SUPPORTING INFORMATION FOR SCREENING FOR APPROPRIATE ASSESSMENT

GREATER DUBLIN DRAINAGE PROJECT

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GDD SISAA
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Executive Summary

The Greater Dublin Drainage (GDD) project is the development of a new regional wastewater treatment facility and associated infrastructure to serve the population of Dublin and parts of Kildare and Meath.

These SI works are required to inform the construction stage, the detailed engineering design of the marine elements of the GDD project and to provide baseline data for any preconstruction and monitoring assessments. Information collected by the SI works will support the overall GDD project in its aim to upgrade and provide additional wastewater infrastructure for the Greater Dublin Area. Therefore, this MUL represents a critical step towards meeting the current and future wastewater treatment demand within the Greater Dublin Area.

This report has been prepared by RPS, on behalf of Uisce Éireann, in support of a Maritime Usage Licence Application (MULA) to the Maritime Area Regulatory Authority (MARA). The MULA is for site investigation works (SI works) to inform the construction stage, the detailed engineering design of the marine elements of the GDD project within Baldoyle Bay and the Irish Sea. The results of environmental surveys will provide baseline data for preconstruction and monitoring assessments.

The SI works comprise geophysical, bathymetric and geotechnical investigations below the High Water Mark (HWM) in Baldoyle Bay (MUL Area A) and bathymetric, geotechnical and environmental survey in the Irish Sea (MUL Area B) as summarised below:

- Land-based geophysical surveys (below the HWM) including access routes via bog mats (Baldoyle Bay);
- Geotechnical surveys (4no. boreholes) including access routes via bog mats (Baldoyle Bay);
- Marine (boat-based) geophysical and bathymetric surveys within Baldoyle Bay and the Irish Sea;
- Marine geotechnical surveys (10no. boreholes) (Irish Sea); and
- Marine environmental surveys (benthic grab samples) (Irish Sea).

This Supporting Information for Screening for Appropriate Assessment (SISAA) report has been prepared to provide all necessary information to allow MARA to complete a Screening for Appropriate Assessment of the potential for Likely Significant Effects on European sites, in view of their conservation objectives, arising from the SI works either individually or in combination with other plans or projects.

The overall findings of this SISAA are as follows.

1. The SI works are not connected with or necessary to the management of the nature conservation interest of any European site.
2. Intrusive geotechnical investigations will take place within Baldoyle Bay and the Irish Sea and environmental grab sampling will take place within the Irish Sea. Sampling locations will be discrete and confined to the area of investigation, however, without further information on locations and without the application of mitigation, there is potential for loss of, or damage to, QI habitats in Baldoyle Bay SAC (000199) and/or Rockabill to Dalkey Islands SAC (003000).
3. Land-based and boat-based geophysical and bathymetric surveys and geotechnical investigations within Baldoyle Bay have the potential to disturb wintering bird species that may be within the immediate vicinity of the MUL Area. Surveys undertaken at sea close to land have the potential to disturb breeding birds at their nests i.e. Irelands Eye SPA.
4. Significant effects due to disturbance of seabirds utilising the marine environment (i.e. foraging or rafting) are considered unlikely due to the temporary and limited nature of the surveys, in a region with a baseline of regular vessel activity.

5. There is no potential for the proposed SI works to disturb Annex II otter protected by SAC designation, as the nearest SAC designated for otter is over 20 km away and there is no likelihood of interaction.
6. The proposed SI works do not overlap with European sites designated for relevant Annex II migratory fish species. The River Boyne and River Blackwater SAC (002299) (NPWS, 2014a) is the only SAC on the east coast of Ireland which is designated for migratory fish species such as river lamprey and salmon, located 37 km north of the MUL Area. Likely significant effects to migratory fish species of the River Boyne and River Blackwater SAC due to underwater noise can be ruled out. Given the distance between the SAC for which migratory fish are designated, the risk ranges for both auditory injury and TTS being below 10 m for all survey scenarios and the scale and duration of the proposed SI works within the Irish Sea.
7. The marine geophysical, bathymetric and geotechnical surveys will introduce subsea noise that has the potential to impact on bottlenose dolphin (*Tursiops truncates*), harbour porpoise (*Phocoena phocoena)*, grey seal (*Halichoerus grypus)* and harbour seal (*Phoca vitulina)*.
8. It is our opinion that without the implementation of mitigation measures, it cannot be excluded on the basis of objective scientific information that the project, individually or in combination with other plans or projects, will have a significant effect on the European sites listed below, including four sites in the UK. It is respectfully submitted that MARA should carry out an Appropriate Assessment and a Natura Impact Statement (NIS) will be submitted to MARA accordingly.
    - Rockabill to Dalkey Island SAC
    - Baldoyle Bay SAC
    - Lambay Island SAC
    - Codling Fault Zone SAC
    - North Anglesey Marine SAC
    - Murlough SAC
    - North Channel SAC
    - Blackwater Bank SAC
    - Lleyn Peninsula and the Sarnau SAC
    - Hook Head SAC
    - Baldoyle Bay SPA
    - North-West Irish Sea SPA
    - Ireland’s Eye SPA
    - North Bull Island SPA
    - Malahide Estuary SPA
    - South Dublin Bay and River Tolka Estuary SPA
    - Lambay Island SPA
    - Rogerstown Estuary SPA
    - Dalkey Island SPA
    - Skerries Islands SPA

1 INTRODUCTION

1.1 Overview

The Greater Dublin Drainage (GDD) project is the development of a new regional wastewater treatment facility and associated infrastructure to serve the population of Dublin and parts of Kildare and Meath.

The proposed scheme involves a new 14.6km orbital sewer running from Blanchardstown to a proposed new wastewater treatment plant (WwTP) in Clonshagh located to the east of Dublin Airport. From the WwTP, a further 5.4km length of outfall pipeline connects to a 6km long marine outfall to transport the treated wastewater offshore.

Core elements of the GDD project, indicated in **Figure 1.1** below, comprise the following:

- **1km Orbital Sewer** – Gravity Main 1 from Blanchardstown to Abbotstown Pumping Station (PS);
- **Abbotstown PS** – to be located in the grounds of the Sport Ireland Campus;
- **5.3km Orbital Sewer** – Rising Main from the PS to Dubber Odour Control Facility;
- **9.3km Orbital Sewer** – Gravity Main 2 from Dubber to WWTP;
- **500,000 PE Wastewater Treatment Plant (WwTP)** and **Sludge Hub Centre (SHC)** to be located at Clonshagh;
- **5km Land-Based Outfall Pipeline** linking the proposed Regional WwTP to the marine outfall;
- **6km Marine Outfall** pipeline to a discharge point located approx. 1km north-east of Ireland's Eye; and,
- **North Fringe Sewer (NFS) Diversion** – diversion of an existing trunk sewer to the WwTP site.

