



Appropriate Assessment Screening and Natura Impact Statement

**Maritime Usage Licence Application for Marine
Site Investigation Surveys at Port of Cork,
Ringaskiddy, County Cork**

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Chapter A – Appropriate Assessment Screening

[1] Introduction

[1.1] Project Background

Ayesa has been commissioned to undertake an Appropriate Assessment Screening report for Port of Cork Company (PoCC) (the 'Applicant'), who wishes to submit a Maritime Usage Licence (MUL) application to the Maritime Area Regulatory Authority (MARA) for marine site investigation (SI) surveys (thereafter referred to as the 'proposed works') at the Port of Cork, Ringaskiddy, Co. Cork.

This Maritime Usage Licence (MUL) application from the Port of Cork Company is for marine environmental and geotechnical surveys for the purposes of site investigations (SIs) at Ringaskiddy, Co. Cork. The site investigations are associated with the future port infrastructure identified in the Port of Cork Masterplan 2050 in the area referred to as CORE1.

The proposed marine SIs (geotechnical boreholes and environmental sediment samples) will enable:

- Detailed mapping of nearshore shallow geological and seabed character;
- Reconnaissance level mapping of seabed relief and features (e.g. archaeology);
- Greater understanding of the seabed and sub-seabed conditions;
- Evaluation of the nature and mechanical properties of the superficial seabed sediments along the survey corridor;

The knowledge gained from the proposed SI surveys will be used to minimise uncertainty in ground conditions at an early design stage.

Data acquired during the proposed SIs will be used to inform the design and assessment of any future projects in the area by providing information on the baseline environment and allowing impacts to be predicted, and subsequently appropriate mitigation to be developed, as applicable. The results of the proposed SIs may also be used at a later date to provide a baseline against which to monitor effects of construction, operation and decommissioning of marine infrastructure.

[1.2] Project Setting

Cork Harbour is a mid-sized water body approximately 28km² in area, and takes in the areas of Ringaskiddy, Monkstown, Cobh, Rostellan and Whitegate in County Cork. The Port of Cork Ringaskiddy is located adjacent to the village of Ringaskiddy. Ringaskiddy village has a population of 570 people. Large industry and existing Port of Cork activities have a dominant role within the village. The location of the proposed redevelopment lies within Cork Harbour coastal water body (IE_SW_060_000) in the South-Western River Basin District (SWRBD). The harbour is fed by Lough Mahon (IE_SW_060_0750), Owenboy Estuary (IE_SW_060_1200) and North Channel Great Island (IE_SW_060_0300) transitional water bodies before feeding into the Outer Cork Harbour coastal water body (IE_SW_050_000).

The site location can be seen below in Figure 1-1. The approximate outline of the proposed MUL area is shown in Figure 1-2. Figure 1-3 and Figure 1-4 below shows the licenced disposal site for any material taken from the seabed during the SI works such as drill cuttings. Drill cuttings will be brought up to surface level in a casing to prevent contact with the seawater. Once aboard the survey vessel, the sediment will be bagged and taken off site to be disposed of at a suitable facility.

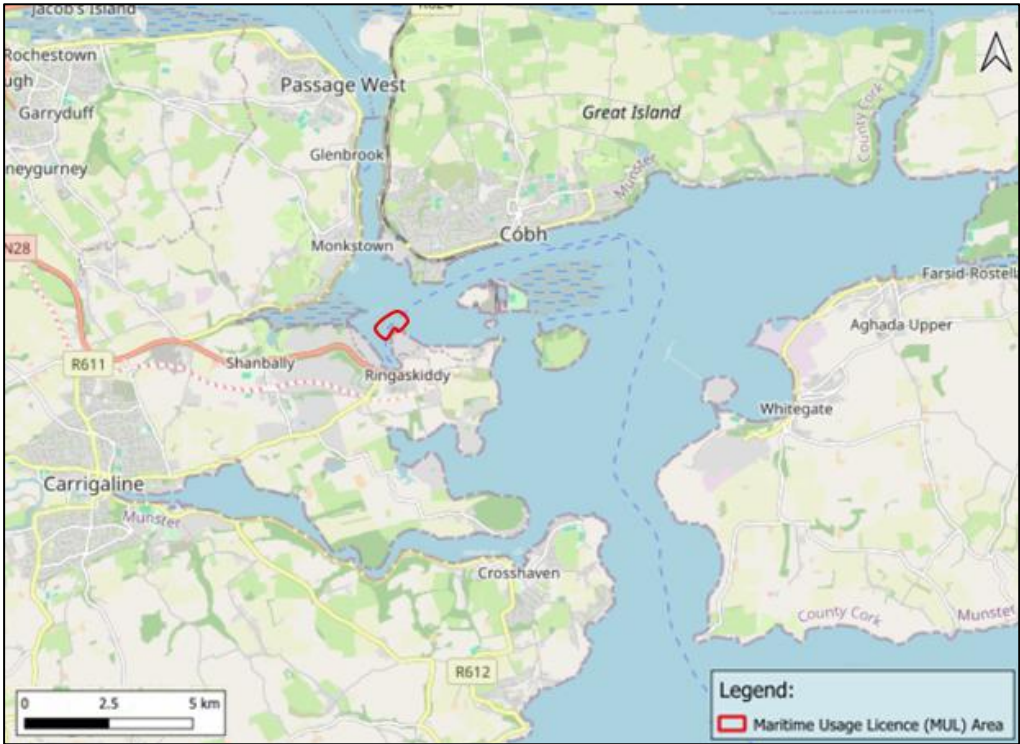


Figure 1-1. Map of Site Location.



Figure 1-2. Approximate location of the proposed MUL area

[1.3] Proposed Works

The following sections outline the proposed SI works needed for to submit a Maritime Usage Licence (MUL) application to the Maritime Area Regulatory Authority (MARA) for marine site investigation (SI) surveys at the Port of Cork, Ringaskiddy, Co. Cork. Figure 1-4 shows a map of the locations of the proposed works mentioned below.

[1.3.1] Borehole Investigation

[1.3.1.1] Structural Boreholes

The Proposed SI works include the following main components to inform preliminary and detailed design.

The 15 proposed structural borehole locations are shown in Figure1-4.

Each borehole will begin as a cable percussive boreholes bored to “refusal”. Boreholes in the area typically encounter “refusal” at depths ranging from 0.4m to 12.5m below seabed. Where refusal is encountered, rotary core drilling will follow at the same location. These follow-on boreholes are then generally drilled to a maximum depth of 25m below the seabed with a casing diameter of 200mm.

The maximum impacted seabed area is 0.5m² and the total volume of seabed material extracted is 12m³.

[1.3.1.2] Sediment Testing Borehole

Sediment samples will be obtained through vibrocore drilling (use of high frequency vibrations to drive a hollow tube into soft unconsolidated sediments) through soft estuarine overburden for recovery of soft soil and sediments. Sediment samples can also be obtained using surface samples (Van Veen grab) as required by the Marine Institute; however, vibrocore drilling is more intrusive. In total, 11 vibrocores and 7 surface grab samples will be collected within the dredging area.

The vibrocore machinery to be used is approximately 4.5m tall when it is in transit and approximately 7m tall when the borehole is being driven. The machinery will be supported by a suitable vessel the Denis Murphy.

For each vibrocore the footprint of the works on the foreshore will be four approximately 1 m². legs of the jack-up barge and the 105 mm temporary steel casing. The 106 mm steel casing is the diameter of the borehole. The vibrocore will be drilled up to 6m below the existing seabed.

There will be no permanent structures, all site investigation will be facilitated by temporary works. The moving marine plant will remain on site for the duration of the works. Associated sampling and testing (both in-situ and geotechnical/geo-environmental laboratory testing).

Proposed marine SI works will be conducted entirely from vessels within the marine environment. The waste soil arisings from each borehole will be minimal based on the diameter of the casing and these will be brought on land for disposal at an appropriately licenced facility (see Figure 1-4).

[1.3.2] Radiological Testing

A sample will be taken anywhere within the proposed dredge area for radiological testing. The sample will be 1.5kg in wet weight and stored in a leak proof container clearly labelled with location and sampling date. These will be delivered to the EPA Radiation Monitoring Laboratory for testing.

[1.3.3] Drop down Video and Benthic Grab Sampling

It is proposed to collect surface subtidal grab samples from 2 locations within the immediate footprint of the proposed development.

It is expected that 2 drop down video locations will be surveyed prior to grab sampling to assess the benthic community and determine suitability for grab sampling.

At each of the 2 subtidal stations within the vicinity of the proposed CORE2 development area, benthic faunal samples will be collected. Additionally, sediment samples will be collected for particle size analysis and organic carbon content. Similar samples (faunal and sediment) will be collected by core along the intertidal transects.

Subtidal sampling will involve the following:

- Single 0.1m² grab samples collected at each of the subtidal sampling stations;
- An additional grab will be collected for Grainsize and Loss on Ignition;
- Ancillary information will be recorded on pre-prepared data record sheets;
- Samples will be positioned using the vessel's GPS.
- Sample positions will be recorded when on site;
- Photographs will be taken of each sample; and
- Drop down video footage will be collected from each of the 2 locations.
- Grab samplers are used to recover samples from approximately the top 0.2 - 0.5m of seafloor. These samples may be used to classify the seabed, or for biological analyses. These samples are generally deployed overboard using a crane from a vessel.

There are various grab sampler types to include but not limited to Van Veen, Hamon and Day Grab samplers. Generally, some variants may come either as single or double, and in a variety of different sizes. Grab samplers generally comprise of steel buckets that are deployed open and which trigger shut when the sampler is in contact with the seafloor. As the buckets close, sediment and biological material are retained inside the sampler.

The grab sampler is then recovered to deck and placed on a trestle or table. The retained material is then visually inspected for acceptance and then transferred to adequate container or on to a designated mat for further offshore processing and logging.

Single Van Veen Grab is ideal for the collection of sediment samples for biological and environmental sampling. In a range of sizes (0.025m², 0.1m², 0.2m², 0.3m²) each model has a marine grade stainless steel bucket with hinged access flaps on the top allowing sub sampling of the collected sediment before it is emptied from the grab. The standard for this type of benthic faunal survey is 0.1m². The bucket is operated with a pair of stainless-steel lever arms that increase the tension to secure the sample securely in the grab as it is retrieved to the surface. Additional lead weights can be added to the back of the bucket to improve stability in strong currents and to the lever arms to increase the equipment's ability to perform in harder conditions.

Generally, any grab sampling will be carried out by deploying sampling gear from the vessel, as per standard operation procedure for deck works involving this kind of equipment considering the technical specification of the grab in use. Various grabs will be available for the benthic survey provision to ensure adequate sampling equipment for various sediment types. From the grab samples a small amount of sediment can be retained for Particle Size Analysis and Loss on Ignition Analysis.

Van Veen/other suitable methods will be used for soft sediments for quantitative benthic infauna analysis and for physio-chemical analysis. Colonial and epifaunal species will be recorded qualitatively. Sediment samples for physio-chemical analysis will be acquired for later laboratory analysis.

Mini and Standard Hamon Grabs (0.1m² and 0.2 m² respectively are particularly used for the collection of samples generally from coarse (sand and gravel) sediment substrates and used for benthic macrofauna and particle size measurement. The grab is relatively simple to operate in almost any water depth.

A 0.1m² sample area is a standard practice used in many benthic sampling applications. The Hamon Grab is a box shaped sampling scoop mounted in a triangular frame. Upon contact with the seabed, tensioned wires are released, which causes the sampling bucket to pivot through 90° pushing seabed sediment into the bucket. On completion of its travel the open end of the bucket comes against a rubber sealed steel plate which stops the sediment escaping during recovery. 0.1m² Hamon Grab refers to 0.1m² area of seabed sampled. The depth of scoop penetration is up to 20cm. On recovery the grab is landed onto a rectangular base from where access can be gained to the inside of the bucket via an inspection window. Whilst in the stand the grab sample can then be easily emptied into a sampling container located under the bucket.

In any case where benthic sampling is not possible, sufficient video and stills will be taken from the sample location to identify existing habitats (to include Annex I habitats) and the habitat boundaries.

This survey provides camera footage to aid in the classification of submerged habitats and is a non-invasive survey for habitats and fauna. The survey period for benthic habitats is year-round.

[1.3.4] Drop Down Video Survey

The drop-down camera to be used is the STR SeaSpyder Nano, an ultra-compact system offering high-resolution digital imaging and photographic-quality illumination. The system featured the latest generation STR SeaCam Mini IP camera and two ultra-efficient STR SeaLight LED lights, installed on a lightweight deployment frame with a 50m Kevlar-reinforced umbilical. Real-time HD video was captured using the supplied STR VidOverlay software. Laser scaling is integrated into the camera system, which was essential for conducting an assessment and for accurately measuring percentage cover.

Short drifts will be used at each drop-down video station, with video recorded along each transects, with the camera positioned approximately 50cm to 1m above the seabed. The camera was landed on the seabed along each transect, enabling an assessment of spatial variability.

At each station, the immediate survey area was checked for obstructions, such as static gear. Notes will be made in-situ on visible sediment conditions, seabed features, flora and fauna,

and notable sensitive and protected species, along with the DGPS position, water depth, date, and time.

The camera will be lowered to the seafloor and a recording made of the bottom type and flora and fauna encountered. Once the camera was recording, the boat is allowed to drift with the current during filming (for approximately two minutes) to get representative footage along each camera deployment. All captured video footage is reviewed, and substrate type and characterising species noted and used to assess any changes in the environment.

There will be 2 locations studied. Stations will be at depths ranging from 1 m to 16 m. The locations to be studied are included in Figure 1-3 below.

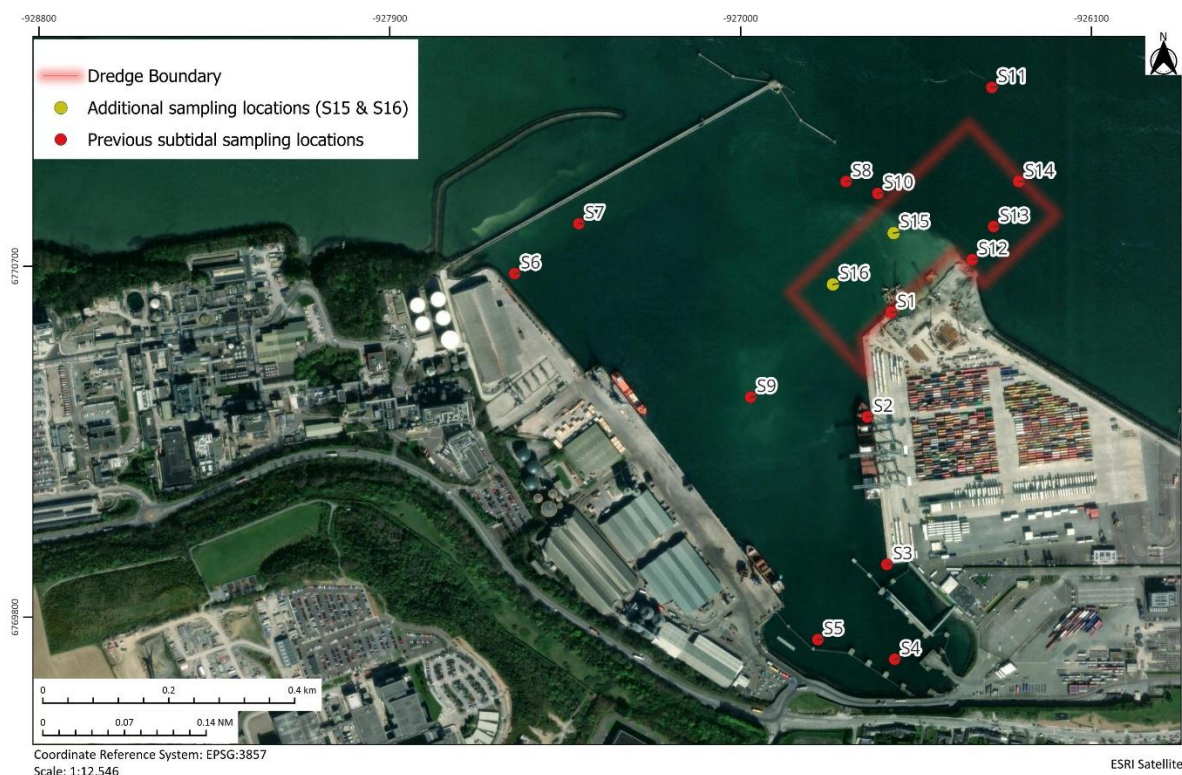


Figure 1-3: Proposed Benthic Grab Sample Locations.

[1.3.5] Embedded Mitigation

The following environmental controls are incorporated into the project design and form part of standard working practice. These measures are embedded, not “additional mitigation”:

- Refuelling and waste handling carried out in accordance with MARPOL Annex I & V – no fuelling in open water unless fully controlled.
- Spill prevention measures and certified bunkering procedures in place for all vessels.
- Onboard containment available for all operational oils, lubricants, and waste materials.
- Navigation safety maintained through Harbour Master coordination and Notices to Mariners.

These embedded measures are inherent to the works and apply irrespective of any additional mitigation for Annex IV species, Natura 2000 compliance, or licence conditions.

