/2003), Part IV of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 and Part IV of the European Communities Environmental Objectives (Groundwater) Regulations 2010, are provided in Table 3.

TABLE 3. WFD RISK AND WATER BODY STATUS (EPA, 2016-2021).

Waterbody Name	Water body; EU code	Location from Site	Distance from Site (km)	WFD water body status (2016-2021)	WFD 3rd cycle Risk Status	Hydraulic Connection to the Site
Surface Water Bodies						
Blackwater River [Munster]	IE_SW_18B021720	South	0.15km	Good	Not At risk	Via overland surface water run-off and via groundwater
Transitional Water Bodies						
Upper Blackwater M Estuary	IE_SW_020_0500	East	57.76km	Moderate	At Risk	Downstream of the Blackwater River
Lower Blackwater M Estuary / Youghal Harbour	IE_SW_020_0100	East	>70km	Moderate	At Risk	Downstream of the Blackwater River
Coastal Water Bodies						
Youghal Bay	IE_SW_020_0000	Southeast	>70km	Moderate	At Risk	Downstream of the Blackwater River
Western Celtic Sea	IE_SW_010_0000	Southeast	>70km	High	Not at risk	Downstream of the Blackwater River
Groundwater Bodies						

Waterbody Name	Water body; EU code	Location from Site	Distance from Site (km)	WFD water body status (2016-2021)	WFD 3rd cycle Risk Status	Hydraulic Connection to the Site
Mitchelstown Groundwater Body	IE_SW_G_082	N/A	N/A	Good	At Risk	Underlying groundwater-body

4.2.3 Habitats & Flora

While the ground was relatively bare (ED2 spoil and bare ground) during the initial Site visit in February 2023 due to previous clearance works taking place (in association with the previously granted planning development which was subsequently abandoned), the assessment was backed up by a follow up habitat and flora survey within the optimal botanical period in May 2023, as well as a desktop study of historical satellite imagery of the Proposed Development Site (Google Earth, 2023). The results showed that the dominant habitat type within the Site is dry meadows and grassy verges (GS2), with areas of scrub (WS1) and scattered trees and parkland (WD5) revegetating in parts. A small treeline (WL2) and buildings and artificial surfaces (BL3) were located to the west, while there was some refuse/waste (ED5) to the east and a stone wall (BL1) habitat was observed along the eastern/southeastern boundary.

Ground species present in this habitat include broad-leaved dock (*Rumex obtusifolius*), creeping buttercup (*Ranunculus repens*), lesser trefoil (*Trifolium dubium*), bird's foot trefoil (*Lotus corniculatus*), clover (*Trifolium repens*), daisy (*Bellis perennis*), common valerian (*Valeriana officinalis*), vetch (*Vicia sativa*), bramble (*Rubus fructicosus*), silverweed (*Potentilla anserina*), rosebay willowherb (*Chamaenerion angustifolium*), ground ivy (*Glechoma hederacea*), and various grass species, but predominantly perennial ryegrass (*Lolium perenne*).

Immature grey willow (*Salix cinerea*) trees were scattered predominantly to the west, which borders the rear gardens of the existing residential estate, although they were also found sparsely interspersed throughout the Site, particularly to the southwest.

The treeline habitat to the west, adjacent to the existing local road in Kingscourt Avenue, comprised a variety of semi-mature/mature tree species such as sycamore (*Acer pseudoplatanus),* willow, beech (*Fagus sylvatica*), and cherry plum (*Prunus cerasifera*). It is noted that this habitat is being retained.

It is noted that sycamore is traditionally considered to be an invasive species due to its ability to outcompete native tree species and its supposedly low contribution to local biodiversity by supporting fewer insect species than native tree species (Leslie, 2005). However, sycamore's invasiveness is considered to be more of an issue in some sensitive native woodland settings and not in urban, anthropogenic environments such as the Site in question. Sycamore has also been found to support relatively high numbers of lichen species, including rarer species, when compared to native tree

species (Leslie, 2005). Sycamore is therefore not considered to be a negative presence at the Site and in fact provides suitable nesting and foraging habitat for local birds and invertebrate species, and thus can be viewed as being positive for biodiversity in the context of the urban location of the Site.

Two invasive plant species were recorded on Site, namely butterfly bush (*Buddleja davidii*), and New Zealand flax (*Phormium tenax*). Butterfly bush was observed growing on areas of hardstanding/artificial surfaces to the west of the Site, while New Zealand flax was observed growing behind a rear garden, to the west of the Site, just behind a dense willow tree canopy.

No rare or protected plant species were observed during the ecological walkovers.

Adjacent and linked habitats outside the Site boundary include the following:

- BC1 – Arable Crops (located in fields directly east of the Site)
- FW2 – Depositing/Lowland River (the Blackwater River, located c.0.15km south of the Proposed Development)
- GA2 – Amenity Grassland (located south of the Proposed Development in the public park adjacent to the FW2 habitat)
- WS2 – Immature Woodland (planted in small sections throughout the park to the south)

In addition, areas of scrub and scattered trees were also located south of the Proposed Development in the public park (which forms part of the overall client landholding area but is not being developed), while an Oak (*Quercus sp*.) treeline was recorded along the north eastern boundary (outside the Site boundary) and a hedge of 'high impact' invasive species Cherry Laurel (*Prunus laurocerasus)* is located east of the Site, bounding the neighbouring, existing residential dwelling, as-well as bounding the existing school to the north.

The walkover survey carried out in July 2024 did not note any significant changes to the previously recorded site conditions, including habitats and flora.

4.2.4 Fauna

4.2.4.1 Mammals

During the ecological walkovers the Site was checked for any evidence of fauna presence/activity on Site. No evidence of badger (*Meles meles*) activity was observed. There were some mammal trails traversing the Site which could be used by Fox (*Vulpes vulpes*), which is not subject to any legal protection in Ireland. A local domestic cat (*Felis catus*) was observed using the Site to hunt on several occasions. Fox (*Vulpes vulpes*) was heard and observed on the 11th of May 2023 prior to the commencement of a bat emergence survey within the southwestern corner of the Site boundary.

Droppings of European Rabbit (*Oryctolagus cuniculus*) were observed in February, while visual observations for this species was made in May 2023. They were largely concentrated along the eastern extent, near the stone wall habitat, which borders improved agricultural grassland.

Other, smaller mammals such as hedgehog (*Erinaceous europaeus*) and pygmy shrew (*Sorex minutus)* were not observed, although the treeline habitat to the west could provide suitable shelter/commuting habitat for these species.

Similarly, the stone wall habitat could provide suitable refuge habitat for common lizard (*Zootoca vivipara*), and individual bat species (although limited). The treeline to the west could also provide potentially suitable commuting and foraging habitat for bats.

Regarding bat species, the vacant buildings were considered to provide potential roost habitat, and so subsequent surveys were carried out in May 2023 to determine if any bat species were using this habitat as a roost. However, the findings of these surveys determined that bats were not using these buildings.

While outside of the Site boundary (0.15km south), it was noted that the Blackwater River provides suitable habitat for Otter and various aquatic species, as noted in the Blackwater River Cork/Waterford SAC (00217) Conservation Objectives (see section 4.3.3). While no data on the usage of the river bank south of the Site is available, previous national and regional studies of Otter in the Blackwater (Munster) have determined that the Blackwater River and Catchment provides an important stronghold for Otter in the southwest, and indeed in Ireland, with evidence of this species presence recorded across the Blackwater River Catchment, from the estuarine area between Cappoquin and Youghal to the foothills of the mountain ranges (Smiddy, P., 2016, and Reid, N. et al, 2013).

4.2.4.2 Birds

A variety of bird species were recorded during the Site surveys. Table 4 below provides a list of the species encountered, as well as their conservation status per 'Birds of Conservation Concern in Ireland 2020-2026' (BoCCI, 2021).

TABLE 4. BIRD SPECIES RECORDED DURING SURVEYS IN FEBRUARY AND MAY 2023.

Species name	BoCCI Status	February 2023	March 2023
Barn Swallow (*Hirundo rustica*)	Amber		X
Blackbird (*Turdus merula*)	Green	X	X
Coal Tit (*Periparus ater*)	Green		X
Goldcrest (*Regulus regulus*)	Amber	X	
Great Tit (*Parus major*)	Green	X	
Hooded Crow (*Corvus cornix*)	Green	X	X
House Sparrow (*Passer domesticus*)	Amber		X
Magpie (*Pica pica*)	Green	X	
Mallard[1] (*Anas platyrhynchos*)	Amber	X	
Meadow Pipit (*Anthus pratensis*)	Red	X	
Robin (*Erithacus rubecula*)	Green	X	
Rook (*Corvus frugilegus*)	Green	X	X
Starling (*Sturnus vulgaris*)	Amber	X	X
Stonechat (*Saxicola rubicola*)	Green		X
Woodpigeon (*Columba palumbus*)	Green	X	X

[1] Mallard observed outside of the Site boundary on the Blackwater River

Five of the above listed species are Amber-listed, while one species, namely the Meadow Pipit (*Anthus pratensis*) is a Red-listed species in Ireland. However, in general the majority of species observed are Green-listed species (BoCCI, 2021), most of which are of the garden bird variety and are found widespread throughout Ireland.

Please refer to the Biodiversity Chapter (Enviroguide, 2024) within the EIAR that accompanies this application under separate cover for the full details of methodologies and results relating to flora and fauna that are not of relevance to this AA Screening.

4.2.4.3 Aquatic Species

Historical records for Fresh Water Pearl Mussel (FWPM) were obtained from an information request issued to NPWS in 2023. The results confirmed that the Blackwater Munster is an important catchment area for this species (defined as being a catchment of SAC populations listed in S.I. 296 of 2009), with existing records for the presence of FWPM in the main channel of the Blackwater River, south of the Proposed Development Site, both upstream and downstream.

Targeted aquatic surveys were not carried out on the Blackwater River located 0.15km south of the Proposed Development, adjacent to the existing public parkland. As a result, on a precautionary basis, QI species of the Blackwater River SAC (002170) are presumed to be present in the stretch of the River Blackwater which occurs directly south of the Proposed Development Site. Further information on the Blackwater River SAC, including conservation objectives are presented in Section 4.3.3, below.

4.2.1 Site Conditions – Surface Water Sensitivities

The walkover survey on the 15th of July 2024 examined the existing Site with a view to identifying surface water sensitivities. On-Site conditions were assessed in their current state including topography, vegetation, presence or absence of drainage channels and possible surface water links to the nearby River Blackwater SAC (002170).

The Site visit also identified the most appropriate locations for placement of mitigation measures in relation to surface water management i.e. attenuation ponds/ lagoons, silt fencing and placement of wastes produced from proposed excavation works. Figure 7 below highlights the current characteristics of the Site, as identified during the walkover survey in July 2024.