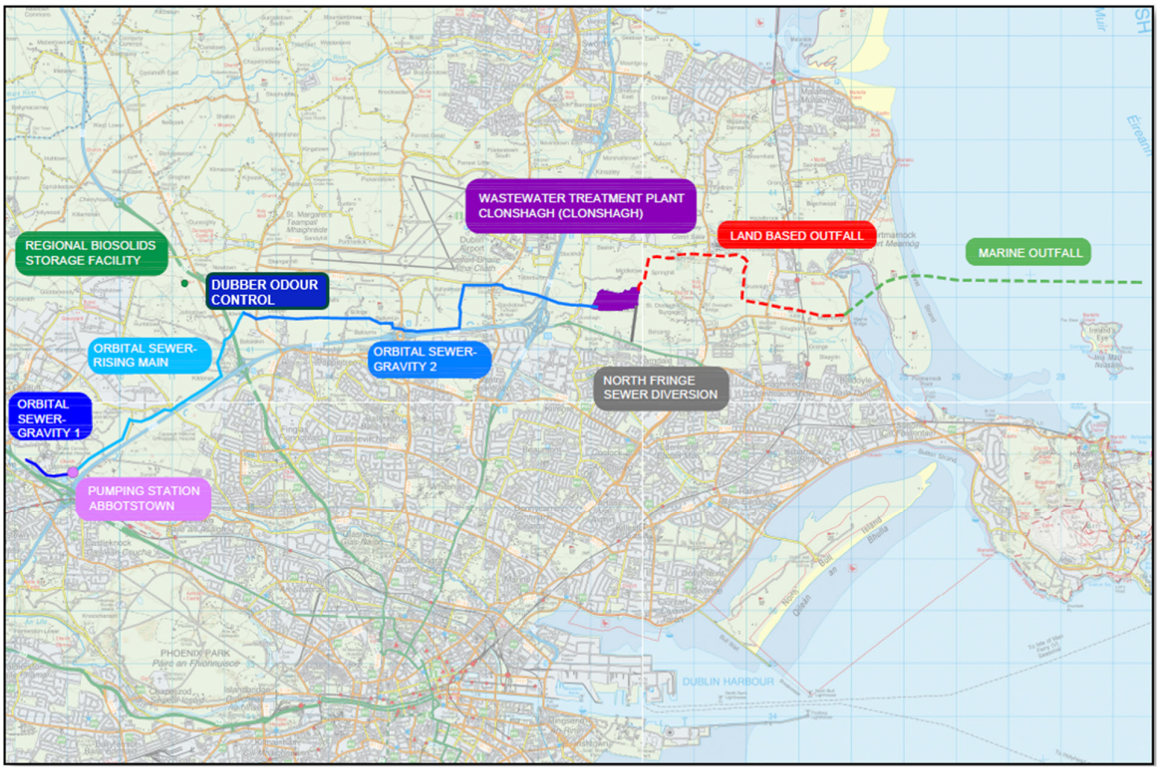
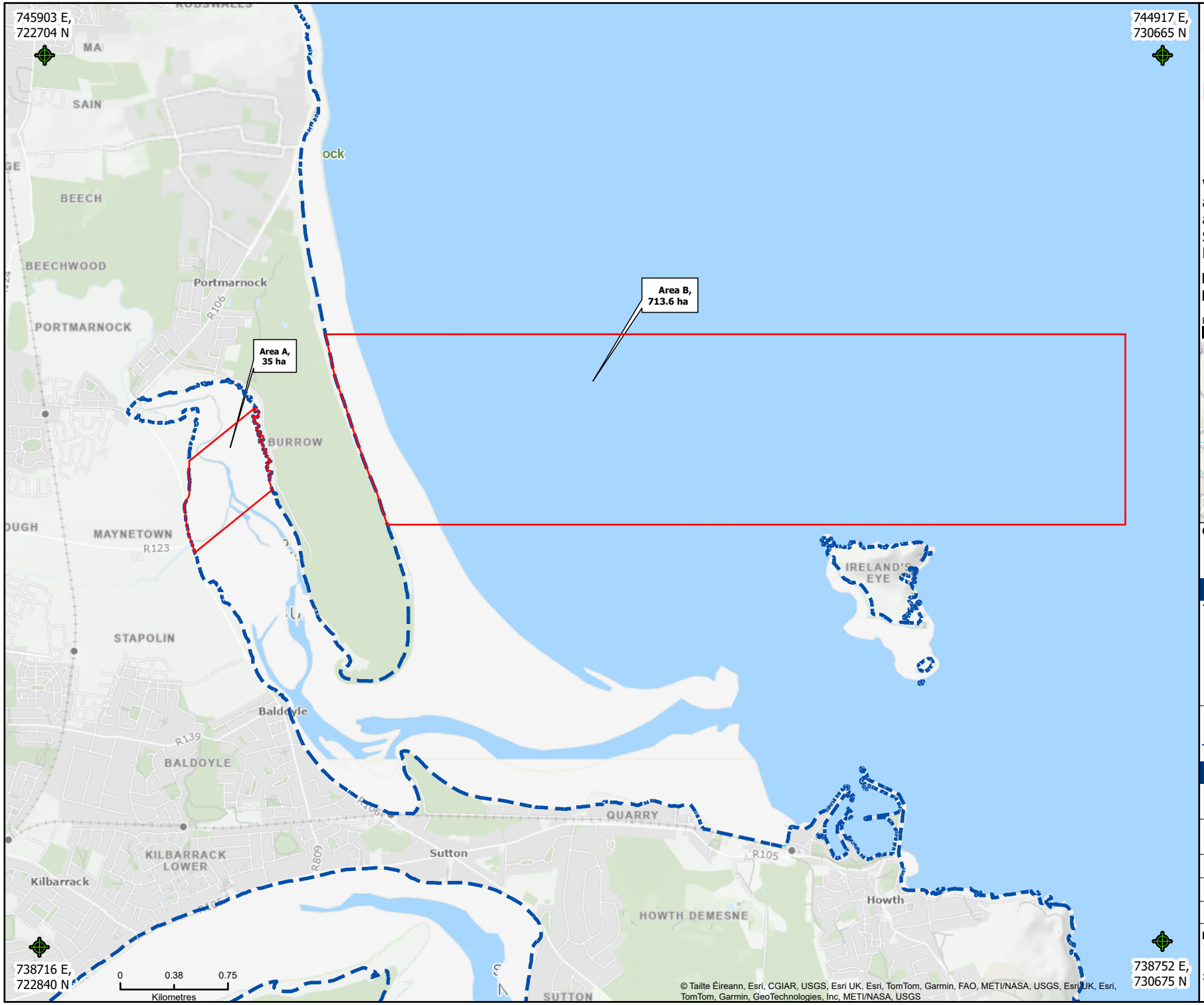


Figure 1.1 Core elements of GDD project.

Construction methods for the GDD project pipeline consist of a combination of both tunnelled and open cut for terrestrial sections of pipeline and tunnelled and dredged methods for marine based sections of pipeline.

This Maritime Usage Licence Application (MULA) is required to undertake site investigations (hereafter referred to as the SI works) within Baldoyle Bay and the Irish Sea. These SI works, which are discussed in more detail in Section 2 below, are required to inform the construction stage, the detailed engineering design of the marine elements of the GDD project and to provide baseline data for any preconstruction and monitoring assessments. Information collected by the SI works will support the overall GDD project in its aim to upgrade and provide additional wastewater infrastructure for the Greater Dublin Area.



Legend

- Maritime Usage Licence Area
- High Water Mark (HWM)
- Townlands Boundaries

Where the licence area adjoins or abuts the land the High Water Mark as defined by the Chief Boundary Surveyor is the boundary of the licence area

MARA File Reference No: PA/MUL/022

N

Prepared by: [redacted]

Client

Uisce Éireann Irish Water

Greater Dublin Drainage

Title

Figure 1.2

Proposed MUL Map

TETRA TECH
rps A TETRA TECH COMPANY
West Pier Business Campus,
Dun Laoghaire,
Co Dublin,
Ireland.
+353 (0) 1 4882900
rpsgroup.com

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NOTE:

1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
2.

1.2 Accompanying Reports

The MULA consists of the following documents and reports:

- Maritime Usage Licence Application Form
- Project Description including drawings
- Assessment of Impact on the Maritime Usage (AIMU)
- Supporting Information for Screening for Appropriate Assessment (SISAA)
- Annex IV Species Risk Assessment
- Subsea Noise Technical Report.
- Natura Impact Statement (NIS).

In order to avoid repetition, this report makes reference to these other reports and drawings throughout.

1.3 Purpose of the Report

This report has been prepared by RPS, on behalf of Uisce Éireann, to provide information on the SI works proposed to be undertaken for the GDD project in support of the MULA to MARA. This Supporting Information for Screening for Appropriate Assessment (SISAA) report provides all necessary information to MARA to allow for completion of a Screening for Appropriate Assessment of the potential for likely significant effects on European site, in view of their conservation objectives, arising from the SI works either alone or in-combination with other plans or projects.

This report provides a brief description of the SI works, consisting of land-based (below the high-water mark) and marine geophysical, bathymetric, geotechnical and environmental surveys and investigations that are proposed to be undertaken. A more detailed description is provided in the separate 'Project Description' document (Report ref: 10028814-RPS-MO-XX-RP-N-RP0080). The Project Description includes details of the methods, equipment and quantities for proposed activities. The results of the SI works will be used to inform the construction stage, the engineering design for the proposed marine outfall pipeline and will also provide baseline data for subsequent environmental assessments.

1.4 Statement of authority

The technical competence of the authors is outlined below:

[redacted] is a Principal Scientist in the Environmental Services Business Unit in RPS. She has over 13 years' experience in the marine science field and is a Chartered Environmentalist and a Full Member of the Institute of Environmental Sciences. [redacted] holds an honours degree in Environmental Science from Trinity College Dublin and a Master's in Marine Environmental Protection from Bangor University, Wales. [redacted] has delivered the environmental assessments for a wide range of marine and coastal projects, including environmental impact assessment, appropriate assessment and Annex IV species reports.

[redacted] is a Project Scientist in the Environmental Services Business Unit in RPS. She holds a Bachelor's Degree in Marine Science from the University of Galway and Master's Degree in Climate Change and Managing the Marine Environment from Heriot-Watt University Edinburgh. She has three years' experience working in consultancy, assisting on a wide range of projects from offshore renewable

energy projects to flood relief schemes, including marine and terrestrial surveys. She is a qualifying CIEEM member.

[redacted] is a Graduate Scientist in the Environmental Services Business Unit in RPS. She holds an honours degree in Zoology (B.Sc.) and Master's degree in Marine Biology, both from University College Cork. She has a years' experience as a Project Manager at Cork Nature Network, responsible for marine and river surveys, and is currently involved in marine licensing and flood relief projects within RPS.

1.5 Legislation

1.5.1 European Legislation

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (the Habitats Directive) provides protection for habitats and species of European importance; Council Directive 2009/147/EC on the conservation of wild birds (Codified version) (the Birds Directive) aims to protect all of the 500 wild bird species naturally occurring in the European Union (EU). Areas designated for protection under the Habitats Directive are described as Special Areas of Conservation (SAC) and those designated under the Birds Directive as Special Protection Areas (SPA) and the sites are known collectively as the Natura 2000 network which includes European sites (see section 1.5.2.4). As each member of the EU is required to designate areas in their jurisdictions, the establishment of this network of European sites under Articles 3 to 9 of the Habitats Directive is the key measure to protect nature and biodiversity in the EU.