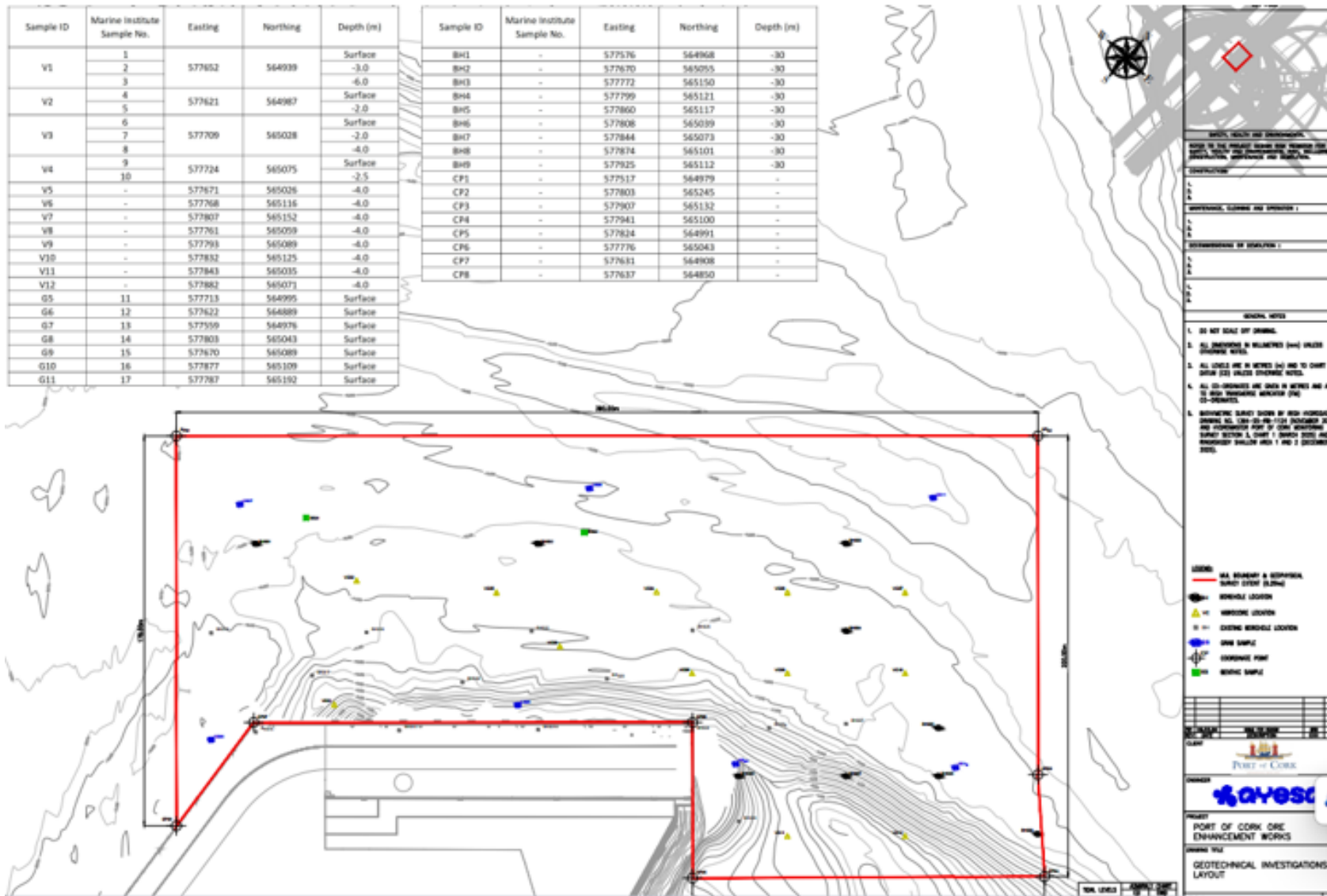


Figure 1-4. Map of SI survey requirements

[1.4] Preparation of Report

Table 1-1 Ayesa Team

Title	Name	Role	Qualifications	Years experience
Senior Ecologist	Joe Butler	Survey, Report Preparation	BSc (Zoology) MSc (Wildlife Conservation & Management)	6
Principal Consultant	Lynn Morrissey	Report checking and review	MSc Env. Res. Mgt. IES Membership	20+
Director	Neil Riding	Report Review and Sign-off	MSc Waste Management. Chartership-CIWM	20+

This report was prepared by Joe Butler BSc (Hons) Zoology, MSc Conservation & Management. Joe Butler has worked as a Consultant Ecologist since 2018. Joe has six years' experience working as a consultant ecologist in the private sector for engineering consultancies and is currently working as a freelance ecologist providing ecological services various clients. He has conducted numerous ecological and environmental assessments, including Appropriate Assessment (AA) Screening Reports, Natura Impact Statements (NIS) and Ecological Impact Assessment Reports (EclA) for submission to various regulatory bodies across Ireland. Joe has significant experience in carrying out ecological surveying and reporting for proposed soil recovery sites throughout Ireland.

[2] Appropriate Assessment Process

[2.1] Process

The AA process is a sequential process consisting of four potential stages. If it is determined that there will be no significant effect on a European Site at the first stage in the process, the process is effectively completed. The four stages are as follows:

- Stage 1 – Screening of the proposed plan or project for AA (current stage).
- Stage 2 – An AA of the proposed plan or project.
- Stage 3 – Assessment of alternative solutions; and
- Stage 4 – Imperative Reasons of Overriding Public Interest (IROPI)/ Derogation.

Stage 1 relates to Regulation 42 of the Birds and Natural Habitats Regulations; and Stage 2 relates to Article 6(3) of the Habitats Directive; and Stages 3 and 4 to Article 6(4) of the Habitats Directive.

[2.1.1] Stage 1: Screening (current stage)

Stage 1 of the AA process is to assess if the plan or project is directly connected with or necessary to the management of Natura 2000 Site(s); or based on best scientific knowledge, if the plan or project, individually or in combination with other plans or projects, is likely to have a significant effect on a Natura 2000 site. This is done by examining the proposed plan or project and any Sites' conservation objectives that might be affected. If screening determines that there are likely to be significant effects, or the significance of effects is uncertain or unknown, then it will be recommended that a project is brought forward to full AA.

[2.1.2] Stage 2: Appropriate Assessment

Stage 2 of the AA process aims to identify any adverse impacts the plan or project might have on the integrity of relevant Natura 2000 Sites. As part of the assessment, a key consideration is 'in combination' effects with other plans or projects. Where adverse impacts are identified, mitigation measures can be proposed to avoid, reduce, or remedy any such negative impacts. The plan or project should then be amended accordingly, thereby avoiding the need to progress to Stage 3.

[2.1.3] Stage 3: Assessment of Alternative Solutions

If it is not possible during Stage 2 to reduce impacts to acceptable, non-significant levels by avoidance and/or mitigation, Stage 3 of the process must be undertaken to objectively assess whether alternative solutions exist by which the objectives of the plan or project can be achieved. Explicitly, this means alternative solutions that do not negatively impact the integrity of a Natura 2000 Site. It should also be noted that EU guidance on this stage of the process states that 'other assessment criteria, such as economic criteria, cannot be seen as overruling ecological criteria' (EC, 2001). In other words, if alternative solutions exist that do not negatively impact Natura 2000 Sites; they should be adopted regardless of economic considerations.

[2.1.4] Stage 4: Imperative Reasons of Overriding Public Interest (IROPI)/ Derogation

Stage 4 of the AA process is undertaken when it has been determined that negative impacts on the integrity of a Natura 2000 Site will result from a plan or project but that no alternatives exist. At this stage of the AA process, the characteristics of the plan or project itself will determine whether the competent authority can allow the plan or project to progress. This is the determination of 'over-riding public interest'. It is important to note that in the case of Natura 2000 Sites that include in their qualifying features 'priority' habitats or species, as defined in Annex I and II of the Directive, the demonstration of 'overriding public interest' is not sufficient and it must be demonstrated that the plan or project is necessary for 'human health or safety considerations'. Where plans or projects meet these criteria, they can be allowed, provided adequate compensatory measures are proposed. Stage 4 of the process defines and describes these compensation measures.

[2.2] Stage 1: AA Screening

This AA screening report has been completed in the following logical order:

- Definition of the zone of influence for the proposed works.
- Identification of the Natura 2000 Sites that are situated (in their entirety or partially) within the zone of influence of the proposed works.
- Identification of the most up-to-date Qualifying Interests (QIs) for each Natura 2000 Site occurring either wholly or partially within the zone of influence.
- Identification of the environmental conditions that maintain the QIs at the desired target of Favourable Conservation Status.
- Identification of the threats/impacts – actual or potential that could negatively impact the environmental conditions of the QIs within the Natura 2000 Sites.
- Highlighting the activities of the proposed works that could give rise to significant negative impacts; and
- Identification of other plans or projects, for which In-combination impacts would likely have significant effects.

The following issues have been considered:

- The nature and quality of habitats within the site of the proposed development.
- Information relating to the ecology of the Natura 2000 site.
- The status of Qualifying Interests of the Natura 2000 site (Annex I habitats and Annex II species of the EU Habitats Directive) and the relevant conservation status and objectives for these species.
- The key structural and functional relationships maintaining the integrity of the Natura 2000 site.
- The status of other annexed habitats and species occurring in proximity to the site of the proposed development; and

- The scale and nature of the aspects of the project in relation to the Natura 2000 site.

[2.3] Legislative Background and Guidance Documents

[2.3.1] International Legislation

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as the "Habitats Directive", provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of community interest by establishing and conserving an EU-wide network of sites known as Natura 2000. These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/ECC) as codified by Directive 2009/147/EC.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to have a significant effect on or to adversely affect the integrity of European Sites (Annex 1.1). Article 6(3) establishes the requirement for AA screening.:

"Any plan or project not directly connected with or necessary to the management of the [European] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In 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 [European] 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 sites is protected. It shall inform the Commission of the compensatory measures adopted."

[2.3.2] The Requirement for AA Screening

Section 42 (1) of S.I. No. 477 of 2011, the European Communities (Birds and Natural Habitats) Regulations 2011 states:

"A screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site."

Where the screening process cannot exclude the possibility that a plan or project, individually or in combination with other plans or projects, could have a significant effect on a European site, there is a requirement under Article 42 (9) of these Regulations for the preparation of a Natura Impact Statement to inform the Appropriate Assessment process.

[2.3.3] Screening Determination

In accordance with Regulation 42(7) of the Birds and Natural Habitats Regulations 2011 (S.I. No. 477/2011) as amended:

"The public authority shall determine that an Appropriate Assessment of a plan or project is not required where the plan or project is not directly connected with or necessary to the management of the site as a European Site and if it can be excluded on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site."

Further, under Regulation 42(8):

"(a) Where, in relation to a plan or project for which an application for consent has been received, a public authority decides that an Appropriate Assessment is required, the public authority shall give notice of the determination, including reasons for the determination of the public authority, to the following—

i. the applicant,

ii. if appropriate, any person who made submissions or observations in relation to the application to the public authority, or

iii. if appropriate, any party to an appeal or referral.

(b) Where a public authority has determined that an Appropriate Assessment is required in respect of a proposed development it may direct in the notice issued under subparagraph (a) that a Natura Impact Statement is required."

[2.3.4] National Legislation

The Habitats Directive has been transposed into Irish law by Part XAB of the Planning and Development Act, 2000 - 2015 and the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011) as amended.

[2.3.5] Guidance Documents on Appropriate Assessment

Where an AA is necessary, the AA requirements of Article 6(3) of the Habitats Directive 92/43/EEC (European Communities 2001) follow a sequential approach as outlined in the following guidance documents:

- 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 NPWS 1/10 and PSSP 2/10.
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (European Commission Environment Directorate-General, 2002).
- Managing Natura 2000 Sites: The provisions of Article 6 of the Habitat's Directive 92/43/EEC Commission Notice (European Commission Environment Directorate-General, 2018).

- Guidelines for Good Practice Appropriate Assessment of Plans Under Article 6(3) Habitats Directive (International Workshop on Assessment of Plans under the Habitats Directive, 2011).
- The Department of the Environment, Heritage, and Local Government guidance "*Appropriate Assessment of Plans and Projects in Ireland – guidance for Planning Authorities, 2009*" and the European Commission (2001) guidelines "*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*".
- Appropriate Assessment Screening for Development Management (OPR, March 2021)

[3] Methods

[3.1] Desktop Information Consulted for this Report

The desk study included review of the following sources of information:

- Article 17 Reports (NPWS, 2019)
- GIS spatial data for Article 17 Reports
- National Biodiversity Data Centre (NBDC) – 1km- and 2km-square species reports (accessed online on 19/11/2025)
- Botanical Society of the British Isles - www.bsbi.org.uk;
- Invasive Species Ireland - www.invasivespeciesireland.com;
- Chartered Institute of Ecology & Environmental Management (CIEEM) - www.cieem.net; and
- BirdWatch Ireland (BWI) - <https://birdwatchireland.ie/>
- Flynn Furney – Wintering and Breeding Bird Survey Report (2024)
- Aquafact – Marine Ecology Report (2024)
- Natura Impact Statement (NIS) – Maritime Usage Licence Application for Marine Site Investigation Surveys at Dognose Bank, Corkbeg, Whitegate, County Cork (MWP, 2025).
- Environmental Impact Assessment Report (EIAR) Ringaskiddy - Ringaskiddy East (Container Berth 2), Ringaskiddy West (Deepwater Berth Extension) and Road Improvements (Ayesa, 2025)

[3.2] Cumulative and In-Combination Effects

Screening for Appropriate Assessment requires that the cumulative or in-combination effects of the proposed development, together with other plans or projects, are assessed. Cumulative impacts can be defined as a project/plan/programme likely to have a significant effect thereon, either individually or in combination with other plans or projects.

Per EC Article 6 Guidance Document (EC 2018), in order to ensure all impacts upon the site are identified, including those direct and indirect impacts that are a result of cumulative impacts, the following steps were completed:

- Identify all projects/ plans which might act in combination: Identify all possible sources of effects from the project or plan under consideration, together with all other sources in the existing environment and any other effects likely to arise from other proposed projects or plans.
- Impacts identification: Identify the types of impacts that are likely to affect aspects of the structure and functions of the site vulnerable to change.

- Define the boundaries for assessment: define boundaries for examination of cumulative effects that will differ for different types of impact and may include remote locations.
- Pathway identification: Identify potential cumulative pathways (e.g. via water, air etc.; accumulations of effects in time or space).
- Prediction: Prediction of magnitude/extent of identified likely cumulative effects.
- Assessment: Comment on whether or not the potential cumulative impacts are likely to be significant.

[3.3] Screening Assessment of European Sites

This chapter provides a Preliminary Screening Assessment to identify SACs and SPAs to be assessed fully in the Screening of Potential Impacts (Section 7).

As per the outcomes of the Judgement in Case C-721/21: Keegan Land Holdings vs. An Bord Pleanála, this screening assessment has been completed with consideration of "*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*".

[3.3.1] Establishing a Zone of influence (Zol)

"The 'zone of influence' for a project is defined as "the area over which ecological features may be affected by biophysical changes because of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries" (CIEEM, 2019). Subsequently, the zone of influence (Zol) will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018).

Foraging ranges of seabirds published by Thaxter et al., (2012) were consulted in determination of the Zol. The furthest mean foraging range for a species of conservation interest was identified as lesser black-backed gull (*Larus fuscus*) with a mean foraging range of 71.9km +/-10.2. Propagation of underwater sound was also considered, particularly in respect of the highly sensitive harbour porpoise (*Phocena phocena*), which shows a responsiveness to works from 20km away (Tougaard et al., 2009).