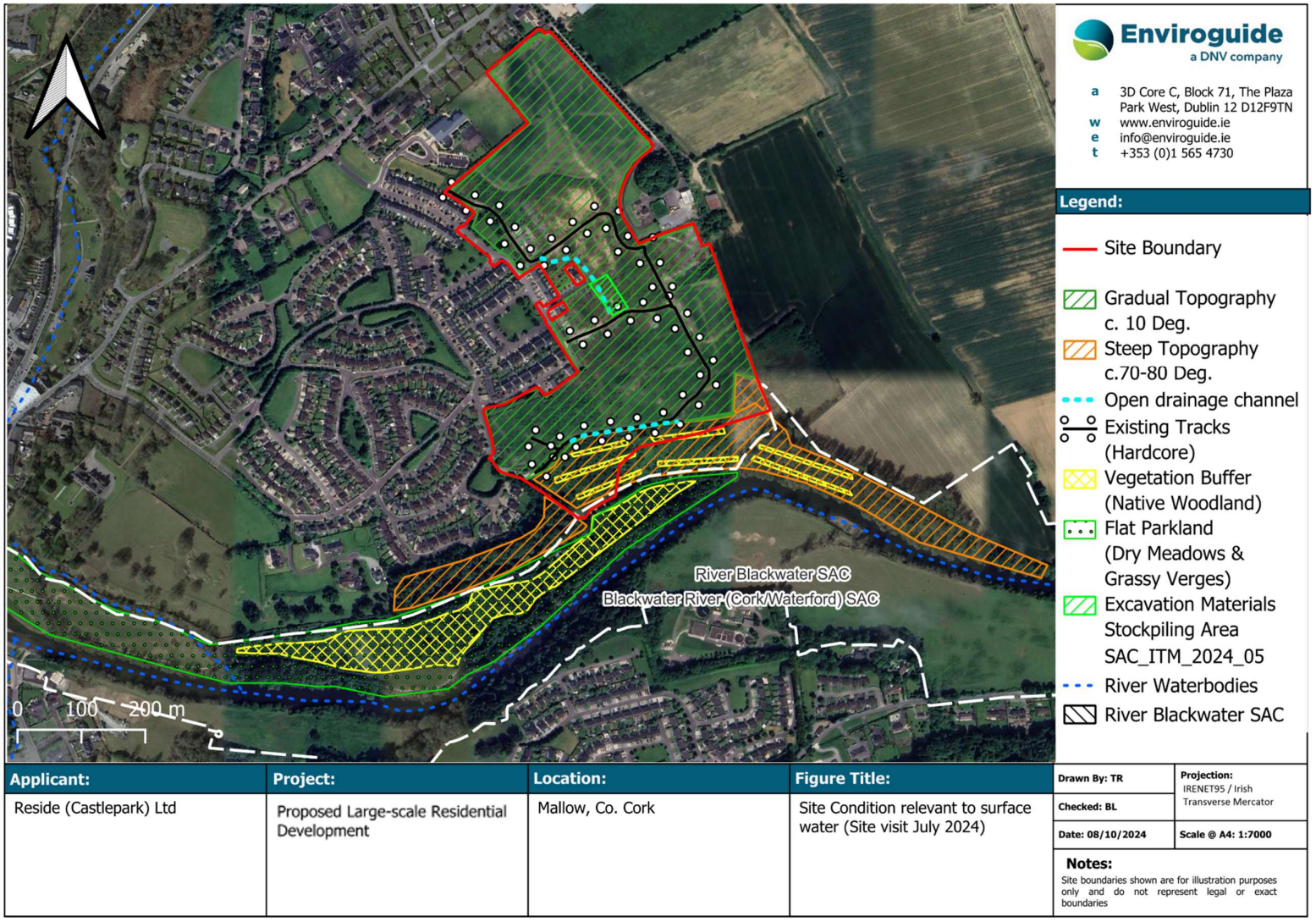

FIGURE 7. CURRENT SITE CONDITION RELEVANT TO SURFACE WATER MITIGATION

4.3 Identification of Relevant European Sites

4.3.1 Potential Sources of Effects

The following elements of the Proposed Development were identified and assessed for their potential to cause likely significant effects on European sites.

Construction Phase (*Estimated duration: total 96 months*)

- Uncontrolled releases of dust, sediments and/or other pollutants to air due to earthworks;
- Surface water run-off containing silt, sediments and/or other pollutants overland into the nearby Blackwater River or surface water network;
- Surface water containing potential pollutants that discharge into the local groundwater (which may also reach surface water bodies that connect to European designated sites);
- Spread of Invasive Alien Plant Species (IAPS);
- Ex-situ disturbance of SCI and QI species;
- Waste generation during the Construction Phase comprising soils and construction wastes;
- Increased noise, dust and/or vibrations as a result of construction activity;
- Increased lighting in the vicinity as a result of construction activity, and;
- Increased human presence and activity as a result of construction activity.

Operational Phase *(Estimated duration: Indefinite)*

- Hydraulic/organic overloading of Mallow WwTP leading to the release of untreated sewage into the Blackwater River and the associated European sites;
- Surface water drainage from the Site of the Proposed Development;
- Increased lighting at the Site and in the vicinity emitted from the Proposed Development;
- Changes in hydrological regime of the Munster Blackwater due to land use changes (e.g. conversion of areas of well-draining greenfield lands to hardstanding) and proposed site drainage, and;
- Increased human presence and activity at the Site and in the vicinity as a result of the Proposed Development.

4.3.2 Potential Pathways to European Sites

For the above listed potential sources of effects to have the potential to cause likely significant effects on any European site, a pathway between the source of potential effects (i.e., the Site of the Proposed Development) and the receptor is required. Potential impact pathways are discussed in the following sections in the context of the identified impact sources as identified in section 4.3.1.

4.3.2.1 Direct Pathways

4.3.2.1.1 Hydrological pathways

The Site is located adjacent to the Blackwater River, and, subsequently to the **Blackwater River (Cork/Waterford) SAC (002170).** A hydrological pathway via surface water run-off down the southern slope from the Site exists linking the Proposed Development to the various qualifying interests of the Blackwater River (Cork/Waterford) SAC.

The hydrological pathway via the Blackwater River to two other European sites, namely the Blackwater Callows SAC (004094) and Blackwater Estuary SPA (004028) to the southeast is considered to be insignificant due to the considerable freshwater buffer (>20 km) between the Proposed Development and these sites.

4.3.2.1.2 Hydrogeological pathways

During groundworks and other construction activities, the ground will be exposed and any potential accidental discharges to ground could potentially migrate vertically downward to the underlying bedrock aquifer and laterally within the aquifer to the downgradient **Blackwater River (Cork/Waterford) SAC.**

The following information on ground water flows for the underlying Mitchelstown GWB has been extracted from the '1st Draft Mitchelstown GWB Description' (published 5th March 2004):

"The rocks of this GWB are devoid of intergranular permeability. Groundwater flow occurs in the many faults and joints, in the pure limestones these openings have been enlarged by karstification. Because of the high frequency of fissures in this region, overall groundwater flow is thought to be of a diffuse nature, although solutionally enlarged conduits and cave systems do occur. Groundwater flow in the pure limestones occurs in an upper shallow highly karstified weathered zone in which groundwater moves quickly in rapid response to recharge. Below this is a deeper zone where there are two components to groundwater flow. Groundwater flows through interconnected, solutionally enlarged conduits and cave systems that are controlled by structural deformation. In addition, there is a more dispersed slow groundwater flow component in smaller fractures and joints outside the larger conduits. Groundwater level data range from 1-21 m below ground level. Typical annual fluctuation of the water table ranges up to 6 or 7 m. Hydrographs for a number of wells within this GWB are shown in Figure 3 below. Groundwater in this GWB is generally unconfined. The highly permeable aquifer supports a regional scale flow system. At a local scale groundwater flow direction may not follow local topography due to flow in karstified conduit systems. Groundwater flow paths can be up to several kilometres long but may be significantly shorter in areas where the water table is very close to the surface. Regional groundwater flow will be away from the surrounding uplands towards the main rivers draining the valleys. The impure limestones that outcrop around the margins of the body and underlie the pure limestones are much less productive, although zones of enhanced permeability may occur in the vicinity of fault zones and areas of intensive fracturing. Limited karstification can also occur. These impure limestones act as a confining layer overlying the productive Kiltorcan-type Sandstones which surround the uplands to the north and east. Groundwater levels are generally shallow in the impure limestones (<10 m below ground surface), and commonly less than 3 mbgl. Local groundwater flows are determined by the local topography."

As such, the hydrogeological pathway via the Mitchelstown GWB to two other European sites, namely the Blackwater Callows SPA (004094) and Kilcolman Bog SPA (004095) to the southeast and north, is considered to be insignificant due to the considerable distance (>20km) between the Proposed Development and these sites, and the likelihood that any potential discharges to ground will migrate south to the Blackwater River, given the topographical nature of the Site.

No other European sites are linked to the Site via hydrogeological means.

4.3.2.1.3 Air and land pathways

The Construction Phase of the Proposed Development could introduce dust and noise impacts transferable via air and land pathways, as well as increased lighting and human activity at the Site and in the vicinity of the Site during the Construction and Operational Phases. The Site is located adjacent to the **Blackwater River (Cork/Waterford) SAC**. Therefore, direct impact pathways via air and land exist between the Proposed Development and the aforementioned European site.

No other European sites are linked to the Site via air and land pathways; due to the distance between the Site and the next nearest European site, Kilcolman Bog SPA (004095) (located >11km to the north).

4.3.2.2 Indirect Pathways

No indirect pathways (e.g., disruptions to migratory paths) were identified.

4.3.3 Relevant European sites

A European site will only be at risk from likely significant effects where a S-P-R link exists between the Proposed Development Site and the European site. All of the European sites considered under the S-P-R method are listed in Table 5 and illustrated in Figure 8, however only one European site was identified to have a S-P-R link of note to the Proposed Development Site, namely the **Blackwater River (Cork/Waterford) SAC (002170).**

TABLE 5. EUROPEAN SITES CONSIDERED WITH THE SOURCE-PATHWAY-RECEPTOR (S-P-R) METHOD TO ESTABLISH NOTABLE LINKS BETWEEN THE SOURCES OF EFFECTS ARISING FROM THE PROPOSED DEVELOPMENT, AND ANY RELEVANT EUROPEAN SITES. THOSE SITES WITH NOTABLE S-P-R LINKS ARE HIGHLIGHTED IN GREEN (IF ANY).

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Potential Pathways
Special Areas of Conservation (SAC)		
Blackwater River (Cork/Waterford) SAC (002170) **Located 0.15km south of the Proposed Development.** https://www.npws.ie/protected-sites/sac/002170	**Conservation Objectives Version 1.0 (NPWS, 2012)** **Habitats** - 1130 Estuaries - 1140 Mudflats and sandflats not covered by seawater at low tide - 1220 Perennial vegetation of stony banks - 1310 *Salicornia* and other annuals colonising mud and sand - 1330 Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*	The Site occurs 0.15km north of the Blackwater River, while the southern boundary of the Site abuts the Blackwater River SAC site boundary. A direct hydrological, hydrogeological and land/air pathway therefore exists between

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Potential Pathways
	- 1410 Mediterranean salt meadows *(Juncetalia maritimi)* - *3260* Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation - 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)* Species - 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 fallax*) - 1106 Salmon (*Salmo salar*) - 1355 Otter (*Lutra lutra*) - 1421 Killarney Fern (*Trichomanes speciosum*)	the Site and this SAC, owing to the proximity between the two.
Special Protection Areas (SPAs)		
Kilcolman Bog SPA (004095) **Located 11.5km north of the Proposed Development** https://www.npws.ie/protected-sites/spa/004095	**Conservation Objectives Version 9.0 (NPWS, 2022a)** **Birds** - A038 Whooper Swan (*Cygnus cygnus*) - A052 Teal (*Anas crecca*) - A056 Shoveler (*Anas clypeata)* - A999 Wetland and Waterbirds	No pathways identified per Section 4.3.2.1 above.
Blackwater Callows SPA (004094) **Located >28km east of the Proposed Development** https://www.npws.ie/protected-sites/spa/004094	**Conservation Objectives (NPWS, 2022b)** **Birds** - A038 Whooper Swan (*Cygnus cygnus*) - A050 Wigeon (*Anas penelope*) - A052 Teal (*Anas crecca*) - A156 Black-tailed Godwit (*Limosa limosa*) - A999 Wetland and Waterbirds	No pathways identified per Section 4.3.2.1 above.
Blackwater Estuary SPA (004028) **Located >30km southeast of the Proposed Development** https://www.npws.ie/protected-sites/spa/004028	**Conservation Objectives (NPWS, 2022b)** **Birds** - A050 Wigeon (*Anas penelope*) - A140 Golden Plover (*Pluvialis apricaria*) - A142 Lapwing (*Vanellus vanellus)* - A149 Dunlin (*Calidris alpina*) - A156 Black-tailed Godwit (*Limosa limosa*) - A157 Bar-tailed Godwit (*Limosa lapponica*) - A160 Curlew (*Numenius arquata*)	No pathways identified per Section 4.3.2.1 above.