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 Natura 2000 sites. Article 7 of the Habitats Directive extends the scope of its articles 6(3) and 6(4) to the Birds Directive.

Article 6(3) establishes the requirement for Appropriate Assessment (AA):

> "*Any plan or project not directly connected with or necessary to the management of the* [Natura 2000] *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. Considering 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 public.*"

Further detail on the stages of AA is provided in Section 3.2.

In the context of the marine works to which this MULA relates, the Habitats and Birds Directives have been transposed into Irish Legislation under, amongst other things, the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended.

Each European site has assigned Conservation Objectives (COs) and a list of Qualifying Interests (QI). The CO concept appears in the eighth recital of the Habitats Directive which reads: "*whereas it is appropriate, in each area designated, to implement the necessary measures having regard to the conservation objectives pursued*". Article 1 then explains that "*conservation means a series of measures*

required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favourable status".

The National Parks and Wildlife Service (NPWS) has established COs for each European site in Ireland. These are published on their website. NPWS advise in the general introductory notes of their site-specific conservation objectives (SSCO) series publications, that an appropriate assessment based on their "*published conservation objectives will remain valid even if the CO targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out*". NPWS advise that to assist in that regard, it is essential that the date and version are included when objectives are cited.

1.5.2 National Legislation

1.5.2.1 Maritime Area Planning Act

The Maritime Area Planning Act, 2021 (as amended) established MARA. One of the functions of MARA is to determine applications for the granting of licences to undertake any of the activities included in Schedule 7 of the Maritime Area Planning Act, 2021 (as amended).

The following definitions in relation to Appropriate Assessment (AA) are included in Section 2(1) of the Maritime Area Planning Act, 2021 (as amended):

> *"screening for appropriate assessment" shall be construed in accordance with, as appropriate—*
>
> > *(a) section 177U of the Act of 2000, or*
> >
> > *(b) Part 5 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011)*
>
> *"appropriate assessment" shall be construed in accordance with, as appropriate—*
>
> > *(a) section 177V of the Act of 2000, or*
> >
> > *(b) Part 5 of the European Communities (Birds and Natural Habitats) Regulations (S.I. No. 477 of 2011);*

where the Act of 2000 refers to the Planning and Development Act 2000 (as amended).

Under Section 112 of the Maritime Area Planning Act, 2021 (as amended), MARA has been designated as a competent authority for the purposes of Part 5 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011)*;* and appropriate assessments to which that Part applies.

MARA is required to carry out a screening for Appropriate Assessment (AA) in accordance with Section 117(4)(a) of the Maritime Area Planning Act, 2021 (as amended).

Where MARA determines that an AA is required it shall carry out the AA in accordance with Section 117(7)(a) of the Maritime Area Planning Act, 2021 (as amended).

1.5.2.2 Screening Out for AA

Under Regulation 42(7) of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) the competent authority in this case MARA shall determine that an AA of a 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 that the project, individually or in combination with other plans or projects, will have a significant effect on a European site.

1.5.2.3 Screening In for AA

Under Regulation 42(6) of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) the competent authority shall determine that an AA of a plan or project *is 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 cannot 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. Under Section 117(4) of the Maritime Area Planning Act, 2021 (as amended) the MARA shall, as soon as is practicable after it receives a MUL application and if it considers it necessary to do so in its capacity as the competent authority, carry out screening for Appropriate Assessment in respect of the proposed maritime usage the subject of the application.

Where the competent authority determines that an AA is required, they shall make a determination under Article 6(3) of the Habitats Directive as to whether or not the proposed development would adversely affect the integrity of a European site and an Appropriate Assessment shall be carried out by the competent authority before consent is given for the proposed development - see Regulation 42(11) European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

1.5.2.4 European Sites and Natura 2000 Sites

The term European site is defined in the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) as:

> *"European Site" means—*
> *(a) a candidate site of Community importance,*
> *(b) a site of Community importance,*
> *(c) a candidate special area of conservation,*
> *(d) a special area of conservation,*
> *(e) a candidate special protection area, or*
> *(f) a special protection area.*

The term Natura 2000 is defined in the same Regulations as:

> *"Natura 2000" means the European network of special areas of conservation under the Habitats Directive and special protection areas under the Birds Directive, provided for by Article 3(1) of the Habitats Directive and, for the purposes of these Regulations, includes European Sites.*

As such, and as adopted in this report, the term European site refers to one of the sites comprising the Natura 2000 network.

2 PROJECT DESCRIPTION

A detailed Project Description report, including drawings, has been included as a separate report to the MULA to reduce repetition in reports. Please refer to this document for the detail on each of the elements summarised in the text below.

The MUL Area comprises two areas, one within Baldoyle Bay (Area A) and the other (Area B) extending east from Portmarnock Beach into the Irish Sea. The total combined MUL Area encompasses an area of 748.6 ha. Area A is within Baldoyle Bay between the high-water mark (HWM) running adjacent to the R106 on the west of Baldoyle Bay and the HWM on the east of Baldoyle Bay adjacent to the Portmarnock Golf Club. This encompasses an area of 35 ha. Area B extends east into the Irish Sea from the HWM at Portmarnock Beach. This encompasses an area of 713.6ha. Drawings illustrating the MUL Area and the proposed locations of the SI works are included in Section 2 of the MULA Project Description.

The activities proposed to be carried out within the MUL Area are summarised in **Table 2-1** below.

Table 2-1 Proposed SI works Activities

Survey Type	Survey Elements (indicative equipment)	MUL Area Applicable to Survey Type	
		Baldoyle Bay	Irish Sea
Land-based Geophysical Surveys	Seismic Refraction, GPR or Electrical Resistivity Tomography (ERT)	Yes	N/A
(below HWM, undertaken at Baldoyle Bay at low tide)	Topographical land surveying techniques.	Yes	N/A
Marine Bathymetric Surveys	Multi Beam Echosounder (MBES)	Yes	Yes
(undertaken from survey vessel)	Side Scan Sonar (SSS)	Yes	Yes
	Vessel Positioning System: Ultra short baseline (UBSL)	Yes	Yes
Marine Geophysical Surveys	Ultra-High Resolution Seismic (UHRS), boomer or sparker	Yes	N/A
(undertaken from survey vessel)	Sub-bottom profiler (SBP)	Yes	N/A
	Vessel Positioning System: UBSL	Yes	Yes
Marine Geomagnetic Surveys (undertaken from survey vessel, no acoustic signal)	Magnetometer	Yes	Yes
Marine Geotechnical Surveys	Rotary core boreholes	N/A	Yes
(undertaken from survey vessel(s) or jack-up barge; JUB)	Cone penetration testing (CPT) at borehole locations.	N/A	Yes
Land-based Geotechnical Surveys	Rotary core boreholes	Yes	N/A

Survey Type	Survey Elements (indicative equipment)	MUL Area Applicable to Survey Type	
		Baldoyle Bay	Irish Sea
(below HWM, accessed from land and undertaken using a rig)	Cone penetration testing (CPT) at borehole locations.	Yes	N/A
Marine Environmental Surveys (undertaken from survey vessel(s))	Drop-down video (DDV) and/or Remotely Operated Vehicles (ROV) survey.	N/A	Yes
	Grab sampling	N/A	Yes
	Water Quality Samples, including Conductivity, Temperature and Depth (CTD) Measurements.	N/A	Yes

The drawings prepared in support of the MULA are included in Appendix A of the Project Description document. As described in more detail in the Project Description document, the proposed locations shown in the figures and drawings are subject to refinement based on the results of the geophysical, bathymetric and environmental surveys. Similarly, the location may be moved due to the presence of obstructions/ refusals at individual locations, i.e. where a physical object, e.g. a subsurface boulder, prevents the borehole, CPT, etc., from going to its target depth. In such circumstances, the borehole location is moved to another nearby location away from the obstruction and drilled again to the target depth.

Uisce Éireann are seeking a MUL for a period of five years from the date of the granting of any licence. Although the majority of the SI works are expected to take 8 weeks to complete, bathymetric surveys may be repeated yearly to ensure that seabed conditions have not changed prior to construction.

3 METHODOLOGY

3.1 Appropriate Assessment Guidance

This SISAA report has been completed in accordance with the EU and national guidance documents that pertain to Member States' fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in relation to this SISAA has complied with the following guidance:

- EC (2000). Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg;
- EC (2002). 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, Office for Official Publications of the European Communities, Luxembourg. European Commission;
- EC (2007). Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. European Commission;
- DoEHLG (2009, rev. 2010). Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government;
- EC (2013). Interpretation Manual of European Union Habitats. Version EUR 28. European Commission, Luxembourg;
- EC (2018). European Commission Notice C (2018) 7621 'Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC', Office for Official Publications of the European Communities, Luxembourg;
- OPR (2021). Practice Note PN01: Appropriate Assessment Screening for Development Management. Office of the Planning Regulator, Dublin Ireland.
- EC (2021). European Commission Notice C (2021) 6913 'Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC', Office for Official Publications of the European Communities, Luxembourg.

