M28

M28 Cork to Ringaskiddy Project

Ringaskiddy Urban Realm and Active Travel Appropriate Assessment Screening Report

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TII Transport Infrastructure Ireland

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1. Introduction

1.1 Background

Cork County Council (CCC) has appointed Jacobs as Engineering Consultants for the Proposed Development. As part of this appointment, Jacobs ecologists were required to produce a Screening Report for Appropriate Assessment (AA) of the Proposed Development and this report presents the findings.

A previous public realm scheme received Part 8 planning approval in 2020 but the scheme has since been extended east and west of the village centre to improve the active travel provision.

The route is shown in Figure 2 Appendix B.

1.2 Description of the Proposed Development

The Proposed Development will provide an active travel route along the existing N28 road, through the village of Ringaskiddy and on to the L2545 between the signalised junction with the R613 and the car park at Gobby Beach. A new shared use pedestrian/cycle facility will be provided on the north side of the N28. Public Realm improvements to the village centre will also be undertaken, and will include new paving, landscaping and junction improvements. Speed reduction measures in the form of Gateway features and raised pedestrian crossings are also included.

The Proposed Development extents cover approximately 1.7km of the N28 through Ringaskiddy village from the R613 junction to the east of Gobby Beach car park including the side road and private accesses. The Proposed Development covers engineering works within the existing road corridor only. Gateway and landscaping features are provided to provide a transition zone into the village and enhance the urban realm. The Proposed Development is split to the west of the Yarra fertiliser plant by the new Ringaskiddy Roundabout which forms part of a separate sub-scheme of the M28 Cork to Ringaskiddy project known as the Protected Road.

The Proposed Development is designed to Design Manual for Urban Roads and Streets (DMURS) and where applicable relevant Transport Infrastructure Ireland (TII) standards. The Proposed Development includes the following:

- Implementation of a 50kph speed limit throughout.
- New shared use two-way cycle facility with pedestrians north of the N28 throughout the Proposed Development extents.
- Improvement of the existing footway to the south of the N28.
- Formalisation of parking laybys with landscaped build outs.
- Re-configured Port of Cork junction opposite the Oratory to reduce entry/exit cross section.
- Public realm improvements to the village centre, including paving and landscaping.
- Narrowing of the road cross section to 6m (two 3m lanes) to promote slower speeds.
- Gateway transition zones into the village at the eastern and western extents.
- Signalised puffin crossing in village centre.
- Five new raised pedestrian crossings on the N28.
- Raised shared use/pedestrian facility across private accesses.
- New public lighting.
    - Replace old sodium lights with LEDs
    - Increase coverage at pedestrian crossing points.
- Re-positioned online bus stops.
- Provision of new bus shelters for westbound traffic.
- Installation of some new drainage underground pipes in the extents of the Proposed Development to supplement the existing pipe network.
    - Discharges to existing outfall.

    - Negligible increase in permeable area to capture as runoff.
    - No works to the foul network.
- Underground ducting of ESB overhead network in village centre.
- Installation of road signage and line marking.
- Rain Gardens in the gateway medians.

Construction Phase

- Small amounts of vegetation clearance which includes topsoil strip, hedge trimming and the removal of trees.
- No new permanent fencing.
- Break out and repositioning of kerbs and gullies.
- Construction of bituminous cycle tracks and footpaths.
    - Shared use path is widening of existing footway into the road.
- Construction of widening the existing concrete footway.
- Landscaping – topsoiling, seeding, tree planting, architectural features.
- Plane and inlay of pavement
    - Plane off existing pavement asphalt layers using a milling machine and replacing with new asphalt.
- Japanese knotweed root protection barrier installation and removal of a small area for disposal in a designated burial cell located off site.
- Excavation of trenches for the installation of new drainage pipes.
- Breakout of small section of existing Old Quay Wall to increase size of gap for village amenity space.
- Topsoil stripping and small amounts of excavation will be removed off site and disposed of to a licensed landfill.
- Contractor will have a designated site compound adjacent to the site for storage of material, refuelling machinery, and operative welfare.

Drainage Design Proposals

The drainage design proposals will provide a robust collection system together with the upsizing and remediation of the existing system.

The collection method from the western end of the Proposed Development to the Protected Road interface consists of a mix of gullies and combined drainage kerbs (CDKs) predominantly tying into the existing surface water drainage network and will be designed in accordance with the TII DMRB for a 1 in 5 year return period. Gullies are preferred over CDKs as the existing carriageway is extremely flat both longitudinally and in crossfall (1:500 to 1:1000 longitudinally and less than 1% crossfall typically) which precludes the use of gullies in some areas, due to the close frequency of the required gully spacing making them impractical.

East of the Protected Road (between Barnahely Roundabout and the end of the Proposed Development at Ringaskiddy, a single carriageway with protected road status as per the Roads Act is proposed) interface the collection method consists of a grassed surface water channel along the south side of the L2545 connecting into the existing 450mm diameter pipe within the southern verge and outfalls at Gobby Beach. The outfall at Gobby Beach is slightly damaged and will be repaired in advance as part of the Protected Road scheme (which is not part of the Proposed Development, but surface water collected in the Proposed Developemny will discharge through this outfall).

The design will not introduce any additional connections or catchment area into the existing combined foul sewer network. Collapsed and damaged pipes within Ringaskiddy village will be repaired as an advanced works package. The overall catchment area discharging to the foul network will be reduced as additional gullies

connecting to the surface water network and soakaways are proposed in areas currently draining to the foul network.

A non-return valve is proposed within a new chamber constructed on the line of the existing 525mm pipe prior to the Port of Cork entrance to prevent the surface water drainage network upstream being surcharged by the tide and making the 525mm pipe through the park available for storage during mid to high tide.

Sustainable Drainage System (SuDS)

The scheme proposals aim to provide significant SuDS provision within the design by maximising infiltration through soakaways and infiltration trenches. New soakaways are proposed within additional buildouts in the Proposed Development along with infiltration trenches along the L2545 from the eastern end of Martello Park to the Protected Road interface. Drainage to the east of the Protected Road interface experiences a level of SuDS through the provision of a grassed surface water channel along the south side of the L2545. Drainage along the north side of the N28 through the village is also proposed to connect to the existing pipe network through infiltration connections where space permits. Rain gardens with soakaways will be provided at the gateway medians.

Construction Timing

The construction phase will be approximately 10 months.

1.3 Legislative context for Appropriate Assessment

Habitats and species of European importance are provided legal protection under Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (hereafter referred to as the Habitats Directive) and Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (hereafter referred to as the Birds Directive). The Habitats Directive protects habitats and species of community interest through the establishment and conservation of an EU-wide network of sites known as the Natura 2000 network (hereafter referred to as European sites, as the term Natura 2000 network was replaced by 'European site' under S.I. No. 473 of 2011 – European Union (Environmental Impact Assessment and Habitats) Regulations 2011). European sites comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Candidate SACs (cSACs) and potential SPAs (pSPAs) are afforded the same protection as SACs and SPAs, and are therefore assessed in the same manner within this AA Screening Report.

The Habitats Directive has been transposed into Irish law by Number 30 of 2000 - Planning and Development Act, 2000 (as amended) and S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011 (hereafter referred to as the Birds and Habitats Regulations). Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European sites.

Article 6(3) establishes the requirement for AA:

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

Article 6(4) states:

"*If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory*

measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted."

The Habitats Directive was transposed into Irish law from a planning perspective through Part XAB of the Planning and Development Act 2000 (as amended). The circumstances under which an AA is required, the stages of that assessment which must be undertaken and the responsibilities of the Competent Authority in considering whether or not to approve consent for proposed plans or projects are outlined in the Act.

Section 177U(1) states that:

"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."

Where likely significant effects upon a European site are predicted, or cannot be ruled out, it is the responsibility of the Competent Authority to undertake an AA under Article 6(3) of the Habitats Directive, informed through an NIS, to determine whether or not the proposed plan in combination with any other plan or project would adversely affect the integrity of a European site in light of its Conservation Objectives.

Section 177T(1) states that:

"(a) A Natura impact report means a statement for the purposes of Article 6 of the Habitats Directive, of the implications of a Land use plan, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites.

(b) A Natura impact statement means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own or in combination with other plans or projects, for one or more than one European site, in view of the conservation objectives of the site or sites."

Section 177T(2) states that:

"Without prejudice to the generality of subsection (1), a Natura impact report or a Natura impact statement, as the case may be, shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one European site in view of the conservation objectives of the site or sites."

1.4 Stages in Appropriate Assessment

The purpose of Screening is to identify whether, activities associated with plans or projects, either acting individually or in-combination with other plans or projects result in likely significant effects (LSEs) on any European sites. All potential effects between activities associated with the plans or projects and the ecological components of European sites must be considered. This includes potential effects on mobile species, notably birds, mammals, invertebrates and migratory fish.

If the prospect of LSEs occurring cannot be excluded on the basis of objective information, the plan or project is taken forward to the next stage of the process, AA. At Screening, the burden of evidence is to show, on the basis of objective information, and beyond reasonable scientific doubt, that the proposed plan or project will have no LSEs on a European site. If the effect is significant, or is not known, it would trigger the need for AA. An overview of the AA process is outlined below:

- **Stage 1 Screening**: Screening determines whether an AA is required by determining if the project or plan is likely to have a significant effect on any European site(s) either individually or in-combination with other plans or projects, in light of the site's conservation objectives.
- **Stage 2 Appropriate Assessment**: If the screening has determined that AA is required, the competent authority then considers the effect of the project or plan on the integrity of the European site(s), specifically it must be determined if the project or plan will adversely affect the integrity of a European site(s) either individually or in-combination with other plans and projects in view of the conservation

objectives of the site(s). Where potential adverse effects on site integrity (AESI) are identified, mitigation measures are proposed to avoid adverse effects, as appropriate. For projects, the AA process is documented within a Natura Impact Statement (NIS).

