MWP

Natura Impact Statement

Marine Usage Licence Application for Marine Site Investigation Surveys at Dognose Bank, Corkbeg, Whitegate, County Cork

Port of Cork Company

August 2025

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Summary of Findings – Appropriate Assessment

Project Title	Marine Usage Licence Application for Marine Site Investigation Surveys
Project Proponent	Port of Cork Company
Project Location	The application site is situated at Dognose Bank in lower Cork Harbour, approximately 2 kilometres (km) west of Whitegate and approximately 3 km southeast of Cobh.
Natura Impact Statement (Stage 2)	In cases where an Appropriate Assessment is required, a Natura Impact Statement (NIS) is prepared and includes a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any adverse impacts a project may have, either individually or in combination with other plans or projects, on the integrity of a Natura 2000 site(s) in view of the conservation objectives of the site(s). This has been undertaken in **Section 4** of this report.
Stage 2 Conclusion	The NIS set out in **Section 4** has considered all aspects of the proposed site investigation surveys, alone and in combination with other plans or projects. Based on best scientific knowledge, it is objectively concluded that the proposed development will not, either alone or in combination with other plans and projects, adversely affect (directly or indirectly) the integrity of eight identified Natura 2000 sites, considering the specific conservation objectives of each site. The NIS contains information which the competent authority may consider in making its own complete, precise and definitive findings and conclusions, and upon which the competent authority can determine that all reasonable scientific doubt has been removed as to the effects of the project on the integrity of the relevant Natura 2000 sites. Provided that the mitigation measures set out in **Section 4.3** are implemented in full, it is considered that the proposed site investigation surveys, either individually, or in combination with other plans/projects, will not affect the integrity of the following eight Natura 2000 sites, or any other Natura 2000 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]

1. Introduction

The Port of Cork Company (PoCC) (the 'Applicant') wishes to submit a Marine Usage Licence (MUL) application to the Marine Area Regulatory Authority (MARA) for Marine Site Investigation (SI) Surveys (hereafter referred to as the 'proposed works') within the waters at Dognose Bank, Corkbeg, Whitegate, County Cork (hereafter referred to as 'the site') approximately 16 km southeast of Cork City centre.

The Appropriate Assessment (AA) process has been undertaken by MARA with the supporting information for a Screening for Appropriate Assessment Report having been prepared by Malachy Walsh and Partners (MWP) Engineering and Environmental Consultants on behalf of PoCC in accordance with relevant guidance to inform the AA process. The screening determination is as follows:

"Based on the information on file, and having regard to:

- *The nature and scale of the proposed development.*
- *The distance to the nearest Natura 2000 sites.*
- *The potential for in-combination effects with other plans and projects.*
- *Possible disturbance from above water noise and visual disturbance and displacement.*
- *Underwater noise disturbance and displacement to birds.*
- *Underwater noise disturbance impacts on marine mammals, and*
- *Water quality impacts leading to habitat degradation or reduction in prey species.*

Having considered the legal framework applicable to Appropriate Assessment, it was concluded that the proposed maritime usage by Port of Cork Company to undertake marine environmental surveys for the purposes of site investigation at Dognose Bank, Corkbeg, Whitegate in the southeast of Cork Harbour (MUL240042) will require Stage 2 Appropriate Assessment. It cannot be excluded on the basis of objective scientific information, that the proposed project, either individually or in combination with other plans or projects, will have a significant effect on a European Site."

This Natura Impact Statement (NIS) examines whether the proposed works, either alone, or in combination with other plans and projects, will adversely affect the integrity of Natura 2000 sites (Special Protection Area's (SPAs) or Special Areas of Conservation (SACs)) or species populations for which the site/s are designated, in the view of best scientific knowledge and the sites' conservation objectives.

1.1 Legislative Context for Appropriate Assessment

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats and wild fauna and flora by the designation of SACs and the Birds Directive (2009/147/EC) seeks to protect birds of special importance by the designation of SPAs. It is the responsibility of each European Union member state to designate SPAs and SACs, both of which form part of Natura 2000, a network of protected sites throughout the European Community. The requirement for Appropriate Assessment of the implications of plans and projects on the Natura 2000 network of sites comes from the Habitats Directive (Article 6(3)). Further information is available at:

http://ec.europa.eu/environment/nature/legislation/habitatsdirective/

http://www.npws.ie/planning/appropriateassessment/

1.2 Stages of Appropriate Assessment

The Appropriate Assessment process is a four-stage process with issues and tests at each stage. The purpose of the screening assessment is to record in a transparent and reasoned manner the likely effects on Natura 2000

sites of any proposed works. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

Stage 1 - Screening

This is the first stage of the Appropriate Assessment process and is undertaken to determine the likelihood of significant impacts as a result of a proposed project or plan. It determines the need for a full Appropriate Assessment.

If it can be concluded that no significant impacts to Natura 2000 Sites are likely, then the assessment can stop here. If not, it must proceed to Stage 2 for further detailed assessment.

Stage 2 - Natura Impact Statement (NIS)

The second stage of the Appropriate Assessment process assesses the impact of the proposal (either alone or in combination with other projects or plans) on the integrity of the Natura 2000 Site with respect to the conservation objectives of the site and its ecological structure and function. This is a much more detailed assessment that Stage 1. A Natura Impact Statement containing a professional scientific examination of the proposal is required and includes any mitigation measure to avoid, reduce or offset negative impacts.

If the outcome of Stage 2 is negative i.e., adverse impacts to the sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned.

Stage 3 - Assessment of alternative solutions

A detailed assessment must be undertaken to determine whether alternative ways of achieving the objective of the project/plan exists.

Where no alternatives exist the project/plan must proceed to Stage 4.

Stage 4 - Assessment where no alternative solutions exist and where adverse impacts remain

The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a Natura 2000 Site where no less damaging solution exists.

1.3 Appropriate Assessment Guidance

The current assessment was conducted within this legislative framework, and the NIS will be compiled in accordance with guidance contained in the following documents:

- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. (Department of Environment, Heritage and Local Government, 2010 rev.).
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10.
- 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 (EC, 2021).
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (EC Environment Directorate General, 2000).

1.4 Statement of Competency

This Natura Impact Statement has been prepared on behalf of MWP by Jack Kennedy (ACIEEM, BSc.), Principal Ecologist at Allta Ecology Ltd.

Jack has over 7 years' experience in ecological surveying and impact assessments and has authored and contributed to numerous screening for Appropriate Assessment (AA) reports, Natura Impact Statements (NIS), Ecological Impact Assessments (EcIA) and Environmental Impact Assessment Report (EIAR). Jack holds Associate membership to the Chartered Institute of Ecology and Environmental Management (CIEEM). He is an experienced field ecologist with a diverse ecological survey profile, including birds, habitats and flora, and biodiversity management, and has contributed to a range of projects from renewable energy to major infrastructural developments.

2. Description of the Site and Proposed Works

2.1 Site Location

The proposed works site is an offshore area to the south-east of Cork Harbour near the mouth of the harbour, along the eastern headland. This area is approximately 16 km southeast of Cork City and 3.0 to 3.5km north of Roches Point. Water depth within the proposed marine SI works site is up to 18 m deep. The land around the proposed works site is used mainly for agricultural and industrial activities.

The Irving Oil Whitegate Oil Refinery and Bord Gáis Energy Whitegate Power Station are located on the headland, approximately 0.15 km east of the proposed marine SI works site. It is a busy stretch of water, used by port traffic to access the Cork City docks, Tivoli docks, Ringaskiddy, Cobh and Whitegate Oil Refinery as well as other smaller harbours and marinas within the greater Cork Harbour area. Corkbeg Island, a small island, connected to the shore by a short, man-made causeway, and entirely taken up by Whitegate Oil Refinery storage tanks located directly to the north of the Marine Usage Licence (MUL) Area. A jetty extends north-westwards from Corkbeg Island into the harbour where oil tankers berth. **Figure 2-1** shows the location of the proposed works including the MUL Area.