3.2 Stages of Appropriate Assessment

Appropriate Assessment (AA) is a four-stage process with tests at each stage. The four stages are summarised diagrammatically in **Figure 3.1** below. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

Stages 1-2 deal with the main requirements for assessment under Article 6(3) of the Habitats Directive. Stage 3 is a precursor to Stage 4 which is the main derogation step of Article 6(4).

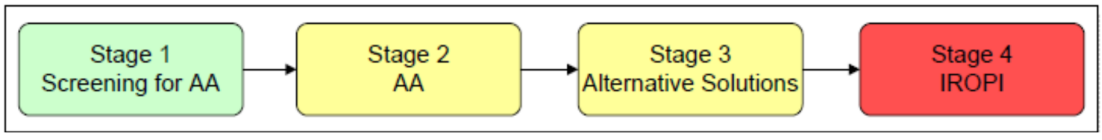


Figure 3.1 Four Stages of Appropriate Assessment

The screening for AA carried out by the competent authority (Stage 1), will determine whether an AA (Stage 2) for this MULA for the GDD project is required. The purpose of the screening stage is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in-combination with other plans or projects, could have significant effects on a European site in view of the site's conservation objectives.

There is no necessity to establish such an effect; it is merely necessary for the competent authority to determine that there may be such an effect. The need to apply the precautionary principle in making any key decisions in relation to the tests of Appropriate Assessment (AA) has been confirmed by the case law of the Court of Justice of the European Union (CJEU). Plans or projects that have no appreciable effect on a European site may be excluded. The threshold at this first stage is a very low one and operates as a trigger in order to determine whether a Stage Two AA must be undertaken by the competent authority on the implications of the proposed development for the conservation objectives of a European site. Therefore, where significant effects are likely, uncertain or unknown at screening stage, a second stage AA will be required

Stage 2 is required if it cannot be excluded, on the basis of the objective information provided at Stage 1, that the GDD project, individually or in combination with other projects or plans, will have a significant effect on a European site, in view of the site's conservation objectives. In this case, a Natura Impact Statement (NIS) must be prepared to assist the competent authority to conduct the Stage 2 AA. Stage 2 AA is a focused and detailed examination, analysis and evaluation carried out by the competent authority of the implications of the plan or project, alone and in-combination with other plans and projects, on the integrity of a European site in view of that site's conservation objectives. Case law has established that such an Appropriate Assessment, to be lawfully conducted, in summary:

> (i) must identify, in the light of the best scientific knowledge in the field, all aspects of the proposed development which can, by itself or in-combination with other plans or projects, affect the conservation objectives of the European site;
>
> (ii) must contain complete, precise and definitive findings and conclusions and may not have lacunae or gaps; and
>
> (iii) may only include a determination that the proposed development will not adversely affect the integrity of any relevant European site where the competent authority decides (on the basis of complete, precise and definitive findings and conclusions) that no reasonable scientific doubt remains as to the absence of the identified potential effects. If adverse impacts can be satisfactorily avoided or successfully mitigated at this stage, so that no reasonable doubt remains as to the absence of the identified potential effects, then the process is complete. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to stage three and, if necessary, stage four.

If it is not possible during Stage 2 to avoid adverse effects on the integrity of one or more European sites through avoidance and/or mitigation, Stage 3 of the process must be undertaken which is to objectively assess whether alternative solutions exist by which the objectives of the plan or project can be achieved. If it can be demonstrated that there are no reasonable alternative solutions, the AA progresses to Stage 4. This final stage is undertaken when it has been determined that negative impacts on the integrity of a European site will result from a plan or project and there are no alternative solutions. At Stage 4 of the AA process, the competent authority must determine if, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, the project must nevertheless be carried out for imperative reasons of overriding public interest, or 'IROPI', including those of a social or economic nature. In such circumstances, the Member State is required to take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected.

While there is no prescribed form or content for reporting (DoEHLG, 2009) the methodology and format adopted in this report has been in accordance with the European Commission Methodological Guidance

on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (EC, 2021) and the European Commission Guidance 'Managing Natura 2000 sites' (EC, 2018), guidance prepared by the NPWS (DoEHLG, 2009) and by the Office of the Planning Regulator (OPR, 2021).

As per DoEHLG (2009):

> *The first test is to establish whether, in relation to a particular plan or project, appropriate assessment is required.*

In summary, the test for the screening for AA is to determine on the basis of a preliminary assessment and objective scientific information could there be effects in view of the site's conservation objectives. There is no necessity to establish such an effect; it is merely necessary for the competent authority to determine that there may be such an effect. The need to apply the precautionary principle in making any key decisions in relation to the tests of Appropriate Assessment (AA) has been confirmed by the case law of the Court of Justice of the European Union (CJEU). Plans or projects that have no appreciable effect on a European site may be excluded. The threshold at this screening stage is a very low one and operates as a trigger in order to determine whether an AA must be undertaken by the competent authority on the implications of the proposed development for the conservation objectives of a European site. Therefore, where significant effects are likely, uncertain or unknown at screening stage, an AA and NIS will be required.

3.3 Stage 1 Screening / Test of Significance

This process identifies whether the proposed development is directly connected to or necessary for the management of a European site(s) and identifies whether likely significant effects upon a European site(s) can be excluded, either alone or in combination with other projects or plans.

1. The screening for AA will incorporate the following steps:
2. Determining whether a project is directly connected with or necessary to the conservation management of any European sites;
3. Describing the project;
4. Identifying the European sites potentially affected by the project or plan;
5. Identifying and describing any potential effects of the project or plan on European sites, alone, or in combination with other plans/projects; and
6. Assessing the likelihood of significant effects on European sites.

The output from this stage is a determination for each European site(s) of not significant, significant, potentially significant, or uncertain effects. The latter three determinations will cause that site to be brought forward to Stage 2.

3.4 Desk Study

Information on the receiving environment was analysed to determine the potential for significant effects to QIs and SCIs of the European sites with established connectivity to the SI works (see Section 5.3). The following publications and data sources were reviewed in July 2025:

- Information on ranges of mobile QI populations in Volume 1 of NPWS' Status of EU Protected Habitats and Species in Ireland (NPWS, 2019), and associated digital shapefiles obtained from the NPWS Research Branch;
- BirdWatch Ireland (https://birdwatchireland.ie/);

- Mapping of European site boundaries and Conservation Objectives for relevant sites, available online from the NPWS including Site Synopses, European site Data Forms and Conservation Objective Supporting Documents, where available (https://www.npws.ie/protected-sites);
- Distribution records for QI of European sites held online by the National Biodiversity Data Centre (NBDC) (https://biodiversityireland.ie/);
- Ordnance Survey of Ireland maps and aerial photography (https://osi.ie)
- EMODnet (2025) Map Viewer. Available at: https://emodnet.ec.europa.eu/geoviewer/ accessed July 2025.
- ObSERVE aerial survey data (Rogan et al., 2018 and Giralt Paradell et al., 2024).

3.5 Identification of Relevant European Sites

3.5.1 Source-Pathway Receptor Model

The identification of relevant European sites to be included in this report was based on the identification of the 'zone of influence (ZoI)' of the SI works using a Source-Pathway-Receptor (S-P-R) model where:

- A 'source' is defined as the individual element of the proposed works that has the potential to impact on a European site, its qualifying features, and its COs;
- A 'pathway' is defined as the means or route by which a source can affect the ecological receptor; and
- A 'receptor' is defined as QI of SACs or SPAs for which COs have been set for the European site(s) being assessed.

An S-P-R model is a standard tool used in environmental assessment. In order for an effect to be likely, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism results in no likelihood for the effect to occur. The S-P-R model was used to identify a list of European sites, and their QIs, to which the SI works are potentially linked. These are termed as 'relevant' sites/QIs throughout this report.

3.5.2 Zone of Influence

Determination of the SI works' ZoI was achieved by assessing the SI works against the ecological receptors within the MUL Area, in addition to the ecological receptors that could be connected to and subsequently impacted by the project through abiotic and biotic vectors.

The proximity of the SI works to European sites, and more importantly, QIs and SCIs of the European sites, is of importance when identifying potentially likely significant effects. In accordance with the OPR AA Screening Guidelines (2021), the S-P-R model has been used to identify the ZoI to ensure that relevant European sites are identified. The S-P-R model minimises the risk of overlooking distant or obscure effect pathways, while also avoiding an over reliance on buffer zones (e.g., 15 km), within which all European sites should be considered. This approach follows the DoEHLG 2009 guidance on AA which states that:

> "*For projects, the distance could be much less than 15 km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects" (DoEHLG, 2009; p.32, para 1).*

The ZoI of the SI works on mobile species (e.g., birds, mammals, and fish), and static species and habitats (e.g., saltmarshes, woodlands, and flora) is considered differently. Mobile species have 'range' outside of the European sites in which they are QI. The range of mobile QI species varies considerably,

from several metres (e.g., in the case of whorl snails *Vertigo* spp.), to hundreds of kilometres (in the case of migratory wetland birds). A project's ZoI may extend well beyond the project boundary and can impact or have an effect on static species and habitats remote from the SI works; for example, where an aquatic QI habitat or plant is located many kilometres downstream from a pollution source. In particular, hydrological linkages between the SI works and European sites (and their QIs) can occur over significant distances; however, any effect will be site-specific depending on the receiving water environment and nature of the potential impact.