Following AA, including mitigation proposals, if AESI remain, or uncertainty remains and the project/plan is to be progressed, an Assessment of Alternative Solutions is required under the provisions of Article 6(4) of the Habitats Directive. This process examines the alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site. If no alternatives exist, or all alternatives would result in adverse effects on the integrity of a European site, then either the process moves to the next stage, or the project is abandoned.

Where an Assessment of Alternative Solutions fails to identify any suitable alternatives, for a project or plan to be progressed it must meet the requirements of Imperative Reasons for Overriding Public Interest IROPI. In this case the provisions of Article 6(3) of the Habitats Directive cannot be met (i.e., a significant effect is likely) and therefore, the provisions of Article 6(4) of the Habitats Directive are used. If, following an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed, compensatory measures are implemented to maintain the coherence of the European site network despite adverse effects to the integrity of the site(s).

1.5 Purpose of this Report

In the context of Article 6(3) of the Habitats Directive, Cork County Council as the Competent Authority, must carry out screening for AA of the proposed works to assess whether, on the basis of objective scientific information, the proposed works, are likely to have a significant effect on the conservation objectives of a European site(s) individually or in-combination with other plans or projects. This report presents the information required for the Competent Authority, Cork County Council, to undertake screening for AA for the proposed works.

1.6 Authors Qualifications and Expertise

This report has been prepared by Holly Clements and Sam Warden and reviewed by Dr Susie Coyle.

Holly Clements is a Graduate Ecologist and holds a BSc (Hons) in Zoology from University of Galway and a 1st class honours Masters degree in Biodiversity and Conservation from Trinity College Dublin. Holly is a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and has one and a half years' professional experience carrying out field surveys for both protected species and habitats. She has also completed AA screenings and Natura Impact Statements on a variety of large and small infrastructure projects.

Samuel Warden is an Ecologist at Jacobs with five years' experience in ecological consultancy and holds a 1st class honours degree in Biology from the University of Manchester. He is a Qualifying Member of CIEEM. Samuel has conducted multiple field surveys for both protected species and habitats across the UK and Ireland and has written and reviewed the associated reporting. During his time as an ecological consultant, he has produced Appropriate Assessment screenings, Preliminary Ecological Assessment reports, survey reports and constraints reports. He has used a variety of different ecological field techniques working on projects ranging from large rail/road infrastructure projects, pipeline improvements and biodiversity enhancement projects to rail station upgrades and localised home upgrade projects.

Dr Susie Coyle is a Senior Associate Director at Jacobs and holds a BSc (Hons) in Aquatic Bioscience and a PhD in fish biodiversity from the University of Glasgow. She is a Chartered Full Member of the Royal Society of Biology (MRSB), a Full Member of CIEEM and a Full Member of the Institute of Fisheries Management (MIFI). Susie has coordinated Jacobs' ecologists both in Ireland and in the UK and has experience of multiple ecological survey techniques and associate reporting. She has seventeen years of consultancy experience in aquatic and terrestrial ecology with over twenty years' experience of field surveys and environmental sampling techniques. One of Susie's main roles is the check and review of reports including Appropriate Assessment Screening reports and Natura Impact Statements.

2. Methodology

2.1 Desk review

The following key resources were analysed to inform the baseline description of the sites and surrounding environment:

- Aerial imagery (Google Earth; ESRI 2023) (accessed January and May 2024);
- Environmental Protection Agency (EPA) rivers and water quality data, Water Framework Directive (WFD) status (EPA 2023) (accessed January and May 2024);
- National Parks and Wildlife Service (NPWS) Mapping of European site boundaries (accessed January 2024) (NPWS 2023a and b) (accessed January 2024);
- Projects from the NPAD (DoEHLG ND) (accessed February 2024);
- The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview (NPWS 2019a) (accessed January 2024);
- The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments (NPWS 2019b) (accessed January 2024);
- The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments (NPWS 2019c) (accessed January 2024);
- Online data available on Natura 2000 sites as held by the NPWS, including the Natura 2000 network Data Form; Site Synopsis; Generic Conservation Objective data (accessed January 2024);
- Other open source information available online regarding fisheries (e.g. www.salmonireland.com and www.fishingireland.info) (accessed January 2024 and May); and,
- Protected and invasive species data from the NBDC database, (NBDC ND) (accessed January 2024 and May).

2.2 Site visit

An ecological walkover was undertaken on the 18th of April 2024 within the footprint of the Proposed Development. A habitat and protected species assessment of the site was undertaken as follows:

- **Habitat assessment**: visual assessment of on-site conditions. Habitats were assessed for their potential to support qualifying interests (Annex I habitats or Annex II species) potentially associated with European sites.
- **Fauna assessment**: checks for field signs of protected species such as prints, hairs, droppings, resting places (holts/roosts/sett activity). Habitats were assessed for their potential for use, or confirmed use, by protected species of fauna.
- **Bat tree assessment**: trees present within the site were assessed for their suitability to support bats. This includes features with potential as roosting or resting places, such as frost cracks, damaged limbs, lifting bark plates and knot-holes. Trees were categorised according to the criteria outlined in Collins (2023). The suitability of habitats for commuting, foraging or swarming was also assessed and categorised according to the criteria outlined in Collins (2023).
- **Invasive species assessment**: inspection for the presence of invasive species within the survey area.

The assessment of species and habitats including invasive species was undertaken in line with the following guidelines and informed this Screening for AA:

- A Guide to Habitats in Ireland (hereafter referred to as Fossitt 2000) (Fossitt, 2000).
- Article 17 reports (NPWS, 2019a, 2019b, and 2019c).
- CIEEM Good Practice Guidance for Habitats and Species. Version 3 (CIEEM, 2021).
- CIEEM Guidelines for Preliminary Ecological Appraisal. Second Edition (CIEEM, 2017).
- CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018).
- National Roads Authority (NRA) Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads (NRA, 2010).
- Transport Infrastructure Ireland (TII) The Management of Invasive Alien Plant Species on National Roads - Standard (TII, 2020a).
- Transport Infrastructure Ireland (TII) The Management of Invasive Alien Plant Species on National Roads - Technical Guidance (TII, 2020b).

2.3 Guidance Documents

This Screening for AA was undertaken with reference to the following guidance:

- Office of the Planning Regulator (OPR) Appropriate Assessment Screening for Development Management. OPR Practice Note PN01. (OPR 2021);
- Department of Environment, Heritage and Local Government (DoEHLG) Appropriate Assessment of Plans and Proposed Schemes in Ireland. Guidance for Planning Authorities (DoEHLG 2010);
- 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 (European Commission 2021a)
- Communication from the Commission on the precautionary principle (European Commission 2000);
- Guidance Document on Article 6(4) of the 'Habitats Directive' 92/43/EEC. Clarification of the concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission (European Commission 2007);
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC (European Commission 2021b);
- Managing Natura 2000 Sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (European Commission 2019);
- Commission Notice: Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (2021/C 437/01) (European Commission 2021c); and,
- Marine Natura Impact Statements in Irish Special Areas of Conservation - A Working Document (NPWS 2012a).

2.4 Screening Methodology

The guidance documents outlined above set out the process for carrying out AA, the first stage of which is referred to as Screening. Steps required for Screening include the following:

- Determination of whether a project or plan is directly connected with or necessary to the conservation management of any European sites (the Proposed Development is not directly connected with or necessary to the conservation management of any European sites);
- Description of the details of the project/ plan (including the site characteristics/ plan area);
- Description of the characteristics of European sites that might be affected (i.e. identification of qualifying interest (QI) and conservation objectives (CO) that could be affected as a result of progressing the project/ plan;
- Assessment of LSEs on relevant European sites in view of the sites' CO, either individually or in-combination with other plans and projects; and
- Presentation of a screening assessment which should determine if the project/ plan individually or in-combination with other plans and projects could undermine the CO of the site(s) and give rise to LSEs. The assessment of LSEs must be undertaken in the absence of mitigation measures.

2.4.1 Guiding Principles and Case Law

Recent Irish guidance in relation to AA and was published in 2021 by the OPR (OPR 2021), namely, *Appropriate Assessment Screening for Development Management*. This document provides information and guidance on the Irish planning application and how to undertake a screening for AA.

A number of cases have been brought to both the National and European courts in relation to the AA process. Therefore, relevant case law, European Court of Justice (ECJ) rulings and European Commission publications have also been considered in the preparation of this AA Screening.

2.4.2 Source-pathway-receptor Model and Zone of Influence

When assessing the Zone of Influence (ZoI), the 'source-pathway-receptor' model is applied, taking consideration of all potential impact pathways connecting elements of the project or plan to European sites in view of their COs.

The source-pathway-receptor conceptual model is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means that there is no likelihood for the effect to occur (e.g. no potential for LSEs). Potential impact pathways that may arise from a project may include, but are not limited to:

- Removal or loss of QI / Special Conservation Interest (SCI) habitat. The specific named bird species for which a SPA is selected is called the 'Special Conservation Interests' (SCIs). However, in practice, the common terminology of Qualifying Interests applies also to SCI (and is used throughout this report for simplicity);
- Removal or loss of habitat with which QI species are associated;
- Mortality of QI species;
- Physical disturbance to QI species;
- Changes of flow/water level impacting on QI species / habitats; and
- Risk of pollution / reduction in water quality impacting on QI species / habitats.
- Changes to flow/water level impacting on QI species and their habitats.