Site Name & Site Code	Qualifying Interests (*= priority habitats)	Potential Pathways
	- A162 Redshank (*Tringa totanus*) - A999 Wetland and Waterbirds	

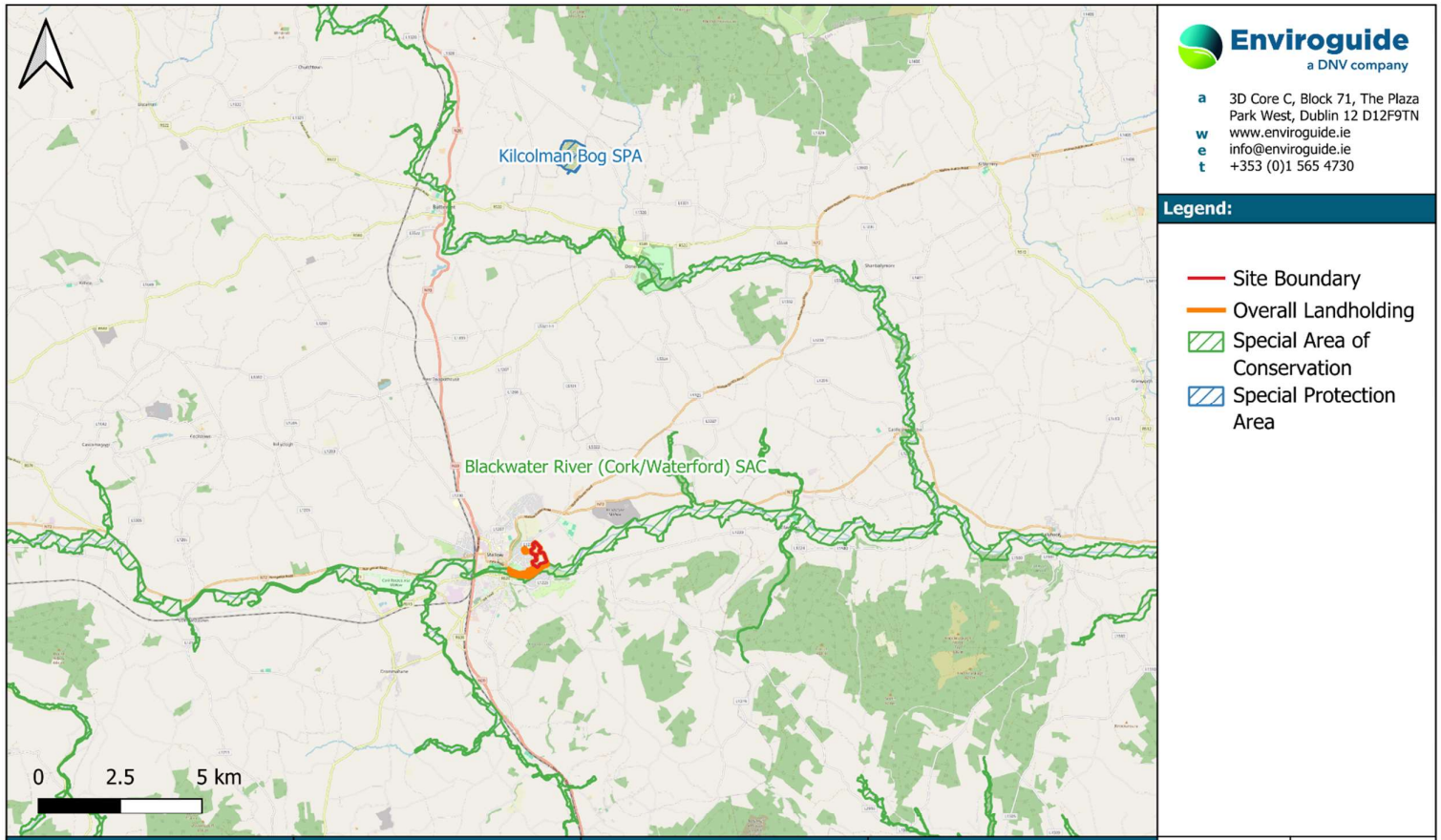

FIGURE 8. LOCATION OF EUROPEAN SITES RELATIVE TO THE PROPOSED DEVELOPMENT (ALL REMAINING EUROPEAN SITES ARE LOCATED >12KM AWAY WITH NO S-P-R LINK).

4.3.3.1 Blackwater River (Cork/Waterford) SAC (002170)

4.3.3.1.1 Site Summary

The following description of the Blackwater River (Cork/Waterford) site is extracted from the Site Synopsis (NPWS, 2016) for the site:

"The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. 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 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.

Interesting geological features along this stretch of the Blackwater Valley include limestone cliffs and caves. 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. A small stand of Yew (Taxus baccata) woodland occurs on a limestone ridge at Dromana, near Villierstown. Marshes and reedbeds cover most of the flat areas beside the rivers and often occur in mosaic with the wet woodland. Floating river vegetation is found along much of the freshwater stretches within the site. 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 occur at Annagh Bog on the Awbeg.

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). 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. The Araglin valley consists predominantly of broadleaved woodland while along the lower reaches of the Awbeg River, the valley sides are generally cloaked with mixed deciduous woodland of estate origin.

This vast site supports several Red Data Book plant species and 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 (Lampetra fluviatilis), Twaite Shad (Alosa fallax fallax), Freshwater Pearl Mussel (Margaritifera margaritifera), Otter (Lutra lutra) and Salmon (Salmo salar).

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.

In terms of birds, the site holds several bird species listed on Annex I of the E.U. Birds Directive, and the site also holds important numbers of wintering waterfowl. 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. Land use at the site is mainly centred on agricultural activities. Both commercial and leisure fishing takes place on the rivers.

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."

The following description of the Site is extracted from the EU Standard Data Form (NPWS, 2018) Quality and Importance Section for the Site (Available from the Natura 2000 Network Viewer (EEA, 2023)):

"The site supports important examples of a range of Annex I habitats, notably estuaries, intertidal mudflats and sandflats, perennial vegetation of stony banks, salt meadows, floating river vegetation, alluvial forests, and oak woodlands. Most of these are of good quality and extensive in area. The Blackwater system is an important salmonid fishery and is of high conservation value for Salmo salar. Also supports important populations of Lampetra planeri, L. fluviatilis, Petromyzon marinus and Alosa fallax fallax. Substantial populations of Margaritifera margaritifera occur, while Austropotamobius pallipes is found in the Awbeg River. Lutra lutra is widespread throughout the site and has been subject to detailed surveys. Trichomanes speciosum occurs at one location. Annex I bird species present in the site include breeding Egretta garzetta, Alcedo atthis and Falco peregrinus and wintering cygnus cygnus and Pluvialis apricaria. A good diversity of other winter waterfowl species also occurs."

4.3.3.1.2 Conservation Objectives

Site specific conservation objectives (SSCO) have been compiled for the Blackwater River SAC (Cork/Waterford) (NPWS, 2012). These are outlined in Table 6 and the relative location of the SAC to the Proposed Development is shown in Figure 8, while Appendix 1 provides the complete list of attributes and targets which define favourable conservation status for each QI.

TABLE 6. QUALIFYING INTERESTS (QIS) / SPECIAL CONSERVATION INTERESTS (SCIS) AND THEIR DEGREE OF CONSERVATION FOR THE RELEVANT EUROPEAN SITE(S). THE CONSERVATION STATUS OF EACH QI / SCI WAS SOURCED FROM THE RELEVANT STANDARD DATA FORMS, AVAILABLE FROM THE NATURA 2000 NETWORK VIEWER (EEA, 2024).

QI / SCI (* = priority habitat)	Degree of Conservation[2]	National Status	Conservation Objective
Blackwater River SAC (002170) (NPWS 2012)			
1130 Estuaries	Good	Inadequate	To maintain the favourable conservation condition of this QI habitat in the Blackwater River (Cork/Waterford) SAC
1140 Mudflats and sandflats not covered by seawater at low tide	Good	Inadequate	

[2] Per the Standard Data Capture Forms this refers to the Degree of Conservation of the structure and functions of the natural habitat type concerned and restoration possibilities at the time of designation.

QI / SCI (* = priority habitat)	Degree of Conservation[2]	National Status	Conservation Objective
Blackwater River SAC (002170) (NPWS 2012)			
1220 Perennial vegetation of stony banks	Good	Inadequate	
1310 *Salicornia* and other annuals colonising mud and sand	Good	Favourable	
1330 Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*	Good	Inadequate	To restore the favourable conservation condition of this QI habitat in the Blackwater River (Cork/Waterford) SAC
1410 Mediterranean salt meadows *(Juncetalia maritimi)*	Good	Inadequate	To maintain the favourable conservation condition of this QI habitat in the Blackwater River (Cork/Waterford) SAC
3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation	Excellent	Inadequate	
91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	Average or reduced	Bad	To restore the favourable conservation condition of this QI habitat in the Blackwater River (Cork/Waterford) SAC
91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)*	Excellent	Bad	
1029 Freshwater Pearl Mussel (*Margaritifera margaritifera*)	Average or reduced	Bad	To restore the favourable conservation condition of this SCI species in the Blackwater River (Cork/Waterford) SAC
1092 White-clawed Crayfish (*Austropotamobius pallipes*)	Average or reduced	Bad	To maintain the favourable conservation condition of this SCI species in the Blackwater River (Cork/Waterford) SAC

QI / SCI (* = priority habitat)	Degree of Conservation[2]	National Status	Conservation Objective
Blackwater River SAC (002170) (NPWS 2012)			
1095 Sea Lamprey (*Petromyzon marinus*)	Excellent	Bad	To restore the favourable conservation condition of this SCI species in the Blackwater River (Cork/Waterford) SAC
1096 Brook Lamprey (*Lampetra planeri*)	Excellent	Favourable	To maintain the favourable conservation condition of this SCI species in the Blackwater River (Cork/Waterford) SAC
1099 River Lamprey (*Lampetra fluviatilis*)	Good	Unknown	
1103 Twaite Shad (*Alosa fallax fallax*)	Good	Bad	
1106 Salmon (*Salmo salar*)	Good	Inadequate	
1355 Otter (*Lutra lutra)*	Excellent	Favourable	To restore the favourable conservation condition of this SCI species in the Blackwater River (Cork/Waterford) SAC
1421 Killarney Fern (*Trichomanes speciosum*)	Not available	Unknown	To maintain the favourable conservation condition of this SCI species in the Blackwater River (Cork/Waterford) SAC

4.4 Assessment of Likely Significant Effects

The following sections discuss the potential for likely significant effects on the relevant European site, taking into consideration the QIs, SCIs and SSCOs (where available), and assesses whether the Proposed Development has the capacity to adversely affect the integrity of this European site. The potential for significant effects that may arise from the Proposed Development was considered through the use of key indicators as detailed in section 3.6.