To this end, the ZoI for this project extends outside of the immediate SI works MUL Area to include ecological receptors connected to the project through proximity and connectivity through features such as watercourses and waterbodies in addition to potential connectivity through land and air. See Section 5.3 for the identification of relevant European sites.

4 DESK STUDY

This section details the results of the desk study undertaken to describe the receiving environment of the SI works. The relevant receiving environment relates to anything that may be directly or indirectly related to the QIs/SCIs of the relevant European Sites.

The MUL Area comprises two discrete areas, MUL Area A within Baldoyle Bay and MUL Area B extending east from Portmarnock Beach into the Irish Sea. The total combined MUL Area encompasses an area of 748.6 ha. Area A (Baldoyle Bay) encompasses an area of 35 ha and Area B (Irish Sea) encompasses an area of 713.6ha.

4.1 Habitats

The MUL Area spans an area of 748.6 ha and covers a range of habitat types, from estuarine / intertidal to subtidal. In order to understand the marine habitat types likely to be encountered, the boundary of the MUL Area was reviewed against EUSeaMap, a broad-scale predictive seabed habitat map for Europe (EMODnet, 2025). There is no habitat information on EMODnet (2025) for Baldoyle Bay, however for the MUL Area within the Irish Sea, there is a band of moderate energy infralittoral sand (MB52), moderate and high energy shallow circalittoral coarse sediment (MC32) extending west to east within the Irish Sea MUL Area.

Data from previous surveys in estuary determined Fossitt habitat types of predominantly LS4 mud shores in the majority of Baldoyle Bay, but some lower salt marsh (CM1) on the western bank within the MUL Area and lower salt marsh/CM2 upper salt marsh on the eastern bank of the MUL Area (Benthic Solutions Ltd., 2023).

The MUL Area intersects with or is adjacent to a number of SACs designated for Annex I habitats, namely Baldoyle Bay SAC, Rockabill to Dalkey Island SAC, and Ireland's Eye SAC (002193). The desk study identified a number of Annex I marine habitats in the wider landscape within and adjacent to the MUL Area. These include: Mudflats and sandflats not covered by seawater at low tide (1140), *Salicornia* and other annuals colonising mud and sand (1310), Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (1330), Mediterranean salt meadows (*Juncetalia maritimi*) (1410), Reefs (1170), and vegetated sea cliffs of the Atlantic and Baltic coasts (1230).

Baldoyle Bay SAC, within which MUL Area A occurs, is located to the south of Portmarnock village and spans to the west pier at Howth in Co. Dublin (NPWS, 2013a). The MUL Area intersects the tidal estuarine bay that is fed by the rivers Mayne and Sluice and is protected from the open sea by a large sand dune system. This SAC was selected to maintain the favourable conservation conditions of the following habitats listed in Annex I of the EU Habitats Directive: Mudflats and sandflats not covered by seawater at low tide (1140), *Salicornia* and other annuals colonising mud and sand (1310), Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (1330), and Mediterranean salt meadows (*Juncetalia maritimi*) (1410). Baldoyle Bay SAC is a site of importance for its Mudflats and sandflats not covered by seawater at low tide, with an estimated habitat area of 538.7 ha.

The MUL Area B within the Irish Sea overlaps the Rockabill to Dalkey Island SAC, which is located in the western Irish Sea and encompasses inshore and coastal waters (NPWS, 2014b). The SAC covers a strip of sea that extends 7km across and 40km north to south, from off the coast of Skerries down to Ballybrack. These waters contain sandy and muddy seabed, reefs, sandbanks and islands. MUL Area B overlaps a small area of reef habitat to the northwest of Ireland's Eye, delineated in NPWS (2014b). The

site was selected as a SAC to maintain the favourable conservation condition of Reefs (1170) under Annex I of the EU Habitats Directive.

The MUL Area B does not overlap Ireland's Eye SAC, it is found less than 1 km south of the MUL Area and is designated as an SAC to maintain the favourable conservation condition of perennial vegetation of stony banks (1220) and vegetated sea cliffs of the Atlantic and Baltic coasts (1230) under Annex I of the EU Habitats Directive (NPWS, 2011a). As all the proposed SI works within the Irish Sea will be conducted below the HWM and just under 1 km away, there will be no interaction with the QIs perennial vegetation of stony banks and vegetated sea cliffs of the Atlantic and Baltic coasts and the proposed SI works, therefore this SAC is not assessed in this SISAA.

4.2 Species

4.2.1 Otter

Otter (*Lutra lutra*) occurs throughout Ireland, including along the coast of Dublin (NPWS, 2019) with populations also found along rivers, lakes, and coasts, where fish and other prey are abundant, and where the bank-side habitat offers plenty of cover. They have diverse habitat preferences: lakes, canals, riverine (streams up to major river systems) marshland and estuaries. Otters are a mobile species and maintain territories. In lowland rivers and fish-rich lakes otters only need to maintain small territories (up to 6km), but along smaller river systems and in upland areas where prey may be less abundant, otter territories can stretch to 20 km (Mullen et al., 2021). Female territories range between 7.5 ± 1.5 km for riverine and 6.5 ± 1.0 km for coastal environments where male territories are approximately 13.2 ± 5.3 km along rivers but with a high degree of variability (Reid et al., 2013). In general, otters exploit a narrow strip of habitat, about 10 m wide at the aquatic-terrestrial interface (Mullen et al., 2021). However, otters have been observed to forage out to a maximum of 80 m from the coast (NPWS, 2009a).

Otter is an opportunistic predator with a broad and varied diet. In coastal areas, otters are known to eat rockling, wrasse, eel, sea scorpion, blenny and molluscs (Mullen et al., 2021).

A desk-based study utilising records from NBDC (2025)[1] indicated that otters have been sighted in the last 10 years adjacent to the MUL Area. Two live otter sightings were recorded in 2022, approximately 90 m from MUL Area A, while a dead otter was recorded at the western bank of the estuary in 2017. It is therefore reasonable to conclude that otters may be present within the MUL Area. There are 45 SACs designated for otter in Ireland, however, none of these are located within 20 km of the MUL Area (considered as a precautionary coastal range for otter).

The main threats to otter include habitat destruction, pollution, particularly organic pollution resulting in fish kills, and accidental deaths, e.g., road traffic and fishing gear (NPWS, 2019). The most recent Article 17 conservation assessment for otters in Ireland deemed the species as being in favourable conservation status (NPWS, 2019).

4.2.2 Marine Mammals

The Irish Sea supports a great diversity and abundance of marine mammals, including the following species listed on Annex II of the Habitats Directive and which are therefore QI of certain SACs: harbour porpoise, bottlenose dolphin, harbour seal and grey seal.

[1] Maps - otter biodiversity maps accessed August 2025

4.2.2.1 Harbour porpoise

Harbour porpoise is the smallest, most widespread and abundant cetacean species in Irish waters (Berrow, 2001). It has been recorded off all coasts and over the continental shelf but is thought to be most abundant off the southwest coast (Wall et al., 2013). The shallow continental shelf is a key habitat for harbour porpoise, which is strongly associated with shallow water (<200 m) where they predominantly feed on demersal fish species. Sightings of this species offshore are relatively uncommon, but this may be due in part to low sighting and acoustic survey effort in favourable sea conditions (Ó Cadhla et al., 2004).

As this species is highly mobile, species-specific Management Units (MU) are used to assess the effect of an activity on them. The Inter Agency Marine Mammal Working Group (IAMMWG) has identified MUs for harbour porpoise and provided recommended abundance estimates for each MU. The MUL Area is located within the Celtic and Irish Seas MU, where the most recent estimate of abundance for harbour porpoises is 62,517 (IAMMWG, 2023), based on data collected during SCANS III and the ObSERVE surveys (Rogan et al., 2018, Hammond et al., 2021). Phase II of the Irish ObSERVE programme (2021-2023) was published in October 2024 and includes an estimate of abundance for harbour porpoise within the Irish Sea during the summer of 2021 (10,655) and summer and winter of 2022 (1,653 and 4,547 respectively). (Giralt Paradell et al., 2024).

A desk-based study utilising records from NBDC (2025)[2] indicated that harbour porpoise have been sighted in the last 10 years in marine habitats within and adjacent to MUL Area B within the Irish Sea. More than 30 sightings of live harbour porpoise have been recorded within the MUL Area B in the last ten years, most of these noting the animals as being present in groups of two or three individuals. It is therefore reasonable to conclude that harbour porpoises are likely to be present within the MUL Area B. However, these records show that in the last 10 years, harbour porpoise have not been recorded within Baldoyle Bay (MUL Area A). One individual was recorded at the mouth of Baldoyle Estuary off Portmarnock Beach while another was recorded stranded in 2022 at Sutton Beach. Therefore, it is reasonable to assume that harbour porpoise do not utilise Baldoyle Bay for foraging. There are 16 SACs designated for harbour porpoise in Ireland, one of these is within the MUL Area: Rockabill to Dalkey Island SAC, while Lambay Island SAC (000204) is approximately 7 km to the north of the MUL Area. The most recent Article 17 conservation assessment for harbour porpoise in Ireland deemed the species as being in favourable conservation status (NPWS, 2019).