The 'source- pathway-receptor' model is focused solely on the QIs for which European sites are designated as per the latest CO from the NPWS website (NPWS 2023).

The ZoI is the area over which effects could occur to ecological features from a project. The determination of a ZoI for a project should be identified on a case-by-case basis as there may be an effect on European sites that are

at a distance from the works. For example, where there is a hydrological link between the development site and a European site.

Key considerations in determining the potential ZoI include:

- Ecological features within and in proximity to the Proposed works;
- Migratory / mobile species of the area;
- Construction activities that may cause a significant effect; and
- Linkages to European sites or sensitive habitats connected to those sites.

3. Baseline Characterisation

The results of the desk-based review and site visits are presented in the following sections. Habitat descriptions below are in the past tense, to reflect their accuracy at a point in the recent past.

3.1 Overview of the baseline environment

3.1.1 Habitats

No Annex I habitats other than those associated with European sites (Table 4.2) and nationally designated sites were identified from the desk study.

The majority of the area was classified as buildings and artificial surfaces (Fossitt code: BL3). This included the built land within the Ringaskiddy area and the national, regional and local road network.

Scattered trees and parkland (Fossitt code: WD5) and amenity grassland (Fossitt code: GA2) were present to the western half of the study area and grass verges within the Proposed Development had been planted with trees. Tree species present include hornbeam (*Carpinus betulus*), silver birch (*Betula pendula*), Norway maple (*Acer platanoides*), cherry (*Prunus spp*), hybrid black poplar (*Populus x canadensis*), Swedish whitebeam (*Sorbus intermedia*) and sycamore (*Acer pseudoplatanus*). The trees have been planted on amenity grassland, with species present in the sward including red fescue (*Festuca rubra*), perennial rye-grass (*Lolium perenne*), meadow grass (Poa spp), creeping buttercup (*Ranunculus repens*), common mouse-ear (*Cerastium fontanum*), daisy (*Bellis perennis*), dandelion (*Taraxacum agg*) and ribwort plantain (*Plantago lanceolata*).

Dry meadows and grassy verges (Fossitt code: GS2) were present on the north side of the road in the eastern half of the Proposed Development. These areas were being managed under a "low mow" regime in accordance with the All-Ireland Pollinator Plan. Species recorded in these areas included sweet vernal-grass (*Anthoxanthum odoratum*), cock's-foot (*Dactylis glomerata*), Yorkshire fog (*Holcus lanatus*), false oat-grass (*Arrhenatherum elatius*), hogweed (*Heracleum sphondylium*), germander speedwell (*Veronica chamaedrys*), curled dock (*Rumex crispus*), hedge woundwort (*Stachys sylvatica*) and ragwort (*Senecio jacobaea*).

Treelines (Fossitt code: WL2) were recorded throughout the study area, both along the road and along the boundaries of the parkland and amenity areas. Species recorded included hornbeam, Swedish whitebeam, alder (*Alnus glutinosa*) and hybrid black poplar.

3.1.2 Species (including Annexed species)

Records of legally protected, rare and / or notable species within 2km of the Proposed Development are listed in Table 3.1.

Table 3.1: NBDC records of species (species in bold are designated for European sites within the ZoI).

Species Name	Scientific Name	Record Count	Date of Last Record	Title of Dataset	Designation
Common Frog	*Rana temporaria*	3	25/04/2023	Amphibians and reptiles of Ireland	EU Habitats Directive >> Annex V || Wildlife Acts
Barn Swallow	*Hirundo rustica*	2	27/06/2019	Birds of Ireland	Wildlife Acts || Amber List
Black Guillemot	*Cepphus grille*	2	17/04/1999	Seabird 2000	Wildlife Acts || Amber List
Common Coot	*Fulica atra*	2	03/03/2019	Birds of Ireland	EU Birds Directive >> Annex II, Section I Bird Species || EU Birds Directive >> Annex III, Section II Bird Species || Birds of Conservation Concern - Amber List
Common Kingfisher	*Alcedo atthis*	1	28/01/2010	Birds of Ireland	Wildlife Acts || Protected Species: EU Birds Directive >> Annex I Bird Species ||

					Birds of Conservation Concern - Amber List
Common Pheasant	*Phasianus colchicus*	1	27/06/2019	Birds of Ireland	Wildlife Acts || EU Birds Directive || EU Birds Directive >> Annex II, Section I Bird Species || EU Birds Directive >> Annex III, Section I Bird Species
Common Redshank	***Tringa totanus***	**2**	**03/03/2019**	**Birds of Ireland**	**Wildlife Acts || Threatened Species: Birds of Conservation Concern || Birds of Conservation Concern - Red List**
Common Shelduck	***Tadorna tadorna***	**1**	**03/03/2019**	**Birds of Ireland**	**Wildlife Acts || Threatened Species: Birds of Conservation Concern || Birds of Conservation Concern - Amber List**
Common Snipe	*Gallinago gallinago*	1	03/03/2019	Birds of Ireland	Wildlife Acts || EU Birds Directive || EU Birds Directive >> Annex II, Section I Bird Species || Protected Species: EU Birds Directive >> Annex III, Section III Bird Species || Birds of Conservation Concern - Amber List
Common Starling	*Sturnus vulgaris*	2	05/05/2012	Birds of Ireland	Wildlife Acts || Threatened Species: Birds of Conservation Concern - Amber List
Common Tern	***Sterna hirundo***	**2**	**05/05/2012**	**Birds of Ireland**	**Wildlife Acts || EU Birds Directive || EU Birds Directive >> Annex I Bird Species || Birds of Conservation Concern - Amber List**
Common Wood Pigeon	*Columba palumbus*	1	27/06/2019	Birds of Ireland	Wildlife Acts || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species || EU Birds Directive >> Annex III, Section I Bird Species
Eurasian Curlew	***Numenius arquata***	**6**	**05/05/2021**	**Birds of Ireland**	**Wildlife Acts || EU Birds Directive >> Annex II, Section II Bird Species || Birds of Conservation Concern - Red List**
Eurasian Oystercatcher	***Haematopus ostralegus***	**2**	**06/09/2017**	**Birds of Ireland**	**Wildlife Acts || Birds of Conservation Concern - Amber List**
Eurasian Teal	***Anas crecca***	**1**	**03/03/2019**	**Birds of Ireland**	**Wildlife Acts || EU Birds Directive >> Annex II, Section I Bird Species || EU Birds Directive >> Annex III, Section II Bird Species || Birds of Conservation Concern - Amber List**
Great Cormorant	***Phalacrocorax carbo***	**3**	**02/01/2023**	**Birds of Ireland**	**Wildlife Acts || Birds of Conservation Concern - Amber List**
House Sparrow	*Passer domesticus*	1	08/02/2004	Birds of Ireland	Wildlife Acts || Birds of Conservation Concern - Amber List
Little Egret	*Egretta garzetta*	3	06/09/2017	Birds of Ireland	Wildlife Acts || EU Birds Directive >> Annex I Bird Species
Little Grebe	***Tachybaptus ruficollis***	**2**	**03/03/2019**	**Birds of Ireland**	**Wildlife Acts || Birds of Conservation Concern - Amber List**
Mallard	*Anas platyrhynchos*	3	27/06/2019	Birds of Ireland	Wildlife Acts || EU Birds Directive >> Annex II, Section I Bird Species || EU Birds

					Directive >> Annex III, Section I Bird Species
Mediterranean Gull	*Larus melanocephalus*	2	15/08/2010	Birds of Ireland	Wildlife Acts || EU Birds Directive >> Annex I Bird Species || Birds of Conservation Concern - Amber List
Mew Gull	*Larus canus*	1	08/02/2004	Birds of Ireland	Wildlife Acts || Birds of Conservation Concern - Amber List
Mute Swan	*Cygnus olor*	1	03/03/2019	Birds of Ireland	Wildlife Acts || Birds of Conservation Concern - Amber List
Northern Gannet	*Morus bassanus*	2	29/03/2020	Birds of Ireland	Wildlife Acts || Birds of Conservation Concern - Amber List
Northern Lapwing	***Vanellus vanellus***	**1**	**08/02/2004**	**Birds of Ireland**	**Wildlife Acts || EU Birds Directive >> Annex II, Section II Bird Species || Birds of Conservation Concern - Red List**
Ringed Plover	***Charadrius hiaticula***	**1**	**06/06/2019**	**Birds of Ireland**	**Wildlife Acts || Birds of Conservation Concern - Amber List**
Sandwich Tern	*Sterna sandvicensis*	4	29/03/2020	Birds of Ireland	Wildlife Acts || EU Birds Directive >> Annex I Bird Species || Birds of Conservation Concern - Amber List
Water Rail	*Rallus aquaticus*	1	28/01/2010	Birds of Ireland	Wildlife Acts || Birds of Conservation Concern - Amber List
Common Dolphin	*Delphinus delphis*	2	19/09/2020	IWDG Casual Cetacean Sightings	EU Habitats Directive || EU Habitats Directive >> Annex IV || Wildlife Acts
Common Porpoise	*Phocoena phocoena*	3	18/01/2017	IWDG Casual Cetacean Sightings	Protected Species: EU Habitats Directive >> Annex II || EU Habitats Directive >> Annex IV || Wildlife Acts || Threatened Species: OSPAR Convention
Common Seal	*Phoca vitulina*	1	02/08/2014	Atlas of Mammals in Ireland 2010-2015	EU Habitats Directive >> Annex II || EU Habitats Directive >> Annex V || Wildlife Acts
Grey Seal	*Halichoerus grypus*	1	19/06/2018	Mammals of Ireland 2016-2025	EU Habitats Directive >> Annex II || EU Habitats Directive >> Annex V || Wildlife Acts
Northern Bottlenose Whale	*Hyperoodon ampullatus*	1	10/08/2005	IWDG Cetacean Strandings Database	Protected Species: EU Habitats Directive >> Annex IV || Wildlife Acts
Risso's Dolphin	*Grampus griseus*	1	26/07/2002	IWDG Cetacean Strandings Database	EU Habitats Directive >> Annex IV || Wildlife Acts
Common Oyster	*Ostrea edulis*	3	21/05/2020	Explore Your Shore	Threatened Species: OSPAR Convention
Dog Whelk	*Nucella lapillus*	1	14/01/2020	Explore Your Shore	Threatened Species: OSPAR Convention
Leathery Turtle	*Dermochelys coriacea*	2	30/06/2000	Irish Marine Turtle Database	EU Habitats Directive >> Annex IV || Wildlife Acts || Threatened Species: OSPAR Convention
Eurasian Red Squirrel	*Sciurus vulgaris*	1	31/12/1983	Mammal Recording Scheme 1970-1985 (An Foras Forbartha)	Wildlife Acts