4.4.1 Changes in Water Quality and Resource

4.4.1.1 Foul Waters to Mallow WwTP

The Mallow WwTP was identified by the EPA as being non-compliant with the Emission Limit Values (ELVs) as set out in the Wastewater Discharge Licence for 2021, according to the 2021 Annual Environmental Report (AER) for the facility (Irish Water, 2021). It is also noted that Total Ammonia was the only parameter of all ELVs that this treatment plant was non-compliant for. However, ambient monitoring of the Blackwater River from upstream (Monitoring station: RS18B021690) and downstream (Monitoring station: RS18B021720) of

the WwTP discharge point shows a deterioration in Biochemical Oxygen Demand (BOD) downstream of the effluent discharge point.

The upgrade works to Mallow WwTP which involved works to upgrade its waste management and processing infrastructure, were completed in July 2023. The following is noted on Irish Water's website (Irishwater.ie) with regard to said improvement works:

"Uisce Éireann first began work on the original WwTP, which was outdated and overloaded, with Glan Agua back in early 2021. The project also involved the construction of a new pumping station and stormwater holding tank at Mallow Bridge. A separate contract to upgrade the wastewater network was signed with Ward & Burke Construction Ltd in early 2021. Work commenced in April 2021 and was completed in January 2023. The overall investment of €34m in these two projects will provide the additional capacity in the wastewater network and at the wastewater treatment plant to cater for current and future development and housing in the Mallow area and will also improve water quality in the River Blackwater through the provision of an enhanced wastewater treatment plant and the removal of eight combined storm overflows".

Note also that in the subsequent AER (Irish Water, 2022), the Mallow WwTP was assessed as compliant for its ELVs, including those relating to ammonia.

The Proposed Development is expected to take 96 months to complete, and as such, it will become operational well after the completion of the upgrade to Mallow WwTP. The upgraded WwTP therefore has capacity to treat all foul flows generated by the Proposed Development and ensure water quality in the main Blackwater Channel is of sufficient quality to meet the relevant standards.

It is not expected that foul waters generated by the Proposed Development will present any source of significant impacts to the Blackwater River SAC post treatment and discharge from Mallow WwTP, as the Proposed Development will not prevent the Mallow WwTP from achieving compliance with its ELVs. It is noted that recent EPA water monitoring data reports Q-values of 4 (Good status) from upstream of the WWTP in 2021 (Station code: RS18B021500), and Q -values of 4 from ca. 4.6km downstream of its discharge point in 2020 (Station code: RS18B021800) (EPA, 2024).

As a result, significant water quality impacts owing to foul waters generated by the Proposed Development, and significant effects on the conservation objectives of the Blackwater River (Cork/Waterford) SAC can be ruled out.

4.4.1.2 Construction Phase: Surface Water

There is potential for surface water run-off during the Construction Phase to enter the existing surface water network within the Castlelands housing estate to the west which discharges into the Blackwater River which forms part of the designated site under assessment.

Another potential route for Construction Phase surface water run-off to contaminate nearby waterbodies is via the general topography of the Site, which slopes generally down towards the south to the Blackwater River.

Therefore, there is a direct hydrological connection between the Site of the Proposed Development and Blackwater River (Cork/Waterford) SAC during the construction of the Proposed Development. As a result, significant water quality impacts owing to surface water run-off generated by the Proposed Development, **cannot be ruled out.**

Therefore, the potential for significant effects on the conservation objectives of the Blackwater River (Cork/Waterford) SAC as a result of surface water quality impacts from the Proposed Development **cannot be ruled out** at this stage.

4.4.1.3 Construction Phase: Ground Water

The aquifer type that underlies the Site is a *Regionally Important Aquifer-Karstified (Diffuse)* (*Rkd*), and the groundwater vulnerability across the Site is mapped as having a '*Extreme'* vulnerability to contamination from human activity in the southern half, and '*High'* vulnerability to the west and '*Rock at or near Surface or Karst'* in the east and south of the Site (GSI, 2024).

According to the GSI's 'A description of Irish Aquifer Categories'[3] information sheet, Rk Aquifers are characterised by Karstified limestone in the upper bedrock layers and along certain fractures, fissures, and joints, whereby limestone has been slowly dissolved away by percolating waters (i.e., 'karstification'). Karstification frequently results in the uneven distribution of permeability through the rock, and the development of distinctive karst landforms at the surface (e.g., swallow holes, caves, dry valleys), some of which provide direct access for recharge/surface water to enter the aquifer. The landscape is characterised by largely underground drainage, with most flow occurring through the more permeable, solutionally-enlarged, interconnected fissure/conduit zones, which may be several kilometres long. Groundwater velocities through fissures/conduits may be high and aquifer storage is frequently low, and there is a strong interconnection between surface water and groundwater. Rkd aquifers are karst aquifers dominated by diffuse flow as opposed to conduit flow (Rkc).

The GSI's Ground water body (GWB) 'Summary of Initial Characterisation[4]' report for the Mitchelstown GWB notes the following in relation to the movement of groundwater within the aquifer:

"*Groundwater in this GWB is generally unconfined. The highly permeable aquifer supports a regional scale flow system. At a local scale groundwater flow direction may not follow local topography due to flow in Karstified conduit systems. Groundwater flow paths can be up to several kilometres long but may be significantly shorter in areas where the water table is very close to the surface. Regional groundwater flow will be away from the surrounding uplands towards the main rivers draining the valleys".*

Therefore, based on the porous characteristics of the underlying aquifer, and the proximity to the Blackwater River, likely significant negative impacts on groundwater quality and quantity via potential contamination/pollution events, cannot be fully ruled out.

Therefore, the potential for significant effects on the conservation objectives of the Blackwater River (Cork/Waterford) SAC as a result of potential groundwater quality and quantity impacts from the Proposed Development **cannot be ruled out** at this stage.

4.4.1.4 Freshwater Pearl Mussel

The European Communities Environmental Objectives (Freshwater Pearl Mussel) Regulations 2009 (S.I. No. 296 of 2009) were introduced to support the achievement of

[3] https://www.gsi.ie/documents/GSI%20Aquifer%20Category%20Descriptions.pdf

[4] https://secure.dccae.gov.ie/GSI_DOWNLOAD/Groundwater/Reports/GWB/MitchelstownGWB.pdf

favourable conservation status for freshwater pearl mussels, and to that end they set environmental quality objectives for the habitats of the FWPM in rivers named in the First Schedule of those Regulations.

The European Union Environmental Objectives (Freshwater Pearl Mussel) (Amendment) Regulations 2018 (S.I. No. 355 of 2018) was introduced which allowed the amendment of the 2009 Regulations to omit the main Blackwater River Channel from the list of watercourses to which it applied to, and in doing so amended the NPWS conservation objectives for the Blackwater River (Cork/Waterford) SAC, removing the FWPM as a qualifying interest for the main river channel. However, in 2019 S.I. No. 355/2018 was effectively reversed, meaning that the 2009 regulations still apply to the Munster Blackwater River (Main Channel).

As such, the NPWS conservation objectives have been amended for the Blackwater River (Cork/Waterford) SAC, reinstating the FWPM as a QI species for the main Blackwater River Channel. Therefore, given the proximity of the Proposed Development to the main Blackwater River Channel, the potential for significant effects to the FWPM population owing to potential water quality impacts from the project, **cannot be ruled out.**

4.4.1.4.1 Potential impacts from Vegetation Clearance in 2022

As noted in the limitations section, vegetation clearance was carried out at the Site prior to the first Site visit by Enviroguide consultants. The clearance activities on site were extremely minor in nature and related to the clearance of localised scrub (young sally/willows) and the removal of stockpiles of rubble and other construction material located on the southern boundary of the Site which had been left there from the original phase of development.

The exact nature of the works were as follows;

- Topping/Mulching of young sally/willows and scrub/briars.
- Excavator and tipper truck attended site for approximately 1 week to remove stockpiles of rubble and other construction material located on the southern boundary of the Site.
- The excavator also graded haul road tracks that were on site from the original phase of the development in order to make the area safe for site surveys and the topographical survey.
- No additional excavation of topsoil or sub-soil was carried out.

In considering the potential impacts of these works key questions to be addressed on the nature of the development, as recommended in the Guidance on Assessment and Construction Management in *Margaritifera* Catchments (Atkinson et al., 2023) has been considered (see Appendix II – Assessment And Construction Management In *Margaritifera* Catchments: Key Questions).

These questions need to be asked with respect to the conservation objectives of a population, in the case of the Blackwater River (Cork/Waterford) SAC (002170) this will be the “restore” function for each of the conservation objectives. Given the response to the key questions (see Appendix II for details) it is apparent that the activities associated with the minor clearance works would not have had a significant impact on the functioning on the preferential flow in areas of *Margaritifera* habitat in the Munster Blackwater SAC. The activities associated with the minor clearance works were not located within the floodplain nor would they have the potential to impact on the ability of the floodplain to provide a regulatory function in terms of

buffering flood flows ensuring that lateral floodplain connectivity is maintained, and floodplain storage is not reduced. In the context of low flows there was no potential for impacting of the ability of the floodplain to provide important baseflow and denitrification properties of the soils and subsoils.

In the naturally well drained areas of the Munster Blackwater catchment, the fringing semi-natural and natural habitats both within and outside of the floodplain are critical to the regulation of flow regime and provide a buffering to sediment and nutrient loading to the river. The minor clearance works were well set back from the Blackwater River and outside of the natural floodplain. There was no removal of natural habitat and therefore the clearance works did not impact of supporting fringe habitat which is critical in these areas of the catchment.

Given the nature of the works and their scale and extent and based on the responses to the Key Questions (Appendix II) it can be concluded that the minor site clearance works would not have had a likely significant effect on the conservation objectives for *Margaritifera* in the Blackwater River (Cork/Waterford) SAC.

4.4.1.5 Operational Phase: Surface Water

All operational surface waters which will not be discharged to ground at the Site but will be directed to the Blackwater River post attenuation and treatment. Therefore, there is a direct hydrological connection between the Site of the Proposed Development and Blackwater River (Cork/Waterford) SAC during the Operational Phase of the Proposed Development. As a result, significant water quality impacts (such as changes to the hydrological regime of the Blackwater River) owing to surface water run-off generated by the Operational Phase of the Proposed Development, **cannot be ruled out.**

4.4.2 Habitat Loss and Alteration

The Proposed Development is not located within any European site and therefore there will be no direct loss or alteration of habitat as a result of the Proposed Development. However, the previous section identified that water quality impacts owing to the project cannot be excluded which in turn may indirectly lead to habitat loss or alteration.

In addition, two invasive plant species were recorded on Site, namely butterfly bush (*Buddleja davidii*), and New Zealand flax (*Phormium tenax*), both of which could potentially be spread during construction phase activities.

As a result of the above, the potential for significant habitat loss/alteration of QI habitat within the Blackwater River (Cork/Waterford) SAC, owing to the project, and the associated effects on the conservation objectives of the SAC **cannot be ruled out** at this stage.