2.2 Description of Proposed Works Site

The marine SI works proposed by the Applicant, will be undertaken at Dognose Bank, Corkbeg, Whitegate, County Cork. The MUL Application Area (the site) is circa 98.55 hectares (ha) and is located approximately 1.6 km west of Whitegate village. The site sits within the lower Cork Harbour; a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy, and Owennacurra. The sediment in the area is largely that of coarse sediment and muds, resulting in a network of low energy infralittoral habitats and tidal mudflats[1]. These muds support a range of macro-invertebrates.

Water depths in the survey area range from the intertidal to approximately 18 m. The harbour falls within the Water Framework Directive (WFD) Farrannamanagh, Owenboy, and Tibbotstown sub-catchments of the Lee, Cork Harbour and Youghal Bay catchment, with a WFD status of moderate[2]. Water quality of these rivers varies but the Owenboy, Owennacurra, and Lee have Q-values of '3-4, moderate', and the Douglas (Lee) river has a Q-value of

[1] Seabed Habitats | European Marine Observation and Data Network (EMODnet)
[2] EPA Maps

'2-3, poor'. This is likely due to both agricultural run-off in attributed catchments, and industry surrounding the harbour.

Biodiversity in the harbour is high, with nationally significant populations of breeding common tern (*Sterna hirundo*) and internationally significant populations of migratory waders and wildfowl, particularly black-tailed godwit (*Limosa limosa*) and redshank (*Tringa tetanus*). Additionally, it supports nationally important wintering populations of 22 species including whooper swan (*Cygnus cygnus*), little egret (*Egretta garzetta*), golden plover (*Pluvialis apricaria*), bar-tailed godwit (*Limosa lapponica*), ruff (*Calidris pugnax*), Mediterranean gull (*Ichthyaetus melanocephalus*) and common tern (*S. hirundo*) (NPWS, 2014a).

Marine mammals have been known to occur in and around the harbour but generally are observed at the harbour mouth. Four records of cetaceans in the area have been submitted to the Irish Whale and Dolphin Group (IWDG) between August 2024 and August 2025, including three minke whale (*Balaenoptera acutorostrata*), ten bottlenose dolphin (*Tursiops truncatus*), and one unidentified cetacean. Both species of seal occur in the harbour - common seal (*Phoca vitulina*) and grey seal (*Halichoerus grypus*). Otter (*Lutra lutra*) also regularly occurs around the harbour, particularly at river estuaries, with the nearest recorded spraint to the proposed works site recorded at Whitegate (Dalton *et al*, 2021).

2.3 Description of Proposed Works

This section provides a high-level overview of the proposed site investigations. The intention is to commence the proposed works as soon as feasible following award of the MUL, taking into consideration any proposed mitigation requirements. The survey works will also be dependent on weather conditions and vessel availability. The exact mobilisation dates for the SI activities will not be known until a MUL has been secured and the process of procuring the contractor is complete. Most survey activities will only occur over a period of weeks. The time spent at each individual location will be a maximum of 2-3 days for some site investigation activities such as boreholes, Cone Penetrometer Tests (CPTs), grab sampling etc.

The following surveys are proposed:

- Geophysical surveys: consist of sub-bottom profiler (SBP) single-channel seismic reflection, underwater multichannel analysis of surface waves (UMASW), and seismic refraction surveys. The surveys are likely to take 3 weeks to complete and are non-invasive.
- Geotechnical surveys: the purpose of the geotechnical survey is to evaluate the nature and mechanical properties of the superficial seabed sediments within the survey area. Approximately 20 boreholes (cable percussive with rotary follow-on) and 20 CPTs will be required in total, along with associated sampling and laboratory testing. These are intrusive investigation works and are likely to take 12 weeks to complete. The precise location for geotechnical works within the site will be informed by the geophysical surveys.
- Environmental surveys; including sub-tidal benthic and sub-tidal video surveys. Benthic habitats have a year-round survey period. The epifauna survey period is between April and the end of September. If required, the survey period for algal species is May to August.
    - Sub-tidal Benthic Survey: used to sample for marine habitats and fauna. A Van-Veen grab sample will be taken for benthic faunal analysis to aid in the classification of submerged habitats.
    - Sub-tidal Video Survey: provides video footage to aid in the classification of submerged habitats. This is a non-invasive survey for habitats and fauna.

- Intertidal Benthic Survey: a series of cores will be taken in the soft sediment intertidal sections of the survey area. Survey period is from April to the end of September.
- Marine Mammal Surveys: Marine mammals are typically surveyed from the shoreline via vantage point surveys where the surveyor uses a telescope and/or binoculars to scan the study area and record any marine mammals observed. This survey will be supplemented by an underwater acoustic survey. Survey for marine mammals may occur year-round taking account of species-specific movements.

Indicative locations for borehole tests and CPTs are provided in **Figure 2-2**. It has been assumed that the geotechnical and geophysical surveys will be conducted across the entire MUL Area. Further details of the proposed works have been included in **Appendix 1**.

Dedicated survey vessels will be used which are appropriate to the water depth of the survey area; a vessel with a shallow draft will be utilised for the shallow water survey area. The exact equipment to be used will be confirmed following a tender process to procure the survey contractor. A jack-up platform will likely be used in the drilling of geotechnical boreholes within the survey area. Exact details of the vessel/platform to be used will not be confirmed until the ground investigation contractor can be confirmed. Positioning at the site will require the use of a tug vessel which will remain on standby for the duration of the drilling operations.

2.4 Zone of Potential Influence

The "Zone of Influence" (ZoI) for a project is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities (CIEEM, 2018). This is likely to extend beyond the site where there are ecological or hydrological connection(s) beyond the site boundaries.

With consideration for the stage 1 Appropriate Assessment, foraging ranges of seabirds published by Thaxter *et al*., (2012) were consulted in determination of the ZoI. 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).

As a precautionary measure, a 100 km ZoI has been applied to the proposed works where there is a marine hydrological connection to the site, and underwater noise or visual disturbance is a factor. **Figure 2-3** presents the site and associated Natura 2000 sites.