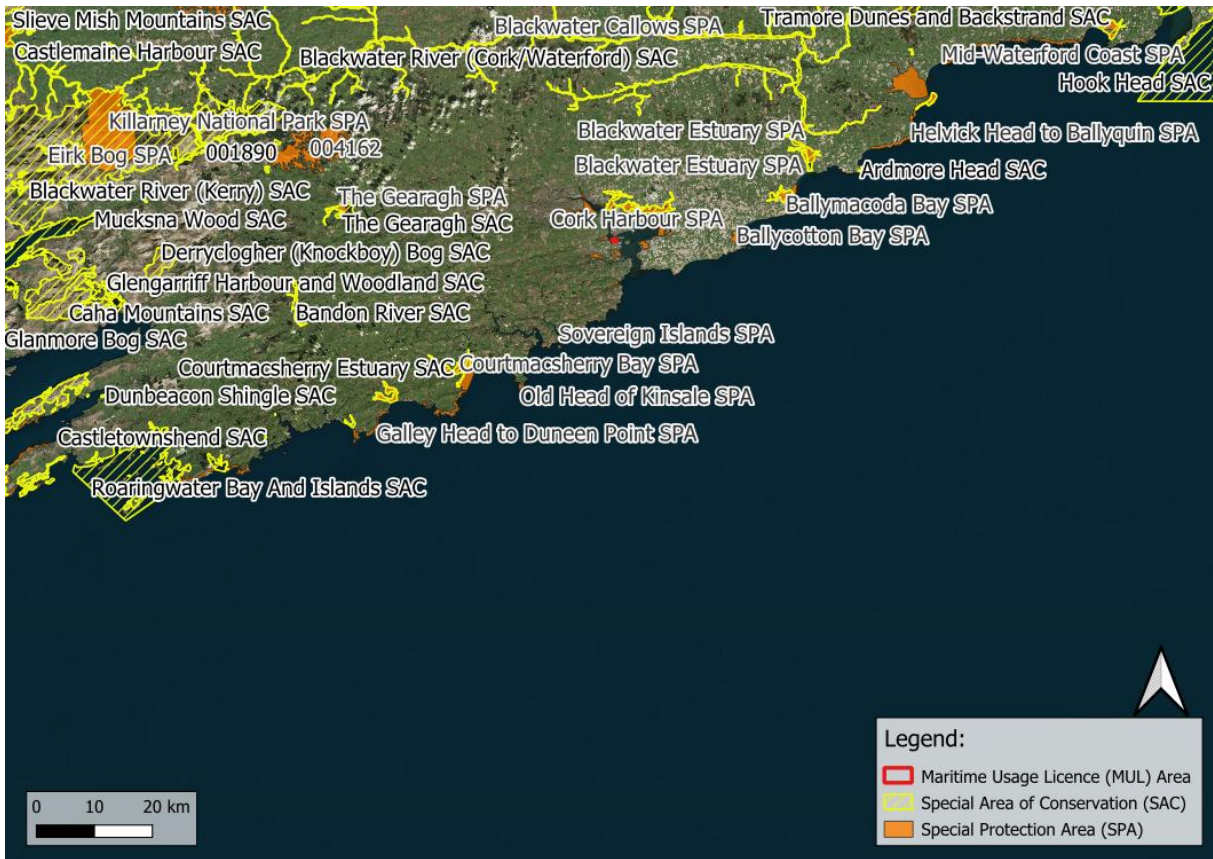


Figure 3-1. Natura 2000 Sites located along the south coast

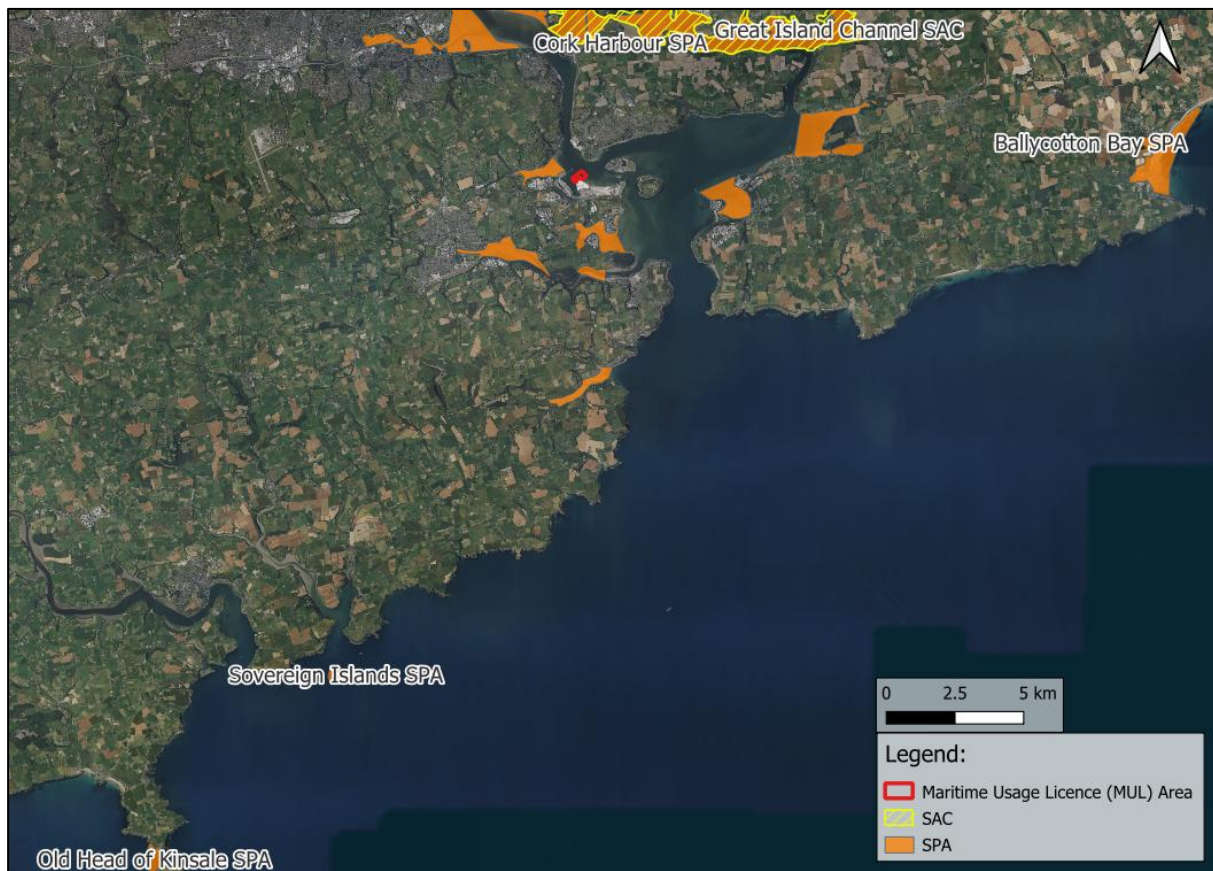


Figure 3-2. Natura 2000 Sites located nearest to the proposed site

[3.4] Source-Pathway-Receptor (SPR) Model

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

- A 'source' is defined as the individual element of the proposed works that has the potential for likely significant effects on a European site, its qualifying features and its conservation objectives.
- A 'pathway' is defined as the means or route by which a source can affect the ecological receptor.
- A 'receptor' is defined as the SCI of SPAs or QI of SACs for which conservation objectives have been set for the European sites being screened.

Further assessment is required when a source-pathway-receptor link between the proposed development and a European site exists, and a likely significant effect may exist. In accordance with EC Article 6 Guidance Document (EC, 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, 2018), in order to ensure that all significant effects upon the site are identified, including those direct and indirect significant effects that are a result of cumulative significant effects, the following steps were completed:

- Identify all projects/ plans which might act in combination: Identify all possible sources of effects from the project or plan under consideration, together with all other sources in the existing environment and any other effects likely to arise from other proposed projects or plans.
- Identification of likely significant effects: Identify the types of significant effects that are likely to affect aspects of the structure and functions of the site vulnerable to change.
- Define the boundaries for assessment: define boundaries for examination of cumulative effects which will be different for different types of significant effects and may include remote locations.
- Pathway identification: Identify potential cumulative pathways (e.g., via water, air etc.; accumulations of effects in time or space).
- Prediction: Prediction of magnitude/extent of identified likely cumulative effects.
- Assessment: Comment on whether or not the potential cumulative significant effects are likely to be significant.

[3.5] Specialist Surveys

[3.5.1] Marine Ecology

As part of an EIAR (Environmental Impact Assessment Report) biodiversity chapter prepared by Ayesa (Ayesa, 2025) for several proposed works in Ringaskiddy Port, AQUAFACT was commissioned to evaluate the potential impacts of the following proposed Ringaskiddy developments on marine environmental quality, as well as protected marine species and habitats during 2024 surveys:

Ringaskiddy East (Container and Multi-purpose Berth (CB/MPB)):

- A Container Berth of approximately 200m in length (CCT 2)
- Dredging of the seabed to a level of -13.0 m Chart Datum (CD)

- Installation of link-span comprising a floating pontoon and access bridge
- Installation of container handling cranes
- Lighting and fencing

Ringaskiddy West (Deepwater Berth Extension):

- A new 182m extension to the existing Deepwater Berth (DWB) which will comprise a filled quay structure (of approximately 231m) extending no further seaward than the edge of the existing DWB
- Dredging works to varying levels to facilitate navigational access to the new facilities
- Lighting

Road Improvements:

- Improvements to internal road network at Ringaskiddy East to facilitate future access to the N28
- Lighting and fencing

The above-mentioned works are located adjacent to the proposed MUL area that is being described in this report.

An EIAR is defined in the Planning and Development Act 2000, as amended as: ‘a report of the effects, if any, which proposed development, if carried out, would have on the environment and shall include the information specified in Annex IV of the Environmental Impact Assessment Directive’

[\[3.5.1.1\] Desktop Study](#)

A desktop study review was carried out of existing data and records for fish, protected aquatic species and habitats (including Annex II species and aquatic Annex I habitats), and invasive species listed under the Third Schedule of S.I No. 477 of 2011, European Communities (Birds and Natural Habitats) Regulations 2011 (as amended)) on watercourses at or hydrologically connected (i.e., downstream) to the development on the National Biodiversity Data Centre (NBDC) and National Parks and Wildlife Service (NPWS) websites.

The relevant receptors include Habitats; Marine Mammals; and Fish.

[\[3.5.1.2\] Field Studies](#)

During the summer of 2024 field studies were carried out across intertidal, subtidal, marine mammal, and fisheries components to assess biodiversity and ecosystem health. The purpose of these surveys in 2024 was to update the biological elements of the survey work undertaken in 2012 and assess the impacts of the proposed redevelopment on both the intertidal and subtidal benthic habitats at Ringaskiddy Port. The primary focus was on the Ringaskiddy Basin, and the area just outside the harbour area.

[3.5.1.2.1 Subtidal Benthic Survey:](#)

A subtidal benthic grab survey took place on the 23rd of July 2024 using a 0.1m² Day Grab on board the Port of Cork vessel the *Denis Murphy*. Each station provided a faunal sample and a sediment sample for particle size and organic carbon analysis, following NMBAQC guidelines.



Figure 3-3. Ringaskiddy Subtidal and intertidal sampling locations July 2024.

3.5.1.2.2 Intertidal Survey Campaign:

The Phase I walkover survey of the two intertidal transect locations took place at low tide on the 24th of July 2024. Initially it was planned to carry out the Phase II quantitative transect survey on foot to take core samples from the littoral zone. A dynamic risk assessment was carried out on site, and it was determined that the sediment type was not suitable to traverse across on foot and alternatively a decision was made to achieve the required grab samples from a vessel at high tide on the 12th of September 2024.



Figure 3-4. Intertidal Transect 1 station locations.

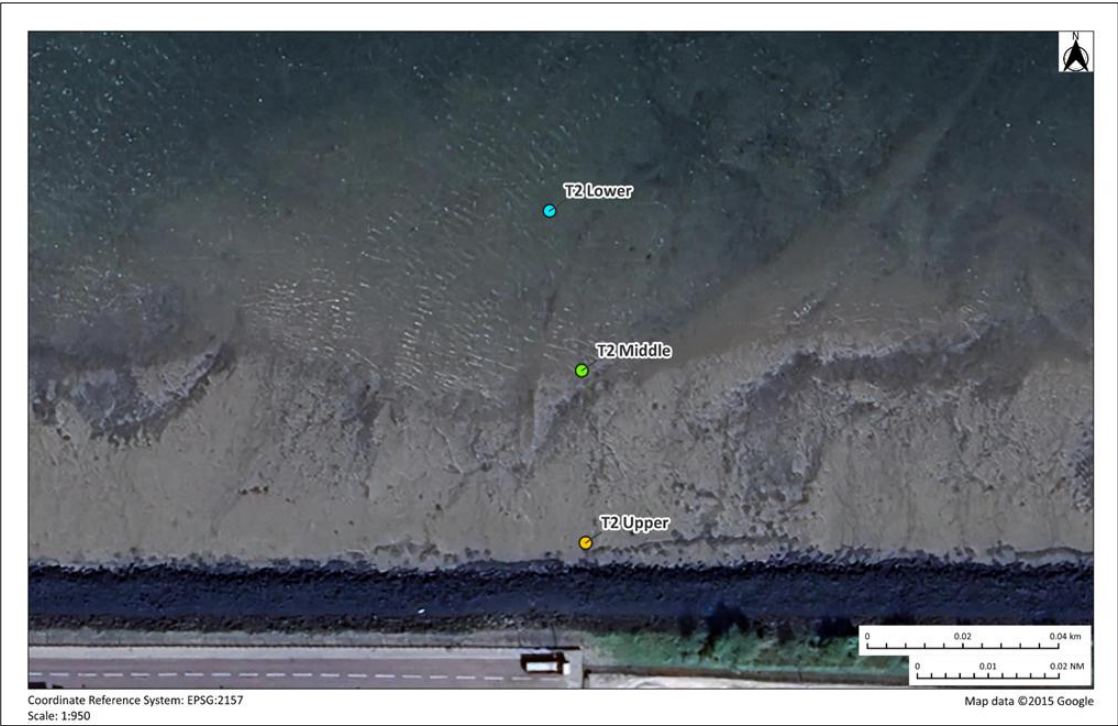


Figure 3-5. Intertidal Transect 2 station locations.

3.5.1.2.3 Drop-Down Video (DDV) Survey:

On the 24th of July 2024, 27 drop-down video (DDV) recordings were carried out in the vicinity of the proposed development at Ringaskiddy. A high-resolution drop-down video system was deployed at 27 locations to characterise the flora and fauna in the area. AQUAFAC T adhered to NMBAQC and JNCC guidelines for the best practice acquisition of video stills imaging of benthic substrata and epibenthic species.



Figure 3-6. Drop Down Video locations Ringaskiddy

3.5.1.2.4 Beam Trawl Survey:

Beam trawl surveys were undertaken on the 27th of June and the 22nd of July 2024 in the vicinity of Ringaskiddy. The survey utilised a two-metre-wide beam trawl equipped with a tickler chain and an 11 mm, which was towed at a speed of 1.5 to 2.5 knots from the A-frame at the stern of a vessel. Seven trawls were undertaken near the project area to collect data on fish species and other marine organisms.

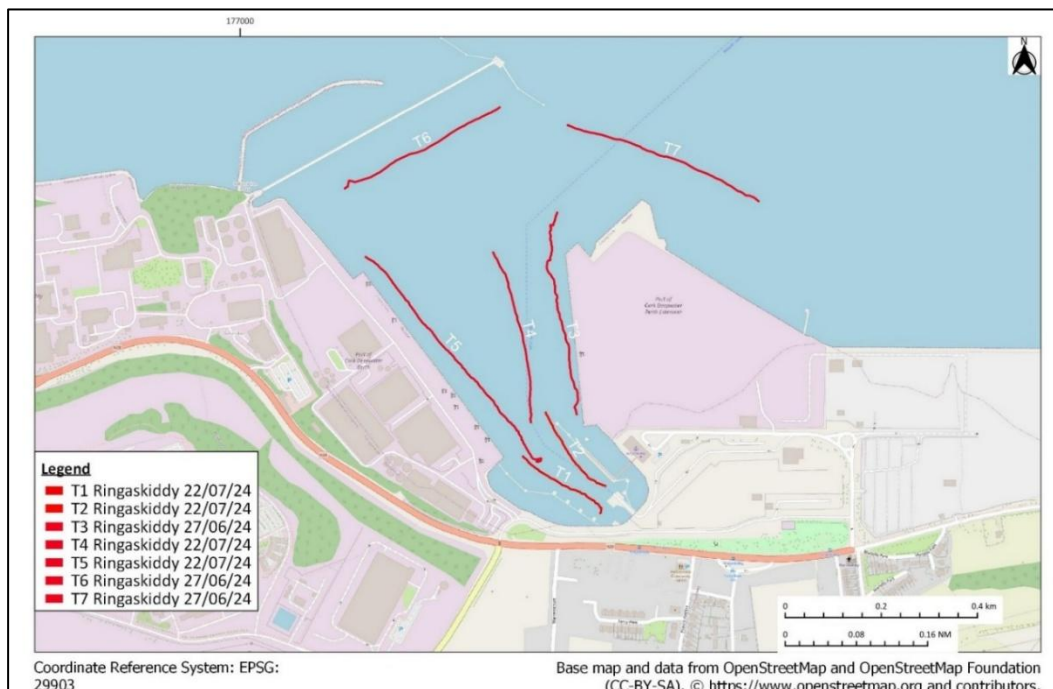


Figure 3-7. Location of trawl survey tracks (T1 to T7) for Ringaskiddy on the 27th of June and the 22nd of July 2024.

3.5.1.2.5 Marine Mammal Observations:

Over five days between the 22nd of July 2024 and the 1st of August 2024, qualified observers carried out marine mammal monitoring to assess activity and potential impacts on these species. The assessment of potential impacts is based on observations conducted during five surveys between July and August 2024 for the proposed development. Monitoring involved five land-based vantage point (VP) watches was used to describe the use of the site by marine mammals, as well as their distribution and relative abundance.

[3.5.2] Ornithology

[3.5.2.1] Wintering Bird Survey

Flynn Furney Environmental Consultants produced the Wintering and Breeding Bird Survey Report for 2023/2024 on behalf of POCC for proposed works at Ringaskiddy Port adjacent to the current proposed MUL area. The Wintering Bird survey methodology was based on that used by the British Trust for Ornithology’s (BTO) Wetland Bird Survey (WeBS) and the Irish Wetland Bird Survey (I-WeBS).

These surveys were conducted from three vantage points: Monkstown, Ringaskiddy and Rocky Island. The Wintering Bird Survey was conducted monthly from October 2023 to March 2024.

1. High Tide Waterbird Counts were undertaken within two hours either side of high tide, to record the distribution, numbers and behaviours of waterbirds the survey area during high tide conditions; and
2. Low Tide Waterbird Counts were undertaken within two hours either side of low tide, to record the distribution, numbers and behaviours of waterbirds within the survey area during low tide conditions.
3. In May 2024, a further count area (Count Area 4) was added at Rocky Island, facing east towards Spike Island.
4. Within each count area, all waterbirds seen were recorded and dominant behaviours noted as either feeding (F) or engaged in other activity such as roosting, resting, washing or preening (R). Birds moving through the area only are indicated with (M). Note, gulls were not recorded in the Breeding Bird Survey (May-August).
5. Birds flying over were ignored unless they subsequently went onto land within the survey area.
6. Equipment used: 20-60 zoom scope, 7X42 binoculars, tripod.

[3.5.2.2] Breeding Bird Survey

Flynn Furney Environmental Consultants produced the Breeding Wetland Bird Survey Report for 2023/2024 on behalf of POCC. The survey methodology was based on that used by the British Trust for Ornithology's (BTO) Wetland Bird Survey (WeBS) and the Irish Wetland Bird Survey (I-WeBS).

These surveys were conducted from three vantage points: Monkstown, Ringaskiddy and Rocky Island. The Breeding Bird Surveys were conducted monthly May 2024 to August 2024.

1. High Tide Waterbird Counts were undertaken within two hours either side of high tide, to record the distribution, numbers and behaviours of waterbirds the survey area during high tide conditions; and
2. Low Tide Waterbird Counts were undertaken within two hours either side of low tide, to record the distribution, numbers and behaviours of waterbirds within the survey area during low tide conditions.
3. In May 2024, a further count area (Count Area 4) was added at Rocky Island, facing east towards Spike Island.
4. Within each count area, all waterbirds seen were recorded and dominant behaviours noted as either feeding (F) or engaged in other activity such as roosting, resting, washing or preening (R). Birds moving through the area only are indicated with (M). Note, gulls were not recorded in the Breeding Bird Survey (May-August).

5. Birds flying over were ignored unless they subsequently went onto land within the survey area.
6. Equipment used: 20-60 zoom scope, 7X42 binoculars, tripod.

[3.6] Assessment of Likelihood of Significant Effects

In assessing the likelihood of the occurrence of significant effects, the logic is as follows:

- The conditions necessary for a significant effect are considered.
- The likelihood of that effect is assessed, considering the process/emission magnitude, duration, timing and frequency, as well as the connectivity with the proposed project site and the sensitivity of the QI/SCI to the process/emission in question.

The below definitions are relevant at this Stage 1 Appropriate Assessment Screening stage:

- Likely Significant Effect - Where a plan or project is likely to undermine any of the site's conservation objectives.
- Possible Significant Effect - Where a plan or project has an indicated potential to undermine any of the site's conservation objectives but where doubt exists about the risk of a significant effect in the current context. Nevertheless, where doubt exists about the risk of a significant effect, use of the precautionary principle requires this effect to be considered appropriately within the Article 6 assessment process.

[4] Results

[4.1] Marine Ecology

The full marine ecology report prepared by Aquafact on behalf of Ayesa is shown in Appendix C of this report.

[4.1.1] Drop Down Video (DDV) observations:

The predominant habitat types across these locations consisted of relatively homogeneous, featureless muddy sands. Occasionally, fish and crabs were observed on the sediment surface. This habitat type was classified as the Infralittoral Sandy Mud habitat complex [SS.SMu.ISaMu], following the JNCC guidelines. The video evidence supported the conclusions drawn from faunal and granulometric assessments conducted during the grab survey at the time, which also identified the same habitat type within the Ringaskiddy Basin.