Harbour porpoises have a higher metabolic rate than dolphins, as this species needs to feed more frequently and consume more prey per unit body weight, in order to maintain their body temperature and other energy needs. For this reason, porpoises may be highly susceptible to changes in the abundance of prey species or disturbance from foraging areas. This species feeds on a wide variety of fish and generally focuses on the most abundant local species. Harbour porpoise, as a species, is particularly vulnerable to disturbance, as individual harbour porpoise needs to forage frequently due to their high metabolic rate (Ransijn et al., 2021).

4.2.2.2 Bottlenose dolphin

Bottlenose dolphins occur off all Irish coasts, with inshore animals moving around the entire Irish coastline and between the UK and Ireland (O'Brien et al., 2009; Robinson et al., 2012). Resident or semi-

[2] Maps - harbour porpoise biodiversity maps accessed August 2025

resident groups are present in the Shannon Estuary and Cork Harbour (Berrow et al., 1996; Ryan et al., 2010).

Bottlenose dolphins are one of the most frequently recorded cetaceans in Irish waters. They occur in group sizes between 3 - 30 in coastal waters, and larger groups of hundreds of individuals in offshore waters. The MUL Area is located within the Irish Sea MU for bottlenose dolphins, where there is an estimated abundance of 293 bottlenose dolphins (IAMMWG, 2023) based on data collected during SCANS III and the ObSERVE surveys (Rogan et al., 2018, Hammond et al., 2021). Phase II of the Irish ObSERVE programme (2021-2023) was published in October 2024 and includes an estimate of abundance for bottlenose dolphin in the Irish Sea during the summer of 2022 at 1,223 (Giralt Paradell et al., 2024).

A desk-based study utilising records from NBDC (2025)[3] indicated that bottlenose dolphin has been sighted in the last 10 years in the Irish Sea adjacent to the MUL Area B. Between 2018 and 2023, five sightings were recorded noting groups of five to 12 individuals, therefore, it is reasonable to assume that bottlenose dolphins may be present within MUL Area B. Previous research has shown the species to have a high degree of site fidelity amongst Ireland's coastal populations (Nykänen et al., 2018). The nearest EU site designated for bottlenose dolphin in Irish waters is Hook Head SAC which is 141 km away off the south coast of Wexford, while the nearest UK SAC designated for bottlenose dolphin is Pen Llyn a'r Sarnau / Lleyn Peninsula and the Sarnau SAC which is 102 km to the southeast.

The most recent Article 17 conservation assessment for bottlenose dolphin in Ireland deemed the species as being in favourable conservation status (NPWS, 2019). However, bottlenose dolphins can be subjected to local and/or regional environmental pressures throughout their range in Irish waters (DEHLG, 2009). The main pressures involve commercial shipping-based or vessel-based activities that occur primarily on a local to regional scale and/or on a temporary to intermittent basis, which includes geophysical seismic exploration (DAHG, 2014).

4.2.2.3 Grey seal

Grey seal is the larger of the two pinniped species which occur around the Irish coast. They are primarily pelagic or demersal in their feeding habits and can be wide-ranging. In Ireland they are generally considered part of a larger population or meta-population that also inhabits adjacent jurisdictions (i.e. the UK and France) (NPWS, 2019). The habitat used by grey seals in Ireland is diverse and dynamic, from coastal and estuarine waters close to human activity and undisturbed offshore islands, to deeper Atlantic shelf waters and shallow seas shared with adjacent member states (Cronin et al., 2013). The key prey species for grey seal include a number of clupeids (e.g., herring), gadoids (e.g., cod, whiting), salmon, flatfish, and sand eels.

There are 10 SACs in Ireland for which grey seal is a QI. These include Lambay Island SAC which is located approximately 7 km from MUL Area B (NPWS, 2024). A desk-based study utilising records from NBDC (2025)[4] indicated that grey seals have been sighted in the last 10 years in marine habitats within and adjacent to MUL Area B. Live sightings have been recorded between 2015 and 2025 in locations which may be investigated during the SI works. Based on tracking data, grey seals typically forage within 100 km of an SAC (Carter et al., 2020). Therefore, it is reasonable to conclude that grey seals are likely to

[3] Maps - bottlenose dolphin biodiversity map accessed August 2025

[4] Maps - grey seal biodiversity map accessed June 2025

be present within MUL Area B. The nearest known haul-out site for grey seals is Ireland's Eye (less than 1 km from MUL Area boundary).

Breeding occurs in late August to December and the annual moult between November to April. Terrestrial habitats used by moulting grey seals around the Irish coastline vary from rocky skerries, island coastlines consisting of rock ledges and outcrops, to sand beaches and sandbanks (Ó'Cadhla at al., 2007). There is a key haul out location at Lambay Island SAC, 7 km north of the MUL Area B, one of the largest on the east coast of Ireland. Between 2009 and 2012, a minimum pup production of 77 pups and a total population size of 270 to 347 was recorded for the east coast population group (Lambay Island and Ireland's Eye) (Ó'Cadhla et al., 2013). In the eastern survey region, which the MUL Area falls within, surveys conducted between 2017 and 2018 recorded a total grey seal count of 418. This was substantially higher than in 2011/2012 (Morris & Duck, 2019).

Grey seal has a 'Favourable' conservation status with an increasing trend in Irish waters (NPWS, 2019). Grey seals face a range of local and regional environmental pressures and threats in Irish coastal/offshore waters. The main pressures involve commercial vessel-based or shipping-based activities, which include prey removal and/or bycatch from fisheries, and impacts arising from geophysical seismic exploration (NPWS, 2019). Strong disturbance could result in displacement of seals from an area. Disturbance could cause slight changes in behaviour such as forcing grey seals to travel greater distances than usual to forage. Grey seals are likely to exhibit some tolerance to the effects of disturbance; however, due to the uncertainties associated with this, the species is deemed to have some sensitivity to strong and mild disturbances. Furthermore, disturbances such as these may also cause potential injury to grey seal, such as impacts on both reproduction and survival rates (Bellman et al., 2019).

4.2.2.4 Harbour seal

Harbour seal is the smaller of the two species of pinniped found in Ireland. They occur in estuarine, coastal, and fully marine areas, and breed in small groups scattered along the coastline. Harbour seals tend to forage within a maximum of 40 or 50 km of their haul-out sites, but most foraging trips tend to be within shorter ranges (Carter et al., 2020). The key prey species for harbour seals are similar to that of grey seal, including clupeids (e.g., herring), gadoids (e.g., cod, whiting), salmon, flatfish, and sand eels.

Harbour seals have been assessed as having a 'Favourable' conservation status in Irish waters and there are 13 SACs in Ireland for which this species is a QI (NPWS, 2019). These include Lambay Island SAC located 7 km north-east of the MUL Area. Lambay Island SAC supports regionally significant numbers of harbour seal, which are present year-round. This Annex II species utilises sandbanks within the harbour for breeding and moulting, with at least 47 harbour seal regularly occurring within the site (NPWS, 2024). This is the closest haul-out site for harbour seal to the MUL Area. A desk-based study utilising records from NBDC[5] indicated that harbour seals have been sighted in the last 10 years in the marine habitats adjacent to the MUL Area B. Live sightings have been recorded between 2016 and 2025 in locations which may be investigated during the SI works. As harbour seals typically forage within 50 km of haul-out sites it is reasonable to conclude that this species is likely to be present within the MUL Area.

Harbour seal pupping occurs during the summer months, primarily in June and July (Arso Civil et al., 2018). Moulting most frequently occurs during August following pupping, although seals in active moult

[5] Maps - harbour seal biodiversity map accessed August 2025

have been observed in southwest Ireland from June to November (Cronin et al., 2013; SCOS, 2021). Outside of the breeding season, seals will exhibit a wider spatial variation. Of the few pup counts that have been undertaken for harbour seals in the Republic of Ireland, the data presented in these is now outdated, therefore they have not been presented in the current desk study. Morris & Duck (2019) reported on the number and distribution of hauled-out harbour seals in 2017/2018, with 131 harbour seals recorded in total in the eastern region (within which the MUL Area is located).

Harbour seals are at risk of similar disturbance and threats to grey seals. These include prey removal, by-catch in fisheries, geophysical seismic exploration, as well as coastal tourism and localised human disturbance at haul-out sites. Strong disturbance could result in displacement of harbour seals from an area, changes in behaviour, reduced reproduction rates, and mortality (Bellman et al., 2019).