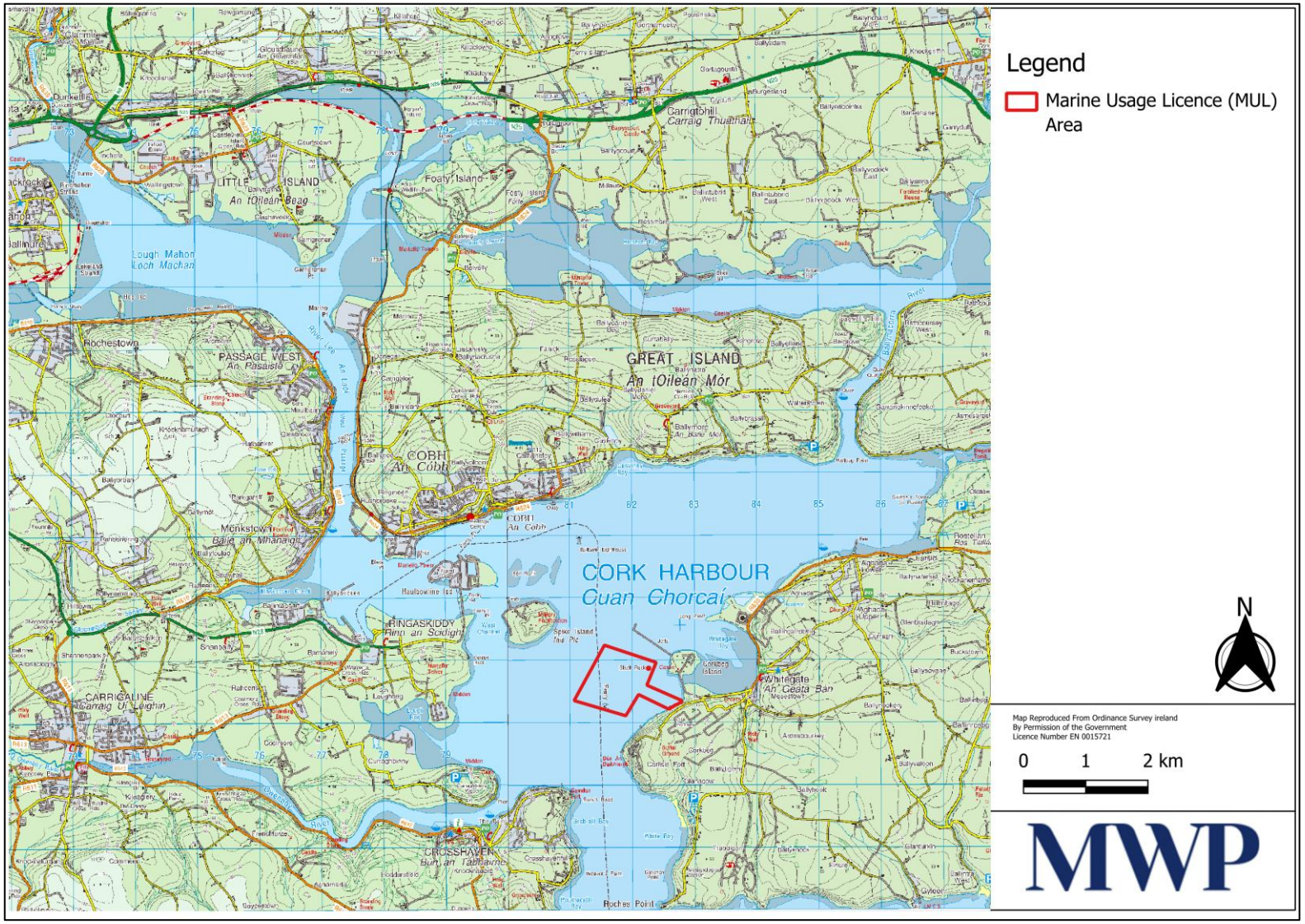

Figure 2-1: Location of Proposed Works and Marine Usage Licence (MUL) Area.