4.4.3 Disturbance and/or Displacement of Species

It is deemed unlikely that the Proposed Development would lead to significant disturbance or displacement of QI species for the Blackwater River (Cork/Waterford) SAC) or any other European Site. The nearest Special Protection Areas (SPAs) to the Site are the Kilcolman Bog

SPA (004095) and Blackwater Callows SPA (004094) located ca. 11.5km north and 25km east from the Site respectively.

Public lighting is proposed along a new footpath leading to the existing footpaths within the SAC. Low level bollard lighting is proposed along the new path. Considering the existing pathways and lighting, the additional lighting along the new path is not considered to significantly add to the existing light levels within the SAC or its adjacent habitats within the Site. Thus, potential disturbance on the SAC QI species from public lighting **can be ruled out**.

However, the preceding sections have identified that water quality impacts owing to the project cannot be excluded, which in turn may indirectly lead to disturbance/displacement of species within the Blackwater River (Cork/Waterford) SAC.

As a result, the potential for significant disturbance and/or displacement of species within the Blackwater River (Cork/Waterford) SAC, owing to the project, and the associated effects on the conservation objectives of the SAC **cannot be ruled out** at this stage.

4.4.3.1 Ex-situ disturbance

The Site of the Proposed Development is comprised largely of improved grassland (GA1), with areas of scrub (WS1) and scattered trees and parkland (WD5) revegetating in parts, which provides little to no suitable *ex-situ* habitat for the waterfowl species listed as SCIs for the Kilcolman Bog SPA (004095) (i.e., Whooper Swan *Cygnus cygnus*, Wigeon *Anas penelope*, Teal *Anas crecca*, and Shoveler *Anas clypeata*). In addition, based on the significant intervening distance between this SPA and the Site in question (11.5km); along with the abundance of analogous agricultural habitats that exist within this intervening distance, it is deemed that the Site does not provide important *ex-situ* feeding resource to the birds of the Kilcolman Bog SPA; and as such will not result in any disturbance or displacement of said SCI species.

Therefore, the potential for significant habitat/species fragmentation within the Kilcolman Bog SPA owing to the project, and the associated effects on the conservation objectives of the SAC, **can be ruled out** at this stage.

4.4.3.2 Aquatic QI species

The Proposed Development lies adjacent to the Blackwater River. Therefore, potential pollution impacts leading to reductions in water quality downstream of the Site will need further consideration in terms of potential displacement of aquatic QI species e.g., Lamprey species, Otter, Salmon, Twaite Shad, White-clawed Crayfish, and FWPM.

No signs of Otter i.e., holts, couches, prints or spraints, were noted as being present during the Site survey, however, the Blackwater River does provide suitable habitat for Otter for foraging, committing and breeding. Potential impacts to Otter would be indirect in nature and more likely to be associated with a reduction in fish prey species should pollution of the Blackwater River occur.

Additionally, an increase in human activity within the Site is also likely to bring with it an increased number of dogs visiting the parks adjacent to the Site and the Blackwater River. Dog foul and flea and tick treatments used on pet dogs could potentially be introduced to the Blackwater River during the Operational Phase of the Proposed Development, as it is noted that access can easily be gained to the river by pets from within this park. Studies in the UK have shown that these flea and tick treatments impact water quality negatively and can even

harm aquatic life (Preston-Allen et al, 2023). Should dog foul not be appropriately removed by pet owners, this can also result in a negative impact by adding increased nutrients from same on the local flora of the park, which could potentially migrate southwards into the Blackwater River.

Therefore, the potential for significant disturbance/displacement of QI species within the Blackwater River SAC owing to the project, and the associated effects on the conservation objectives of the SAC, **cannot be ruled out** at this stage.

4.4.1 Habitat/Species Fragmentation

Habitat fragmentation has been defined as the 'reduction and isolation of patches of natural environment' (Hall *et al*., 1997 cited in Franklin *et al*., 2002) usually due to an external disturbance such that an alteration of the spatial composition of a habitat occurs that alters the habitat and 'create[s] isolated or tenuously connected patches of the original habitat' (Wiens, 1989 cited in Franklin *et al*., 2002). This results in the spatial separation of habitat units which had previously been in a state of greater continuity.

The previous sections have identified that the potential for habitat loss/alteration to occur cannot be ruled out. As a result, the potential for significant habitat/species fragmentation within the Blackwater River SAC owing to the project, **cannot be ruled out** at this stage.

4.4.2 Changes in Population Density

The Proposed Development will not result in a reduction in population densities of any SCI species associated with nearby SPAs for the reasons outlined in 4.4.3.1 above. As a result, the potential for significant changes in population density to SPAs within the zone of influence owing to the project, **can be ruled out**.

However, the previous sections identified that water quality impacts could have the potential to cause significant impact on QI species of the nearby Blackwater River (Cork/Waterford) SAC. As such, significant water quality impacts on the Blackwater River owing to the project, could result in the potential for significant changes in population density to these QI species and **cannot be ruled out** at this stage.

4.4.3 Potential for In-combination Effects

4.4.3.1 Existing Planning Permissions

As standard practice, a search of planning applications located within the town of Mallow of for which the Site of the Proposed Development is located, was conducted using online planning resources such as the National Planning Application Database (NPAD) (MyPlan.ie) and Cork County Council Planning Applications online map. Any planning applications listed as granted or decision pending from within the last five years were assessed for their potential to act in-combination with the Proposed Development and cause likely significant effects on the relevant European sites. Long-term developments granted outside of this time period were also considered where applicable.

It is noted that the majority of the few developments within the vicinity of the Site of the Proposed Development are applications granted for small scale extensions and alterations to

existing permitted developments. The larger developments in the vicinity of the Proposed Development are outlined in Table 7.

TABLE 7. GRANTED AND PENDING DEVELOPMENT APPLICATIONS WITHIN MALLOW TOWN, WHERE THE PROPOSED DEVELOPMENT IS LOCATED. THE LOCATION AND DISTANCE GIVEN IS RELATIVE TO THE PROPOSED DEVELOPMENT.

Planning Reference	Planning Authority	Status	Location
226156	**Cork County Council**	**Application Finalised**	**Scoil Aonghusa CNS, Kingfort Avenue, Castlepark Village, Castlelands, Mallow, Co.Cork**
Development Description Permission for construction of a single storey extension to existing school (Scoil Aonghusa CNS) incorporating a special educational needs base and associated facilities, alterations to northeast and northwest elevations of existing school and all associated site works including the construction of a soft fall play area and retaining wall with fencing. **Potential for In-combination effects** The Proposal encompasses an attenuation tank which addressed concerns raised by Cork CoCo in an FI dated 17/11/2022 that the drainage from the proposal could impact on the Blackwater SAC. Once this FI was submitted, the development was granted, as effects on this SAC, either alone or in-combination, were not envisaged.			
224676	**Cork County Council**	**Pending appeal decision with ABP**	**Old Course, Spaglen, Mallow, Co.Cork**
Development Description The construction of a residential development of 96 no. dwelling units and all associated site development works. The proposed development consists of the construction of 24 no. 4-bed semi-detached houses, 30 no. 3-bed semi-detached houses, 16 no. 3-bed townhouses, 14 no. 2-bedtownhouses and 6 no. 2-bed duplex units, 4 no. 2-bed apartment units and 2 no. 1-bed apartments units contained in 3 no. 3 storey apartment blocks. Vehicular access to the proposed development will be via the existing entrance from the L-1207. The proposed development also includes open space, landscaping, bicycle parking facilities, bin stores, public lighting, and all ancillary site development works. A Natura Impact Statement (NIS) has been prepared and will be submitted to the planning authority with the application. The NIS will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy during office hours at the offices of the planning authority. **Potential for In-combination effects** The NIS Report States: "with the implementation of the mitigation measures proposed, that the construction, operation and decommissioning of the proposed development will not adversely affect the integrity of any European Site" alone or in combination. In addition, A Letter from the Local Authority issued to ABP regarding the appeal on 13/01/2023 states: "*The Planning Authority is of the opinion that all the relevant issues have been covered in the technical reports already forwarded to the Bord as part of the appeal documentation and has no further comment to make in this matter".* The main potential for in-combination impacts on the Blackwater River SAC, however the NIS and CEMP for the Proposed Development at Castlelands, Mallow outline mitigation measures, including embedded design features (e.g., SuDS and landscaping) that serve to ensure the Proposal will not act in-combination to create any adverse effects on the local ecology of the Site, adjacent/linked habitats, including the Blackwater River SAC. As such, in-combination effects are not foreseen.			
235197	**Cork County Council**	**Pending Decision**	**"Clonmore", Ballyviniter Lower, Mallow, Co.Cork**
Development Description Application for 1) The construction of 108 no. dwelling houses, consisting of 3 no. 4 bed detached, 2 no. 3 bed detached, 68 no. 4 bed semi-detached, 32 no. 3 bed semi-detached and 3no. 3 bed terraced houses. These houses area to be assessed through the existing completed part of the housing development; 2) A crèche of 380 sqm of single/two storey construction, also accessed from the existing			

Planning Reference	Planning Authority	Status	Location
completed part of the housing development, including 11 carparking spaces and associated works; 3) the provision of a 1.2m diameter culvert within this development. This leads to an open water course which is to be provided in lieu of the existing pipe works along the western boundary of the site; 4) all associated site development works. Extension of Duration to Permission granted under Planning Ref. No. 16/6949, ABP-301221-18. **Potential for in-combination effects** The original application was granted with no potential impact expected to occur on designated sites, alone or in-combination. However, this extension sought to make changes to the proposal and so was refused on the basis that it was invalid. However, the original application was then submitted, with the extension of duration being granted on the 09/08/2023 until the 31/03/2024. The Ecology Primary Report dated 03/08/2023 states: "*I note the application is for the completion of a permitted development, under reg ref 16/6949, of 108 dwelling houses. I also note that a Natura Impact Statement was submitted with the 2016 application and considered to be acceptable. As no changes, which may give rise to ecological impacts, have been made from the original application, I have no objection to the proposed Extension of Duration.".* As such, in-combination effects are not foreseen.			
226225	**Cork County Council**	**Permission Granted**	**Ballydaheen Road/ Mill Street, Ballydahin, Mallow, Co. Cork**
Development Description The construction of 52 no. residential units comprising of 12 no. 3 bed units, 18 no. 2 bed units and 22 no. 1 bed units [a mix of 3 bed townhouses, 1 & 2 bed maisonettes and 1, 2 & 3 bed own-door apartments]. The units range in height from 2 to 3 storeys. Permission is also sought for the construction of 3 no. commercial units [Beauty Salon/Coffee Shop/Café and Newsagents] as well as a multi-purpose/ community space at ground floor level. The development also includes landscaping, drainage, boundary treatments, 96 no. bicycle parking spaces, 57 no. car parking spaces, bin storage, play area, planting/screening and all associated site development works at Ballydaheen Road/ Mill Street, Ballydahin, Mallow, Co. Cork. A Natura impact statement will be submitted to the planning authority with this application. The Natura impact statement will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy during office hours at the office of the relevant planning authority. **Potential for In-combination Effects** No in-combination impacts were identified in the NIS report for this granted application. Further information was requested regarding the overall landscape proposal at the site, which was subsequently provided and accepted with planning permission being granted. As such, in-combination effects are not foreseen.			
312640 (ABP-312640-22)	**An Bord Pleanala**	**Permission Granted**	**Anabella, Mallow, Co. Cork.**
Development Description Permission application for the construction of 299 no. residential units (185 no. houses, 114 no. apartments) creche and associated site works **Potential for In-combination Effects** The inspectors report makes reference to the AA Screening and NIS reports which were prepared in support of this application, stating: *"I note the applicant submitted a Natura Impact Statement (NIS). In deciding to prepare and submit a NIS the applicant states that the precautionary principle was being applied. I am of the opinion that the application of the precautionary principle in this instance represents an over-abundance of precaution and is unwarranted. Having regard to the above assessment, I recommend that Section 9(4)(a) of the Act of 2016 be applied, and that permission is granted for the reasons and considerations and subject to the conditions set out below".* As such, in-combination effects are not foreseen.			
244243; ABP-320525-24	**An Bord Pleanala**	**Decision due 02/12/2024**	**Spa Glen, Mallow, Co. Cork**