[4.1.2] Intertidal Survey Benthic Fauna Results

Transect 1 had previously been surveyed in 2012. This location is situated to the south of the training wall and north of the ADM jetty. The upper shore rock armour along the training wall has a zonation typical of hard substrates in this sheltered muddy mid estuarine location. Sloping stable boulders in the supralittoral has a community of yellow and grey lichens including *Xanthoria parietina*, *Caloplaca marina*, and *Hydropunctaria maura* (formerly *Verrucaria maura*). This can be classified as the JNCC biotope 'LR.FLR.Lic.YG – Yellow and grey lichens on supralittoral rock' (EUNIS code B3.111) (Tyler-Walters, 2016). This band transitions into a narrow upper rocky shore biotope characterised by *Pelvetia canaliculata* and *Fucus spiralis* ('LR.LLR.F.Fspi – *Fucus spiralis* on sheltered upper eulittoral rock' (EUNIS code A1.312)(Perry, 2015)). This biotope then transitions into a band dominated by *Ascophyllum nodosum* and *Vertebrata lanosa* with some *Ulva* spp. ('LR.LLR.F.Asc.FS – *Ascophyllum nodosum* on full salinity mid eulittoral rock' (EUNIS code A1.3141)(Perry & Hill, 2020)).

Beneath the ADM jetty there is an extensive area of mussel bed that was previously recorded in the 2008 and 2014 surveys and remains relatively unchanged since the last surveys. This mussel bed can be classified as 'LS.LBR.LMus.Myt.Mu - *Mytilus edulis* beds on littoral mud' (EUNIS code A2.7213)(Tillin & Mainwaring, 2018).

Transect 2 was not surveyed in 2012 due to access issues. This transect is located along the quay wall to the east of the proposed 160m quay wall extension and to the west of the bridge at Paddy's Point. The location was chosen as a representative intertidal location downstream from the proposed extension and likely to be influenced by the proposed works. Figure 15-8 illustrates the locations of the intertidal faunal grab stations. The upper shore rock armour along the quay wall has a similar as Transect 1. Sloping stable boulders in the supralittoral has a community of yellow and grey lichens including *Xanthoria parietina*, *Caloplaca marina*, and *Hydropunctaria maura* (formerly *Verrucaria maura*). ('LR.FLR.Lic.YG – Yellow and grey lichens on supralittoral rock' (EUNIS code B3.111). This band transitions into a narrow upper rocky shore biotope characterised by *Pelvetia canaliculata* and *Fucus spiralis* ('LR.LLR.F.Fspi – *Fucus spiralis* on sheltered upper eulittoral rock' (EUNIS code A1.312)). This biotope then transitions into a band dominated by *Ascophyllum nodosum* and *Vertebrata lanosa* with some *Ulva* spp. ('LR.LLR.F.Asc.FS – *Ascophyllum nodosum* on full salinity mid eulittoral rock' (EUNIS code A1.3141)).

[4.1.3] Subtidal Survey Benthic Fauna Results

The subtidal benthic infauna survey at 13 subtidal stations in Ringaskiddy recorded 99 taxa and 1,918 individuals across 8 phyla, with 64 taxa identified to species level. Station (St.)12 was not possible to sample due to the presence of large boulders. Four taxa accounted for over 55% of the faunal abundance: the bivalve Mytilidae juvenile (319 individuals, 16.63% abundance) and the polychaetes *Melinna palmata* (292 individuals, 15.22% abundance), *Nephtys* spp (damaged) (229 individuals, 11.94% abundance), and Ampharetidae (damaged) (222 individuals, 11.54% abundance).

Univariate statistical analyses were carried out on the station-by-station faunal data. The same data set used above for the univariate analyses was also used for the multivariate analyses.

[4.1.4] Intertidal Survey Sediment Results

The intertidal sediment types ranged from muddy sand to gravelly muddy sand, with the highest levels of medium sand at T2 Lwr, fine sand at T2 Mid, and silt-clay at T1 Upp. Organic content varied, with higher values typically associated with finer sediments. The sediment composition is shown in full in the accompanying Marine Benthic Ecology Report.

[4.1.5] Intertidal Biotopes

The initial intertidal walkover survey documented the biotopes present on the rock armour in the upper shore of the transect locations. These included 'LR.FLR.Lic.YG – Yellow and grey lichens on supralittoral rock', 'LR.LLR.F.Fspi – *Fucus spiralis* on sheltered upper eulittoral rock', and LR.LLR.F.Asc.FS – *Ascophyllum nodosum* on full salinity mid eulittoral rock'. In addition, an area of mussel beds that was identified in the previous surveys in the vicinity of the ADM jetty was again recorded in the present survey. This biotope can be classified as LS.LBR.LMus.Myt.Mu - *Mytilus edulis* beds on littoral mud'.

Multivariate analysis of the faunal samples revealed a clear divide between the stations within the inner Ringaskiddy harbour area and those outside. The stations within the inner harbour area can be classified as a mosaic of the JNCC biotopes 'SS.SMu.IFIMu.CerAnit *Cerastoderma edule* with *Abra nitida* in infralittoral mud' and 'SS.SSa.IMuSa.SsubNhom *Spisula subtruncata* and *Nephtys hombergii* in shallow muddy sand. The stations surveyed outside of the inner harbour area were classified as 'SS.SMu.ISaMu.MelMagThy *Melinna palmata* with *Magelona* spp. and *Thyasira* spp. in infralittoral sandy mud'.

There are full descriptions of the biotope types recoded on the Marine Biological Association MarLIN website. The sensitivities of these biotopes to various pressures (Physical, Chemical, Biological, and Hydrological) are well understood and each biotope is assessed on the Resistance, Resilience, and Sensitivity of a variety of activities that could impact on them. The proposed dredging activities have the most potential to impact on the biotopes identified. Dredging may result in light siltation (deposition of less than 5cm depth), heavy siltation (deposition of greater than 30cm depth) and/or removal of the substrate by extraction.

[4.1.6] Beam trawl survey results:

The beam trawl survey revealed a diverse array of finfish, with Plaice (*Pleuronectes platessa*) recorded in many transects, particularly in T5. Sand Goby (*Pomatoschistus minutus*) was the most abundant species overall, especially in T1. Other notable species included Reticulated Dragonet (*Callionymus reticulatus*), most prevalent in T5, and Dover Sole (*Solea solea*), a

commercially important species favouring soft, sandy substrates. Transects T1 and T5 showed high species diversity and abundance, demonstrating the ecological value of these areas.

Invertebrate Findings: A total of 965 individual invertebrates were recorded, representing over 20 species. Harbour Crab (*Polybius depurator*) was the most frequently captured, followed closely by Green Crab (*Carcinus maenas*). Brown Shrimp (*Crangon crangon*) was also abundant. Species diversity varied across transects, with T7 showing the highest diversity. The survey provided valuable insight into the invertebrate populations, with crabs and shrimp dominating the catches.

Key invertebrate species like Green Crab and Brown Shrimp were measured for size distribution. Green Crab carapace widths clustered around 20 mm, 40 mm, and 45 mm, while most Brown Shrimp measured between 30-45 mm, indicating a predominance of mid-sized individuals in the population. The full survey results can be seen in the accompanying Fisheries report.

[4.1.7] MMO Survey Conclusion:

The 2024 Marine Mammal Observer surveys provide a robust baseline for the assessment of marine mammals present within the proposed development area. Of note, there is a greater number of harbour seal (*Phoca vitulina*) recorded within the area than previously noted in the 2014 EIS, with the greatest number of species found in one haul-out location adjacent to the port jetty. Grey seal (*Halichoerus grypus*) and otter (*Lutra lutra*) were also recorded during the 2024 surveys showing their presence in the proposed development area. Notably, a range of seabirds were recorded as incidental species, indicating the use of the area for foraging and commuting purposes for these species

[4.2] Wintering and Breeding Birds

Various different species of bird were recorded during the wintering and breeding season between October 2023 – August 2024. These results are shown in full in the Ringaskiddy Wintering & Breeding Wetland Bird Survey Report 2023/2024 prepared by Flynn Furney Environmental Consultants (See Appendix B).

The following tables show the bird counts recorded from the Flynn Furney wintering and breeding bird surveys in 2023/2024. Counts are shown in both High and Low tide times. 'R' refers to roosting birds and 'F' refers to foraging birds:

[4.2.1.1] Wintering and Breeding Bird Survey Results 2023/2024

Various different species of bird were recorded during the wintering and breeding season between October 2023 – August 2024. These results are shown in full in the Ringaskiddy Wintering & Breeding Wetland Bird Survey Report 2023/2024 prepared by Flynn Furney Environmental Consultants (See Appendix B).

The following tables show the bird counts recorded from the Flynn Furney wintering and breeding bird surveys in 2023/2024. Counts are shown in both High and Low tide times. 'R' refers to roosting birds and 'F' refers to foraging birds:

4.2.1.1.1 Wintering Bird Survey Results

Table 4-1. Wintering Bird Survey Results – October 2023

Species	October 2023 - Wintering					
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						
Black Guillemot						
Black-headed Gull	72 R	39 R	37 R	16 R		46 R
Black-tailed Godwit					41 R	
Brent Goose						
Common Gull	4 R	5 R	5 R	2 R		3 R
Common Tern						
Cormorant	43 R	29 R	12 R	7 R	334 R	65 R
Curlew		2 F		4 R	1 F	31 F
Dunlin				25 F		
Great Black-backed Gull	8 R	4 R	1 R	5 R	1 R	1 R
Great Crested Grebe					1R	
Greenshank	1 R	1 F		3 F	9 R	3 F
Grey Heron	2 R	7 F	2 R	5 F	17 R	30 R
Herring Gull	13 R	28 R	3 R	11 R	5 R	3 R
Lapwing						
Lesser Black-backed Gull	1 R	8 R			5 R	3 R
Little Egret	1 F	2 F	1 F	1 F	6 R	4 F
Mallard	4 R	28 R			17 R	5 R
Mediterranean Gull						1 R
Mute Swan	1 R	7 R		1 R	1 R	
Oystercatcher		8 F	1 F	19 F	7R	7 F
Red-breasted Merganser						
Redshank	2 F	2 F		3 F	5 F	68 F
Sandwich Tern						
Shag	2 R	2 R	6 R	8 R		
Shelduck						
Snipe						
Teal					23 R	53 R
Turnstone	3 F			4 F	2 F	
Whimbrel						
Other						
Common Sandpiper	1 R	1 F	1 F			
Ringed Plover				20 F		

Table 4-2. Wintering Bird Survey Results – November 2023

Species	November 2023 - Wintering					
	1. Ringaskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						
Black Guillemot			1 F			
Black-headed Gull	92 R	126 R	8 R	19 F	28 R	41 F
Black-tailed Godwit					5 R	33 F
Brent Goose						
Common Gull		2 R		3 F	2 R	
Common Tern						
Cormorant	85 R	19 R	1 F	6 F	91 R	15 R
Curlew	1 R	2 F		3 F	12 R	21 F
Dunlin	9 R					97 F
Great Black-backed Gull	5 R	1 R	2 R	3 F	2 R	
Great Crested Grebe					1 F	1 F
Greenshank	2 R	1 R		2 F	2 F	4 F
Grey Heron	2 F	7 R	1 R	6 F	5 R	9 F
Herring Gull	1 R	8 F		9 F	3 R	
Lapwing						5 R
Lesser Black-backed Gull	1 R	2 R			2 R	1 R
Little Egret	1 R					3 F
Mallard	8 R	46 R			67 R	5 R
Mediterranean Gull						
Mute Swan	7 R	6 R	2 R			
Oystercatcher		7 F		29 F	14 R	12 F
Red-breasted Merganser				2 R		
Redshank	17 R	4 F		5 F	3 F	57 F
Sandwich Tern						
Shag		1 R	6 R	2 R	2 R	
Shelduck	1 R				7 R	15 F
Snipe	8 R			2 F		5 F
Teal					56 R	78 R
Turnstone					11 F	
Whimbrel						
Common Sandpiper	1 R	1 R	1 R	2 F		
Ringed Plover				1 F		
Great Northern Diver					1 F	

Table 4-3. Wintering Bird Survey Results – December 2023

Species	December 2023 - Wintering					
	1. Ringaskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						2 F
Black Guillemot						
Black-headed Gull	193 R	258 F	1 R	2 R	17 R	119 F
Black-tailed Godwit		20 F			58 R	38 F
Brent Goose		19 F		9 F	5 F	
Common Gull					1 R	3 F
Common Tern						
Cormorant	2 R	62 R	2 F	3 F	169 R	31 R
Curlew		2 F		1 F	8 F	13 F
Dunlin						56 F
Great Black-backed Gull	5 R	2 R	2 R	2 R	1 R	3 R
Great Crested Grebe						
Greenshank		1 F	1 F	1 R	4 F	2 F
Grey Heron		5 F	1 R	4 R	21 R	7 F
Herring Gull	36 R	26 F		15 R	4 R	6 F
Lapwing						
Lesser Black-backed Gull	2 R	2 R		1 R	2 R	3 F
Little Egret			1 R	1 F	1 F	
Mallard	3 R	67 R			79 R	23 R
Mediterranean Gull						
Mute Swan	6 R	5 R	2 F	2 R		
Oystercatcher		7 F	1 F	3 F	2 F	8 R
Red-breasted Merganser					3 F	1 R
Redshank		2 F			2 F	64 F
Sandwich Tern						
Shag	1 F	1 R	1 F	5 R	6 R	
Shelduck	3 R	3 F			17 R	15 F
Snipe						
Teal		1 R			91 R	63 F
Turnstone					7 F	
Whimbrel						
Other						

Table 4-4. Wintering Bird Survey Results – January 2024

Species	January 2024 - Wintering					
	1. Ringaskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						
Black Guillemot			3 F		2 F	
Black-headed Gull	197 R	322 R	1 R	36 R	67 R	24 F
Black-tailed Godwit		35 F				112 F
Brent Goose						
Common Gull		28 R	1 R	67 F		26 R
Common Tern						
Cormorant	5 F	29 F	2 F	2 F	426 R	37 R
Curlew		3 F		4 F	6 F	13 F
Dunlin						23 F
Great Black-backed Gull	3 R	5 R	2 R	4 R	2 R	2 R
Great Crested Grebe						
Greenshank	3 R	2 F	1 F	2 F	3 F	2 F
Grey Heron	2 R	5 F		5 F	11 R	17 R
Herring Gull	41 R	53 R	4 R	24 F	2 R	9 F
Lapwing						
Lesser Black-backed Gull	4 R	6 R		2 R	3 F	4 R
Little Egret		2 F			1 F	1 F
Mallard	2 R	87 R			29 F	6 F
Mediterranean Gull		2 R				
Mute Swan		4 R				
Oystercatcher		7 F		29 F		3 F
Red-breasted Merganser						
Redshank	1 R	3 F		2 F	7 F	62 F
Sandwich Tern						
Shag			2 F	2 F		
Shelduck		10 F			26 F	27 F
Snipe						
Teal					53 F	109 F
Turnstone					6 F	5 F
Whimbrel						
Other						
Great Northern Diver			1 F			
Common Sandpiper				1 F		

Table 4-5. Wintering Bird Survey Results – February 2024

Species	February 2024 - Wintering					
	1. Ringaskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						4 F
Black Guillemot						
Black-headed Gull	243 R	82 R	9 R	5 R	49 R	139 R
Black-tailed Godwit					27 R	127 F
Brent Goose		34 F				
Common Gull	61 R	29 R	2 R	13 R	1 R	102 R
Common Tern						
Cormorant	109 R	86 R	4 F	3 F	407 R	11 R
Curlew		4 F		2 F	8 R	16 F
Dunlin						
Great Black-backed Gull	4 R	3 R	3 R	1 R	5 R	
Great Crested Grebe						
Greenshank		1 F	1 F		3 F	5 F
Grey Heron	2 R	4 R			23 R	8 R
Herring Gull	51 R	23 R	3 R	11 R	39 R	9 R
Lapwing				12 R		
Lesser Black-backed Gull	18 R	5 R	1 R		2 R	5 F
Little Egret						
Mallard	3 R	19 R			38 R	6 F
Mediterranean Gull	1 R				1 R	
Mute Swan	2 F	3 F				1 F
Oystercatcher		2 F	3 R	3 F		2 F
Red-breasted Merganser						
Redshank		1 F	5 F		3 F	64 F
Sandwich Tern						
Shag	1 R		1 R	4 R		
Shelduck					12 R	12 F
Snipe						
Teal					98 R	144 F
Turnstone						2 F
Whimbrel	1 F					
Other						
Common Sandpiper	1 R			1 R		
Ringed Plover						

Table 4-6. Wintering Bird Survey Results – February 2024

Species	March 2024 - Wintering					
	1. Ringaskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						
Black Guillemot						
Black-headed Gull	1 R	1 F				7 F
Black-tailed Godwit		26 F			97 R	550+ F
Brent Goose	2 R				2 F	
Common Gull	41 R	7 F				19 F
Common Tern						
Cormorant	2 F	3 F	1 F		69 R	13 R
Curlew		2 F				8 F
Dunlin						
Great Black-backed Gull	3 R		2 R			2 R
Great Crested Grebe						
Greenshank					1 R	5 F
Grey Heron	2 R	3 F	1 R		6 R	8 R
Herring Gull	5 R	12 F			2 R	
Lapwing						
Lesser Black-backed Gull		1 F				1 R
Little Egret					2 R	
Mallard	19 R	13 R			7 R	
Mediterranean Gull						
Mute Swan						
Oystercatcher		5 F				6 F
Red-breasted Merganser						
Redshank						31 F
Sandwich Tern						
Shag	2 R		1 R			
Shelduck		1 F			5 R	2 R
Snipe						
Teal					13 R	9 R
Turnstone						
Whimbrel						
Other						
Common Sandpiper	1 R	1 R				
Sandwich Tern	1 R					

4.2.1.1.2 Breeding Bird Results

Table 4-7. Breeding Bird Survey Results – May 2024

Species	May 2024 - Breeding							
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek		4. Spike Island	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit								
Black Guillemot							2 F	
Black-headed Gull								
Black-tailed Godwit								
Brent Goose								
Common Gull								
Common Tern	16 R	19 R	4 F	5 F	5 F	12 F	5 F	3 F
Cormorant	10 R	3 R	2 F	1 F	2 F	9 R	2 F	
Curlew								
Dunlin								
Great Black-backed Gull								
Great Crested Grebe								
Greenshank								
Grey Heron	1 R	5 F	1 R	2 F	1 R	3 F	1 R	1 R
Herring Gull								
Lapwing								
Lesser Black-backed Gull								
Little Egret						1 F		
Mallard	4 R	29 R	2 F	2 F	11 R	2 R		3 F
Mediterranean Gull								
Mute Swan		1 R						
Oystercatcher		2 F	4 M			8 F	4 R	4 R
Red-breasted Merganser								
Redshank								
Sandwich Tern								
Shag				1 R	1 R	2 R	1 F	
Shelduck					2 R	5 F		
Snipe								
Teal								
Turnstone								
Whimbrel								
Other								
Ringed Plover				2 F			3 F	