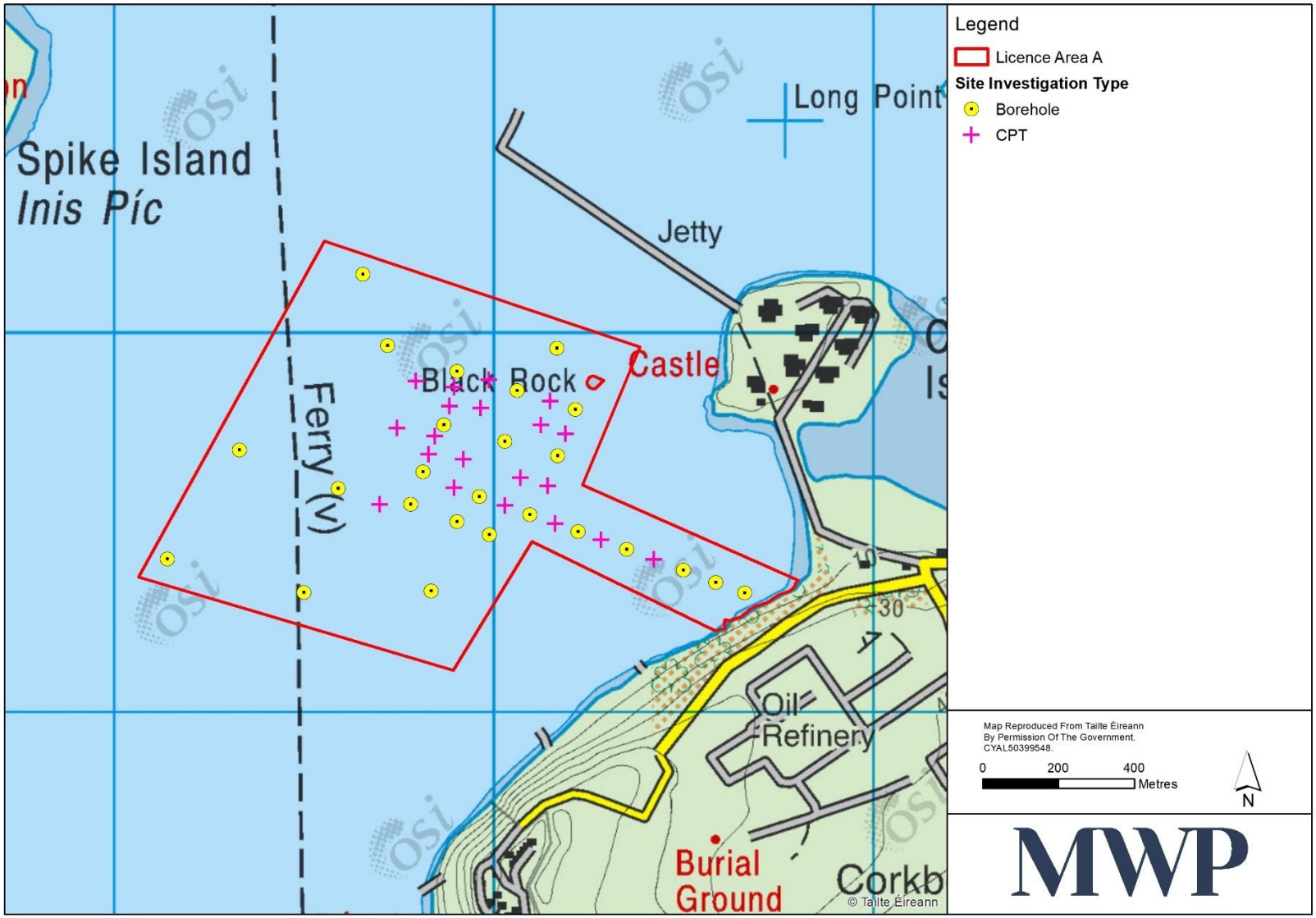

Figure 2-2: Site Map with Indicative Borehole and CPT Sample Locations

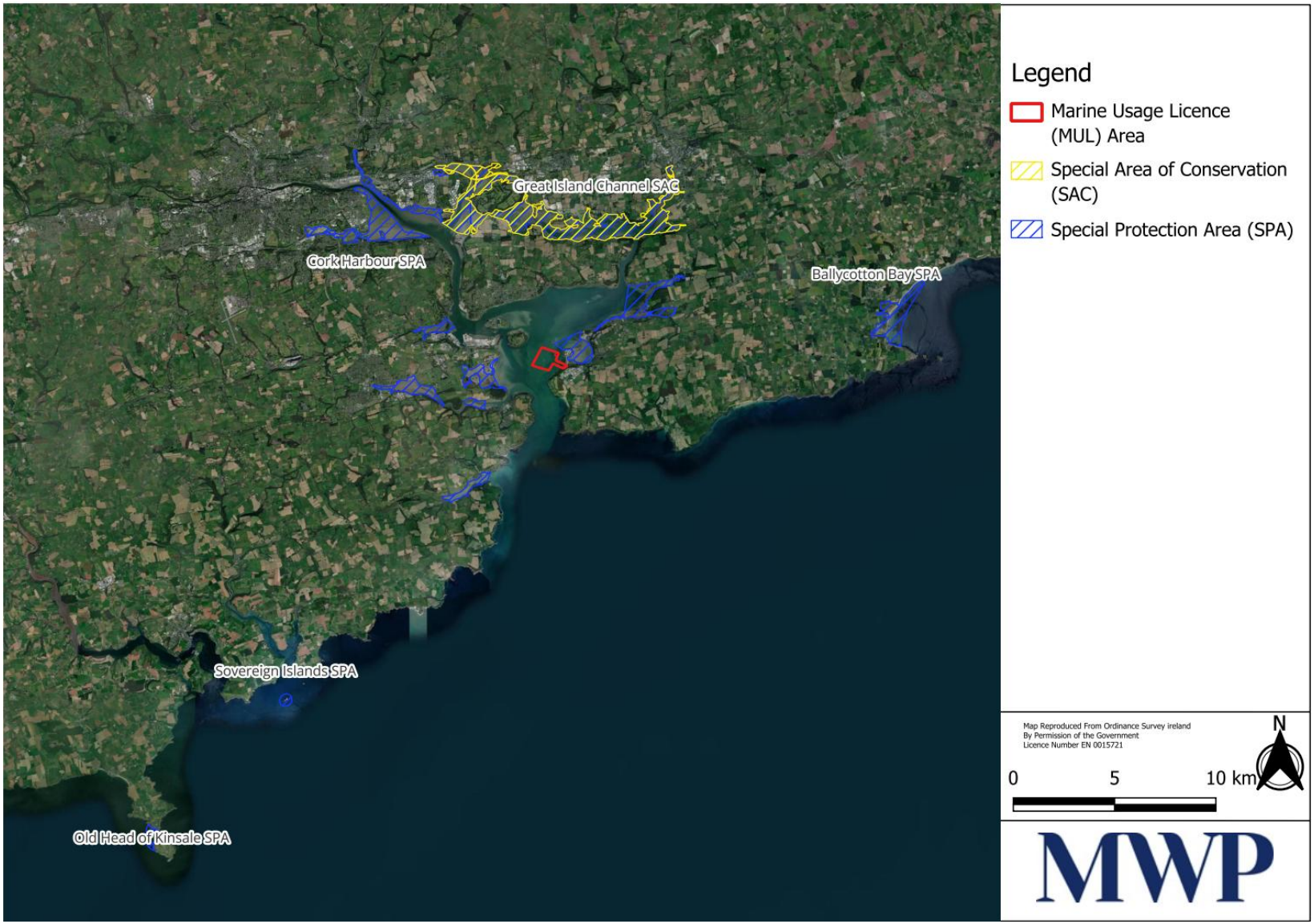

Figure 2-3: Natura 2000 sites nearest the proposed works site

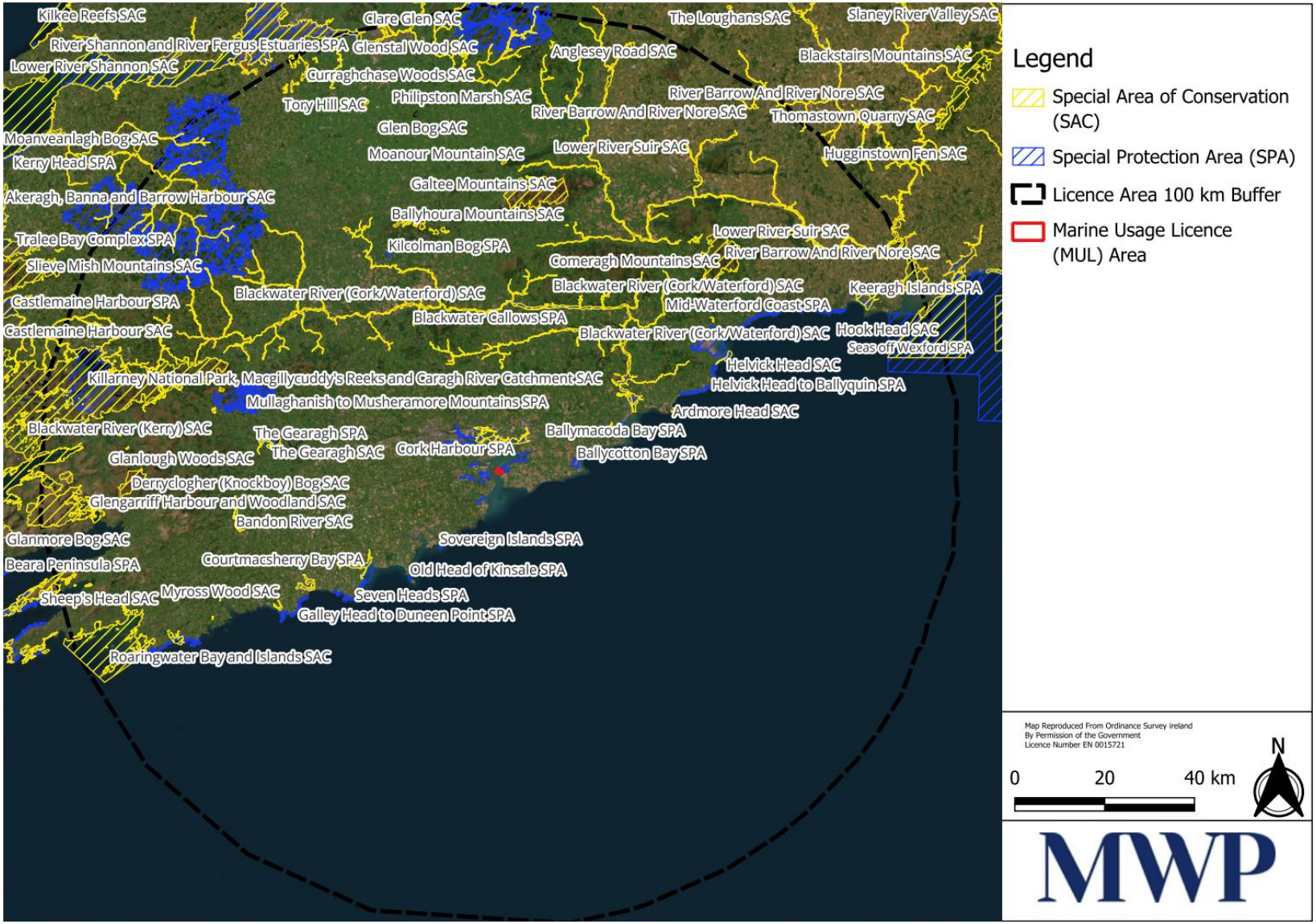

Figure 2-4: Natura 2000 sites located within the 100km ZoI

2.5 Identification of Potential Impacts

Table 2-1: Description of project details and potential significant effects that may arise.

Description of elements of the project likely to give rise to potential ecological impacts.	The proposed marine SI works including geophysical, geotechnical and environmental surveys may cause the following potential ecological impacts: ▪ Machinery: The presence and sustained use of plant machinery on site, albeit at variable rates and numbers, during daylight hours for the duration of the SI surveys. ▪ Use of fuels/oils/lubricants, and other such substances considered harmful to the aquatic environment. ▪ Human presence: Sustained increase in human activity, albeit at variable rates and numbers, during daylight hours for duration of the SI surveys. ▪ Increased noise and air emissions associated with survey activity. ▪ Borehole drilling and grab sampling. ▪ Storage of effluent/wastewater/waste ▪ Disturbance from underwater noise associated with surveys ▪ Physical and noise disturbance to birds ▪ Fugitive oils, fuels, lubricants impacting water quality
Describe any likely direct, indirect or secondary ecological impacts of the project (either alone or in combination with other plans or projects) by virtue of: *Size and scale;* *Land-take;* *Distance from Natura 2000 Site or key features of the Site;* *Resource requirements;* *Emissions;* *Excavation requirements;* *Transportation requirements;* *Duration of construction, operation etc.; and* *Other.*	▪ There is no spatial overlap between the subject site and any Natura 2000 site; therefore, there will be no direct habitat loss/alteration within any Natura 2000 site. ▪ Potential for direct species disturbance/displacement impacts due to construction activity including fugitive noise emissions from machinery, human activity. ▪ The subject site is hydrologically connected to two Natura 2000 sites – Cork Harbour SPA [004030] and Great Island Channel SAC [001058] - via the waters of lower Cork Harbour. ▪ Potential for water quality impacts through increased silt levels, and/or ingress of fuels/oils into the waters of Cork Harbour. ▪ 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. ▪ Potential for spread of invasive alien species

3. Appropriate Assessment Screening Determination

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, was identified in the screening for AA carried out by MARA:

- 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]

Details of qualifying interests screened in for each respective European Site are outlined in Table 3-1. Natura 2000 sites within the ZoI where Species of Conservation Interest (SCI) are not connected by underwater noise or visual disturbance have been screened out and not considered below.