4.2.3 Migratory Fish Species

A number of Annex II diadromous fish species (which migrate between the sea and fresh water) have the potential to pass through the MUL Area during certain times in their life cycle, including river lamprey (*Lampetra fluviatilis*), sea lamprey (*Petromyzon marinus*), Atlantic salmon (*Salmo salar*) and twaite shad (*Alosa fallax*). For the above species, this may occur only during upstream or downstream migrations to and from spawning grounds. Twaite shad, Atlantic salmon, sea and river lamprey are protected under EU legislation via Annex II of the Habitats Directive, with salmon offered protection under Annex II when in freshwater only. The River Boyne and River Blackwater SAC (NPWS, 2014a) is the only SAC on the east coast of Ireland which is designated for migratory fish species river lamprey and salmon. The next nearest SAC designated for migratory fish species is the Slaney River Valley SAC (000781) which is located to the southeast of Ireland over 100 km away and it is not considered likely that fish from such a distant site would migrate through the MUL Area.

The marine migration routes of Atlantic salmon around Ireland were published in a study which Inland Fisheries Ireland contributed to (Rikardsen et al., 2021). This study tagged 204 salmon kelts with satellite tags from seven European countries and tracked them during their oceanic migration. As can be seen on the extract below, the Irish Sea was not identified as a migration route for salmon.

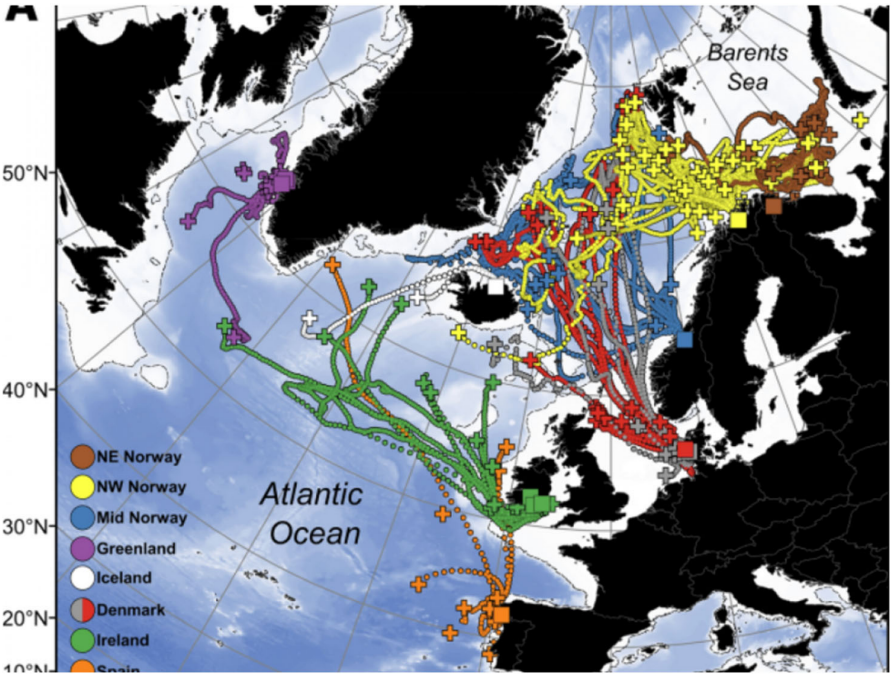


Figure 4.1 Map of migration routes of tagged Atlantic salmon (Rikardsen et al., 2021).

4.2.4 Birds

4.2.4.1 Seabirds

Aerial surveys undertaken from 2021 to 2023 under Phase II of the ObSERVE Programme recorded 20 species or species groups of seabirds in Irish waters. The inshore/coastal waters of the Irish Sea were noted as of importance in both summer and winter as the greatest overall density of seabirds nationally was identified in this area. Records were dominated by auk species, northern gannet (*Morus bassanus*), northern fulmar (*Fulmarus glacialis*), kittiwake (*Rissa tridactyla*) and Manx shearwater (*Puffinus puffinus*) (Giralt Paradell et al., 2024). Some species such as shearwaters, terns and storm petrels (*Hydrobates pelagicus*) were mainly recorded during the summer surveys. Coastal waters for seabirds were noted as particularly important throughout the year and the survey highlighted hotspots during the summer off the south and southwest coast of Ireland, while during the autumn seabird densities were higher off the southwest coast and further offshore (Giralt Paradell et al., 2024).

The MUL Area overlaps the boundaries of the following SPAs, designated for seabird QIs:

- North-west Irish Sea SPA
- Ireland's Eye SPA

The North-west Irish Sea SPA (004236) overlaps with a large portion of the MUL Area and is an important resource for marine birds This SPA spans from intertidal coastal zones out to offshore Irish sea and is connected to multiple other SPAs in the area. The estuaries and bays that open into it along with connecting coastal stretches of intertidal and shallow subtidal habitats, provide safe feeding and roosting habitats for waterbirds throughout the winter and migration periods. These areas, along with more pelagic marine waters further offshore, provide additional supporting habitats (for foraging and other maintenance

behaviours) for those seabirds that breed at colonies on the north-west Irish Sea's islands and coastal headlands. These marine areas are also important for seabirds outside the breeding period (NPWS, 2023a).

MUL Area B within the Irish Sea overlaps the boundary of Ireland's Eye SPA (004117) which is found 1.5km to the north of Howth, off the coast of Co. Dublin. The island is an important breeding area for seabirds given the rocky cliffs along the north and east as well as the presence of a large sea stack that is disconnected from the main island at high tide. This site is of special conservation interest for the following species: cormorant (*Phalacrocorax carbo*), herring gull (*Larus argentatus*), kittiwake, guillemot (*Uria aalge*) and razorbill (*Alca torda*). The cormorant, herring gull, kittiwake, guillemot and razorbill populations found on Ireland's Eye SPA are of national importance. The gannet colony is of particular note as it is one of only six colonies nationwide and one of two sites on the east coast. The ObSERVE surveys also noted sightings of gannets in the Irish sea. The regular presence of a breeding pair of peregrine (*Falco peregrinus*), an Annex I species, is also of note (NPWS, 2011a).

The MUL Area is within 20 km of other SPAs designated for seabirds, namely, Lambay Island SPA (004069), Howth Head Coast SPA (004113), Dalkey Island SPA, Rockabill SPA (004014) and Skerries Island SPA (004122). Lambay Island SPA is a site of international importance for its population of breeding seabirds, particularly cormorant, shag (*Phalacrocorax aristotelis)* and kittiwake. The island is also a nesting site for peregrine (NPWS, 2011b). Howth Head Coast SPA is located 2 km south of the MUL Area and is designated as an SPA for its nationally important kittiwake population, although it is a breeding site for a range of seabirds including guillemot, razorbill and fulmar (NPWS, 2011c). Dalkey Islands SPA (004172) is found 14 km south of the MUL Area and is of special conservation interest for its breeding populations and as a staging site of roseate tern (*Sterna dougallii*), common tern (*Sterna Hirundo*) and Arctic tern (*Sterna paradisaea*). This site is one of three breeding sites for roseate tern in Ireland (NPWS, 2015b). The most important roseate tern colony in Europe is located at Rockabill SPA, with large population of common tern and Arctic tern present as well (NPWS, 2015c). Skerries Islands SPA (004122) is located 16 km north of the MUL Area boundary, with internationally important populations of light-bellied brent goose, as well as other populations of nationally important seabird and waterfowl species (NPWS, 2009b). South Dublin Bay and Tolka Estuary SPA (004024), located 6 km south of the MUL Area is designated for the protection of wintering black-headed gull and breeding common tern, Arctic tern and Roseate tern.

4.2.4.2 Migratory Waders and Geese

The MUL Area overlaps the boundaries of the following SPAs, designated for wintering wader QIs:

- Baldoyle Bay SPA

Baldoyle Bay SPA (004016) is a small tidal estuarine system protected from the Irish Sea by a large dune system, with large mud flats exposed at low tides. It supports internationally important populations of Light-bellied brent goose (*Branta bernicla*) as well as nationally important populations of shelduck, ringed, golden and grey plover and bar-tailed godwit (NPWS, 2014c).

The MUL Area is within 20 km of other SPAs designated for wintering waders and geese: North Bull Island SPA (004006), Malahide Estuary SPA (004025), South Dublin Bay and River Tolka Estuary SPA (004024), Rogerstown Estuary SPA (004015) and Skerries Islands SPA. North Bull Island SPA is of international importance as it supports over 20,000 wintering waterbirds and internationally important populations of three species: light-bellied brent goose, black-tailed godwit (*Limosa limosa*) and bar-tailed godwit (*Limosa lapponica*) (NPWS, 2014d). Malahide Estuary SPA is located 2 km north of the MUL Area boundary and is designated for wintering bird species, with its populations of waterfowl and large diversity

of winter bird species particularly important (NPWS, 2013b). South Dublin Bay and River Tolka Estuary SPA is located 6 km south of the MUL Area boundary and is an area of intertidal flats and estuary noted as of international importance for its wintering waterfowl as part of the Dublin Bay complex (NPWS, 2015d). Rogerstown Estuary SPA, located 7.5 km north of the MUL Area boundary, is home to an internationally significant population of light-bellied brent goose and nationally important populations of multiple other wintering waterfowl species (NPWS, 2014e). Skerries Islands SPA is located 16 km north of the MUL Area boundary, with internationally important populations of light-bellied brent goose, as well as other populations of nationally important seabird and waterfowl species (NPWS, 2009b).