European Otter	*Lutra lutra*	1	14/05/2010	Atlas of Mammals in Ireland 2010-2015	EU Habitats Directive >> Annex II || EU Habitats Directive >> Annex IV || Wildlife Acts
Fallow Deer	*Dama dama*	1	04/06/2015	Atlas of Mammals in Ireland 2010-2015	Wildlife Acts
Pipistrelle	*Pipistrellus pipistrellus sensu lato*	2	01/04/2008	National Bat Database of Ireland	EU Habitats Directive >> Annex IV || Wildlife Acts
Red Deer	*Cervus elaphus*	1	02/06/2015	Atlas of Mammals in Ireland 2010-2015	Wildlife Acts
West European Hedgehog	*Erinaceus europaeus*	1	28/04/2021	Hedgehogs of Ireland	Wildlife Acts

Cork Harbour has a nationally important breeding colony of common tern (102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually, and the chicks are ringed. In 2010, a colony established on three mooring dolphins at the ferry terminal at Ringaskiddy. The number of pairs at this location increased to 45 – 50 pairs in 2012 (RPS, 2013).

3.1.3 Aquatic Environment

There are no rivers identified as Water Framework Directive (WFD) waterbodies within or in the vicinity of the Proposed Development. The coastal waterbody, Cork Harbour, is located adjacent to the proposed works. The EPA status determination for Cork Harbour is presented below in Table 3.2. The risk rating takes account of the current water quality and trends and is used to highlight waterbodies that are at risk of not achieving their objectives under the WFD. WFD status may be determined by using monitoring, extrapolation, or expert judgement techniques.

Table 3.2: WFD waterbodies in the vicinity of the Proposed Development and their EPA WFD status.

Waterbody	WFD status (EPA, 2021)	Risk rating (EPA, 2021)	Monitoring technique (EPA, 2021)
Cork Harbour	Moderate	At risk	Monitoring

3.1.4 Invasive species

Records of floral invasive species within 5km of the Proposed Development are shown in Table 3.3 (NBDC, 2023). To note, exact locations are not provided in data returns for invasive species desk-based searches of NBDC.

Table 3.3: NBCD records of invasive species (species in bold text are Third Schedule invasive plants).

Species Name	Scientific Name	Record Count	Date of Last Record	Distance of Closest Record to Site	Impact level
Butterfly-bush	*Buddleja davidii*	1	15/09/2008	0m – 1km resolution	Medium Impact Invasive Species
Himalayan Honeysuckle	*Leycesteria formosa*	1	12/11/2015	1.6km – 100m resolution	Medium Impact Invasive Species
Japanese Knotweed	***Reynoutria japonica***	**2**	**30/06/2015**	**0m – 100m resolution**	**High Impact Invasive Species >> Regulation S.I. 477 (Ireland)**

Red Oak	*Quercus rubra*	1	12/05/2023	1.4km – 100m resolution	Medium Impact Invasive Species
Russian-vine	*Fallopia baldschuanica*	1	05/08/2023	1.4km – 100m resolution	Medium Impact Invasive Species
Sea-buckthorn	***Hippophae rhamnoides***	**1**	**21/08/2022**	**1.2km – 100m resolution**	**Medium Impact Invasive Species >> Regulation S.I. 477 (Ireland)**
Sycamore	*Acer pseudoplatanus*	1	31/03/2023	2km – 100m resolution	Medium Impact Invasive Species
Three-cornered Garlic	***Allium triquetrum***	**1**	**21/02/2023**	**1.4km – 100m resolution**	**Medium Impact Invasive Species >> Regulation S.I. 477 (Ireland)**
Traveller's-joy	*Clematis vitalba*	1	05/08/2023	1.4km – 100m resolution	Medium Impact Invasive Species
European Rabbit	*Oryctolagus cuniculus*	6	20/07/2018	0m – 100m resolution	Medium Impact Invasive Species
Fallow Deer	*Dama dama*	1	04/06/2015	950m – 10km resolution	High Impact Invasive Species >> Regulation S.I. 477 (Ireland) || Protected Species: Wildlife Acts

There is Japanese knotweed being treated in the verge behind current fence line of the Proposed Development on the L2545 near Gobby Beach. There have been three treatments to date and there were no signs of regrowth recorded during the site survey on 18th April 2024.

The following invasive plant species were recorded within the study area:

- Butterfly bush (*Buddleja davidii*)
- Old man's beard (*Clematis vitalba*)
- Spanish bluebell (*Hyacinthoides hispanica*)
- Winter heliotrope (*Petasites fragrans*)
- Three-cornered garlic (*Allium triquetum*)

Of these species, Spanish bluebell and three-cornered garlic are included in the Third Schedule list of the European Communities (Birds and Natural Habitats) Regulations 2011 [S.I.477/2011].

4. Screening

4.1 Potential Effect Pathways from Development

Table 4.1 outlines broad categories of potential impacts that could occur as a result of development, and the potential effects on European sites and associated qualifying interest (QI) species or habitats.

Table 4.1: Potential effect pathways from developments on European sites.

Broad categories of potential impacts on European sites	Potential effect pathways (distance assumptions shown in italics)
Physical loss of habitats including supporting habitat[1] and functionally linked habitat[2].	Development could result in direct loss of QI habitat (terrestrial or aquatic) in a European site. Physical loss of habitat is only likely to be significant if it is within the boundary of a European site, or within an area of functionally linked habitat outside of the European site (for example, off-site area of known foraging, roosting, breeding habitat for a QI for which a European site is designated).
Mortality	Mortality of species could occur through direct impact (e.g. destruction of an otter holt) or as a result of pollution event to habitats that support QI species, aquatic species in particular (e.g. salmonids, freshwater pearl mussel, etc).
Habitat degradation – changes in water quality (pollution)	Water quality can be affected by oil, chemicals, heavy metals and so on, or through chronic runoff of such materials. Water quality can also be affected by sedimentation through runoff from construction sites. Changes in water quality could directly affect QI species or habitats or affect them indirectly through loss of aquatic prey species, or through changes in their habitat. Pollution effects can occur outside of a European site and at a considerable distance from works (for example, via hydrological link).
Habitat degradation – hydrological/hydrogeological changes	Construction impacts could affect groundwater quality and/or quantity and thereby the existing hydrological regime. Changes in hydrology can alter geomorphological processes which can affect the deposition of shingle or other material potentially impacting on QI fish species amongst others. Changes in these processes can impact aquatic/riparian/terrestrial habitats and species either directly or indirectly.
Disturbance (including biological disturbance)	Development could result in disturbance of QI species. This disturbance may include, but not be limited to, noise, vibration, movement (of people and/or vehicles) and lighting. Disturbance may lead to the abandonment of habitats or resting sites by QI species, which could include designated or functionally linked habitats outside of a European site. Spread of non-native invasive species.

4.2 European sites within the ZoI of the Proposed Development

The 'source-pathway-receptor' model was applied taking consideration of all potential impact pathways connecting elements of the Proposed Development to European sites in view of their COs, as shown in Table 4.1.

[1] Supporting habitat is habitat within a protected site (SPA, SAC or NHA) which supports a QI species which is designated by a separate protected site (SPA, SAC or NHA).

[2] Functionally linked habitat is habitat within unprotected land which supports QI species designated by a protected site (SPA, SAC or NHA) in the vicinity of said land.

The foraging and roosting distances for a number of the QI bird species associated with SPAs potentially within the ZoI are stated in Appendix A. The European sites within the vicinity of the Proposed Development is shown in

Figure 1 Appendix B.

The proposed works were examined with reference to their location to European sites, and taking account of the potential effects outlined in Table 4.1, the following European sites are considered to be within the ZoI of the proposed works:

- Cork Harbour SPA (site code: 004030). Located 835m south and 923m north. There is a hydrological link (650m) via Cork Harbour.
- Ballycotton Bay SPA (site code: 004022). Located 18.6km east. There is a weak hydrological link (26km) via Cork Harbour, Outer Cork Harbour and the Western Celtic Sea. However, this SPA shares a number of the same QI species and is within commuting distance of with Cork Harbour SPA, and therefore could support the same population of birds.
- Sovereign Islands SPA (site code: 004124). Located 19.1km southwest. There is a weak hydrological link (24km) via Cork Harbour, Outer Cork Harbour and the Western Celtic Sea. However, this SPA shares a number of the same QI species and is within commuting distance of with Cork Harbour SPA, and therefore could support the same population of birds.
- Ballymacoda Bay SPA (site code: 004023). Located 26.9km east. There is a weak hydrological link (40km) via Cork Harbour, Outer Cork Harbour and the Western Celtic Sea. However, this SPA shares a number of the same QI species and is within commuting distance of with Cork Harbour SPA, and therefore could support the same population of birds.
- Blackwater Estuary SPA (site code: 004028). Located 34.2km northeast. There is a weak hydrological link (40km) via Cork Harbour, Outer Cork Harbour and the Western Celtic Sea. However, this SPA shares a number of the same QI species and is within commuting distance of with Cork Harbour SPA, and therefore could support the same population of birds.