Table 4-8. Breeding Bird Survey Results – June 2024

Species	June 2024 - Breeding							
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek		4. Spike Island	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit								
Black Guillemot								
Black-headed Gull								
Black-tailed Godwit								
Brent Goose								
Common Gull								
Common Tern	15 F	13 F	3 F	8 F	6 F	11 F	2 F	5 F
Cormorant	5 R	9 R	1 F	2 F	7 R	13 R	10 R	6 R
Curlew					5 F	12 F	2 M	1 F
Dunlin								
Great Black-backed Gull								
Great Crested Grebe								
Greenshank						4 F	1 R	
Grey Heron	2 R	2 F	1 R	2 F	11 R	9 F		2 F
Herring Gull								
Lapwing								
Lesser Black-backed Gull								
Little Egret					1 F	1 F		
Mallard		1 R			9 R			
Mediterranean Gull								
Mute Swan	3 F	1 R	6 R		2 F			
Oystercatcher		3 F		4 F		7 F	7 R	2 F
Red-breasted Merganser								
Redshank								
Sandwich Tern								
Shag			2 R	3 R			1 R	
Shelduck					7 R	7 F	2 R	
Snipe								
Teal								
Turnstone				2 F				
Whimbrel								
Other								
Ringed Plover				2 F				
Sandwich Tern						1 R		

Table 4-9. Breeding Bird Survey Results – July 2024

Species	July 2024 - Breeding							
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek		4. Spike Island	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit								
Black Guillemot								
Black-headed Gull								
Black-tailed Godwit						1 F		
Brent Goose								
Common Gull								
Common Tern	26 R	21 R	4 F	12	6 F	8 F		2 M
Cormorant	23 R	15 R	1 R		36 R	12 R	1 F	7 R
Curlew		1 F		2		8 F		2 F
Dunlin								
Great Black-backed Gull								
Great Crested Grebe								
Greenshank		1 F				1 F		
Grey Heron	2 R	6 F		3	11 R	11 R		1 F
Herring Gull								
Lapwing								
Lesser Black-backed Gull								
Little Egret		1 F			5 R	3 R		1 F
Mallard	28 R	11 F			2 F	1 F		
Mediterranean Gull								
Mute Swan		2 R				1 F		
Oystercatcher		9 F		3	17 R	9 F	2 R	6 F
Red-breasted Merganser								
Redshank					1 F			
Sandwich Tern								
Shag	1 R			1	2 R			
Shelduck								
Snipe								
Teal								
Turnstone								
Whimbrel								
Other								
Common Sandpiper		2 R		1				
Ringed Plover				2				

Table 4-10. Breeding Bird Survey Results – August 2024

Species	August 2024 - Breeding							
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek		4. Spike Island	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit								
Black Guillemot								
Black-headed Gull								
Black-tailed Godwit				8 F		4 F		
Brent Goose								
Common Gull								
Common Tern						6 F	1 F	
Cormorant	2 F	16 R	3 F	3 F	148 R	43 R	2 R	17 R
Curlew	1 R	1 F		6 F		7 F		5 F
Dunlin								
Great Black-backed Gull								
Great Crested Grebe								
Greenshank	4 R					7 F	1 F	
Grey Heron	1 R	6 F	1 R	5 F	2 R	5 R		3 F
Herring Gull								
Lapwing								
Lesser Black-backed Gull								
Little Egret	1 R			1 F	7 R			
Mallard	14 R	2 F			19 R	4 F		
Mediterranean Gull								
Mute Swan								
Oystercatcher	25 R	29 F		42 F	2 R	4 F	1 M	27 F
Red-breasted Merganser								
Redshank						51 F		
Sandwich Tern		1 M				2 F	3 F	
Shag	1 F	2 F		2 R		3 R	4 R	3 F
Shelduck								
Snipe								
Teal								
Turnstone								
Whimbrel							1 F	
Other								
Gannet			1 M					
Ringed Plover				33 F				

[5] Screening of likely impacts

[5.1] Sources of Likely Significant Effects

The following sections hereunder consider whether the construction phase of the proposed development works could cause 'likely significant effects' on the qualifying features of the Natura 2000 site(s), alone or in-combination with other plans/projects. The proposed development site does not overlap or encroach on the boundaries of any Natura 2000 sites or other protected habitats, but there is direct hydrological connectivity between the site and Natura 2000 sites nearby. It is therefore required to assess any potential negative impacts on habitats and/or SCI species for which the Natura 2000 sites are designated.

[5.1.1] Sources

[5.1.1.1] Transport of Water Borne Contaminants

The distance travelled by water-borne contaminants is influenced by a number of factors, some of which are listed below:

- Magnitude of contaminant release;
- Particle size of sediment;
- Flow velocity;
- Morphology of the receiving waterbody – rocks, vegetation, meanders etc. provide opportunities for the attenuation of contaminants, and may also create localised areas of low flow, such that some sediment can fall out of suspension; and
- Solubility of contaminant.

[5.1.1.2] Sediment

SI works can result in sediment influx into adjacent areas, which can have various negative environmental effects. This is particularly concerning when rivers, streams or marine habitats are the potential receptors of sediment run-off influxes. Although sedimentation is a natural process that forms a key component of nutrient transfer between terrestrial and marine habitats, excessive sedimentation can result in is the alteration of water quality, as sediment can reduce water clarity, affect water quality through nutrient influx, disrupt algal growth, and result in the deterioration of habitats for marine mammals, fish and other marine fauna, and potentially have medium to long-term effects on nearby QI habitats.

The proposed SI works primarily includes boreholes to sample seabed sediment and/or bedrock at Cork Harbour. The proposed SI works will result in the disturbance of benthic sediments within the marine environment. Additionally, the proposed works may include the use of floating vessels (i.e. construction/work barges) with outboard motors, which may additionally result in the disturbance of marine sediments in the immediate area of the proposed site.

Given the tidal nature of Cork Harbour, this sediment could then be transported into upper areas of the harbour towards Great Island Channel SAC as well as other protected sections of Cork Harbour that are designated for protection under Cork Harbour SPA.

[5.1.1.3] Hydrocarbons & Toxic Contaminants

Hydrocarbon spills into the adjacent marine ecosystem can have severe negative environmental effects. Sources of hydrocarbons include fuels, hydraulic fluids and oils from borehole machinery and drilling platforms (i.e. barges). Hydrocarbon spills are particularly toxic to biota, including aquatic fauna such as fish, crustaceans, amphibians and mammals. Hydrocarbon spills can affect the physical and chemical properties of water, leading to significant changes in water quality, which can result in the death of aquatic plants and fauna.

Hydrocarbon spills/precipitation into the marine ecosystem will result in deterioration of water quality, including low dissolved oxygen and altered pH, resulting in aquatic fauna die-offs. The toxins from hydrocarbon spills can also accumulate in the food chain, causing harmful effects on animals that consume contaminated water or soil. Unlike suspended sediment, which (depending on particle size) can drop out of solution in areas of reduced flow velocities, petroleum-range hydrocarbons are largely insoluble in water and will float on the surface, thereby allowing for greater potential for extended transport within the marine environment.

[5.1.1.4] Noise and Vibration

Noise and vibration effects are generally associated with the use of borehole machinery and drilling platforms/barges. Borehole drilling machinery can produce high levels of noise that can cause significant disturbance to local fauna such as seabirds, fish, marine turtles, and marine mammals. Vibration emissions from borehole drilling can similarly impart negative effects to marine fauna, as well as the disturbance of prey items such as fish, crustaceans and benthic invertebrates. Moreover, underwater noise and vibration emissions can interfere with the foraging behaviour and communication of marine mammals and subsequently cause them to vacate the affected habitats or become stressed, ultimately affecting their survival.

Primary sources of noise and vibration effects will emanate from borehole drilling activities, particularly rotary coring borehole drilling activities and the associated machinery.

The de facto daytime noise limit, as recommended by most local authorities in Ireland, is a sound pressure level (SPL) of 55 decibels (dB) (see British Standard BS 5228:2009+A1:2014). Although the Cork Harbour berths commercial and recreational vessels, elevated noise and vibration emissions emanating from construction works have the potential to affect marine fauna.

[5.2] Pathways

[5.2.1] Direct Impacts

The proposed works site does not overlap any Natura 2000 sites. However, the works area is located in Cork Harbour, which contains several areas that are designated for protection under Cork Harbour SPA (Natura 2000 Site). The nearest of these designated areas is 600 metres west of the proposed works.

[5.2.2] Hydrology

There is a clear hydrological link between the project site and Cork Harbour SPA. This could potentially result in this Natura 2000 Site becoming negatively impacted on by the proposed project activities via sediment and/or hydrocarbon transportation.

There is potential for indirect alteration of habitats outside of but hydrologically linked to the survey site. Potential for indirect species disturbance/displacement due to in-situ or ex-situ habitat loss/alteration impacts, impairment of water quality and/or impacts on prey availability.

Great Island Channel SAC is located approximately 5 km north of the proposed site near the inner sections of Cork Harbour. This Natura 2000 site is also hydrologically connected to the project site. Given the tidal nature of the harbour, Great Island Channel SAC could potentially be impacted on by any unmitigated sediment and/or hydrocarbon run-off that may occur from the proposed works.

[5.2.3] Noise emissions (above and below water)

There is potential for direct species disturbance/displacement impacts due to survey activity including fugitive noise emissions from machinery and human activity.

Cork Harbour SPA also contains various different bird species, many of which are SCIs (Species of Conservation Interest) for this Natura 2000 Site. These birds may be susceptible to noise emissions from the proposed works. Noise emissions from the works could deter these birds away from typically foraging, roosting or nesting areas of the harbour where they typically thrive.

Ex-situ bird and mammal species may also enter the Cork Harbour from other surrounding Natura 2000 Sites to forage. These species may also be impacted on by potential water contamination and/or noise impacts.

[5.3] Receptors

The potential and likelihood of impacts from the proposed development works to nearby Natura 2000 sites is assessed below. Habitats and species detailed in Natura 2000 sites identified as sites that are likely to receive impacts from the proposed development are provided in the sections hereunder. Additionally, any sensitive/protected species/habitats within the immediate vicinity of the proposed works have also been considered.

The aim of this AA Screening is to assess potential impacts on QIs and SCIs of Natura 2000 Sites from the proposed works that are located within the Zol.

[6] Screening of Likely Significant Effects to European Sites

The potential for likely significant effects on the following Natura 2000 sites in the absence of any mitigation, individually or cumulatively with other plans or projects are assessed below.

The European sites listed below have been identified where the potential impacts from the proposed activities are within the Zone of Influence (ZOI) of the sites, where a Source-Pathway-Receptor (SPR) link exists and given the nature, extent and duration of the activities and the conservation objectives of the European sites.

- Cork Harbour SPA [004030]
- Great Island Channel SAC [001058]
- Ballycotton Bay SPA [004022]
- Sovereign Islands SPA [004124]
- Ballymacoda Bay SPA [004023]
- Courtmacsherry Bay SPA [004219]
- Hook Head SAC [000764]
- Roaringwater Bay and Islands SAC [000101]

[6.1.1] Special Protection Areas (SPA)

[6.1.1.1] Cork Harbour SPA 004030

The Site Synopsis and Conservation Objectives for the site are available on <https://www.npws.ie/protected-sites/spa/004030>. This SPA is of high conservation value for the QI habitats and/or Species of Conservation Interest (SCIs) shown in Table 6-1 below.

Significant effects to the below SCIs may include habitat loss, population decreases or significant decrease in the range, timing or intensity of habitat use by species, other than that occurring from natural patterns of variation.

Increased sediment load from the works site could alter the conditions of habitats at Cork Harbour SPA and therefore has potential to result in significant effects to the SCI species that utilise those habitats.

The contamination of aquatic habitats common in the SPA (e.g., estuaries and mudflats) with petrochemicals from construction and operational vehicles may lead to the accumulation of toxic compounds in prey items (e.g., fish, invertebrates, molluscs and aquatic plants) and thus bioaccumulation in the bird species of Special Conservation Interest at the SPA. Bioaccumulation of toxic compounds may cause morbidity or mortality of individuals.

A number of activities can result in disturbance, including visual and noise. Disturbance can cause sensitive species, such as birds, to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

Table 6-1. Likelihood of significant effects to the SCIs of Cork Harbour SPA

Special Conservation Interests [004030]	Comments	Screening Determination
Little Grebe (<i>Tachybaptus ruficollis</i>) [A004]	<ul style="list-style-type: none"> Forages in sheltered coasts and estuaries for insects, larvae and small fish. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Great Crested Grebe (<i>Podiceps cristatus</i>) [A005]	<ul style="list-style-type: none"> Occasionally forages in estuaries and on the shoreline for fish, but also small crustaceans, small frogs and newts. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Cormorant (<i>Phalacrocorax carbo</i>) [A017]	<ul style="list-style-type: none"> Often forages on rocky shores, coastal lagoons and estuaries for fish. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Grey Heron (<i>Ardea cinerea</i>) [A028]	<ul style="list-style-type: none"> Forages in any watery habitat shallow enough for wading. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Shelduck (<i>Tadorna tadorna</i>) [A048]	<ul style="list-style-type: none"> Commonly forages in coastal areas for invertebrates, small shellfish and aquatic snails. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Wigeon (<i>Anas penelope</i>) [A050]	<ul style="list-style-type: none"> Typically forages aquatic plants, grasses, roots in wetland and marine habitats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In

Special Conservation Interests [004030]	Comments	Screening Determination
Teal (<i>Anas crecca</i>) [A052]	<ul style="list-style-type: none"> In winter, typically forages seeds and small invertebrates in brackish waters and even in sheltered inlets and lagoons along the seashore. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Pintail (<i>Anas acuta</i>) [A054]	<ul style="list-style-type: none"> During winter, often forages in sheltered estuaries and coastal lagoons, primarily on plant material including seeds and rhizomes of aquatic plants. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Shoveler (<i>Anas clypeata</i>) [A056]	<ul style="list-style-type: none"> Forages for small insects and plant matter in wetlands habitats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Red-breasted Merganser (<i>Mergus serrator</i>) [A069]	<ul style="list-style-type: none"> Commonly forages for fish in coastal waters. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	<ul style="list-style-type: none"> Often forages for mussels and cockles in estuaries and rocky shores. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. Increased sedimentation could lead to reduced shellfish recruitment and thus reduced prey availability (Wilbur and Clarke 2001). Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Golden Plover (<i>Pluvialis apricaria</i>) [A140]	<ul style="list-style-type: none"> During migration often forages in estuaries for worms, beetles and insects. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In

Special Conservation Interests [004030]	Comments	Screening Determination
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	<ul style="list-style-type: none"> Often forages for shellfish and worms on beaches and tidal flats. Shellfish and worms. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Lapwing (<i>Vanellus vanellus</i>) [A142]	<ul style="list-style-type: none"> Often forage in wetlands and intertidal habitats for worms and insects. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Dunlin (<i>Calidris alpina</i>) [A149]	<ul style="list-style-type: none"> Primarily forages in coastal habitats for molluscs, worms and crustaceans. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	<ul style="list-style-type: none"> Often forages in muddy estuaries in winter for invertebrates, but also aquatic plants. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Curlew (<i>Numenius arquata</i>) [A160]	<ul style="list-style-type: none"> Typically forages for worms, shellfish and shrimps in estuaries, mudflats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Redshank (<i>Tringa totanus</i>) [A162]	<ul style="list-style-type: none"> Forages for insects, earthworms, molluscs and crustaceans in mudflats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Black-headed Gull (<i>Chroicocephalus</i>)	<ul style="list-style-type: none"> Typically forages intertidal habitats for worms, insects, fish and carrion. Consumption of prey items contaminated with 	Screened In

Special Conservation Interests [004030]	Comments	Screening Determination
<i>ridibundus</i>) [A179]	<p>petrochemicals could lead to morbidity or mortality of individuals.</p> <ul style="list-style-type: none"> An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	
Common Gull (<i>Larus canus</i>) [A182]	<ul style="list-style-type: none"> Typically forages intertidal habitats for worms, insects, fish and carrion. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]	<ul style="list-style-type: none"> Opportunistic feeders who forage a variety of food (fish, insects, crustaceans, worms, starfish, molluscs, seeds, berries, small mammals, eggs, small birds, chicks, scraps, offal, and carrion) in marine and wetland habitats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Common Tern (<i>Sterna hirundo</i>) [A193]	<ul style="list-style-type: none"> Typically feed far from nest sites in marine habitats however may sometimes forage large rivers or coastal areas for fish. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Nationally important breeding population at Cork Harbour SPA. However, breeding primarily occurs on artificial structures, (e.g., mooring 'dolphins'), which are concentrated around the port at Ringaskiddy (RPS, 2014). Therefore, there is unlikely to be any disturbance to breeding sites from construction works. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Wetland and Waterbirds [A999]	<ul style="list-style-type: none"> An influx of sediment or petrochemicals from the site could negatively alter the conditions of the wetland habitats within this site. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In

[6.1.1.2] Ballycotton Bay SPA 004022

The Site Synopsis and Conservation Objectives for the site are available on <https://www.npws.ie/protected-sites/spa/004022>. This SPA is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCI) shown in Table 6-2 below.

Birds can have large foraging ranges, with some species, particularly marine birds, traveling hundreds or even thousands of kilometers to find food. The size of a bird's foraging range depends on factors like species, breeding phase, colony size, and the availability of food. Therefore, given the close proximity of Ballycotton Bay SPA (19 km straight line distance), many of the SCI bird species listed here are likely to also be foraging in the Cork Harbour area.

Significant effects to the below SCIs may include habitat loss, population decreases or significant decrease in the range, timing or intensity of habitat use by species, other than that occurring from natural patterns of variation.

Increased sediment load from the works site could alter the conditions of habitats at Cork Harbour and therefore has potential to result in significant effects to the SCI species that utilise those habitats.

The contamination of aquatic habitats common in Cork Harbour (e.g., estuaries and mudflats) with petrochemicals from construction and operational vehicles may lead to the accumulation of toxic compounds in prey items (e.g., fish, invertebrates, molluscs and aquatic plants) and thus bioaccumulation in the bird species of Special Conservation Interest at the SPA. Bioaccumulation of toxic compounds may cause morbidity or mortality of individuals.