Table 3-1: Screening determination for Natura 2000 sites and Species of Conservation Interest (SCI) within the ZoI.

Qualifying Interest (QI)	Screening Determination	Rationale	Conservation Objectives
Cork Harbour SPA [004030] (< 0.5 km northeast)			
Little Grebe (*Tachybaptus ruficollis*) [A004] Great Crested Grebe (*Podiceps cristatus*) [A005] Cormorant (*Phalacrocorax carbo*) [A017] Grey Heron (*Ardea cinerea*) [A028] Shelduck (*Tadorna tadorna*) [A048] Wigeon (*Anas penelope*) [A050] Teal (*Anas crecca*) [A052] Pintail (*Anas acuta*) [A054] Shoveler (*Anas clypeata*) [A056] Red-breasted Merganser (*Mergus serrator*) [A069] Oystercatcher (*Haematopus ostralegus*) [A130] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Black-headed Gull (*Chroicocephalus ridibundus*) [A179]	Screened In	- Above water noise and visual disturbance and displacement to birds. - Below water noise disturbance and displacement to birds. - Water quality deterioration impacting habitats and species.	NPWS (2014a) Conservation Objectives: Cork Harbour SPA 004030. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Qualifying Interest (QI)	Screening Determination	Rationale	Conservation Objectives
Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183] Common Tern (*Sterna hirundo*) [A193] Wetlands [A999]			
Great Island Channel SAC [001058] (7.5km, northeast)			
Mudflats and sandflats not covered by seawater at low tide [1140] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]	**Screened In**	- SAC overlaps with Cork Harbour SPA	NPWS (2014b) Conservation Objectives: Great Island Channel SAC 001058. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Ballycotton Bay SPA [004022] (15 – 20 km east)			
Teal (*Anas crecca*) [A052] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140] Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Turnstone (*Arenaria interpres*) [A169] Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183]	**Screened In**	- Above water noise and visual disturbance and displacement to birds. - Below water noise disturbance and displacement to birds. - Water quality deterioration impacting habitats and species.	NPWS (2014c) Conservation Objectives: Ballycotton Bay SPA 004022. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Wetlands [A999]	Screened Out	- No source-pathway-receptor connectivity	
Sovereign Islands SPA [004124] (20 – 25 km southwest)			
Cormorant (*Phalacrocorax carbo*) [A017]	**Screened In**	- Above and below water noise and visual disturbance and displacement to foraging birds. - Water quality deterioration impacting habitats and species.	NPWS (2025) Conservation Objectives: Sovereign Islands SPA 004124. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Ballymacoda Bay SPA [004023] (20 – 25 km east)			
Common Gull (*Larus canus*) [A182] Lesser Black-backed Gull (*Larus fuscus*) [A183]	**Screened In**	- Above and below water noise and visual disturbance and displacement to foraging birds.	NPWS (2015) Conservation Objectives: Ballymacoda Bay SPA 004023. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Wigeon (*Anas penelope*) [A050] Teal (*Anas crecca*) [A052] Ringed Plover (*Charadrius hiaticula*) [A137] Golden Plover (*Pluvialis apricaria*) [A140]	Screened Out	- No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	

Qualifying Interest (QI)	Screening Determination	Rationale	Conservation Objectives
Grey Plover (*Pluvialis squatarola*) [A141] Lapwing (*Vanellus vanellus*) [A142] Sanderling (*Calidris alba*) [A144] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Redshank (*Tringa totanus*) [A162] Turnstone (*Arenaria interpres*) [A169] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999]			
Old Head of Kinsale SPA [004021] (25 – 30 km southwest)			
Kittiwake (*Rissa tridactyla*) [A188] Guillemot (*Uria aalge*) [A199]	**Screened In**	- Above and below water noise and visual disturbance and displacement to foraging birds.	NPWS (2025) Conservation Objectives: Old Head of Kinsale SPA 004021. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Courtmacsherry Bay SPA [004219] (30 – 35 km southwest)			
Common Gull (*Larus canus*) [A182]	**Screened In**	- Above and below water noise and visual disturbance and displacement to foraging birds.	NPWS (2014d) Conservation Objectives: Courtmacsherry Bay SPA 004219. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Great Northern Diver (*Gavia immer*) [A003] Shelduck (*Tadorna tadorna*) [A048] Wigeon (*Anas penelope*) [A050] Red-breasted Merganser (*Mergus serrator*) [A069] Golden Plover (*Pluvialis apricaria*) [A140] Lapwing (*Vanellus vanellus*) [A142] Dunlin (*Calidris alpina*) [A149] Black-tailed Godwit (*Limosa limosa*) [A156] Bar-tailed Godwit (*Limosa lapponica*) [A157] Curlew (*Numenius arquata*) [A160] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999]	Screened Out	- No source-pathway-receptor connectivity, the site is beyond foraging ranges of these species	
Hook Head SAC [000764] (< 100 km east)			
Bottlenose Dolphin (*Tursiops truncatus*) [1349] Harbour Porpoise (*Phocoena phocoena*) [1351]	**Screened In**	- Underwater noise impacts from survey activities.	NPWS (2025) Conservation Objectives: Hook Head SAC 000764. Version 2. National Parks and Wildlife Service, Department of Housing,
Large shallow inlets and bays [1160] Reefs [1170]	Screened Out	- No source-pathway-receptor connectivity to habitats given	

Qualifying Interest (QI)	Screening Determination	Rationale	Conservation Objectives
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]		considerable distance from the site.	Local Government and Heritage.
Roaringwater Bay and Islands SAC [000101] (< 100 km southwest)			
Harbour Porpoise (*Phocoena phocoena*) [1351]	**Screened In**	- Underwater noise impacts from survey activities.	NPWS (2011) Conservation Objectives: Roaringwater Bay and Islands SAC 000101. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Large shallow inlets and bays [1160] Reefs [1170] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] European dry heaths [4030] Submerged or partially submerged sea caves [8330] Otter (*Lutra lutra*) [1355] Grey Seal (*Halichoerus grypus*) [1364]	Screened Out	- No source-pathway-receptor connectivity to habitats given considerable distance from the site. - 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)	

4. Natura Impact Statement

4.1 Assessment of Potentially Significant Effects

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 depends 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) outlined in **Section 2.3**, and the QI or SCI (receptor). For an impact to be transmitted from source to receptor there must be a risk initiated by:

- Source: the origin of potential impacts (e.g., near stream construction works at a proposed development site)
- 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
- 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 in Section 2.5, above, 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 section together with the potential impacts identified in Section 2.5; 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.

4.1.1 Habitat Loss, Alteration or Degradation

The proposed SI site is directly adjacent to the Cork Harbour SPA, <0.5km to the SPA boundary – refer to Figure 2-3, above. 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 primary force at play in the area will be tidal and current effects which may distribute disturbed sediment from the site for resettlement elsewhere.