Table 4.2: Pathways from Proposed Development determining the potential ZoI.

Cork Harbour SPA, Ballycotton Bay SPA, Sovereign Islands SPA, Ballymacoda Bay SPA, Blackwater Estuary SPA			
Source	Pathway	Receptor	Distance from Source
Noise/vibration from works	Overland	Bird QIs	Up to 171m from source of 120 dB(A)[3]
	Functionally linked habitat	Bird QIs	0-100m
Movement of people/or vehicles	Overland	Bird QIs	0-100m
Changes in water quality (pollution)	Via Cork Harbour	Bird QIs	Varies depending on dilution factor

4.2.1 Other European sites in the vicinity of the proposed works but outside the ZoI

The following European sites are considered to be within the vicinity of the Proposed Development but outside the ZoI:

[3] Taken from Standard Distance Decay Rates for Noise after Source, (Cutts, Hemingway and Spencer, 2013).

- Great Island Channel SAC (site code: 001058). Located 5.5 km north. There is no hydrological connection as the SAC is located upstream of the proposed works via the Lough Mahon transitional waterbody.
- Blackwater River (Cork/Waterford) SAC (site code: 002170). Located 21.9km north. There is no hydrological connection as the SAC is located upstream of the proposed works via the Lough Mahon transitional waterbody.
- Ballymacoda (Clonpriest and Pillmore) SAC (site code: 000077). Located 25.6km east. There is no hydrological connection to this SAC.
- Courtmacsherry Estuary SAC (site code: 001230). Located 31km southwest. There is a weak hydrological link (40km) via the Western Celtic Sea and given the dilution effect no effects are predicted.
- The Gearagh SAC (site code: 000108). Located 43.8km northwest. There is no hydrological connection to this SAC.
- Old Head of Kinsale SPA (site code: 004021). Located 28.3km southwest. There is a weak hydrological connection (36km) via the Western Celtic Sea and given the dilution effect no effects are predicted.
- Courtmacsherry Bay SPA (site code: 004219). Located 30km southwest. There is a weak hydrological connection (45km) via the Western Celtic Sea and given the dilution effect no effects are predicted.
- Seven Heads SPA (site code: 004191). Located 34.8km southwest. There is a weak hydrological connection (45km) via the Western Celtic Sea and given the dilution effect no effects are predicted.
- Helvick Head to Ballyquin SPA (site code: 004192). Located 45km northeast. There is a weak hydrological connection (50km) via the Western Celtic Sea and given the dilution effect no effects are predicted.
- Clonakilty Bay SPA (site code: 004081). Located 43.6km southwest. There is a weak hydrological connection (57km) via the Western Celtic Sea and given the dilution effect no effects are predicted.
- Galley Head to Duneen Point SPA (site code: 004190). Located 46.8km southwest. There is a weak hydrological connection (60km) via the Western Celtic Sea and given the dilution effect no effects are predicted.

5. Assessment of Likely Significant Effects (LSEs)

5.1 Screening Exercise

A screening exercise is presented in Table 5.1 which examines the potential effects of the Proposed Development on the five European sites outlined in Table 4.2.

The potential effects of the Proposed Development on the QI (Annex I habitats and Annex II species of the Habitats Directive and Annex I of the Birds Directive) for which the above sites are designated are also examined. The results of this exercise and the rationale for 'screening in or screening out' European sites within the ZoI (and therefore, of potential relevance to the AA) are also detailed in Table 5.1.

Table 5.1: European Sites with the Potential for LSEs from the Proposed Development (grey text = qualifying feature which is not considered to be within the ZoI of the Proposed Development)

European Site name and code	Distance of site from the Proposed Development	Qualifying Interests	Description of connectivity	Preliminary assessment of Likely Significant Effects (LSEs)
Special Protection Area (SPA)				
Cork Harbour SPA (004030)	Direct distance: 835m Hydrological distance: 650m	Little Grebe (*Tachybaptus ruficollis)* [A004] Great Crested Grebe (*Podiceps cristatus)* [A005] Cormorant (*Phalacrocorax carbo)* [A017] Grey Heron (*Ardea cinerea)* [A028] Shelduck (*Tadorna tadorna)* [A048] Wigeon (*Anas penelope)* [A050] Teal (*Anas crecca)* [A052] Pintail (*Anas acuta)* [A054] Shoveler (*Anas clypeata)* [A056] Red-breasted Merganser (*Mergus serrator)* [A069] Oystercatcher (*Haematopus ostralegus)* [A130] Golden Plover (*Pluvialis apricaria)* [A140] Grey Plover (*Pluvialis squatarola)* [A141] Lapwing (*Vanellus vanellus)* [A142] Dunlin (*Calidris alpina alpina)* [A149] Black-tailed Godwit (*Limosa limosa)* [A156]	**Pathway** The species in black text have been brought forward for assessment as they are known to use urban, agricultural and amenity grassland to forage and roost in. The species listed in grey text have not been brought forward for assessment as they are known to use wetland and coastal habitats, of which there are none located along the Proposed Development, and are not known to use urban, agricultural and amenity grassland as part of their ecology. The proximity of the European site to the Proposed Development means that works may be taking place within or adjacent to functionally linked habitat for QI bird species which are known to use urban, agricultural and amenity land to forage and roost in. Common tern are known to nest on three mooring dolphins at the ferry terminal at Ringaskiddy which are within 50-250m of the Proposed Development **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Habitat degradation** Potential for habitat degradation via a pollution event entering watercourses which are hydrologically linked to the SPA and to supporting habitat within Cork Harbour. *Further assessment needed in next column*. **Mortality** No mortality is predicted on QIs within the SPA due to the length and volume of the hydrological connection, taking the dilution	**Habitat degradation – No LSEs** There is a hydrological link to the SPA which is a distance of approximately 650m. However, the hydrological link is via the coastal waters of Cork Harbour which have a large assimilative capacity. Thus, a pollution event is unlikely to reach this European site to cause significant impacts when taking the distance and dilution capacity of Cork Harbour into account. **Mortality – No LSEs** The Proposed Development may result in mortality of these QI species associated with the SPA due to pollution impacts in supporting habitats leading to a reduction in water quality and reduction of prey availability causing mortality to these QI species. However, due to the small scale and localised nature of the proposed works, the potential for a pollution event is unlikely, and as the number of suitable agricultural or amenity grassland around the Proposed Development is limited, the likelihood of a pollution event affecting supporting/functionally linked habitat is negligible. **Disturbance – No LSEs** Disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting these QI species which are known to travel inland to forage and roost. The Proposed Development is predominantly adjacent to built land, which may support a small percentage of gull species and provide roosting habitat for cormorant and grey heron. There are existing walls and an area of amenity grassland at the closest point of the

European Site name and code	Distance of site from the Proposed Development	Qualifying Interests	Description of connectivity	Preliminary assessment of Likely Significant Effects (LSEs)
		Bar-tailed Godwit (*Limosa lapponica)* [A157] Curlew (*Numenius arquata)* [A160] Redshank (*Tringa tetanus)* [A162] Black-headed Gull (*Chroicocephalus ridibundus)* [A179] Common Gull (*Larus canus)* [A182] Lesser Black-backed Gull (*Larus fuscus)* [A183] Common Tern (*Sterna hirundo)* [A193] Wetlands and Waterbirds [A999]	capacity of Cork Harbour into consideration. Potential for mortality outside the SPA given the works have potential to pollute functionally linked/supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Disturbance** The works are too far from the SPA to cause direct disturbance impacts within the SPA itself. However, there is potential for disturbance to QI birds in functionally linked habitats outside the SPA. *Further assessment needed in next column*.	Proposed Development to the mooring dolphins of the harbour, of which three are used for nesting by common tern. The walls and amenity area provide a level of screening between the harbour and the road. However, due to the nature of the small scale and localised works and the existing disturbance from the road, there is no potential to cause disturbance at a significant level. Additionally, the agricultural and amenity grassland habitats adjacent to the Proposed Development are considered sub-optimal due to the size of the fields for the QI species, wigeon, teal, pintail, shoveler, oystercatcher, golden plover, lapwing, black-tailed godwit, curlew, black-headed gull, common gull and lesser black-backed gull.
Ballycotton Bay SPA (site code: 004022)	Direct distance: 18.6km Hydrological distance: 26km	Teal (*Anas crecca*) [A052] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Turnstone (*Arenaria interpres*) [A169] Common Gull (*Larus canus*) [A182]	**Pathway** The species in black text have been brought forward for assessment as they are known to use urban, agricultural and amenity grassland to forage and roost in. The species listed in grey text have not been brought forward for assessment as they are known to use wetland and coastal habitats, of which there are none located along the Proposed Development, and are not known to use urban, agricultural and amenity grassland as part of their ecology. The proximity of the European site to the Proposed Development means that works may be taking place within or adjacent to functionally linked habitat for QI bird species which are known to use urban, agricultural and amenity land to forage and roost in. **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Habitat degradation**	**Habitat degradation – No LSEs** There is a hydrological link to the SPA but it is considered to be *de minimus* as it is at a distance of approximately 26km. Thus, a pollution event is unlikely to cause significant impacts to this European site or the supporting/functionally linked habitat to this SPA when taking the distance and dilution capacity of Cork Harbour into account. **Mortality – No LSEs** The Proposed Development may result in mortality of these QI species associated with the SPA due to pollution impacts in supporting habitats leading to a reduction in water quality and reduction of prey availability causing mortality to these QI species. However, due to the small scale and localised nature of the proposed works, the potential for a pollution event is unlikely and as the number of suitable agricultural or amenity grassland around the Proposed Development is