Planning Reference	Planning Authority	Status	Location
Development Description Permission for following Large Scale Residential Development (LRD) comprising the demolition of the existing farmhouse/buildings and the construction of 186 no. residential units, 1 no creche and all associated ancillary development works including the signalisation of the N72/L5331 junction to provide improved sightline visibility, amendments to part of the existing hedgerow along the N72 to improve sightline visibility, 2 no. vehicular access points, 1 no. toucan and 3 no. uncontrolled pedestrian and cycle crossing points on the L5331, footpaths, parking, drainage, landscaping/amenity areas and the undergrounding of existing 38KV overhead electricity lines. A Natura Impact Statement is submitted to the planning authority with this application. **Potential for In-combination Effects** No in-combination impacts were identified in the NIS submitted for this development. The main potential for in-combination impacts on the Blackwater River SAC, however the NIS and CEMP for the Proposed Development at Castlelands, Mallow outline mitigation measures, including embedded design features (e.g., SuDS and landscaping) that serve to ensure the Proposal will not act in-combination to create any adverse effects on the local ecology of the Site, adjacent/linked habitats, including the Blackwater River SAC. As such, in-combination effects are not foreseen.			
235952; Original application: ABP 301429-18, amended by ABP 311986-21.	**An Bord Pleanala**	**Granted 17th January 2024.**	**Hazel Brooke, Spaglen (townland), Mallow, Cork**
Development Description Extension of Duration application for the construction of a strategic housing development comprising of 148 no. residential units, a creche, the provision of landscaping and amenity area to include 3 no. local play areas and 3 no. neighbourhood play areas and all associated ancillary development to include the provision of improved pedestrian facilities including the installation of dropped kerbs and tactile paving, new pedestrian crossings and the realignment and improvement of the spa road junction and footpaths to the west, lighting, drainage, boundary treatments and bicycle & carparking and bin storage. Extension of Duration to Permission granted under Planning Ref. No. ABP Ref 301429-18 (as amended by ABP 311986-21) **Potential for In-combination Effects** An AA screening was conducted and submitted with the conclusion of no likely significant effects. The planning authority requested further information which was submitted and reviewed, and provided evidence required to satisfy that no significant adverse effects are likely to occur in relation to any Natura 2000 site arising from an extension of the permitted development. Thus, in-combination effects are not foreseen.			
245530	**Cork County council**	**Submitted 13/08/2024, Awaiting FI**	**Annabella, Mallow, Co. Cork**
Project Description Permission for the construction of a creche facility to serve the adjacent permitted residential development (Cork County Council Ref. 15/6119 (extended under Ref. No. 20/6130) and all associated ancillary site development works including vehicular access, parking, footpaths, landscaping and amenity areas at Annabella (townland), Mallow, Co. Cork. The proposed creche will replace the creche previously permitted under Cork County Council Ref. 16/6023 (extended under ref. 22/6434). **Potential for In-combination Effects** An AA screening was conducted and submitted which concluded that the development is highly unlikely to have significant environmental impacts on any Natura 2000 sites and stage II appropriate assessment is not required. Thus, no in-combination effects are foreseen.			

4.4.3.2 EPA Licenced/Registered Facilities

In this instance, the ZOI refers to the Blackwater River channel itself, whereby, licences/registered facilities along this channel or with the potential to impact on this ecological feature, could provide in-combination impacts with the Proposed Development.

A review of planning alerts mapping tool[5] determined that there are no active wind farm planning applications at present within the ZOI of the Proposed Development.

A review of the EPA mapping tool determined that there are several IPPC, IPC or IEL facilities within the zone of influence of the subject Site (EPA, 2024).

The nearest IEL-licenced facility is Dairygold Co-Operative Society Limited (Mallow) (Active licence no. P0403-03) which is located 1.15km northeast of the Proposed Development.

There is an active commercial quarry located 2.3km northeast of the Proposed Development; Mallow Quarry, Lacknamina, Mallow, Co. Cork (Quarry no. C020). This quarry extracts and processes asphalt macadam, RMC, general fill, and agricultural lime to produce ready mix/bulk, blocks, asphalt/macadam plant, agricultural lime, and mortars (GSI, 2024).

A review of Cork County Council Online Planner determined that there are no current planning applications pertaining to either of the facilities/quarries listed above (Cork County Council, 2024). It is considered that there is no potential for the Proposed Development to act in-combination with the above-listed EPA licenced/registered facilities in the vicinity, or those located further upstream and downstream of the Site, that may cause likely significant effects on the above European sites, based on the following:

- The spatial separation of the Proposed Development to the above listed EPA registered facilities; and,
- Accounting for the requirement for each of these facilities to produce suitable risk assessments and/or mitigations on the potential for operations to produce adverse impacts on European sites, alone or in-combination, prior to EPA/ABP/the relevant authority approval.

4.4.3.3 Relevant Policies and Plans

The following policies and plans were reviewed and considered for possible in-combination effects with the Proposed Development.

- Cork County Development Plan (2022-2028).
- Cork County Heritage and Biodiversity Action Plan (2021-2026).
- Kanturk Mallow Municipal District Local Area Plan 2017.
- All Ireland Pollinator Plan (2021-2025).

Each of these plans has undergone AA, and where potential for likely significant effects as been identified (e.g., in the case of the Cork County Development Plan), an NIS has been prepared which identifies appropriate mitigation. As such, it is considered that the plans and policies listed will not result in in-combination effects with the Proposed Development.

[5] https://www.planningalerts.ie/industries/wind-farm-windfarm-turbine-planning-applications

The Cork County Development Plan 2022-2028 has directly addressed the protection of European sites through specific Objectives and policies (MW-GO-02, MW-GO-03, MW-GO-13). The Cork County Heritage and Biodiversity Action Plan (2021-2026) and the All-Ireland Pollinator plan are set out to protect and improve biodiversity and as such will not result in negative in-combination effects with the Proposed Development.

Lastly, the Mallow WwTP upgrade works which were completed in early 2023, long before this Proposed Development will be completed (in 96 months), are considered to provide a positive impact on the treatment of foul waters received in the Mallow Town area. As per licencing application for this WwTP, an NIS was produced which considered the conservation objectives of the QI/SCI species and habitats for which the Blackwater River SAC is designated.

On examination of the above, it is considered that there are no means for the Proposed Development to act in-combination with any policies or plans that would cause any likely significant effects on any European sites.

TABLE 8. SUMMARY OF IMPACT ASSESSMENT ON EUROPEAN SITES AS A RESULT OF THE PROPOSED DEVELOPMENT.

Site	Habitat Loss / Alteration	Habitat or Species Fragmentation	Disturbance and/or Displacement of Species	Changes in Population Density	Changes in Water Quality and/or Resource	In-combination effects	Stage 2 AA Required
SAC							
Blackwater River SAC (002170)	Yes	Yes	Yes	Yes	Yes	No	YES
Kilcolman Bog SPA (004095)	No	No	No	No	No	No	NO
Blackwater Callows SPA (004094)	No	No	No	No	No	No	NO
Blackwater Estuary SPA (004028)	No	No	No	No	No	No	NO

5 APPROPRIATE ASSESSMENT SCREENING CONCLUSION

The Proposed Development at Castlelands, Mallow, Co. Cork has been assessed considering:

- The nature, size and location of the Proposed Development and possible impacts arising from the Construction and/or Operational Phase.
- The QIs and conservation objectives of the European sites.
- The potential for in-combination effects arising from other plans and projects.

In carrying out this AA screening, ecology specific mitigation measures have not been accounted for. Standard best practice construction measures which could have the effect of mitigating any effects on any European sites have similarly not been considered.

In conclusion, on the basis of the screening exercise carried out above, and on the basis of the best scientific knowledge available, the possibility of significant effects on the Blackwater River (Cork/Waterford) SAC (002170) whether arising from the project itself or in combination with other plans and projects, **cannot be excluded**.

Thus, it is required to proceed to Stage 2 of the AA process; and the preparation of a NIS is required. A NIS has been prepared by Enviroguide and accompanies this submission under a separate cover.

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APPENDIX I – SITE-SPECIFIC CONSERVATION OBJECTIVES

The following table lists the QIs/SCIs and their site-specific conservation objectives for the relevant European sites assessed in this Screening Report. Those attributes and targets for which the risk of significant impacts via the identified S-P-R connections was assessed in this Screening Report are highlighted in green. See the main text for a detailed assessment.

Attribute	Target	S-P-R connection / potential impacts
Blackwater River SAC [002170] (NPWS 2012)		
1029 Fresh Water Pearl Mussel Conservation Objective: To restore the favourable conservation condition of the Freshwater Pearl Mussel in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Distribution	Maintain at 161km.	Yes: A hydrological connection exists between the Proposed Development and the habitat distribution of FWPM within the Blackwater SAC (See Map 8 of Conservation Objectives).
Population Size	Restore to 35,000 adult mussels	
Population Structure: Recruitment	Restore to least 20% of population no more than 65mm in length; and at least 5% of population no more than 30mm in length	
Population Structure: Adult Mortality	No more than 5% decline from previous number of live adults counted; dead shells less than 1% of the adult population and scattered in distribution	
Habitat Extent	Restore suitable habitat in more than 35km and any additional stretches necessary for salmonid spawning	
Water Quality: macroinvertebrate and phytobenthos (diatoms)	Restore water quality macroinvertebrates: EQR greater than 0.90; phytobenthos: EQR greater than 0.93	
Substratum quality: filamentous algae (macroalgae), macrophytes (rooted higher plants)	Restore substratum quality- filamentous algae: absent or trace (<5%); macrophytes: absent or trace (<5%)	
Substratum quality: Sediment	Restore substratum quality- stable cobble and gravel substrate with very little fine material; no artificially elevated levels of fine sediment	
Substratum quality: oxygen availability	Restore to no more than 20% decline from water column to 5cm depth in substrate	
Hydrological regime: flow variability	Restore appropriate hydrological regimes	
Host Fish	Maintain sufficient juvenile salmonids to host glochidial larvae	
1092 White-clawed Crayfish: Conservation Objective: To maintain the favourable conservation condition of White-clawed Crayfish in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		