A number of activities can result in disturbance, including visual and noise. Disturbance can cause sensitive species, such as birds, to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

Table 6-2. Likelihood of significant effects to the QIs of Ballycotton Bay SPA

Special Conservation Interests [004022]	Comments	Significant Effect Likely
Teal (<i>Anas crecca</i>) [A052]	<ul style="list-style-type: none"> Teal in Ireland typically forage within a short distance, generally around 3 kilometers, from their resting spots during the winter, though they can travel further to find food like seeds, grains, and aquatic plants (BTO, 2025). No source-pathway-receptor connectivity, the project site is beyond foraging ranges of these species 	Screened Out
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]	<ul style="list-style-type: none"> Foraging distances for plovers in Ireland vary, with breeding golden plovers in the UK foraging up to 4 km from the nest, and a core range often cited as around 3 km. However, exceptional distances up to 11 km are possible (Dr Maeve Flynn, 2024) No source-pathway-receptor connectivity, the project site is beyond foraging ranges of these species 	Screened Out
Golden Plover (<i>Pluvialis apricaria</i>) [A140]	<ul style="list-style-type: none"> Foraging distances for plovers in Ireland vary, with breeding golden plovers in the UK foraging up to 4 km from the nest, and a core range often cited as around 3 km. 	Screened Out

Special Conservation Interests [004022]	Comments	Significant Effect Likely
	<p>However, exceptional distances up to 11 km are possible (Dr Maeve Flynn, 2024)</p> <ul style="list-style-type: none"> No source-pathway-receptor connectivity, the project site is beyond foraging ranges of these species 	
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	<ul style="list-style-type: none"> Foraging distances for plovers in Ireland vary, with breeding golden plovers in the UK foraging up to 4 km from the nest, and a core range often cited as around 3 km. However, exceptional distances up to 11 km are possible (Dr Maeve Flynn, 2024) No source-pathway-receptor connectivity, the project site is beyond foraging ranges of these species 	Screened Out
Lapwing (<i>Vanellus vanellus</i>) [A142]	<ul style="list-style-type: none"> Lapwings don't typically travel long distances to forage, but instead, they forage in areas near their breeding or roosting sites. Foraging trips are generally short, especially when they are raising young, but they will move further afield if they need to find new foraging grounds, and this can be up to 5.7km away in some documented cases (Birdwords, 2025). No source-pathway-receptor connectivity, the project site is beyond foraging ranges of these species 	Screened Out
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	<ul style="list-style-type: none"> Data suggests that godwits can move up to 15-20 km for foraging, though they are highly mobile within their main sites. Studies on species like the Bar-tailed Godwit show they are mobile within a bay and utilize a range of nearby sites (Tara Adcock, 2021) Often forages in muddy estuaries in winter for invertebrates, but also aquatic plants. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	<ul style="list-style-type: none"> Data suggests that godwits can move up to 15-20 km for foraging, though they are highly mobile within their main sites. Studies on species like the Bar-tailed Godwit show they are mobile within a bay and utilize a range of nearby sites (Tara Adcock, 2021) Often forages in muddy estuaries in winter for invertebrates, but also aquatic plants. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Curlew (<i>Numenius arquata</i>) [A160]	<ul style="list-style-type: none"> Curlews in Ireland generally do not travel long distances to forage, as they typically find food within or near their breeding and non-breeding sites. They forage in their 	Screened In

Special Conservation Interests [004022]	Comments	Significant Effect Likely
	<p>immediate habitat, which includes bogs, wet grasslands, and lightly grazed pastures (Birdwatch Ireland, 2025)</p> <ul style="list-style-type: none"> 	
Turnstone (<i>Arenaria interpres</i>) [A169]	<ul style="list-style-type: none"> • Turnstones in Ireland forage close to their roosting sites on rocky shores and coastlines, but may forage up to 15-20km away, especially during migration or when seeking food. They primarily feed on small invertebrates, insects, and crustaceans, using their wedge-shaped bills to flip stones, shells, and seaweed (Aquafact, 2020). • Often forages for Sandhoppers & other marine invertebrates. Also, fish carrion washed up on shore. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • Increased sedimentation could lead to reduced shellfish recruitment and thus reduced prey availability (Wilbur and Clarke 2001). • Winters all around the Irish coast 	Screened In
Common Gull (<i>Larus canus</i>) [A182]	<ul style="list-style-type: none"> • Common gulls have a maximum foraging range of about 50 km from their nest during the breeding season, but individual trips are typically shorter, averaging between 11.7 and 14.3 km from the colony (Garthe <i>et al.</i>, 2022) • Typically forages intertidal habitats for worms, insects, fish and carrion. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]	<ul style="list-style-type: none"> • With average ranges around 72 km from their breeding colonies. During the breeding season, they forage on average 19.5 km for marine and 14.9 km for terrestrial trips, but can travel much further, sometimes up to 175.5 km offshore (Thaxter <i>et al.</i>, 2012) • Opportunistic feeders who forage a variety of food (fish, insects, crustaceans, worms, starfish, molluscs, seeds, berries, small mammals, eggs, small birds, chicks, scraps, offal, and carrion) in marine and wetland habitats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Wetland and Waterbirds [A999]	<ul style="list-style-type: none"> • No source-pathway-receptor connectivity 	Screened Out

[6.1.1.3] Sovereign Islands SPA 004124

The Site Synopsis and Conservation Objectives for the site are available on <https://www.npws.ie/protected-sites/spa/004124>. This SPA is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCIs) shown in Table 6-3 below.

Birds can have large foraging ranges, with some species, particularly marine birds, traveling hundreds or even thousands of kilometers to find food. The size of a bird's foraging range depends on factors like species, breeding phase, colony size, and the availability of food. Therefore, given the close proximity of Sovereign Islands SPA (19 km straight line distance), SCI bird species listed here are likely to also be foraging in the Cork Harbour area.

Significant effects to the below SCIs may include habitat loss, population decreases or significant decrease in the range, timing or intensity of habitat use by species, other than that occurring from natural patterns of variation.

Although minor, increased sediment load from the works site could alter the conditions of habitats at Cork Harbour and therefore has potential to result in significant effects to the SCI species that utilise those habitats.

The contamination of aquatic habitats common in Cork Harbour (e.g., estuaries and mudflats) with petrochemicals from construction and operational vehicles may lead to the accumulation of toxic compounds in prey items (e.g., fish, invertebrates, molluscs and aquatic plants) and thus bioaccumulation in the bird species of Special Conservation Interest at the SPA. Bioaccumulation of toxic compounds may cause morbidity or mortality of individuals.

A number of activities can result in disturbance, including visual and noise. Disturbance can cause sensitive species, such as birds, to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

Table 6-3. Likelihood of significant effects to the QIs of Sovereign Islands SPA

Special Conservation Interests [004124]	Comments	Significant Effect Likely
Cormorant (<i>Phalacrocorax carbo</i>) [A017]	<ul style="list-style-type: none"> • Often forages on rocky shores, coastal lagoons and estuaries for fish. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In

[6.1.1.4] Ballymacoda Bay SPA 004023

The Site Synopsis and Conservation Objectives for the site are available on <https://www.npws.ie/protected-sites/spa/004023>. This SPA is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCI) shown in Table 6-4 below.

Birds can have large foraging ranges, with some species, particularly marine birds, traveling hundreds or even thousands of kilometers to find food. The size of a bird's foraging range

depends on factors like species, breeding phase, colony size, and the availability of food. Ballymacoda Bay SPA is a 27 km straight line distance from the proposed MUL area in Ringaskiddy.

Significant effects to the below SCIs may include habitat loss, population decreases or significant decrease in the range, timing or intensity of habitat use by species, other than that occurring from natural patterns of variation.

Although minor, increased sediment load from the works site could alter the conditions of habitats at Cork Harbour and therefore has potential to result in significant effects to the SCI species that utilise those habitats.

The contamination of aquatic habitats common in Cork Harbour (e.g., estuaries and mudflats) with petrochemicals from construction and operational vehicles may lead to the accumulation of toxic compounds in prey items (e.g., fish, invertebrates, molluscs and aquatic plants) and thus bioaccumulation in the bird species of Special Conservation Interest at the SPA. Bioaccumulation of toxic compounds may cause morbidity or mortality of individuals.

A number of activities can result in disturbance, including visual and noise. Disturbance can cause sensitive species, such as birds, to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

Table 6-4. Likelihood of significant effects to the QIs of Ballymacoda Bay SPA

Special Conservation Interests [004023]	Comments	Screening Determination
Sanderling (<i>Calidris alba</i>)	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Turnstone (<i>Arenaria interpres</i>) [A169]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Wigeon (<i>Anas penelope</i>) [A050]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Teal (<i>Anas crecca</i>) [A052]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Golden Plover (<i>Pluvialis apricaria</i>) [A140]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Lapwing (<i>Vanellus vanellus</i>) [A142]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Dunlin (<i>Calidris alpina</i>) [A149]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out

Special Conservation Interests [004023]	Comments	Screening Determination
Curlew (<i>Numenius arquata</i>) [A160]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Redshank (<i>Tringa totanus</i>) [A162]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Wetlands and Waterbirds [A999]	No source-pathway-receptor connectivity	Screened Out
Common Gull (<i>Larus canus</i>) [A182]	<ul style="list-style-type: none"> • Common gulls have a maximum foraging range of about 50 km from their nest during the breeding season, but individual trips are typically shorter, averaging between 11.7 and 14.3 km from the colony (Garthe <i>et al.</i>, 2022) • Typically forages intertidal habitats for worms, insects, fish and carrion. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • Located within foraging range of this species. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183]	<ul style="list-style-type: none"> • With average ranges around 72 km from their breeding colonies. During the breeding season, they forage on average 19.5 km for marine and 14.9 km for terrestrial trips, but can travel much further, sometimes up to 175.5 km offshore (Thaxter <i>et al.</i>, 2012) • Opportunistic feeders who forage a variety of food (fish, insects, crustaceans, worms, starfish, molluscs, seeds, berries, small mammals, eggs, small birds, chicks, scraps, offal, and carrion) in marine and wetland habitats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident in Ireland. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In

[6.1.1.5] Old Head of Kinsale SPA 004021

The Site Synopsis and Conservation Objectives for the site are available on <https://www.npws.ie/protected-sites/spa/004021>. This SPA is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCI) shown in Table 6-5 below.

Birds can have large foraging ranges, with some species, particularly marine birds, traveling hundreds or even thousands of kilometers to find food. The size of a bird's foraging range depends on factors like species, breeding phase, colony size, and the availability of food. Old Head of Kinsale SPA is a 29 km straight line distance from the proposed MUL area in Ringaskiddy.

Significant effects to the below SCIs may include habitat loss, population decreases or significant decrease in the range, timing or intensity of habitat use by species, other than that occurring from natural patterns of variation.

Although minor, increased sediment load from the works site could alter the conditions of habitats at Cork Harbour and therefore has potential to result in significant effects to the SCI species that utilise those habitats.

The contamination of aquatic habitats common in Cork Harbour (e.g., estuaries and mudflats) with petrochemicals from construction and operational vehicles may lead to the accumulation of toxic compounds in prey items (e.g., fish, invertebrates, molluscs and aquatic plants) and thus bioaccumulation in the bird species of Special Conservation Interest at the SPA. Bioaccumulation of toxic compounds may cause morbidity or mortality of individuals.

A number of activities can result in disturbance, including visual and noise. Disturbance can cause sensitive species, such as birds, to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

Table 6-5. Likelihood of significant effects to the QIs of Old Head of Kinsale SPA

Special Conservation Interests [004121]	Comments	Significant Effect Likely
Kittiwake (<i>Rissa tridactyla</i>) [A188]	<ul style="list-style-type: none"> • Kittiwakes in Ireland can forage up to a mean of 55 km, with some foraging trips extending to a mean of 156 km and a maximum recorded distance of 770 km from their breeding sites during the breeding season. This variation is influenced by individual and colony-level factors (NPWS, 2024) • Kittiwakes primarily eat small fish, which they catch from the surface or just below, and also consume marine invertebrates like copepods, squid, and worms. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In
Guillemot (<i>Uria aalge</i>) [A199]	<ul style="list-style-type: none"> • Guillemots in Ireland will typically forage within 1 km of their colony or fly up to 7 km or more to reach the mainland coast. They are coastal feeders, so their foraging distances are constrained by their need to stay relatively close to shore (Scottish Wildlife Trust, 2025) 	Screened Out

[6.1.1.6] Courtmacsherry Bay SPA 004219

The Site Synopsis and Conservation Objectives for the site are available on <https://www.npws.ie/protected-sites/spa/004219>. This SPA is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCI) shown in Table 6-6 below.

Birds can have large foraging ranges, with some species, particularly marine birds, traveling hundreds or even thousands of kilometers to find food. The size of a bird's foraging range depends on factors like species, breeding phase, colony size, and the availability of food. Old Head of Kinsale SPA is a 31 km straight line distance from the proposed MUL area in Ringaskiddy.

Significant effects to the below SCIs may include habitat loss, population decreases or significant decrease in the range, timing or intensity of habitat use by species, other than that occurring from natural patterns of variation.

Although minor, increased sediment load from the works site could alter the conditions of habitats at Cork Harbour and therefore has potential to result in significant effects to the SCI species that utilise those habitats.

The contamination of aquatic habitats common in Cork Harbour (e.g., estuaries and mudflats) with petrochemicals from construction and operational vehicles may lead to the accumulation of toxic compounds in prey items (e.g., fish, invertebrates, molluscs and aquatic plants) and thus bioaccumulation in the bird species of Special Conservation Interest at the SPA. Bioaccumulation of toxic compounds may cause morbidity or mortality of individuals.

A number of activities can result in disturbance, including visual and noise. Disturbance can cause sensitive species, such as birds, to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

Table 6-6. Likelihood of significant effects to the QIs of Courtmacsherry Bay SPA

Special Conservation Interests [004219]	Comments	Screening Determination
Great Northern Diver (<i>Gavia immer</i>)	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Shelduck (<i>Tadorna tadorna</i>) [A048]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Wigeon (<i>Anas penelope</i>) [A050]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Red-breasted Merganser (<i>Mergus serrator</i>) [A069]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Golden Plover (<i>Pluvialis apricaria</i>) [A140]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Lapwing (<i>Vanellus vanellus</i>) [A142]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Dunlin (<i>Calidris alpina</i>) [A149]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out

Special Conservation Interests [004219]	Comments	Screening Determination
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Curlew (<i>Numenius arquata</i>) [A160]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Wetlands and Waterbirds [A999]	No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	Screened Out
Common Gull (<i>Larus canus</i>) [A182]	<ul style="list-style-type: none"> • Common gulls have a maximum foraging range of about 50 km from their nest during the breeding season, but individual trips are typically shorter, averaging between 11.7 and 14.3 km from the colony (Garthe <i>et al.</i>, 2022) • Typically forages intertidal habitats for worms, insects, fish and carrion. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality. 	Screened In

[6.1.2] Special Area of Conservation (SAC)

[6.1.2.1] Great Island Channel SAC 001058

The Site Synopsis and Conservation Objectives for the site are available at <https://www.npws.ie/protected-sites/sac/001058>. This SAC is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCI) shown in Table 6-7 below.

This SAC is located <5 km north of the proposed works area (straight line and fluvial distance).

Significant effects to the below QIs at Great Island Channel SAC may include habitat loss, disruption of the natural community composition/distribution, or alterations to the physical or vegetive structure.

Increased sediment load from the development site could negatively alter the conditions of mudflats, sandflats or Atlantic salt meadows. Petrochemical contamination from construction/operational vehicles may cause morbidity or mortality of species important to the community complex in these habitats (i.e., macroinvertebrates in mud/sandflats and aquatic plant species in Atlantic salt meadows). Thus, the community distribution in both habitats and

the physical and vegetative structure of the Atlantic salt meadows may be negatively impacted by the development.

Table 6.7 comments on the likelihood of significant effects to QIs of the Great Island Channel SAC and gives a rationale for each case.

Table 6-7. Likelihood of significant effects to the QIs of Great Island Channel SAC

Qualifying Interests [001058]	Comments	Screening Determination
Habitats		
Mudflats and sandflats not covered by seawater at low tide [1140]	<ul style="list-style-type: none"> An influx of sediment from the project site could negatively alter the condition of these mudflats and sandflats. Contamination by petrochemicals or heavy sedimentation may cause morbidity or mortality of polychaete/oligochaete community complex, the sustenance of which is identified as a conservation objective of the SAC. 	Screened In
Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330]	<ul style="list-style-type: none"> Contamination by oils or petrochemicals may lead to plant morbidity or death and thus the vegetation structure and composition may be negatively affected. Increased sediment deposition may lead to an increase in the area available for colonisation by saltmarsh vegetation. 	Screened In

[6.1.2.2] Hook Head SAC 000764

The Site Synopsis and Conservation Objectives for the site are available at <https://www.npws.ie/protected-sites/sac/000764>. This SAC is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCI) shown in Table 6-8 below.

This SAC is located 92 km (straight line distance) east of the project site.

Significant effects to the below QIs at Hook Head SAC may include disruption of foraging marine mammals from this SAC.

Table 6-8 comments on the likelihood of significant effects to QIs of the Hook Head SAC and gives a rationale for each case.

Table 6-8. Likelihood of significant effects to the QIs of Hook Head SAC

Qualifying Interests [000764]	Comments	Screening Determination
Large shallow inlets and bays [1160]	Too far removed from the project site to be impacted on by hydrocarbons, sedimentation or noise impacts.	Screened Out
Reefs [1170]	Too far removed from the project site to be impacted on by hydrocarbons, sedimentation or noise impacts.	Screened Out
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	Too far removed from the project site to be impacted on by hydrocarbons, sedimentation or noise impacts.	Screened Out
<i>Tursiops truncatus</i> (Common)	A bottlenose dolphin would likely travel from the Hook Head SAC to Cork Harbour to forage, as both are part of a broader network	Screened In

Qualifying Interests [000764]	Comments	Screening Determination
Bottlenose Dolphin) [1349]	<p>of habitats used by transient dolphins in Ireland. Cork Harbour is an established, albeit occasional, foraging and transit area for bottlenose dolphins, particularly mother/calf pairs, and the journey between the two areas for feeding is plausible.</p> <p>Bottlenose dolphins do not have a fixed foraging distance, as it depends on factors like prey availability and water depth, and can range from very small areas to traveling up to 100 km (62 miles) a day. They search for prey in specific, smaller "hotspots," such as areas where prey is concentrated by currents, or near human activity, and can be found both inshore and offshore (Moreno and Mathews, 2018).</p> <p>Underwater noise impacts from survey activities may impact these species in the area.</p>	
<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	<p>A harbour porpoise would likely travel from the Hook Head SAC to Cork Harbour to forage, as they undertake seasonal movements related to food availability and are commonly found in coastal waters. These movements can include inshore travel in the summer to feed, and they may move north or south depending on prey distribution.</p> <p>Harbour porpoises have varied foraging distances, moving between approximately 14 and 59 km per day on average, with some individuals traveling much farther. Their movements can range from daily travel in the tens of kilometers to long-distance migrations of over 1,000 km. Their foraging is influenced by local food availability, with some staying within smaller core areas while others cover vast distances.</p> <p>Underwater noise impacts from survey activities may impact these species in the area.</p>	Screened In

[6.1.2.3] Roaringwater Bay and Islands SAC [000101]

The Site Synopsis and Conservation Objectives for the site are available at <https://www.npws.ie/protected-sites/sac/000764>. This SAC is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCI) shown in Table 6-9 below.