European Site name and code	Distance of site from the Proposed Development	Qualifying Interests	Description of connectivity	Preliminary assessment of Likely Significant Effects (LSEs)
		Lesser Black-backed Gull (*Larus fuscus*) [A183] Wetland and Waterbirds [A999]	No potential for habitat degradation via a pollution event to the European site directly due to the distance and dilution factor of the intervening waterbodies. There is potential for habitat degradation via a pollution event to supporting/functionally linked habitat within Cork Harbour. *Further assessment needed in next column*. **Mortality** No mortality is predicted on QIs within the SPA due to the length and volume of the hydrological connection taking the dilution rates into consideration via Cork Harbour. Potential for mortality outside the SPA given the works have potential to pollute functionally linked/supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Disturbance** The works are too far from the SPA to cause direct disturbance impacts within the SPA itself. However, there is potential for disturbance to QI birds in functionally linked habitats outside the SPA. *Further assessment needed in next column*.	limited, the likelihood of a pollution event affecting supporting/ functionally linked habitat is low. **Disturbance – No LSEs** Disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting these QI species which are known to travel inland to forage and roost. The Proposed Development is predominantly adjacent to built land, which may support a small percentage of gull species. However, due to the nature of the small scale and localised works and the existing disturbance from the road, there is no potential to cause disturbance at a significant level. Additionally, the agricultural and amenity grassland habitats adjacent to the Proposed Development are considered sub-optimal due to the size of the fields for the QI species, teal, golden plover, black-tailed godwit, curlew, black-headed gull, common gull and lesser black-backed gull.
Sovereign Islands SPA (site code: 004124)	Direct distance: 19.1km Hydrological distance: 24km	Cormorant (*Phalacrocorax carbo*) [A017]	**Pathway** The species in black text has been brought forward for assessment as it is known to use urban, agricultural and amenity grassland to forage and roost in. The proximity of the European site to the Proposed Development means that works may be taking place within or adjacent to functionally linked habitat for QI bird species which are known to use urban, agricultural and amenity land to forage and roost in. **Habitat loss**	**Habitat degradation – No LSEs** There is a hydrological link to the SPA but it is considered to be *de minimus* as it is a distance of approximately 24km. Thus, a pollution event is unlikely to cause significant impacts to this European site or the supporting/functionally linked habitat to this SPA when taking the distance and dilution capacity of Cork Harbour into account. **Mortality – No LSEs** The Proposed Development may result in mortality of this QI species associated with the SPA due to pollution impacts in supporting habitats leading to a reduction in water quality

European Site name and code	Distance of site from the Proposed Development	Qualifying Interests	Description of connectivity	Preliminary assessment of Likely Significant Effects (LSEs)
			No potential for habitat loss given the works do not take place within this European site. **Habitat degradation** No potential for habitat degradation via a pollution event to the European site directly due to the distance and dilution factor of the intervening waterbodies. There is potential for habitat degradation via a pollution event to supporting/functionally linked habitat within Cork Harbour. *Further assessment needed in next column*. **Mortality** No mortality is predicted on QIs within the SPA due to the length and volume of the hydrological connection taking the dilution rates into consideration via Cork Harbour. Potential for mortality outside the SPA given the works have potential to pollute functionally linked/supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Disturbance** The works are too far from the SPA to cause direct disturbance impacts within the SPA itself. However, there is potential for disturbance to QI birds in functionally linked habitats outside the SPA. *Further assessment needed in next column*.	and reduction of prey availability causing mortality to this QI species. However, due to the small scale and localised nature of the proposed works, the potential for a pollution event is unlikely and the dilution factor of Cork Harbour reduces the potential impact on QI birds. **Disturbance – No LSEs** Disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting QI species which are known to travel inland to forage and roost. The Proposed Development is predominantly adjacent to built land, which may provide roosting habitat for cormorant. However, due to the small scale and localised nature of the works and the existing disturbance from the road, there is no potential to cause disturbance at a significant level.
Ballymacoda Bay SPA (site code: 004023)	Direct distance: 26.9km Hydrological distance: 40km	Wigeon (*Anas penelope*) [A050] Teal (*Anas crecca*) [A052] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140]	**Pathway** The species in black text have been brought forward for assessment as they are known to use urban, agricultural and amenity grassland to forage and roost in. The species listed in grey text have not been brought forward for assessment as they are known to use wetland and coastal habitats, of which there are none located along the Proposed Development, and are not	**Habitat degradation – No LSEs** There is a hydrological link to the SPA but it is considered to be *de minimus* as it is at a distance of approximately 40km. Thus, a pollution event is unlikely to cause significant impacts to this European site or the supporting/functionally linked habitat to this SPA when taking the distance and dilution capacity of Cork Harbour into account.

European Site name and code	Distance of site from the Proposed Development	Qualifying Interests	Description of connectivity	Preliminary assessment of Likely Significant Effects (LSEs)
		Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183] Wetland and Waterbirds [A999]	known to use urban, agricultural and amenity grassland as part of their ecology. The proximity of the European site to the Proposed Development means that works may be taking place within or adjacent to functionally linked habitat for QI bird species which are known to use urban, agricultural and amenity land to forage and roost in. **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Habitat degradation** No potential for habitat degradation via a pollution event to the European site directly due to the distance and dilution factor of the intervening waterbodies. There is potential for habitat degradation via a pollution event to supporting/functionally linked habitat within Cork Harbour. *Further assessment needed in next column*. **Mortality** No mortality is predicted on QIs within the SPA due to the length and volume of the hydrological connection taking the dilution rates into consideration via Cork Harbour. Potential for mortality outside the SPA given the works have potential to pollute functionally linked/supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or by consuming polluted water. *Further assessment needed in next column.* **Disturbance** The works are too far from the SPA to cause disturbance impacts within the SPA itself. However, there is potential for disturbance to QI birds in functionally linked habitat outside the SPA. *Further assessment needed in next column*.	**Mortality – No LSEs** The Proposed Development may result in mortality of these QI species associated with the SPA due to pollution impacts in supporting habitats leading to a reduction in water quality and reduction of prey availability causing mortality to these QI species. However, due to the small scale and localised nature of the proposed works, the potential for a pollution event is unlikely and the dilution factor of Cork Harbour reduces the potential impact on QI birds. **Disturbance – No LSEs** Disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting these QI species which are known to travel inland to forage and roost. The Proposed Development is predominantly adjacent to built land, which may support a small percentage of gull species. However, due to the nature of the small scale and localised works and the existing disturbance from the road, there is no potential to cause disturbance at a significant level. Additionally, the agricultural and amenity grassland habitats adjacent to the Proposed Development are considered sub-optimal due to the size of the fields for the QI species, wigeon, teal, golden plover, lapwing, black-tailed godwit, curlew, black-headed gull, common gull and lesser black-backed gull.

European Site name and code	Distance of site from the Proposed Development	Qualifying Interests	Description of connectivity	Preliminary assessment of Likely Significant Effects (LSEs)
Blackwater Estuary SPA (site code: 004028)	Direct distance: 34.2km Hydrological distance: 40km	Wigeon (*Anas penelope*) [A050] Golden Plover (*Pluvialis apricaria*) [A140] Lapwing (*Vanellus vanellus*) [A142] *Dunlin (Calidris alpina) [A149]* Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Wetland and Waterbirds [A999]	**Pathway** The species in black text have been brought forward for assessment as they are known to use urban, agricultural and amenity grassland to forage and roost in. The species listed in grey text have not been brought forward for assessment as they are known to use wetland and coastal habitats, of which there are none located along the Proposed Development, and are not known to use urban, agricultural and amenity grassland as part of their ecology. The proximity of the European site to the Proposed Development means that works may be taking place within or adjacent to functionally linked habitat for QI bird species which are known to use urban, agricultural and amenity land to forage and roost in. **Habitat loss** No potential for habitat loss given the works do not take place within this European site. **Habitat degradation** No potential for habitat degradation via a pollution event to the European site directly due to the distance and dilution factor of the intervening waterbodies. There is potential for habitat degradation via a pollution event to supporting/functionally linked habitat within Cork Harbour. *Further assessment needed in next column*. **Mortality** No mortality is predicted on QIs within the SPA due to the length and volume of the hydrological connection taking the dilution rates into consideration via Cork Harbour. Potential for mortality outside the SPA given the works have potential to pollute functionally linked/supporting habitat. Pollution may cause mortality in birds who have consumed pollutant ladened prey or	**Habitat degradation – No LSEs** There is a hydrological link to the SPA but it is considered to be *de minimus* as it is at a distance of approximately 40km. Thus, a pollution event is unlikely to cause significant impacts to this European site or the supporting/functionally linked habitat to this SPA when taking the distance and dilution rates of Cork Harbour into account. **Mortality – No LSEs** The Proposed Development may result in mortality of these QI species associated with the SPA due to pollution impacts in supporting habitats leading to a reduction in water quality and reduction of prey availability causing mortality to these QI species. However, due to the small scale and localised nature of the proposed works, the potential for a pollution event is unlikely and the dilution factor of Cork Harbour reduces the potential impact on QI birds. **Disturbance – No LSEs** Disturbance from noise and visuals could cause a stress response or act as a deterrent in functionally linked habitat impacting these QI species which are known to travel inland to forage and roost. The Proposed Development is predominantly adjacent to built land, which may support a small percentage of gull species. However, due to the nature of the small scale and localised works and the existing disturbance from the road, there is no potential to cause disturbance at a significant level. Additionally, the agricultural and amenity grassland habitats adjacent to the Proposed Development are considered sub-optimal due to the size of the fields for the QI species, wigeon, golden plover, lapwing and black-tailed godwit.