The primary source of potential disturbance or habitat loss is the benthic grab sampling, and geotechnical sampling. For benthic grab sampling, a 0.1 m^2 sample area is a standard practice in most sampling applications. A Hamon Grab is a box-shaped sampling scoop mounted in a triangular frame and is proposed for use in this survey. The depth of scoop penetration is up to 20 cm. 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. These grab samples are expected to back fill naturally, and sample sediment will not be released back into the water column.

Each borehole will have a seabed footprint of approximately 0.5 m^2 and the 20 boreholes would cumulatively generate approximately 15 m^3 of risings. 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.

Therefore, no significant impacts are expected in relation to benthic ecology due to physical disturbance and removal, increased suspended sediment and re-deposition caused by the proposed surveys, and as a result no additional mitigation measures are required.

4.1.2 Water Quality and Resource

There is no overlap of the proposed works area with any Natura 2000 site, the nearest site being the Cork Harbour SPA located approximately 0.3km to the northeast of the site - refer to Figure 2-3, above. Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica, Scrobicularia plana, Hydrobia ulvae, Nepthys hombergi, Nereis diversicolor,* and *Corophium volutator*. Green algae species occur on the flats, especially *Ulva* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered throughout the site, and these provide high tide roosts for some bird species. Some shallow bay water is included within the SPA. Rostellan Lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

The Great Island Channel SAC overlaps with the Cork Harbour SPA with the main habitats being sheltered tidal sand and mudflats, and the Atlantic salt meadows. As with the Cork Harbour SPA, the intertidal flats are composed mainly of soft muds and support a range of macro-invertebrates. The saltmarshes are scattered through the site and are all estuarine on mud substrate. Species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Greater Sea-spurrey (*Spergularia media*), Lax-flowered Sea-lavender (*Limonium humile*), Sea Arrowgrass (*Triglochin maritimum*), Sea Mayweed (*Matricaria maritima*) and Red Fescue (*Festuca rubra*). All the mudflats support feeding birds; the main roost sites are at Weir Island and Brown Island, and to the north of Fota at Killacloyne and Harper's Island. Ahanesk supports a roost also but is subject to disturbance. The numbers of Grey Plover (80) and Shelduck (800-1000) in the harbour are of national importance. The site is an integral part of Cork Harbour which is a wetland of international importance for the birds it supports. Overall, Cork Harbour regularly holds over 20,000 wintering waterfowl and contains internationally important numbers of Black-tailed Godwit (1,181) and Redshank (1,896), along with nationally important numbers of nineteen other bird species. Furthermore, it contains large flocks of both Dunlin (12,019) and Lapwing (12,528). All counts are average peaks, 1994/95 – 1996/97. Much of the SAC falls within Cork Harbour SPA, an important bird area designated under the E.U. Birds Directive.

While the main land use within the site is aquaculture (oyster farming), the greatest threats to its conservation significance comes from road works, infilling, sewage outflows and possible marina developments.

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 disturbance to the seabed, which will 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.

In conclusion, there is a risk that without a programme of mitigation measures the proposed development may potentially result in adverse water quality impacts within the Natura 2000 sites listed in Table 3-1, above. Adverse water quality impacts, should they arise, could then exert impacts on aquatic/water-dependant habitats and species protected within the Natura 2000 sites, which could adversely affect the integrity of these sites. Section 4.3, 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.

4.1.3 Disturbance and/or Displacement of Species

There is a potential for disturbance / displacement of species resulting from visual presence of equipment and vessels on site, and noise both above and below water generated during the proposed works. Cork Harbour SPA is designated for the large numbers of bird species that use the mudflats and sandflats as well as other coastal habitats for feeding and nesting. The SPA is of international importance for the total numbers of wintering waterbirds (>20,000 individuals) and for the populations of Black-tailed Godwit and Redshank which are designated species for the SPA. The extensive wetlands found through throughout the SPA are important for a number of other bird species such as Whooper Swan, Little Egret, Golden Plover, Mediterranean Gull and Common Tern. The site is also potentially within the foraging ranges sourced from Thaxter *et al.*, 2012 for several seabird and SCI species listed in Table 3-1, above. A full assessment of potential disturbance impacts to birds can be found in Section 4.1.3.2, below.

Since, it has been established in Section 4.1.2, above, that there is some limited potential for water quality impairment at the waters of the works site, there is also the potential for disturbance/displacement impacts to QI bird species via water quality impairment in the absence of mitigation. Section 4.3, below, outlines a programme of mitigation measures designed to avoid, reduce or offset potential adverse water quality impacts and thus, any potential indirect disturbance or displacement of the SCI bird species populations of screened in natura 2000 sites that might ensue because of the proposed works.

4.1.3.1 Marine Mammals

An Annex IV risk assessment has been completed and submitted as part of this application with respect to marine mammals, and includes basking shark, marine turtles, and otter as part of the report. A full assessment of risk to these species and groups have been completed in the Annex IV document submitted as part of this application.

Mitigation measures outlined in the Annex IV report are summarised in Section 4.3 and the full Annex IV extract is included in Appendix 3.

4.1.3.2 Above Water Noise and Visual Disturbance - Birds

On average, birds hear less well than many mammals, including humans. Sounds audible to birds can be divided into threatening and non-threatening sounds. Examples of non-threatening sounds are wave noise on a beach or constant traffic noise from a road. Threatening sounds include impulsive sounds such as gunfire, explosion or barking of a dog. The sound of construction or similar works is not impulsive (sudden, loud or shocking) but tends to be continuous and low frequency noise such as that made by machinery and vehicular traffic. Acoustic deterrents or gas banger devices are not generally effective because birds habituate to them and eventually ignore them completely. Devices that tend to emit sound frequencies outside the hearing range of humans are most certainly inaudible to birds as well because birds have a narrower range of hearing than humans do (Birkhead, 2012).

Disturbance often implies a short-term or temporary effect that is unlikely to impact upon the individuals or populations of waterbirds concerned. However, it is a term that covers a wide range of responses in waterbirds. Disturbance is any situation in which human activities cause a bird to behave differently from the behaviour it would be reasonably expected to exhibit without the presence of that activity. 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 listed in Table 3-1, above,

4.1.3.3 Below Water Noise and Disturbance

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 4.1.3.2, 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, just as with humans, hearing damage is still possible given a high enough decibel emission.

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 4.3.

4.1.4 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. However, a programme of mitigation measures pertaining to protection of water quality is recommended (see Section 4.3, below).

4.2 Identification of In-Combination Effects

The assessment of potential in-combination effects considers the above potential impact mechanisms associated with the proposed works that, in combination with other plans and projects, may result in significant effects. Projects and plans identified as relevant have been included in Table 4-1.

Table 4-1: Related plans and projects that may give rise to in-combination effects in relation to the proposed works.

Reference Number	Description	Potential for In-Combination Effects
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 Natura 2000 sites identified within the ZoI or the vicinity of the Proposed Development.	No potential for in-combination effects. The Plan was subject to Stage 1 and Stage 2 AA. It was concluded that with implementation of mitigation measures the Plan is not foreseen to give rise to any significant effects on designated Natura 2000 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	Climate Action Plan 2025 The Climate Action and Low Carbon Development (Amendment) Act 2021 (CALCD 2021) sets the legal framework for the preparation of Ireland's Climate Action Plans in support of the national climate objectives. An appropriate assessment screening and stage 1 assessment were completed in support of this project.	No potential for in-combination effects. The stage 1 AA determined the action plan was not directly connected with or necessary to the management of the Natura 2000 sites, the assessed differential measures are not deemed likely to have significant effect on specific Natura 2000 sites, either individually or in combination with other plans or projects.
N/A	Port of Cork Masterplan 2050 Under the National Ports Policy, Irish ports are advised to produce port masterplans in line with international best practice. The purpose of the Port of Cork Masterplan 2050 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	No potential for in-combination effects. Any individual project that emerges 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, environmental, and marine, 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 inherent potential for in-combination effects.
N/A	National Development Plan (NDP) 2021-2030 As part of Project Ireland 2040 the National Development Plan sets out the Government's over-arching investment strategy and budget for the period 2021-2030. It is an ambitious plan that balances the significant demand for public investment across all sectors and regions of Ireland with a major focus on improving the delivery of infrastructure projects to ensure speed of delivery and value for money.	No potential for in-combination effects. Within the framework of hierarchy for strategic environmental assessment, the NDP has been subject to the Strategic Environmental Assessment and AA process and no potential for effect was found. Individual undertakings as part of the plan will be subject to their respective assessments to meet consent requirements as necessary.