This SAQC is located 84km (straight line distance) south-west of the project site.

Significant effects to the below QIs at Roaringwater Bay and Islands SAC may include disruption of foraging marine mammals from this SAC.

Table 6.9 comments on the likelihood of significant effects to QIs of the Roaringwater Bay and Islands SAC and gives a rationale for each case.

Table 6-9. Likelihood of significant effects to the QIs of Roaringwater Bay and Islands SAC

Qualifying Interests [000101]	Comments	Significant Effect Likely
Large shallow inlets and bays [1160]	Too far removed from the project site to be impacted on by hydrocarbons, sedimentation or noise impacts.	Screened Out
Reefs [1170]	Too far removed from the project site to be impacted on by hydrocarbons, sedimentation or noise impacts.	Screened Out
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	Too far removed from the project site to be impacted on by hydrocarbons, sedimentation or noise impacts.	Screened Out
European dry heaths [4030]	Too far removed from the project site to be impacted on by hydrocarbons, sedimentation or noise impacts.	Screened Out
Submerged or partially submerged sea caves [8330]	Too far removed from the project site to be impacted on by hydrocarbons, sedimentation or noise impacts.	Screened Out
<i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	A harbour porpoise would likely travel from the Roaringwater Bay and Islands SAC to Cork Harbour to forage, as they undertake seasonal movements related to food availability and are commonly found in coastal waters. These movements can include inshore travel in the summer to feed, and they may move north or south depending on prey distribution. Underwater noise impacts from survey activities may impact these species in the area.	Screened In
<i>Lutra lutra</i> (Otter) [1355]	It is unlikely an otter would intentionally venture 100km from a Special Area of Conservation (SAC) in Ireland, as typical home ranges are much smaller. An otter's territory, even for males which have larger ranges, is a matter of kilometers, not tens of kilometers.	Screened Out
<i>Halichoerus grypus</i> (Grey Seal) [1364]	Grey seal screened out due to foraging range c.30km from haul-out site (Vincent et al. 2016), and tolerance to anthropogenic noise and activity (Anderwald et al. 2013)	Screened Out

[6.2] Cumulative and In-Combination Significant Effects

It is a requirement of Appropriate Assessment that the cumulative or in-combination effects of the proposed development together with other plans or projects are assessed. Cumulative impacts can be defined as a project/plan/program likely to have a significant effect on a European Site, either individually or in combination with other plans or projects. Considering the information presented in section 6, any project/plan/program which may generate sediment, contaminants, or noise and vibration emissions that may have the potential to have cumulative impacts from the proposed works to cause significant effects to European sites are considered here.

The following sources were consulted in order to determine if there were any other plans or projects in the area which could result in cumulative impacts:

- Cork County Development Plan, 2022-2028 <https://www.corkcoco.ie/en/cork-county-development-plan-2022-2028>

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- Cork County Council - Planning Enquiry System
<https://corkcocoour.maps.arcgis.com/apps/webappviewer/index.html?id=254568bc8931492eb72ab5446c411cb9>
- DHPLG EIA Portal <https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal>

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 2 km of the Proposed Development in the last three years has been undertaken to identify other plans and projects that may result in cumulative effects.

Table 6-10. Review of planning applications within 2 km of the development

Application Number	Description	Potential for In-Combination
N/A	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 Zol 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	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 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.	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, 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)	Indaver Ireland Limited Proposed development of a resource recovery	No potential for in-combination effects. The Natura Impact Statement for this development

An Bord Pleanála / Cork County Council	centre (including waste-to-energy facility)	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
224577	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	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	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.

[7] Screening Statement

The Screening exercise was completed in compliance with the relevant EC and national legislation and associated guidance. Article 42 (7) of the European Communities (Birds and Natural Habitats) Regulations 2011 states that: *“The public authority shall determine that an Appropriate Assessment of a plan or project is not required [...] if it can be excluded on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site.”*

The Screening exercise was completed in compliance with the relevant European Commission and national guidelines. Article 42 (7) of the European Communities (Birds and Natural Habitats) Regulations 2011 states that: *“The public authority shall determine that an Appropriate Assessment of a plan or project is not required [...] if it can be excluded on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site.”*

The potential impacts from the construction and post-construction stages of the project site have been considered in the context of the European Sites potentially affected and their Qualifying Interests/Special Conservation Interests.

Cork Harbour SPA, Ballycotton Bay SPA, Sovereign Islands SPA, Ballymacoda Bay SPA, Old Head of Kinsale SPA, Courtmacsherry Bay SPA, Great Island Channel SAC, Hook Head SAC and Roaringwater Bay and Islands SAC are at risk of indirect negative impacts from the proposed works. Mitigation cannot be accounted for at the screening stage of Appropriate Assessment to avoid these impacts. It has been concluded that the potential for significant effects to the above-mentioned Natura 2000 Sites cannot be ruled out and thus a Natura Impact Statement must be completed to progress this application.



Chapter B – Natura Impact Assessment (NIS)

[8] Introduction

Chapter A of this Report detailed the Appropriate Assessment (AA) Screening review.

This chapter (Chapter B) reports the detailed methodology followed for the Appropriate Assessment process for addressing possible impacts of the proposed works to Cork Harbour SPA, Ballycotton Bay SPA, Sovereign Islands SPA, Ballymacoda Bay SPA, Old Head of Kinsale SPA, Courtmacsherry Bay SPA, Great Island Channel SAC, Hook Head SAC and Roaringwater Bay and Islands SAC.

[8.1] Methodology for Stage 2: Appropriate Assessment (NIS)

In addition to the methodology employed at Stage 1 of the AA Screening process, further information on current site conditions was consulted to assess the impacts of the proposed works on the QI's and SCIs of Cork Harbour SPA, Ballycotton Bay SPA, Sovereign Islands SPA, Ballymacoda Bay SPA, Old Head of Kinsale SPA, Courtmacsherry Bay SPA, Great Island Channel SAC, Hook Head SAC and Roaringwater Bay and Islands SAC. See Section 2.1 for the Appropriate Assessment stage process.

[9] Appropriate Assessment of Screened In Natura 2000 Sites

As described in the screening report (Chapter A), the proposed works are located at the Port of Cork Ringaskiddy. Therefore, there is a clear hydrological pathway between the works and Cork Harbour (Cork Harbour SPA) and Great Island Channel (SAC).

Some bird species are highly mobile and have large foraging ranges. This includes some SCI bird species from Ballycotton Bay SPA, Sovereign Islands SPA, Ballymacoda Bay SPA, Old Head of Kinsale SPA and Courtmacsherry Bay SPA.

Several mammal species are also highly mobile and may enter Cork Harbour from other Natura 2000 Sites within 100 km to forage. This includes the Bottlenose Dolphin (*Tursiops truncatus*) and Harbour Porpoise (*Phocoena phocoena*) from Hook Head SAC and the Harbour Porpoise (*Phocoena phocoena*) from Roaringwater Bay and Islands SAC.

[9.1] Conservation Objectives of Screened in QIs/SCIs of Natura 2000 Sites

The following outlines the conservation objectives of screened in QIs and SCIs of Natura 2000 Sites assessed in this report. These conservation objectives were gathered from NPWS data available at <https://www.npws.ie/protected-sites>. This reference is cited alongside the titles of each of the below Natura 2000 Sites

1) Cork Harbour SPA (NPWS, 2014a)

The conservation objectives for SCI bird species of Cork Harbour SPA include:

- Population Trend: Long term population stable or increasing
- Distribution: No significant decrease in the range, timing or intensity of use of areas by little grebe, other than that occurring from natural patterns of variation
- Breeding population abundance: No significant decline
- Prey biomass available: No significant decline
- Barriers to connectivity: No significant decline
- Habitat Area: The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,587 hectares, other than that occurring from natural patterns of variation.

2) Great Island Channel SAC (NPWS, 2014b)

The conservation objectives for the Great Island Channel SAC are to maintain or restore the favourable conservation condition of its qualifying interests. These objectives specifically focus on two habitats: Mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows. Additionally, the SAC must maintain the favourable status of the Annex I bird species it supports, including Dunlin, Lapwing, Black-tailed Godwit, Redshank, and Golden Plover.

3) Ballycotton Bay SPA (NPWS, 2014c)

The main conservation objective for Ballycotton Bay SPA is to maintain the favourable conservation condition of its listed Special Conservation Interest species, which include a variety of waterbirds like Ringed Plover, and the wetland habitat it provides. This is defined by maintaining stable or increasing populations of these birds and ensuring the wetland area is stable and not significantly reduced, while preventing activities that could displace them or reduce their numbers.

4) Sovereign Islands SPA (NPWS, 2025a)

The main conservation objective for the Sovereign Islands SPA is to restore the favourable conservation condition of the Cormorant (*Phalacrocorax carbo*) population, which has shown a significant decline. The specific targets are to ensure the breeding population size is stable or increasing, and the productivity rate (number of fledged young per breeding pair) is sufficient to maintain a stable or increasing population.

5) Ballymacoda Bay SPA (NPWS, 2015)

The Common Gull (*Larus canus*) and Lesser Black-backed Gull (*Larus fuscus*) were the only two SCI species of this Natura 2000 Site that were screened in.

The conservation objectives for the Common Gull (*Larus canus*) in Ireland, where it is listed as a Special Conservation Interest (SCI) species, are to maintain or restore its "favourable conservation condition" in designated Special Protection Areas (SPAs). This involves ensuring the species' population is stable or increasing, maintaining its range and the timing/intensity of its use of habitats, and protecting the availability and stability of its wetland habitats.

The conservation objective for the Lesser Black-backed Gull (*Larus fuscus*), where it is listed as an SCI species, is to maintain or restore its populations and habitats to favourable conservation status, which involves ensuring population numbers are stable or increasing, the natural range is not reduced, and there is a sufficient and sustainable habitat to support the population long-term. Specific actions to achieve this include managing and protecting breeding and feeding sites, addressing threats like pollution and predation, and avoiding disturbance to avoid deterioration of habitats.

6) Old Head of Kinsale SPA (NPWS, 2025b)

The conservation objective for the Old Head of Kinsale SPA is to maintain the favourable conservation condition of its qualifying species: Kittiwake (*Rissa tridactyla*) and Guillemot (*Uria aalge*). This is achieved by ensuring the breeding population size is stable or increasing, and the species have sufficient breeding habitats and foraging resources to support the population targets.

7) Courtmacsherry Bay SPA (NPWS, 2014d)

The Common Gull (*Larus canus*) was the only SCI species of this Natura 2000 Site that was screened in.

The conservation objectives for the Common Gull (*Larus canus*) in Ireland, where it is listed as a Special Conservation Interest (SCI) species, are to maintain or restore its "favourable conservation condition" in designated Special Protection Areas (SPAs). This involves ensuring the species' population is stable or increasing, maintaining its range and the timing/intensity of its use of habitats, and protecting the availability and stability of its wetland habitats.

8) Hook Head SAC (NPWS, 2025c)

Bottlenose Dolphin (*Tursiops truncatus*) and Harbour Porpoise (*Phocoena phocoena*) are the only Qualifying Interests (QIs) of this SAC to be screened in.

The main conservation objective for bottlenose dolphins in the Hook Head SAC is to maintain them at "favourable conservation status," which includes ensuring their natural range and habitat are stable or increasing, their long-term survival, and the long-term viability of the population. Specific objectives focus on protecting the species and its habitat from significant negative impacts, particularly from human activities like noise, light, and pollution.

The conservation objectives for the harbour porpoise in Ireland are to maintain its "favourable conservation status," which means ensuring the population is viable, its natural range is not reduced, and there is sufficient habitat to support it. These general objectives are translated into site-specific targets for designated marine Special Areas of Conservation (SACs), which focus on attributes like population abundance, distribution, breeding occurrence, and habitat quality.

9) Roaringwater Bay and Islands SAC (NPWS, 2011)

The Harbour Porpoise (*Phocoena phocoena*) is the only Qualifying Interests (QI) of this SAC to be screened in.

The conservation objectives for the harbour porpoise in Ireland are to maintain its "favourable conservation status," which means ensuring the population is viable, its natural range is not reduced, and there is sufficient habitat to support it. These general objectives are translated into site-specific targets for designated marine Special Areas of Conservation (SACs), which focus on attributes like population abundance, distribution, breeding occurrence, and habitat quality.

[9.2] Assessment of Potential Significant Effects

[9.2.1] Characteristics of a Significant Effect

For an effect to be significant, its character, magnitude, duration, or intensity must be at a level that it alters a sensitive aspect of the environment. If a plan or project will have impacts on a Natura 2000 site, but these impacts will clearly not affect or undermine the site's conservation objectives, it is not considered that it will have a significant effect on the site concerned (DEHLG, 2010). The key determination to be made by the competent authority is, therefore, whether the project is 'capable of having an effect' and whether there is a possibility that the effect, or effects, in question will be significant. The level and significance of any putative effect also depend upon the existence of a plausible and functional source-pathway-receptor link between the proposed development and the relevant Natura 2000 sites.

When assessing impact, the QI or SCI for which the relevant Natura 2000 sites are selected, are only considered relevant where a credible or tangible source-pathway-receptor link exists between the plan or project, in this case the proposed programme of works (source) and the QI or SCI (receptor). For an impact to be transmitted from source to receptor there must be a risk initiated by:

- i. Source: the origin of potential impacts (e.g., near stream construction works at a proposed development site)
- ii. Pathway: how the effect reaches the receiving receptor (e.g., a watercourse which connects the proposed development site to the site designated for the protection of a receptor); and
- iii. Receptor: (e.g., a protected species, associated aquatic or riparian habitats). If the source, pathway, or receptor is absent, no linkage exists and thus, there will be no potential for an impact to be transmitted.

The purpose of an Appropriate Assessment carried out under Article 6(3) is to determine whether the impacts identified will have an adverse effect on the integrity of the relevant Natura 2000 sites. The focus is to determine whether the potential impacts identified as plausibly ensuing from the proposal will have adverse impacts on the Conservation Objectives of the sites selected.

The sections hereunder consider the QI and SCI habitats, and species identified in the preceding sections together with the potential impacts and determines whether the proposed programme of works is likely to have significant effects on the Natura 2000 sites selected for inclusion in this NIS.

The likelihood of significant adverse effects to a Natura 2000 site arising from the works was determined based on several indicators including:

- Habitat loss, alteration or degradation
- Water quality and resource
- Disturbance and/or displacement of species
- Habitat or species fragmentation

These indicators are used because any significant change, loss, disturbance or deterioration in the ecological structure and function of these indicators could affect the integrity of the Natura 2000 sites being considered and, thereby, the conservation objectives of said Natura 2000 sites.

[9.2.2] Potential Significant effects

[9.2.2.1] Habitat Loss, Alteration and Degradation

The proposed SI site is directly adjacent to the Cork Harbour SPA, ~600m to the Cork Harbour SPA boundary. The harbour forms a hydrological connection between the site and the SPA, with potential for increased sedimentation and suspended solids. Given the localised and temporary nature of works and because there is no overlap with the SPA, the proposed works will not directly impact on habitats through disturbance, land-take, or similar. The main pathway for sedimentation in the area will be tidal and current effects which may distribute disturbed sediment from the site for resettlement elsewhere.

The main source of potential disturbance or habitat loss is the benthic grab sampling, and geotechnical sampling.

For subtidal grab sampling, a 0.1 m² grab sample will be collected at each of the subtidal sampling stations. A single stove-pipe core (0.028m²) will be collected at each intertidal sample stations. Single Van Veen Grab is ideal for the collection of sediment samples for biological and environmental sampling. In a range of sizes (0.025m², 0.1m², 0.2m², 0.3m²) each model has a marine grade stainless steel bucket with hinged access flaps on the top allowing sub sampling of the collected sediment before it is emptied from the grab. The standard for this type of benthic faunal survey is 0.1m². Van Veen/other suitable methods will be used for soft sediments for quantitative benthic infauna analysis and for physio-chemical analysis.

A 0.1m² sample area is a standard practice used in many benthic sampling applications. The Hamon Grab is a box shaped sampling scoop mounted in a triangular frame. Upon contact with the seabed, tensioned wires are released, which causes the sampling bucket to pivot

through 90° pushing seabed sediment into the bucket. On completion of its travel the open end of the bucket comes against a rubber sealed steel plate which stops the sediment escaping during recovery. 0.1m² Hamon Grab refers to 0.1m² area of seabed sampled. The depth of scoop penetration is up to 20cm.

The boreholes will be left to collapse naturally following completion of drilling. Although these are invasive methods that will directly contact the seabed, the disturbance footprint is minimal considering the area of the site, and because no activity will occur within the Cork Harbour SPA.

Indirect effects from suspended sediment increase and re-deposition are also spatially limited. Any smothering would be a very thin layer within the vicinity of the sample locations due to the small volumes of sediment removed during sampling. However, as a matter of precaution mitigation measures are outlined in Section 9.3 to avoid potential impacts from borehole drilling on surrounding habitats that may occur from sediment and/or hydrocarbons.

[9.2.2.2] Water Quality and Resource

When any works are conducted within or in proximity to waterbodies, impairment of water quality may potentially occur because of accidental fuel/oil spills from machinery/equipment and the release of increased levels of sediment which may occur during drilling for geotechnical surveys. The benthic ecology and geotechnical surveys will result in minor disturbance to the seabed, which may cause an increase in suspended sediment concentrations resulting in an increase in turbidity in the water column. Drill cuttings have the potential to carry contaminants if left in situ. Vessels and equipment involved in the proposed surveys have the potential for pollution from spills or leaks of fuel and oil. There will be no use of surrounding waters for mechanical cooling, lubrication or similar, and there will be no discharge from the vessels.