European Site name and code	Distance of site from the Proposed Development	Qualifying Interests	Description of connectivity	Preliminary assessment of Likely Significant Effects (LSEs)
			by consuming polluted water. *Further assessment needed in next column.* **Disturbance** The works are too far from the SPA to cause disturbance impacts within the SPA itself. However, there is potential for disturbance to QI birds in functionally linked habitat for outside the SPA. *Further assessment needed in next column*.	

5.2 Determination of Likely Significant Effects

An examination of European Sites and their QI features within the ZoI of the Proposed Development is presented in Table 5.1. Potential pathways have been identified between the Proposed Development and European sites as outlined in Table 4.1.

The determination of LSEs is considered to be any effect that may possibly occur as a consequence of the proposed works that would undermine the conservation objectives for the site's QI/SCI features. In the assessment of LSEs, consideration is given to the questions and statements that identify what would constitute a significant effect in terms of loss, fragmentation, disruption, disturbance and changes to key elements affecting the QI/SCI features that may compromise the conservation objectives for that feature.

Given the works are situated along an existing road, there are no hydrological connections crossed by the works and the short duration of the small scale localised works, LSEs on this European site are not anticipated.

5.3 In-combination effects

In order to take account of in-combination effects, plans, and projects that are completed, approved but uncompleted, or proposed (but not yet approved) should be considered in this context (EC, 2021a).

A search of the National Planning Application Database (NPAD) (DoHPLG, February 2024) and general web searches for major infrastructure projects and plans within 1km of the Proposed Development in the last three years has been undertaken to identify other plans and projects that may result in cumulative effects. The majority of recent planning applications appear to be small scale domestic applications such as dwelling house modifications and alteration to car parking provisions, as well as some residential developments. These projects/developments are detailed in Table 5.2 below.

Table 5.2: Results of the review of the desk-based search including the NPAD.

Application Number	County Council	Description	Potential for In-combination
N/A	Cork County Council	Cork County Development Plan 2022-2028 A Natura Impact Report was prepared (Cork County Council, 2022) in support of the Cork County Development Plan 2022-2028. The report assessed potential impacts arising from the Cork County Development Plan 2022-2028. No impacts were identified on any of the European sites identified within the ZoI or the vicinity of the Proposed Development. As such, no in-combination effects are anticipated between the Proposed Development and the Cork County Development Plan 2022-2028 or the supporting NIS.	No potential for in-combination effects. The Plan was subject to Stage 1 and Stage 2 AA. It was concluded that, with the implementation of mitigation measures, the Plan is not foreseen to give rise to any significant effects on designated European sites, alone or in-combination with other plans or projects. Therefore, with the mitigation measures of the Plan implemented, and the absence of significant effects predicted from the Proposed Works, there is no potential for in-combination effects between the Proposed Works and this Plan.
N/A	Cork County Council	Port of Cork Masterplan Under the National Ports Policy, Irish ports are advised to produce port masterplans in line with international best practice for all Irish ports. The purpose of the Port of Cork Masterplan 2050 ("Masterplan") is to provide a vision of how the PoCC can	Any individual projects that emerge in the course of implementing the Masterplan will be assessed at the time of design and construction. In relation to such projects, the PoCC will follow, and comply with, all the normative planning, marine,

		continue to adapt and grow. This masterplan builds upon the previous Strategic Development Plan adopted by the PoCC in 2010. It provides an integrated framework to strategically plan for the short, medium, and long-term; to coordinate port planning: to assist local authorities in the preparation of their own local and regional plans; to evaluate future development proposals and to facilitate the green energy sector.	environmental, and consent requirements. If there are no projects arising from the plan that could be delivered within the same timeframe as the Proposed Development then there is no potential for in-combination effects.
318802 (Previously submitted as PA0045)	An Bord Pleanála / Cork County Council	Indaver Ireland Limited Proposed development of a resource recovery centre (including waste-to-energy facility)	No potential for in-combination effects. The Natura Impact Statement for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
214205	Cork County Council	Construction 2no. two-storey townhouses and all ancillary site development works.	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
214439	Cork County Council	Construction of a two-storey mixed-use development, namely; ground floor retail premises, and first floor residential (2no. apartments), along with associated site works.	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
217291	Cork County Council	The removal of 8 no. car parking spaces permitted under Cork County Council planning application 11/5487, and their replacement with the construction of an open-air outdoor enclosure comprising of a concrete base, timber panel security fence and access gateways, fixed to the existing in-situ concrete wall, and all associated development. The enclosure will house a test rig, consisting of pipe work,3 no. water tanks, and electronic equipment, mounted on a steel framed platform (a skid) to facilitate transport by road and ease of installation and allow for the removal of the rig once testing is complete after approximately 3 years.	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
217343	Cork County Council	Demolition of existing single storey derelict house and construction of two storey dwelling house and associated siteworks.	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.

215480	Cork County Council	The construction of a warehouse building for storage, distribution and manufacturing, with ancillary 2-storey offices, staff facilities, parking, entrance off existing public road and all associated site works.	No potential for in-combination effects. The AA screening report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
224356	Cork County Council	A new vehicular entrance off the L2545, the temporary use of lands (for a period of 10 years) for open storage of port related cargo, and all ancillary works including road / kerbside re-alignment and security fencing	No potential for in-combination effects. The AA screening report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
225444	Cork County Council	Permission for the construction of a grass mound and erection of a commemorative sculpture and all associated works.	No potential for in-combination effects. The AA screening report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
224577	Cork County Council	Removal of external inclined conveyer system to warehouse as permitted under Cork County planning Ref. 06/13900 and replacement with vertical elevator and associated pit and a horizontal enclosed conveyor with supporting bridge structure and all associated site works	No potential for in-combination effects. The AA screening report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
235531	Cork County Council	Removal of three car parking spaces and the erection of a research container unit.	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
236365	Cork County Council	Permission for the relocation and erection of a small micro generation research wind turbine at the north - eastern corner of the site. The wind turbine will be used to provide power to the Beaufort Building and for the educational purposes. The project involves: 1) construction of a concrete foundation for the turbine (measuring 12.25m^2), 2) erection of the tower and turbine (metal lattice tower and turbine with tip height of 19.1m) and 3) associated site works, fencing and utility connections	No potential for in-combination effects. The AA screening report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
225633	Cork County Council	Construction of 18 no. dwelling houses (reconfiguration and change of layout of part of the permitted residential layout granted under Pl. Reg. No. 18/5545 at site no's 13 - 30, to re-orientate and rearrange the	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.

		layout of 12 no. 3 bed semi-detached houses and 6 no. 3 bed terrace houses), re-location of site entrance, landscaping, public lighting, soakways and all associated development.	
226675	Cork County Council	Permission for retention and completion of 12 no. dwelling houses originally granted planning permission under Planning Reg. No. 18/5545.	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
234358	Cork County Council	Construction of grass mounds, erection of sculptures and all associated works	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
234811	Cork County Council	Demolition of existing single storey store to rear of dwelling and construction of single storey extension to rear and side of dwelling and associated site works	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
224285	Cork County Council	Permission for retention of site boundaries as constructed and permission to construct a new vehicular entrance.	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
224608	Cork County Council	(i) 1 no. 3-storey office extension to the existing administration building with a floor area of approximately 2,721 square meters, an overall parapet height of 16.3 meters and connected by overhead passageway to the southern elevation of the administration building; (ii) temporary continuation for a further 2 years of use of the existing 4 no. single-storey, 360 square meter pre-fabricated temporary modular office units permitted under planning reference 16/07150; (iii) permanent continuation of use for the existing 95 no. car spaces temporarily permitted under reference 16/07150. The development will include associated works for local site roads, footpaths, connection to underground services, landscaping and site works. The proposed development is located on lands approximately 1.32 hectares within the existing permitted manufacturing	No potential for in-combination effects. The AA screening report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.

		campus. This application relates to development which comprises an activity which holds an industrial emissions directive licence (Reg. No. P0778-02)	

5.3.1 Conclusions of in-combination effects

No in-combination effects are anticipated between the above projects and plan and the Proposed Development.

6. Screening statement and conclusion

The Proposed Development is not connected with, or necessary to, the management of any European site(s).

This Appropriate Assessment Screening Report presents the objective scientific information required to inform a robust and complete examination of the potential impacts of the Proposed Development on European sites.

The conclusion of the Screening for Appropriate Assessment is that there is no potential for Likely Significant Effects, alone or in combination, on the conservation objectives of Cork Harbour SPA, Ballycotton Bay SPA, Sovereign Islands SPA, Ballymacoda Bay SPA and Blackwater Estuary SPA, or any other European site. Therefore, a Stage 2 Appropriate Assessment is not required.

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Appendix A. QI Foraging/ Roosting distances

Table 7.1 contains the results of a desk-based study which researched the available literature on the foraging/roosting distances for all Qualifying Interest species assessed. This information has been used to inform pathways for impacts upon the Special Protection Areas and the QIs, of which they have been designated for. Note: only available data has been tabulated and no information was found for some of the species and therefore, has not been added to the table below.

Table 7.1:Foraging/roosting distances of SCI bird species and their associated designated areas within the ZoI of the Proposed Development. (Woodward *et al.*, 2019; Legagneux *et al.*, 2009; Clausen *et al.*, 2013; Birdlife International, 2013; SNH, 2016; Birdlife International).