Attribute	Target	S-P-R connection / potential impacts
Distribution	No reduction from baseline	Yes: As this species has recently been recorded within the main channel of the Blackwater River, albeit upstream of Mallow (at Site 8: Bridgetown Lower in Sweeney & Sweeney, 2017), a potential hydrological connection between the Proposed Development and this QI species exists.
Population Structure: Recruitment	Juveniles and/or females with eggs in at least 50% of positive samples	
Negative Indicator Species	No alien crayfish species	
Disease	No instances of disease	
Water Quality	At least Q3-4 at all sites sampled by EPA	
Habitat Quality: Heterogeneity	No decline in heterogeneity or habitat quality	
1095 Sea Lamprey: Conservation Objective: To restore the favourable conservation condition of Sea Lamprey in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Distribution: Extent of anadromy	Greater than 75% of main stem length of rivers accessible from estuary	Yes: a hydrological connection exists between the Proposed Development and the distribution of this QI species within the Blackwater SAC (See Map 10 of Conservation Objectives).
Population structure of juveniles	At least three age/size groups present	
Juvenile density in fine sediment	Juvenile density at least 1/m²	
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	More than 50% of sample sites positive	
1096 Brook Lamprey: Conservation Objective: To maintain the favourable conservation condition of Brook Lamprey in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Distribution	Access to all water courses down to first order streams	Yes: a hydrological connection exists between the Proposed Development and the distribution of this QI species within the Blackwater SAC (See Map 10 of Conservation Objectives).
Population structure of juveniles	At least three age/size groups of brook/river lamprey present	
Juvenile density in fine sediment	Mean catchment juvenile density of brook/river lamprey at least 2/m²	
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	More than 50% of sample sites positive	
1099 River Lamprey: Conservation Objective: To maintain the favourable conservation condition of River Lamprey in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Distribution	Access to all water courses down to first order streams	Yes: a hydrological connection exists between the Proposed Development and the distribution of this QI species within the Blackwater SAC (See Map 10 of Conservation Objectives).
Population structure of juveniles	At least three age/size groups of brook/river lamprey present	
Juvenile density in fine sediment	Mean catchment juvenile density of brook/river lamprey at least 2/m²	
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	

Attribute	Target	S-P-R connection / potential impacts
Availability of juvenile habitat	More than 50% of sample sites positive	
1103 Twaite Shad: Conservation Objective: To maintain the favourable conservation condition of Twaite Shad in Blackwater River SAC, which is defined by the following list of attributes and targets:		
Distribution: Extent of anadromy	Greater than 75% of main stem length of rivers accessible from estuary	Yes: a hydrological connection exists between the Proposed Development and the distribution of this QI species within the Blackwater River SAC (which enter freshwater rivers from April – June each year to spawn).
Population structure: Age classes	More than one age class present	
Extent and distribution of spawning habitat	No decline in extent and distribution of spawning habitats	
Water quality: Oxygen levels	No lower than 5mg/l	
Spawning habitat quality: Filamentous algae; macrophytes. sediment	Maintain stable gravel substrate with very little fine material, free of filamentous algal (macroalgae) growth and macrophyte (rooted higher plant) growth	
1106 Atlantic Salmon (only in freshwater): Conservation Objective: To maintain the favourable conservation condition of Atlantic Salmon in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Distribution: Extent of anadromy	100% of river channels down to second order accessible from estuary	Yes: The main channel of the River Blackwater is a designated Salmonid Water under the European Communities (Quality of Salmonid Waters) Regulations of 1988. Therefore, a hydrological connection exists between the Proposed Development and the distribution of this QI species within the Blackwater SAC.
Adult spawning fish	Conservation Limit (CL) for each system consistently exceeded	
Salmon fry abundance	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling	
Out-migrating smolt abundance	No significant decline	
Number and distribution of reed beds	No decline in number and distribution of spawning reeds due to anthropogenic causes	
Water quality	At least Q4 at all sites sampled by EPA	
1130 Estuaries: Conservation Objective: To maintain the favourable conservation condition of Estuaries in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Habitat Area	The permanent habitat area is stable or increasing, subject to natural processes	No impact pathways identified due to lack of S-P-R link with potential to cause significant effect owing to the location of, and the distance between the mapped distribution of this QI and the Proposed Development Site.
Community Extent	Maintain the extent of the *Mytilus edulis*-dominated community, subject to natural processes	
Community structure: *Mytilus edulis* density	Conserve the high quality of the *Mytilus edulis*-dominated community, subject to natural processes	
Community Distribution	Conserve the following community types in a natural condition: Intertidal estuarine sandy mud community complex; Subtidal estuarine fine sand with *Bathyporeia spp.* community complex; Sand and mixed	

Attribute	Target	S-P-R connection / potential impacts
	sediment with polychaetes and crustaceans community complex; Coarse sediment community complex	
1240 Mudflats and sandflats not covered by seawater at low tide: Conservation Objective: To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Habitat Area	The permanent habitat area is stable or increasing, subject to natural processes	No: while a hydrological connection exists via the Blackwater River, there is a significant intervening distance of c.53km (as the crow flies) which is deemed to provide sufficient buffering and dilution capacity
Community Extent	Maintain the extent of the *Zostera* and *Mytilus edulis*-dominated community, subject to natural processes	
Community structure: *Zostera* shoot density	Conserve the high quality of the Zostera-dominated community, subject to natural processes	
Community structure: *Mytilus edulis* density	Conserve the high quality of the *Mytilus edulis*-dominated community, subject to natural processes	
Community distribution	The following community types should be conserved in a natural condition: Intertidal estuarine sandy mud community complex and Sand and mixed sediment with polychaetes and crustaceans community complex.	
1220 Perennial vegetation of stony banks: Conservation Objective: To maintain the favourable conservation condition of Perennial vegetation of stony banks in Blackwater River SAC, which is defined by the following list of attributes and targets:		
Habitat area	Area stable or increasing, subject to natural processes, including erosion and succession	No impact pathways identified due to lack of S-P-R link with potential to cause significant effect owing to the location of, and the distance between the mapped distribution of this QI and the Proposed Development Site.
Habitat distribution	No decline, or change in habitat distribution, subject to natural processes	
Physical structure: functionality and sediment supply	Maintain the natural circulation of sediment and organic matter, without any physical obstructions	
Vegetation structure: zonation	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation composition: typical species and subcommunities	Maintain the typical vegetated shingle flora including the range of subcommunities within the different zones	
Vegetation composition: negative indicator species	Negative indicator species (including non-natives) to represent less than 5% cover	
1310 *Salicornia* and other annuals colonizing mud and sand:		

Attribute	Target	S-P-R connection / potential impacts
Conservation Objective: To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Habitat area	Area stable or increasing, subject to natural processes, including erosion and succession	No impact pathways identified due to lack of S-P-R link with potential to cause significant effect owing to the location of, and the distance between the mapped distribution of this QI and the Proposed Development Site.
Habitat distribution	No decline, or change in habitat distribution, subject to natural processes	
Physical structure: sediment supply	Maintain natural circulation of sediments and organic matter, without any physical obstructions	
Physical structure: creeks and pans	Maintain creek and pan structure, subject to natural processes, including erosion and succession	
Physical structure: flooding regimes	Maintain natural tidal regime	
Vegetation structure: zonation	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation structure: vegetation height	Maintain structural variation within sward	
Vegetation structure: vegetation cover	Maintain more than 90% of area outside creeks vegetated	
Vegetation composition: typical species and sub-communities	Maintain the presence of species-poor communities with typical species listed in saltmarsh Monitoring Project (McCorry and Ryle, 2009)	
Vegetation structure: negative indicator species: *Spartina anglica*	No significant expansion of common cordgrass (Spartina anglica), with an annual spread of less than 1%	
1330 Atlantic Salt Meadows: Conservation Objective: To restore the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Habitat area	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Kinsalebeg - 2.77ha.	No impact pathways identified due to lack of S-P-R link with potential to cause significant effect owing to the location of, and the distance between the mapped distribution of this QI and the Proposed Development Site.
Habitat distribution	No decline or change in habitat distribution, subject to natural processes	
Physical structure: sediment supply	Maintain natural circulation of sediments and organic matter, without any physical obstructions	
Physical structure: creeks and pans	Maintain creek and pan structure, subject to natural processes, including erosion and succession	

Attribute	Target	S-P-R connection / potential impacts
Physical structure: flooding regime	Maintain natural tidal regime	
Vegetation structure: zonation	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation structure: vegetation height	Maintain structural variation within sward	
Vegetation structure: vegetation cover	Maintain more than 90% of the saltmarsh area vegetated	
Vegetation composition: typical species and sub communities	Maintain range of sub- communities with typical species listed in Saltmarsh Monitoring Project (McCorry and Ryle, 2009)	
Vegetation structure: negative indicator species - *Spartina anglica*	No significant expansion of common cordgrass (Spartina anglica), with an annual spread of less than 1%	
1355 Otter*:* Conservation Objective: To restore the favourable conservation condition of Otter in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Distribution	No significant decline	Yes: All of the Blackwater river is considered an important habitat for Otter in southern Ireland (Smiddy, 2016), as such, a hydrological connection exists between the Proposed Development and the distribution of this QI species within the Blackwater River SAC.
Extent of terrestrial habitat	No significant decline. Area mapped and calculated as 103ha above high-water mark (HWM); 1165.7ha along riverbanks/ around ponds	
Extent of marine habitat	No significant decline. Area mapped and calculated as 647.2ha	
Extent of freshwater habitat (river)	No significant decline. Length mapped and calculated as 599.54km	
Extent of freshwater habitat (lake)	No significant decline. Area mapped and calculated as 25.06ha	
Couching sites and holts	No significant decline	
Fish biomass available	Fish biomass available	
Barriers to connectivity	No significant increase	
1410 Mediterranean Salt Meadows: Conservation Objective: To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Habitat area	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Kinsalebeg: 1.36ha.	No impact pathways identified due to lack of S-P-R link with potential to cause significant effect owing to the location of, and the distance between the mapped
Habitat distribution	No decline, or change in habitat distribution, subject to natural processes	

Attribute	Target	S-P-R connection / potential impacts
Physical structure: sediment supply	Maintain natural circulation of sediments and organic matter, without any physical obstructions	distribution of this QI and the Proposed Development Site.
Physical structure: creeks and pans	Maintain creek and pan structure, subject to natural processes, including erosion and succession	
Physical structure: flooding regime	Maintain natural tidal regime	
Vegetation structure: zonation	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	
Vegetation structure: vegetation height	Maintain structural variation within sward	
Vegetation structure: vegetation cover	Maintain more than 90% of area outside creeks vegetated	
Vegetation composition: typical species	Maintain range of sub- communities with typical species listed in Saltmarsh Monitoring Project	
Vegetation structure: negative indicator species - *Spartina anglica*	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%	
1421 Killarney Fern*:* Conservation Objective: To maintain the favourable conservation condition of Killarney Fern in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Distribution	No decline. Two locations known within the SAC	No impact pathways identified due to lack of S-P-R link with potential to cause significant effect owing to the location of, and the distance between the mapped distribution of this QI and the Proposed Development Site.
Population size	Maintain size and extent of existing colonies, including sporophyte frond counts and number of gametophyte patches	
Habitat extent	No loss of suitable habitat, such as shaded rock crevices, caves, or gullies in, or near to, known colonies. No loss of woodland canopy at or near to known locations	
Hydrological conditions: visible water	Maintain hydrological conditions at the locations so that all colonies are in dripping or damp seeping habitats, and water is visible at all locations	
Hydrological conditions: humidity	No increase. Presence of desiccated sporophyte fronds or gametophyte mats indicates conditions are unsuitable	
Light levels: shading	No changes due to anthropogenic impacts	
Invasive species	Absent or under control	
3260 Water courses of plain to montane levels with the *Ranunculion fluitantis and Callitricho-Batrachion* vegetation*:* Conservation Objective: To maintain the favourable conservation condition of Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		