During borehole drilling and grab sampling, temporary increases in turbidity and the localised suspension of fine sediments are expected to occur within the immediate area. These effects represent the primary pathway by which sediment disturbance may interact with the marine environment. Within the Harbour however, given the confined spatial extent of the SI footprint, the low-energy nature of the SI works, and the rapid tidal dispersion of suspended material, these effects are predicted to be short-lived and limited to the immediate vicinity of the works.

The wider coastal environment is already subject to natural variability in turbidity arising from tidal currents, storm events, and regular vessel traffic. The resuspended sediments from the works will rapidly disperse and settle under tidal influence.

Seabed disturbance drilling could result in a local increase in turbidity. Marine mammals often inhabit turbid environments, and many utilize acoustic techniques to communicate and navigate.

All vessels engaged in the works will comply with standard marine safety and environmental management procedures, including MARPOL (1973/78) and the Project Environmental Management Plan (PEMP) requirements. These controls include implementation of pollution prevention measures such as:

- Availability of spill response kits on all vessels.
- Refuelling only at designated locations under controlled conditions; and
- Immediate containment and clean-up procedures in the event of accidental release.

Given these measures, the likelihood of any significant hydrocarbon release is considered very low. Any minor spill that might occur would be localised and short-lived, with rapid natural dispersion facilitated by tidal flushing within Cork Harbour. Environmental persistence is therefore expected to be minimal.

Potential effects on bird and mammal are limited to potential short-term avoidance behaviour in the immediate vicinity of a spill event. No injury, mortality, or lasting disturbance is anticipated, as affected areas would rapidly recover through natural dispersion and dilution.

However, from a precautionary point of view, there is still a risk that without a programme of mitigation measures the proposed development may potentially result in adverse water quality impacts within Cork Harbour. Adverse water quality impacts, should they arise, could then exert impacts on aquatic/water-dependant habitats and species. This includes the bird species listed as SCIs of Cork Harbour SPA and the mudflats/sandflats and Atlantic salt meadows protected under Great Island Channel SAC. It also includes the bird and/or mammal species listed above that forage in Cork Harbour from outside SPAs/SACs including Ballycotton Bay SPA, Sovereign Islands SPA, Ballymacoda Bay SPA, Old Head of Kinsale SPA, Courtmacsherry Bay SPA, Hook Head SAC and Roaringwater Bay and Islands SAC.

Section 9.3, below, outlines a programme of mitigation measures designed to control and eliminate the point and diffuse pollution sources identified and to avoid, reduce or offset the potential adverse water quality impacts that might ensue because of the proposed works.

[9.2.2.3] Above Water Noise and Visual Disturbance – Birds

Disturbance to birds from noise can result in a variety of impacts and effects. Disturbance may affect birds by temporarily or permanently displacing them from a disturbed area, resulting effectively in habitat ‘loss’.

Depending on the importance of the affected area to a species, this may affect the local population size, for example if birds are displaced regularly or permanently from formerly preferred feeding/nesting areas. Disturbance may affect energy budgets – meaning that birds need to spend more time feeding to meet their energy needs (and during breeding the energy requirements of dependent offspring); and cause physiological stress.

Disturbed birds may face an increased predation risk and displacing breeding adults from nests can increase the risk of breeding failure. Noise disturbance may interfere with auditory communication between birds.

It has been shown that only sudden, extremely loud noises (>70 dB) have sufficient “startling power” to drive birds away for a significant amount of time (Spectrum Acoustic Consultants, 2012). Spectrum Acoustic Consultant’s study was carried out during drilling operations, which was found to have a maximum volume of 58 dB at a distance of 50 metres. Drilling wells is a very noisy business - the proposed works for this project are unlikely to produce comparable noise levels.

Sudden loud noises (or impulsive noises) tend to have the most significant impact on waterfowl species since they do not habituate to it in the same way as background ambient noise. Research suggests that birds may habituate to ambient noise below 70dB(A) whereas sudden irregular noises of above 50dB(A) may result in some level of disturbance (Cutts *et al.*, 2008).

In the estuarine environment, disturbance can manifest in a number of forms of varying severity depending on the nature, duration and intensity of the disturbance source; increased vigilance which interrupts a natural behaviour, temporary displacement where the bird moves away (without flying) before resuming normal behaviour, taking flight before returning to the vicinity

of the disturbance, and taking flight to leave the vicinity completely. Cutts et al. (2009) considered impacts to birds utilising the Humber Estuary in northeast England and summarised the general thresholds due to the potential effects of construction disturbance on birds. Noise levels up to 50 dB (decibels) are found to have no effect, whereas noise between 50 dB and 85 dB causes head turning, scanning behaviour, reduced feeding, and movement away to nearby areas. At levels above 85 dB, response includes preparing to fly away, flying away, and possibly leaving the area entirely. The authors in that study recommend that ambient construction noise levels should be restricted to below 70 dB. Birds will habituate to regular noise below this level (Cutts et al. 2009).

Another source of disturbance to waterbirds would be the activity and presence of human operators close to the shoreline. Waders using Mutton Island in Galway Bay were studied over a period of 5 years, during and after the construction of a major sewage treatment plant which was situated between 150 m and 200 m from a main high tide roost location for various waterbirds. The waders became more concentrated on the undeveloped part of the island but otherwise showed no negative effects of disturbance. Numbers of birds using the roost were higher towards the end of the period as human disturbance decreased due to controls on access to the island and because of a high wall around the construction site which screened construction workers from the birds (Nairn, 2005).

The proposed works will take place in the context of the many existing vessel movements that already occur in the Cork Harbour navigational channel daily. As discussed above, waterbirds are most frequently disturbed by unexpected movement or loud impulsive noise and often caused by people or dogs / dog walkers, rather than traffic including vessel traffic, which birds in the harbour may be habituated to through regular daily exposure.

Given the busy nature of Cork Harbour and shipping lane and the level of ambient noise already experienced at this site (Sutton et al. 2014), it is unlikely that the temporary presence of an additional vessel and its associated noise will result in significant disturbance/displacement impacts to the SCI bird species of Cork Harbour SPA, Ballycotton Bay SPA, Sovereign Islands SPA, Ballymacoda Bay SPA, Old Head of Kinsale SPA and Courtmacsherry Bay SPA.

[9.2.2.4] Below Water Noise and Disturbance – Birds

The potential for disturbance to birds from underwater noise has been identified as a potential risk. While birds in the harbour may be accustomed to above water ambient noise as outlined in Section 9.2.2.4, above, there are few studies regarding the effects of underwater noise on birds apart from seismic surveys (Hartley Anderson Limited, 2020) and one publication which suggests, based on known avian physiology and similarities drawn to human physiology, that hearing is not a useful sensory mechanism for birds (Dooling & Therrien, 2012).

However, considering the low availability of scientific evidence, the reduced hearing range of birds when compared to marine mammals, and the temporary, localised nature of the proposed works; but also considering the potential for hearing damage, a precautionary approach will be taken. Mitigating measures are proposed in Section 9.3.

[9.2.2.5] Disturbance to local breeding Common tern (*Sterna Hirundo*) populations

Since 2010, a sub-colony of terns has nested at Ringaskiddy, and this breeding site quickly became the largest in Cork Harbour. Unfortunately, for a number of years, chick survival at this nesting site became extremely low.

Although the proposed SI works are not located adjacent to this nesting site, it is possible that above and below water noise/vibration and visual disturbance may impact this local tern population in the absence of mitigation. Mitigating measures are proposed in Section 9.3.

[9.2.2.6] Underwater Noise and Disturbance – mammals

As previously mentioned, Hook Head SAC and Roaringwater Bay and Islands SAC have SCI marine mammal species that may travel as far as Cork harbour to forage. This includes *Phocoena phocoena* (Harbour Porpoise) and *Tursiops truncatus* (Common Bottlenose Dolphin).

The operation of SI plant and support vessels within Cork Harbour will generate underwater noise and vibration, primarily from engine and propeller activity and the drilling equipment itself.

Sound produced by drilling at 145 dB re: 1 mPa@1m will not elicit a behavioural response, temporary threshold shift (TTS) or permanent threshold shift (PTS) in marine mammals within the survey area according to the behavioural response criteria proposed by Southall et al. (2007). Sound from penetration testing although higher did not exceed thresholds likely to cause a significant effect even at close range not lead to TTS. In addition, the sound produced is intermittent and generated for short durations, resulting in minimal exposure periods.

The semi-enclosed nature of Cork Harbour, combined with the deeper entrance channel, will facilitate attenuation and rapid dispersion of underwater sound. Sound propagation will also be reduced by reflections from harbour structures and shallow bathymetry. As a result, noise energy is expected to dissipate rapidly, and the risk of amplification or prolonged exposure is low. Any temporary behavioural reactions from harbour porpoise, common dolphin, bottlenose dolphin, otters or seals are therefore anticipated to be localised and short-term, limited to minor avoidance of the immediate works area.

Vibration transmitted through the seabed during SI works is expected to be highly localised. Vibration levels are unlikely to be perceptible to marine fauna beyond the active works footprint. Noise and vibration effects will be temporary, occurring only during active surveying operations. Sound levels will revert to baseline conditions immediately after drilling/grab sampling ceases, consistent with those associated with normal harbour vessel activity.

Taking into account the low intensity, intermittent nature, and short duration of noise emissions, the potential risk of disturbance to marine mammal species from underwater noise or vibration is assessed as low to negligible.

[9.2.2.7] Habitat or Species Fragmentation

Habitat fragmentation has been defined as ‘reduction and isolation of patches of natural environment’ (Franklin et al., 2002) which results in spatial separation of habitat areas which had previously been in a state of greater continuity. Adverse effects of habitat fragmentation on species can include the increased isolation of populations or species which can detrimentally impact upon the resilience or robustness of the populations reducing overall species diversity and altering species abundance. The proposed works will not result in any habitat loss within any of the relevant Natura 2000 sites and, therefore, significant habitat or species fragmentation impacts are not envisaged.

[9.2.2.8] Vessel Collision Risk – Marine mammals

As previously mentioned, Hook Head SAC and Roaringwater Bay and Islands SAC have SCI marine mammal species that may travel as far as Cork harbour to forage. This includes *Phocoena phocoena* (Harbour Porpoise) and *Tursiops truncatus* (Common Bottlenose Dolphin).

The risk of injury or mortality is considered extremely low as marine mammals are exposed to considerable vessel traffic on a daily basis and would be aware of their presence. The geophysical vessel is small and slow thus any animals in the area would have sufficient time to avoid any collisions and thus injury or mortality.

The risk to marine mammals from vehicle collision is assessed as low to negligible.

[9.3] Mitigation Measures

In this section mitigation measures are presented in Table 9-1 that will minimise potential effects that may arise from the proposed works

Table 9-1. Proposed mitigation measures

Receptor	Potential Effects	Mitigation Measures
Water Quality & Resource	Increase in suspended sediments from survey activities	Small footprint of activities directly influencing the seabed will produce temporary, minimal sediment in suspension. Tidal currents are expected to be sufficient to disperse any suspended material and naturally fill boreholes. No direct mitigation required.
	Water pollution from survey vessels	<ol style="list-style-type: none"> 1) Risk of accidental spills / leaks will be managed through implementation of a Project Environmental Management Plan (PEMP), developed prior to any survey being undertaken. There will be no refuelling of vessels on site. 2) Refuelling or maintenance of vessels or equipment will not be carried out on-site
	Water pollution from drill cuttings	Drill cuttings will be brought up to surface level in a casing to prevent contact with the seawater. Once aboard the survey vessel, the sediment will be bagged and taken off site to be disposed of at a suitable facility.
Marine Mammals	Underwater noise disturbance impacts on marine mammals	Implementation of a suitably qualified Marine Mammal Observer (MMO) following Guidance to Manage the Risk to Marine Mammals from Man-made

Sound Sources in Irish Waters (DEHLG, 2014).

- 1) A dedicated, qualified and experienced Marine Mammal Observer (MMO) will conduct a 30-minute watch for marine mammals within a Mitigation Zone (MZ) of 1000m (geophysical) and 500m (geotechnical) prior to commencement of works. If a dolphin or porpoise is sighted within the MZ, start-up of works must be delayed until the animal(s) is observed to move outside the MZ, or the 30 minutes has passed without the animal being sighted within the MZ.
- 2) Geophysical and geotechnical activities shall only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO has been achieved. Where effective visual monitoring, as determined by the MMO, is not possible, the sound-producing activities shall be postponed until effective visual monitoring is possible.
- 3) Once normal operations commence, there is no requirement to halt or discontinue the activity at nighttime, or if weather or visibility conditions deteriorate or if marine mammals occur within the MZ.

Full Annex IV risk assessment mitigation measures have been produced in support of this application, available in Appendix D.

Birds	Underwater noise disturbance and displacement to birds	The proposed survey area lies within a busy part of the harbour for both industry and shipping. Most bird species screened in reside or forage within the area and would likely be habituated to anthropogenic disturbance and vessel movement. However, as there is a risk of harm to birds from noise, as a precautionary measure, an ecological clerk of works (ECoW) will be present on site for the duration of works to monitor for potential disturbance to a significant number of birds which may affect the
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integrity of one or more Natura 2000 site.

Significant numbers of a species are considered 1% of a population, and in this case, 1% of the SCI population for any diving bird species with a foraging range associated with a Natura 2000 site in the Zol. For the purposes of mitigation, with connectivity to several Natura 2000 sites, the lowest significant population will be used, and the ECoW will be suitably briefed and trained in advance.

Above water noise and visual disturbance and displacement

Above water noise will mainly consist of continuous noise which is not expected to displace or disturb birds. Visual impacts will be temporary in nature and not expected to significantly displace or disturb birds.

The works area will be inspected by a suitably qualified ecologist as engaged by the appointed contractor, for the presence of wintering and/or breeding birds prior to commencement of SI works. Where wintering/breeding birds are observed the suitably qualified ecologist will, in discussion with the appointed the contractor, advise how works will be appropriately undertaken.

Mobile plant shall be switched off when not in use and not left idling.

No machinery should be left running outside of the agreed operation hours to limit any noise emissions from the site in the late evenings and early mornings when wildlife is most active.

Port of Cork Company (PoCC) Common Tern Conservation Plan

In 2017, PoCC proposed a number of conservation measures to be implemented in Ringaskiddy, Co. Cork in order to protect Common Tern species.

A renesting and conservation project led by the Port of Cork Company (PoCC), to protect the Common Tern, an amber listed migratory seabird, has resulted in a record number of Common Terns expected to return and hatch in Cork this breeding season (April to August 2023).

The measures included the introduction of purpose-built pontoons in Cork Harbour with the aim of providing a protected breeding site for the endangered bird and its offspring. The

pontoons provide the ideal nesting substrate and are designed to exclude predators, particularly Otter and Grey Heron which have taken many young birds in previous years.

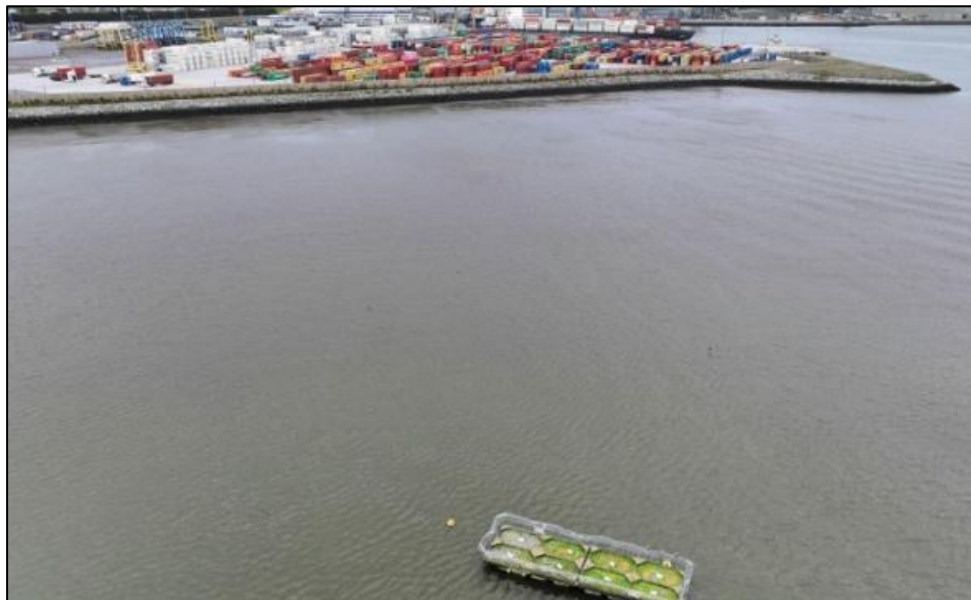


Figure 9-1. A pontoon for terns in Cork Harbour opposite the Cork Container Terminal at the Port of Cork.

[9.4] Residual Impacts

Residual impacts are impacts that remain once mitigation has been implemented or impacts that cannot be mitigated for. Provided that the mitigation measures outlined in Section 9.3, above, are implemented in full, significant adverse residual impacts on the Conservation Objectives of any of the identified Natura 2000 sites evaluated herein will not occur because of the proposed works, either independently or in combination with other plans or projects.

[10] Conclusion

This report presents a Stage 2 Natura Impact Statement for the proposed survey, outlining the information required for the competent authority to screen for appropriate assessment and to determine whether the proposed works, either alone or in combination with other plans and projects, in view of best scientific knowledge, will adversely affect the integrity of Natura 2000 sites. This NIS has involved the scientific examination, analysis and evaluation of all relevant information including, a description of the proposed project, proposed methodologies, the receiving environment, Natura 2000 sites within the potential ZOI of the proposed SI works and has applied the precautionary principle in the preparation of the conclusion. The implementation of standard mitigation measures including the measures outlined, including on-site monitoring, the presence of an MMO during works, and strict adherence to the project PEMP will be sufficient to prevent adverse effects on the integrity of Natura 2000 sites. Based on the assessment of the proposed site investigation works, alone and in combination with other projects and plans, including the implementation of mitigation measures, it can be concluded that no adverse effects on any of the Natura 2000 sites' integrity will arise, in view of the site's conservation objectives.

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Appendix A – Proposed MUL Area



Appendix B – Ringaskiddy Wintering and Breeding Wetland Bird Survey Report (Flynn Furney, 2024)

Appendix C – Ringaskiddy Marine Ecology Surveys (Aquafact, 2024)

Appendix D – Annex IV Species Risk Assessment