Species	Max (km)	Mean Max (km)	Mean (km)	Category[4]	Confidence[5]	SPAs in ZoI with this species as SCI
Black-headed gull	18.5	18.5	7	Direct	Uncertain	Cork Harbour SPA, Ballymacoda Bay SPA,
Common gull	50	50	25	Survey	Poor	Cork Harbour SPA, Ballycotton Bay SPA, Ballymacoda Bay SPA.
Common tern	37	33.81	8.67	Direct	Good	Cork Harbour SPA.
Cormorant	35	25.6±8.3	7.1±3.8	Direct	Moderate	Cork Harbour SPA, Sovereign Islands SPA.
Lesser black back gull	533	127±109	43.3±18.4	Direct	Highest	Cork Harbour SPA, Ballycotton Bay SPA, Ballymacoda Bay SPA.

[4] Direct = Foraging ranges were obtained through direct attachment of devices such as VHF tags or GPS tags to individual seabirds, enabling precise measurement of seabird movements. This category also includes visual tracking of terns in boats equipped with a GPS device. Survey = Foraging ranges were estimated using visual surveys of birds at sea, based on the assumption that the concentrations of birds observed are breeding birds which are associated with the nearest colony.

[5] Assigned in Woodward *et al.*'s (2019) paper on foraging distances. Not available for all species

Golden Plover	11	-	3	-	-	Cork Harbour SPA, Ballycotton Bay SPA, Ballymacoda Bay SPA, Blackwater Estuary SPA.
All other QI species did not have known foraging/roosting distances.	N/A	N/A	N/A	N/A	N/A	Cork Harbour SPA, Ballycotton Bay SPA, Ballymacoda Bay SPA, Blackwater Estuary SPA

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Appendix B. Figures

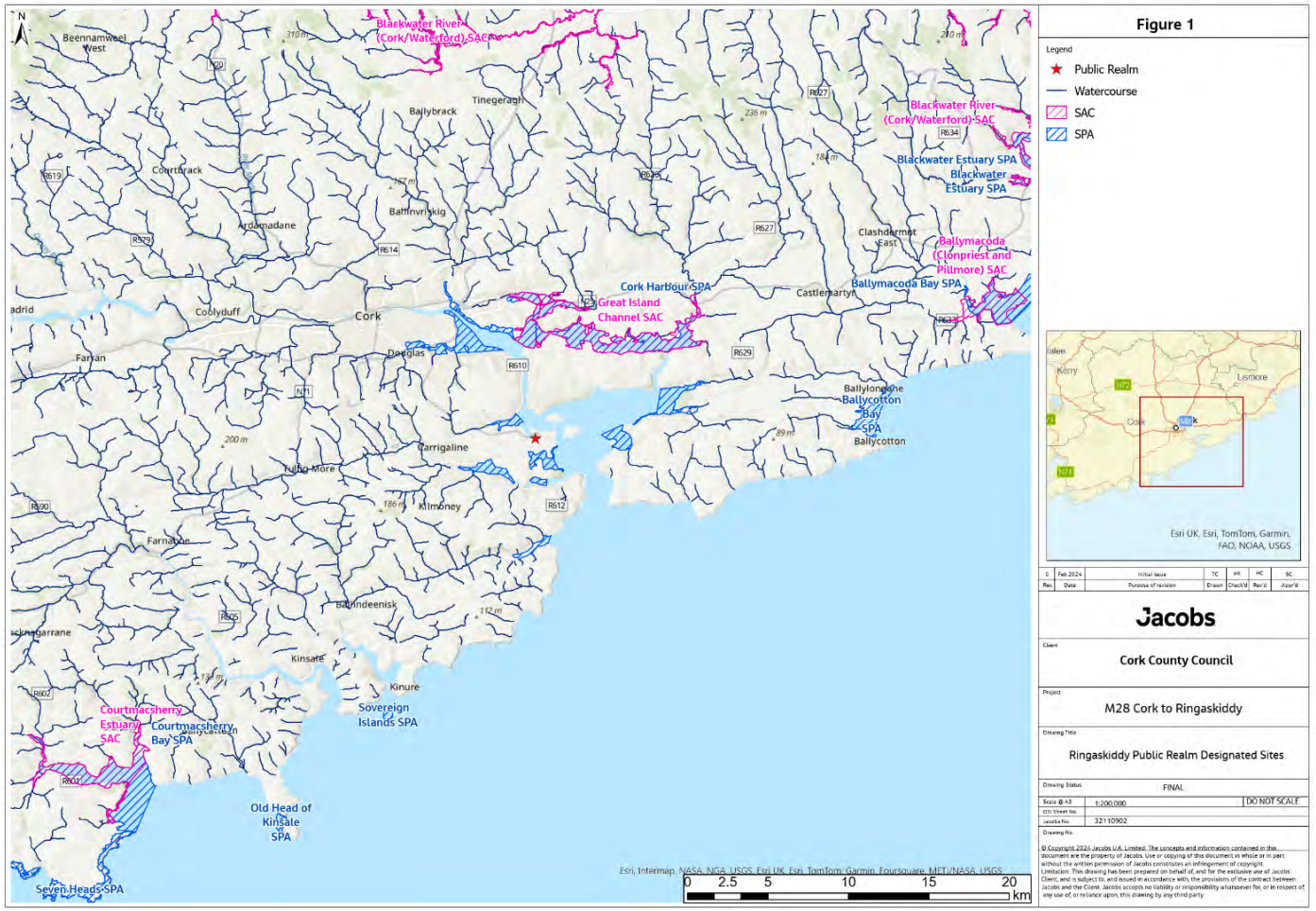

Figure 1: Designated Sites in the vicinity of the Proposed Development.

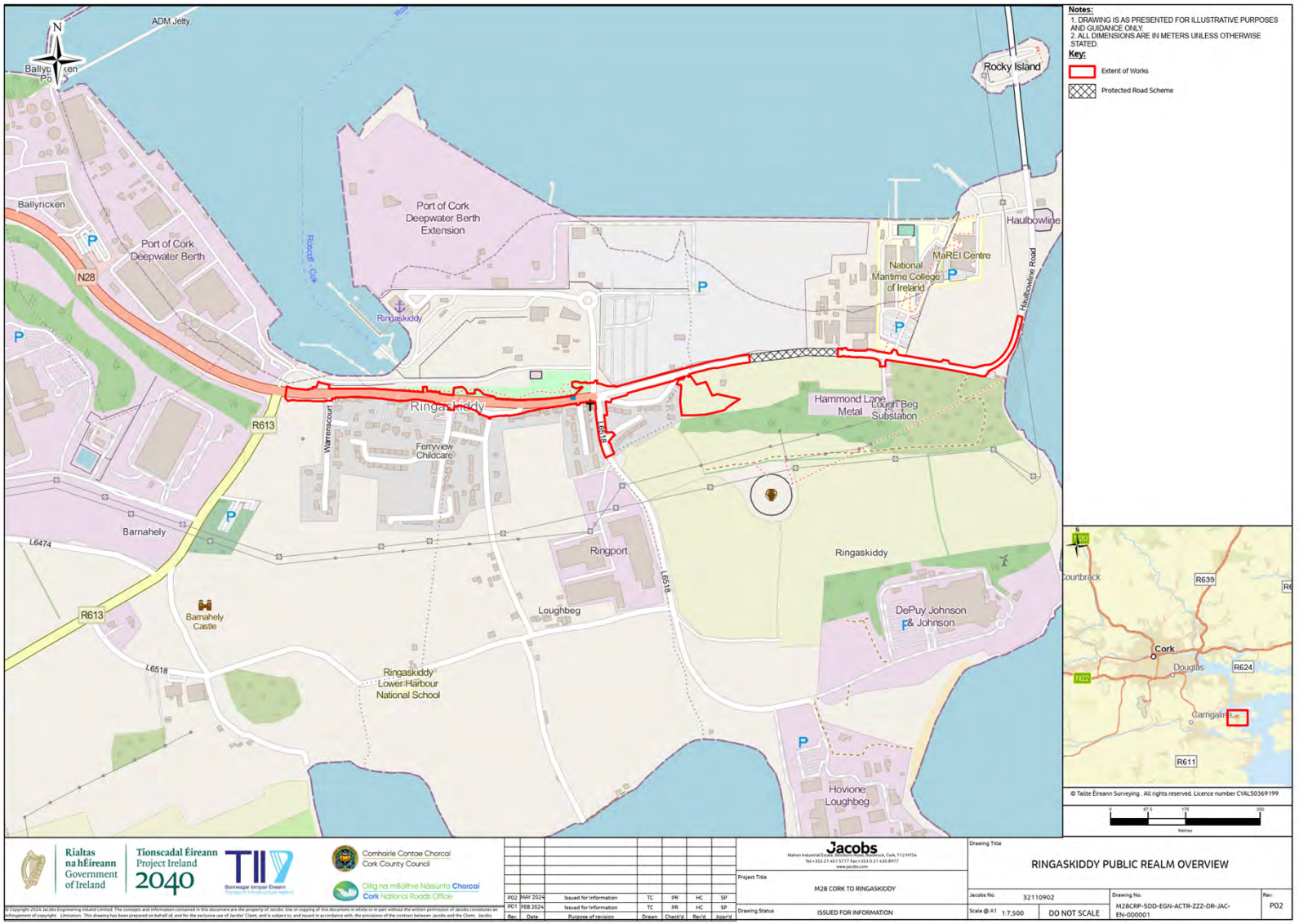

Figure 2: Proposed Development Route