Attribute	Target	S-P-R connection / potential impacts
Habitat distribution	No decline, subject to natural processes	Yes: Floating river vegetation has been noted as being found along much of the freshwater stretches within the Blackwater River SAC (NPWS, 2016). Therefore, there is a potential hydrological connection between the Proposed Development and the distribution of this QI habitat within the Blackwater SAC.
Habitat area	Area stable or increasing, subject to natural processes	
Hydrological regime: river flow	Maintain appropriate hydrological regimes	
Hydrological regime: tidal influence	Maintain natural tidal regime	
Substratum composition: particle size range	The substratum should be dominated by the particle size ranges, appropriate to the habitat sub-type (typically sands, gravels and cobbles)	
Water quality: nutrients	The concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition	
Vegetation composition: typical species	Typical species of the relevant habitat sub-type should be present and in good condition	
Floodplain connectivity: area	The area of active floodplain at and upstream of the habitat should be maintained	
91A0 Old sessile oak with Ilex and Blechnum in the British isles: Conservation Objective: To restore the favourable conservation condition of Old sessile oak woods with Ilex and Blechnum in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Habitat area	Area stable or increasing, subject to natural processes, at least 263.7ha for sub-sites surveyed	No: This is a terrestrial habitat with no pathway between the Proposed Development and this QI habitat.
Habitat distribution	No decline	
Woodland size	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and “small” woods at least 3ha in size	
Woodland structure: cover and height	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi- mature trees and shrubs; and well-developed herb layer	
Woodland structure: community diversity and extent	Maintain diversity and extent of community types	
Woodland structure: natural regeneration	Seedlings, saplings, and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	
Woodland structure: dead wood	At least 30m³/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter	
Woodland structure: veteran trees	No decline	

Attribute	Target	S-P-R connection / potential impacts
Woodland structure: indicators of local distinctiveness	No decline	
Vegetation composition: native tree cover	No decline. Native tree cover not less than 95%	
Vegetation composition: typical species	A variety of typical native species present, depending on woodland type, including sessile oak (*Quercus petraea*) and birch (*Betula pubescens*)	
Vegetation composition: negative indicator species	Negative indicator species, particularly non-native invasive species, absent or under control	
91E0 Alluvial forests with *Alnus glutinosa and Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*): Conservation Objective: To restore the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) in the Blackwater River (Cork/Waterford) SAC, which is defined by the following list of attributes and targets:		
Habitat area	Area stable or increasing, subject to natural processes, at least 19.2ha for sites surveyed.	Yes: This is a terrestrial habitat with alluvial influence, therefore adopting a precautionary approach, there is a potential hydrological connection between the Proposed Development and the distribution of this QI habitat within the Blackwater SAC.
Habitat distribution	No decline	
Woodland size	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and “small” woods at least 3ha in size	
Woodland structure: cover and height	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semi- mature trees and shrubs; and well-developed herb layer	
Woodland structure: community diversity and extent	Maintain diversity and extent of community types	
Woodland structure: natural regeneration	Seedlings, saplings, and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	
Hydrological regime: flooding depth/height of water table	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	
Woodland structure: dead wood	At least 30m³/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder)	
Woodland structure: veteran trees	No decline	
Woodland structure: indicators of local distinctiveness	No decline	

Attribute	Target	S-P-R connection / potential impacts
Vegetation composition: native tree cover	No decline. Native tree cover not less than 95%	
Vegetation composition: typical species	A variety of typical native species present, depending on woodland type, including alder (Alnus glutinosa), willows (*Salix spp*) and, locally, oak (*Quercus robur*) and ash (*Fraxinus excelsior*)	
Vegetation composition: negative indicator species	Negative indicator species, particularly non-native invasive species, absent or under control	
91J0 Yew Woods (*Taxus baccata*) of the British Isles*:* Conservation Objective: The status of *Taxus baccata* woods of the British Isles as a qualifying Annex I habitat for the Blackwater River (Cork/Waterford) SAC is currently under review. The outcome of this review will determine whether a site-specific conservation objective is set for this habitat. No S-P-R links from the Site to this QI habitat.		
Kilcolman Bog SPA [004095]		
Conservation Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:		
Species Code	Species Name	S-P-R Potential Impacts
A038	Whooper Swan (*Cygnus cygnus)*	No: The intervening distance between the Site and this SPA is sufficient to exclude the possibility of significant effects arising from the Development during the Construction and/or Operational Phase.
A052	Teal (*Anas crecca)*	
A056	Shoveler (*Anas clypeata)*	
Blackwater Callows SPA [004094]		
Conservation Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:		
Species Code	Species Name	S-P-R Potential Impacts
A038	Whooper Swan (*Cygnus cygnus)*	No: The intervening distance between the Site and this SPA is sufficient to exclude the possibility of significant effects arising from the Development during the Construction and/or Operational Phase.
A050	Wigeon (*Anas penelope*)	
A052	Teal (*Anas crecca*)	
A156	Black-tailed Godwit (*Limosa limosa*)	
A999	Wetlands and Waterbirds	
Blackwater Estuary SPA (004028)		
Conservation Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:		
Species Code	Species Name	S-P-R Potential Impacts
A050	Wigeon (*Anas penelope*)	No: The intervening distance between the Site and this SPA is sufficient to exclude the possibility of significant effects arising from the
A140	Golden Plover (*Pluvialis apricaria*)	
A142	Lapwing (*Vanellus vanellus*)	
A149	Dunlin (*Calidris alpina*)	
A156	Black-tailed Godwit (*Limosa limosa*)	

Attribute	Target	S-P-R connection / potential impacts
A157	Bar-tailed Godwit (*Limosa lapponica*)	Development during the Construction and/or Operational Phase.
A160	Curlew (*Numenius arquata*)	
A162	Redshank (*Tringa totanus*)	
A999	Wetlands and Waterbirds	

APPENDIX II – ASSESSMENT AND CONSTRUCTION MANAGEMENT IN *MARGARITIFERA* CATCHMENTS: KEY QUESTIONS

The following table outlines the Key Questions to be Addressed on the Nature of the Development during its Planning and Construction Stages, Extracted From Guidance On Assessment And Construction Management In *Margaritifera* Catchments (Atkinson et al., 2023), and provides answers to each in relation to the minor clearance works that took place on the Site in 2022.

Key Questions	Response	Minor Clearance Works
Planning		
Is the project or plan to be completed in phases?	Yes	The works were undertaken to facilitate the topographical survey and other surveys to inform the design and the assessment of the potential impact of the Castlelands proposed residential development at Castel Park, Mallow, Co Cork. Mitigation measures in place for the Castlelands proposed residential development, as outlined in the CEMP, will be sufficient to protect the *Margaritifera* population in the Munster Blackwater during the construction phase.
Is the project or plan part of a larger strategy or series of work packages?	Yes	
Does the plan or project require access through a *Margaritifera* catchment?	Yes	The minor works were undertaken within the Munster Blackwater *Margaritifera* catchment.
Site Characteristics in a Construction Context		
Is the proposed development adjacent to a river, stream or lake?	No	The minor clearance works were separated from the Blackwater river by a wide corridor (approximately 135 meters) which remained vegetated and provides a significant buffer which provided protection to the Blackwater River from any impact of the works.
Has a detailed audit of the drainage network indicated significant risk to the *Margaritifera* and its habitat through drainage pathways?	Yes	There are no water courses or drainage ditches present on the entire site. The EPA flow delivery paths mapped on EPA Water Maps (https://gis.epa.ie/EPAMaps/Water) indicate that there are no focused flow delivery paths between the location of the minor clearance works and the Blackwater River which is indicative of the free draining nature of the soils and sub-soils across the site.
Does the proposed site have impermeable soils, highly erodible soils such as peat, or a high water table?	No	The site is underlain by free draining soils.
Are there steep slopes (greater than 1 in 7 or 15%) within your proposed development /operational area or in the drainage pathway to the river that represent a significant risk to the *Margaritifera*?	No	The slopes within the area where minor works were undertaken are relatively flat however the area to the south which remains vegetated during the minor clearance works is sloped towards the Blackwater River (approximately 12%), however due to the free draining nature of the soils there are no preferential flow paths at this location.
Will the proposed site require extensive ground works including landscaping, vegetation/scrub removal?	No	The clearance works did not require major groundworks with only minor regrading of access tracks to ensure site was safe for survey access.

Key Questions	Response	Minor Clearance Works
Will the proposed development require significant new, or altered drainage?	No	The scale of the works was minor in nature and no drainage was required.
Is there potential for soil erosion along the drainage pathways from the proposed development/operational area?	No	The minor clearance works were completed within 1 week and the intact vegetation in the buffer area between thew area of clearance and the Blackwater River prevented soil erosion along any drainage paths which are limited due to the nature of the soils and subsoils.
Construction		
Will site preparation works involve significant excavation, deep foundations, pile driving, or the removal and disturbance of soil?	No	The minor works require no excavation with only the removal of stockpiled rubble and other construction material.
Will the construction works involve the storage on site of stockpiles of soil, or other material excavated or stripped during site preparation for later reuse such as landscaping?	No	The works did not require the stockpiling of soil or other construction material, the works were undertaken to remove existing stockpiles on site which were present before the site was acquired for the Castlelands proposed residential development.
Will construction materials be stored on site that may prove a threat to *Margaritifera* populations?	No	The minor works were undertaken to remove stockpiled materials, there was no requirement to store fuel or chemicals on site during the works
Will limestone or lime rich materials be used in ballast or construction materials?	No	The minor clearance works were undertaken to remove stockpiled building material and no lime rich materials were introduced during these minor works
Is it proposed to divert surface waters during construction?	No	There are no surface waters in the location where the works were undertaken.
Will dewatering of trenches and excavations be required?	No	The minor works undertaken did not require any excavation other that minor regrading of uneven access tracks.
Is it proposed to develop a temporary compound for construction within a *Margaritifera* catchment?	No	The works were minor and did not require a temporary compound.
Is it proposed to provide on-site refuelling of vehicles and equipment used in construction?	No	No refueling was required on site
Will the site preparation and construction works involve the movement of vehicles over unpaved erodible surfaces, particularly any such areas near watercourses?	No	Whilst the works were undertaken in an area of the site that was previously cleared the minor works were undertaken to remove stockpiles, recolonizing vegetation and regrading existing tracks. These areas were unpaved but were remote from any water courses or drainage ditches and did not result in any erosion of the soils in the clearance area.
Does the construction require machinery to access watercourses or require fording or temporary platforms to be constructed in the channel?	No	There was no requirement for instream works as part of the development.

Key Questions	Response	Minor Clearance Works
Is it proposed to carry out any in-stream, or river bankside works?	No	The works did not require and instream or bankside works.
Will the proposed development require bridge works to provide site access during construction or operation?	No	The minor works did not require any bridge works.
Is it proposed to use local "borrow pits" to provide construction material?	No	The minor works did not require the use of borrow pits.
Is it proposed to construct (and maintain) flood defence infrastructure?	No	The site is not at risk of flooding.
Will the proposed development result in deposition of dust or airborne contaminants?	No	There was limited potential for dust deposition during the works as there was no significant groundworks undertaken.
Construction involving tree felling and tree planting, agricultural modification and bog restoration	No	There was some topping and mulching of young Sallys/willows and scrub clearance but no tree felling or agricultural modification.

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