Reference Number	Description	Potential for In-Combination Effects
N/A	**South Coast Designated Maritime Area Plan (DMAP)** The Plan identifies four Irish Maritime Areas within the Celtic Sea within which proposed future Offshore Renewable Energy projects may be located, which in this instance relates to fixed offshore wind technology.	No potential for in-combination effects. The DMAP has been subject to SEA and AA/NIS process and there was no potential for significant effect on any specific Natura 2000 sites, either individually or in combination with other plans or projects. Each project as part of the DMAP will be subject to its own assessments.
LIC240006	**Marine environmental surveys for the purposes of site investigation** Site investigation works for the south coast DMAP	Potential for temporal overlap of activities. however, conditions provided by MARA at issue (LIC240006, appendix 1-14), ensure the operator will coordinate with other authorisation holders within 24km of the proposed site to ensure there is no temporal overlap between projects with respect to geophysical, seismic, and geotechnical activities. Additional conditions also apply to mitigate for impacts. No potential for in-combination effects.
MUL230029	**Dredging and deposit of dredged material** Haulbowline Naval Base maintenance dredging of entrance channel and docks at naval basin.	No potential for in-combination effects. Revised SISAA following request for further information states no scope for in combination effects with the proposed dredging works and other plans and projects that would have the potential to have significant effects on the Natura 2000 sites. There may be potential for temporal overlap of the projects but considering the short duration of each, subject to the granting of a MUL, it is unlikely to induce in-combination effects
MUL240036	**Marine environmental surveys for the purposes of site investigation** Site investigation works to inform deployment of 2 substations, cable corridors and landfalls, as part of Tonn Nua A.	No potential for in-combination effects. Where the SI works are to take place within 5 km of and concurrently with other licenced activities, EirGrid will coordinate with other licence holders to ensure that there will be no temporal and spatial overlap between the SI works marine geophysical activities and the marine geophysical activities by other licence holders, and there will be no spatial overlap between the SI works marine geotechnical, environmental and archaeological activities and overlapping activities by other licence holders. Appropriate separation distances (500 m or as otherwise conditioned by MARA) will be maintained between vessels.
MUL250008	**Deposition of dredged material** Deposition of dredged marine sediments from Ringaskiddy Basin to facilitate berth extensions with capacity to support Offshore Renewable Energy.	No potential for in-combination effects. The proposed deposition site is positioned outside the harbour where tidal influence and currents will allow for dispersal of sediments and, given the distance offshore, it is unlikely to increase sedimentation in the harbour. The proposed works do not involve land-take. The temporary and limited disturbance to the

Reference Number	Description	Potential for In-Combination Effects
		seabed is unlikely to significantly increase sedimentation in the area.
MAC240030	Cable laying Installation of the Beaufort telecommunications fibre optic cable connecting Kilmore Quay in County Wexford to Pembrokeshire in Wales.	No potential for in-combination effects. Given the differing nature of the proposed works and the distance between sites, <100 km, it is unlikely that the proposed works will have an in-combination effect on any adjoining Natura 2000 sites.
S0013-03	EPA Dumping at Sea permit	No potential for in-combination effects. The proposed deposition site is positioned outside of the harbour where tidal influence and currents will allow for dispersal of sediments and, given the distance offshore, it is unlikely to increase sedimentation in the harbour. The deposition site has been historically used for dredged materials with no adverse effect on record. The deposition site does not have overlap with the proposed works and, given the distance between the deposition site and proposed works site, there is unlikely to be increased sedimentation as a result of in-combination. Each permit is subject to their respective environmental assessment and appropriate assessment screening, with no adverse effects on any Natura 2000 site anticipated.
S0005-03	EPA Dumping at Sea permit	
S0021-03	EPA Dumping at Sea permit	
S0039-01	EPA Dumping at Sea permit	
FS007126	Maintenance dredging Maintenance dredging to facilitate the maintenance of the port berth, basins and approach channels into Port of Cork.	No potential for in-combination effects. The applicant has shown that the operations will not adversely affect (either directly or indirectly) the integrity of any Natura 2000 site, either alone or in combination with other plans or projects. Screening indicates overlap in a licenced area of activities. Licence conditions state MARA to be notified minimum of 14 days in advance of any commencement of works. Provided the proposed works are limited in duration, there is unlikely to be overlap of activities. No work will be undertaken by the applicant which may result in an overlap of activities.
ABP OA04.321875	Planning permission for redevelopment of port facilities Planning permission sought for proposed redevelopment of port facilities at Ringaskiddy deep-water berth.	No potential for in-combination effects. The applicant has shown that the operations will not adversely affect (either directly or indirectly) the integrity of any Natura 2000 site, either alone or in combination with other plans or projects.

4.3 Mitigation Measures

In this section mitigation measures are presented in **Table 4-2** that will minimise potential effects that may arise from the proposed works.

Table 4-2: Proposed mitigation measures associated with the proposed works

Receptor	Potential Effect(s)	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	- 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. - 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). - 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. - 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. - 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 3.

Receptor	Potential Effect(s)	Mitigation Measures
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 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 ZoI. 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	As outlined in section 4.1.3, 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.

4.4 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 4.3, 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 as a result of the proposed works, either independently or in combination with other plans or projects.

5. Statement 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 1 – Project Characteristics

Size, scale, area, land-take	The MUL Area is circa 98.55 ha. No land-take is required.
Details of physical changes that will take place during the various stages of implementing the proposal	Geophysical Survey The geophysical survey is non-intrusive and will not result in any physical changes to the area. The findings of the geophysical survey will influence the final location of the offshore ground investigation locations. Geotechnical Survey Each borehole will have a seabed footprint of approximately 0.5 m^2 and risings of approximately 15 m^3 (assuming a borehole depth of up to 25m) will be dispersed around the drill site as a cuttings pile. The borehole will be left to collapse naturally following completion of drilling where the cuttings are likely to fall back down the hole. The Piezocone penetrometer for CPT shall have a minimum 10 tonne capability and a maximum depth penetration of 6m below seabed. Subtidal Video Survey Non-invasive survey for habitats and fauna will not result in any physical changes to the area. Sub-tidal Benthic Survey Van-Veen grab samples will be taken for benthic faunal analysis for marine habitats and fauna. Intertidal Benthic Survey A series of cores will be taken during in the soft sediment intertidal sections of the survey area. Marine Mammals Both vantage point surveys and underwater acoustic surveys are non-invasive and will not result in any physical changes in the area.
Description of resource requirements for the construction/operation and decommissioning of the proposal (water resources, construction material, human presence etc)	A jack-up platform will likely be used to acquire geotechnical boreholes in the application area. Positioning at the site will require the use of a tug vessel which will remain on standby for the duration of the drilling operations. The SI contractor will be responsible for locating a suitable mobilisation point. No other resources are required.
Description of timescale for the various activities that will take place as a result of implementation (including likely start/finish date)	Geophysical surveys are likely to take 3 weeks to complete Geotechnical surveys are likely to take 12 weeks to complete Overall survey duration of approximately 19 weeks.
Description of wastes arising and other residues (including quantities) and their disposal	The survey vessels will operate under international standards The International Convention for the Prevention of Pollution from Ships (MARPOL) with respect to black and grey wastewater and food waste discharges, which are designed to eliminate impacts to coastal waters, and reduce the levels of discharge in offshore waters. Therefore, no effects are expected.
Identification of wastes arising and other residues (including quantities) that may be of particular concern in the context of Natura 2000 network	There will be no direct emissions to water (seawater or other) during the proposed marine SI works. There will be no waste sediment as the boreholes will be left to collapse naturally following completion of drilling where the cuttings are likely to fall back down the hole. Any general waste arising from the survey activities will be stored onboard temporarily and will be taken off site to a licence/permitted waste facility.
Description of any additional services required to implement the	N/A

project or plan, their location and means of construction

Appendix 2 – Proposed Mitigation Measures

Project Environmental Management Plan

The PEMP will include, but is not limited to:

- Oils and lubricants used in the survey equipment would be biodegradable where possible, and all chemicals would be certified to the relevant standard;
- Good practice procedures would be put in place when transferring oil or fuel between service vessels;
- Vessels must be free of invasive alien species on their hulls and in their ballast water;
- Vessels must comply with the International Maritime Organization (IMO) ballast water management guidelines;
- Appropriate vessel maintenance following guidance from MARPOL;
- Appropriate spill plan procedures would also be implemented in order to appropriately manage any unexpected discharge into the marine environment;
- Inclusion of control measures such as the requirement to carry spill kits, and bunding to contain any spill, and the requirement for vessel personnel to undergo training to ensure requirements of the PEMP are understood and communicated;
- All work practices and vessels will adhere to the requirements of MARPOL 73/78; specifically Annex 1;
- Regulations for the prevention of pollution by oil concerning machine waters, bilge waters and deck drainage and Annex IV Regulations for the prevention of pollution by sewage from ships concerning black and grey waters; and,
- All vessels will be certified by the Marine Survey Office.

Appendix 3 – Annex IV Risk Assessment

Below mitigation measures extracted from MUL240042 Annex IV Risk Assessment

Marine Mammal Mitigation

Potential mitigation measures during marine site investigations are limited. The most effective mitigation is through the use of a Marine Mammal Observer (MMO) who ensures that there are no marine mammals within a pre-agreed distance prior to the onset of marine site investigations. The MMO can also record any reaction to the geophysical and geotechnical investigations. However, this mitigation measure will only be effective during daylight hours and in favourable weather conditions.

The National Parks and Wildlife Service recommend a distance of 1000 m for geophysical survey and 500 m radial distance of the drilling sound sources in water depths of <200 m (NPWS 2014) on commencement.

Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters (DAHG, 2014)

The mitigation measures recommended by the NPWS are for the presence of a trained and experienced MMO to ensure a "buffer zone" is clear of marine mammals prior to the start of noise-inducing activities. The proposed mitigation measures (Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters) recommended by the Department of Arts, Heritage and the Gaeltacht in 2014 are designed to mitigate any possible effects.

The following mitigation measures are proposed to minimise the potential impacts on marine mammals and to allow animals move away from the area of dredging and HDD operations:

1. A dedicated, qualified and experienced Marine Mammal Observer will conduct a 30-minute watch for marine mammals within 1000 m (geophysical) and 500 m (geotechnical) prior to start up. If an Annex IV species (cetacean, marine turtle or otter) or seal is sighted within the Mitigation Zone (MZ), start-up 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, nor if weather or visibility conditions deteriorate nor if marine mammals occur within the MZ.

Disturbance

The most effective way of mitigating the potential effects of acoustic disturbance is through the provision of an MMO ensuring no marine mammals are present within an agreed mitigation zone.

Collision, Injury and Mortality

There is no risk of injury, mortality or collision.

Disruption of Normal Behaviour

Geophysical and geotechnical investigations activity is very local and of relatively short duration and any disturbance will be short term. Sound exposure levels from geophysical and geotechnical investigations may be above levels that can cause disturbance to a marine mammal, including, masking or behavioural impacts. The presence of an additional vessel and the associated noise produced, is very unlikely to have a significant impact on marine mammals.

NPWS Assessment

1. Do individuals or populations of Annex IV species occur within the proposed area?

Bottlenose dolphins are the most frequently recorded marine mammal species adjacent to the site. Grey seals are frequently observed in, and at the mouth, of Cork Harbour. Common dolphin, minke and fin whales occur in the wider area. No moulting sites for grey or harbour seals occur in Cork Harbour. All marine mammals are part of a larger population and are very mobile.

2. Is the plan or project likely to result in death, injury or disturbance of individuals?

The project will not cause injury or death nor disturbance with proposed mitigation, as any impacts including noise associated with the project is local and of short duration. The activities proposed during this project consist of geophysical and geotechnical (drilling and CPT) operations. It is unlikely any noise generated will be capable of causing excessive disturbance or permanent or temporary hearing injury to a marine mammal. Localised disturbance to marine mammals in the works area may occur during operations without mitigation. The risk of injury or mortality is considered extremely low because Annex IV species, if they occurred in the immediate vicinity of the site are exposed to human activity on a daily basis and would be accommodated.

3. Is it possible to estimate the number of individuals of each species that are likely to be affected?

No abundance estimates for marine mammals exposed to the proposed SI activities are available but the numbers in the harbour are generally low. Seals occur in low numbers within the harbour and counts at breeding and moulting sites are available at the sites >50 km from Cork Harbour. Cetaceans occur in small numbers in the harbour but in greater numbers at the disposal site but no robust density estimates for the site are available. The numbers of all marine mammals present at the SI site and exposed to elevated noise levels are likely to be in the low 10s. Only a few individual marine turtles have been recorded in Cork Harbour over the past few decades and are extremely unlikely to occur during the proposed surveys.

4. Will individuals be disturbed at a sensitive location or sensitive time during their life cycle?

Cetaceans occurring within Cork Harbour can be sporadic but some species such as bottlenose dolphins may occur more during summer months. Other species such as harbour porpoise occur throughout the year at the site while common dolphin abundance peaks during autumn. Harbour porpoise and common dolphin adults with calves have been recorded at the disposal site during summer and autumn months. As there are no known pupping or moulting sites for seal within or adjacent to Cork Harbour, it will have no significant effect.

5. Are the impacts likely to focus on a particular section of the species' population, e.g. adults vs. juveniles, males vs. females?

There are no data to suggest that any particular gender or age group Annex IV species predominates in the area suggesting marine operations site are likely to expose all age groups and both genders.

6. Will the plan or project cause displacement from key functional areas, e.g., for breeding, foraging, resting or migration?

Marine mammals occur at the site but there is no evidence that the site is close to important foraging, nursery, resting or migration routes. No long-term displacement will occur. While a range of Annex IV species occur throughout the year and for some species at important feeding times (e.g. autumn for fin whales), the marine activities will not lead to any significant disturbance. Small numbers of grey seals may occur in the vicinity of the site but they are likely to be acclimated to human activities and are not be affected.

7. How quickly is the affected population likely to recover once the plan or project has ceased?

No long-term disturbance of Annex IV species in the area will occur, short term affects can be mitigated. All Annex IV species (with the exception of marine turtles) are likely to be acclimated to human activities and are likely to recover from any temporary disturbance within hours or days.

Residual Impacts

With implementation of the above mitigation measures, it is very unlikely that there will be any negative residual impacts from the proposed marine operations on Annex IV species in the area.

Summary

Cork Harbour and its approaches are important for some Annex IV species in the area including the occurrence of bottlenose dolphins and grey seals adjacent to the proposed site. Mitigation to reduce impacts on Annex IV cetacean species is recommended and if implemented will result in no significant impacts. Mitigation is recommended through provision of an MMO during geophysical and geotechnical activities to comply with NPWS (2014) guidelines.