5 IDENTIFICATION OF RELEVANT EUROPEAN SITES

5.1 Assessment of Connectivity

Connectivity is identified via the S-P-R model which identifies the potential impact pathways such as land, air, hydrological pathways etc. which may support direct or indirect connectivity between the SI works (source) and European sites and their QIs or SCIs (receptors).

Where it is evident that there is no connectivity between the SI work and receptors (i.e., European sites and/or habitats and species for which the sites are selected), the receptors are excluded from the AA process. Where connectivity exists between the SI works and receptors, these receptors are taken forward to the assessment of likely significant effects (Section 6.2).

When assessing impact, the QI and SCI habitats and species are only considered receptors where a credible or tangible S-P-R link exists between the SI works and the receptor. In order for an impact to occur there must be a risk initiated by having a ‘source’ - the origin of potential impacts (e.g., near stream construction works), an impact pathway - the means by which the effect reaches the receptor (air, water, or ground) between the source and the receptor (e.g., a watercourse which connects the development site to the site designated for the protection of a receptor) and a '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.

5.2 Source-Pathway-Receptor Assessment

5.2.1 Source of Impact

Identification of a risk of impact does not constitute a prediction that it will occur or, in the event that it does occur, that there is an intrinsic likelihood that it will result in ecological or environmental damage or that it will cause or create a significant effect on the European sites in question. The level and significance of the effect depends upon the magnitude, duration or intensity of the impacts ensuing from the proposal and the existence of a credible or tangible S-P-R link between the SI works and the aforementioned European sites. It is also determined by the extent of the exposure to the risk and the characteristics of the receptor.

5.2.2 Impacts Scoped out of Assessment

Introduction of marine invasive alien species: The International Convention for the Control and Management of Ships’ Ballast Water and Sediments, 2004, entered into force globally on 8 September 2017. It is a treaty, adopted by the International Maritime Organization (IMO) in order to help prevent the spread of potentially harmful aquatic organisms and pathogens in ships’ ballast water, including invasive species[6]. The Sea Pollution (Miscellaneous Provisions) Act 2006 gives effect to a number of internationally agreed instruments including the International Convention on Ballast Water Management 2004. The Convention stipulates that ships must manage their ballast water so that aquatic organisms

[6] https://invasives.ie/about/legislation-policy/ - Accessed 21 October 2024.

and pathogens are removed or rendered harmless before the ballast water is released into a new location.

All vessels used as part of the SI works will take actions to prevent the spread of invasive alien species as part of their standard operating procedures. Therefore, it can be excluded on the basis of objective evidence that invasive alien species will be introduced by the SI works and thereby cause, either individually or in combination with any other plans or projects, a likely significant effect on any European Site. Therefore, this effect is not considered further in this assessment.

Collision Risk: Vessel strikes are a known cause of mortality in marine mammals (Laist et al., 2001). Non-lethal collisions have also been documented (Laist et al., 2001; Van Waerebeek et al., 2007). Injuries from such collisions can be divided into two broad categories: blunt trauma from impact and lacerations from propellers. Injuries may result in individuals becoming vulnerable to secondary infections or predation.

It has been calculated that a maximum of one vessel and one jack-up barge could be operating at any one time within the Irish Sea area of the MUL Area. For the geophysical and bathymetric surveys, the vessels will be travelling in a predefined trajectory. It is considered that this will allow animals to predict the movement of the vessels and therefore avoid collisions. It is likely that the other survey vessels (i.e. benthic survey and/or geotechnical survey vessel) will be stationary for extended periods throughout their operations which will reduce the potential for collision with these vessels.

As documented in the accompanying Assessment of Impact on the Maritime Usage (AIMU) Report, the area supports reasonably high levels of baseline marine traffic, with cargo vessels, fishing boats and pleasure craft traversing the MUL Area to access commercial and fishing ports and harbours in the region. It is, therefore, reasonable to assume that marine mammals in the area are exposed to vessel traffic on a regular basis and may exhibit some habituation. In addition, based on review of available specification sheets from prospective contractors, it is noted that the typical speed of the survey vessel while on survey is between 3.5 - 6 knots, and it will be travelling in a predefined trajectory, allowing marine mammals to predict movements and avoid collisions. The increase in vessel traffic at any one time is considered to be very low, given the location of the MUL Area. Therefore, it can be excluded on the basis of objective evidence that there is potential for collision risk with cetacean species by the SI works and thereby cause, either individually or in combination with any other plans or projects, a likely significant effect on any European Site. Therefore, this effect is not considered further in this assessment.

5.2.3 Impacts Scoped In for Assessment

Table 5-1 identifies the potential impacts arising from the SI works, the element of SI works associated with each impact, a description of effect pathway and the receptors with the potential to be affected. This assessment will then be used to identify relevant European sites and QIs and SCIs to be taken forward to the Stage 1 Screening for Appropriate Assessment. Identification of relevant European sites and QIs is presented in Section 5.3.1 to 5.3.5, with **Table 5-1** summarising all sites taken forward for screening.

Table 5-1 Source-Pathway-Receptor Assessment for the SI Works

Impact	Potential source of impact	Description of Effect Pathway	Relevant Receptors
Above water noise, vibration and lighting	Presence of vessel and general non-survey vessel activity. Human presence	Potential for disturbance to species, leading to displacement from the area.	Marine mammals, birds

Impact	Potential source of impact	Description of Effect Pathway	Relevant Receptors
	and use of equipment during land-based surveys.		
Habitat loss, alteration and/ or fragmentation (including smothering due to increased suspended sediment concentrations (SSC))	Intrusive sampling methods which remove or interact with seabed habitats, including geotechnical borehole drilling, JUB legs, environmental grab sampling and access to estuarine sampling locations.	Potential for direct loss of and/or damage to habitats and potential to indirectly affect species that rely on those habitats for feeding and/or breeding. Potential for marine sediments disturbed by intrusive sampling methods to smother sensitive habitats and to indirectly affect species that rely on those habitats for feeding and/or breeding.	Habitats, marine mammals, birds
Underwater noise	Underwater noise emissions from geophysical and bathymetric surveys (MBES, SSS, SBP, USBL, P-SBP/C-SBP, sparker or boomer), geotechnical survey (borehole drilling, vessel activity).	Potential for direct effects (including injury, disturbance and/or displacement) on mobile species with hearing abilities.	Marine mammals, diving birds, fish
Accidental pollution event	Survey vessels and equipment such as drilling rigs	Potential for direct effects on habitats and species in the case of an accidental pollution event i.e. oil spill or water quality issues. Potential for indirect effects on habitats and species which rely on the MUL Area for feeding and/or breeding.	Habitats, marine mammals, fish, birds

5.3 Identification of Relevant European Sites

The following sections detail the identification of relevant European sites for consideration in the Stage 1 Screening for Appropriate Assessment. Each section describes the rationale for site selection, which is based on a S-P-R model of assessment. As outlined in Section 1.5.2.4, the term ‘European sites’ includes SACs, candidate SACs, SPAs and candidate SPAs, and as such, all designated and candidate European sites are considered in the following assessment.

European sites identified within the overall zone of influence of the SI works, their respective relevant QI/ SCI, and a measure of the distance of the European site from the MUL Area are detailed in **Table 5-2** below. **Figure 5.1**, **Figure 5.2** and **Figure 5.3** show the location of the SI works relative to these European sites.

5.3.1 Annex I Habitats

The European sites with relevant Annex I habitat QIs to be considered in this SISAA are:

- All European sites that physically overlap with the MUL Area. It is noted that intrusive sampling methods will only directly affect a relatively small portion of the overall MUL Area, however, as a conservative measure, and to allow for flexibility in sampling locations, the entire area of the MUL Area is assessed for potential impacts.

- All European sites within the zone of influence of impacts and where a S-P-R link exists, as assessed in **Table 5-1**. All direct impacts to Annex I habitats (subtidal and intertidal) will be limited to the proposed survey area. Intrusive sampling techniques with the potential to increase SSC in the water column will be limited to discrete sampling locations and the proposed sampling techniques are unlikely to give rise to large sediment plumes. As a precautionary measure, to allow for the potential for indirect effects arising from SSC/smothering, SACs with Annex I habitats which directly border the MUL Area are also considered.

While Ireland's Eye SAC is found less than 1 km south of the MUL Area and is designated as an SAC to maintain the favourable conservation condition of perennial vegetation of stony banks (1220) and vegetated sea cliffs of the Atlantic and Baltic coasts (1230) under Annex I of the EU Habitats Directive (NPWS, 2014f). All the proposed SI works within the Irish Sea will be conducted below the HWM, therefore there will be no interaction with the QIs perennial vegetation of stony banks and vegetated sea cliffs of the Atlantic and Baltic coasts, therefore this SAC is not considered further in this SISAA.

The sites selected for consideration of Annex I habitat QIs in this SISAA are listed below and outlined in **Figure 5.2**:

- Rockabill to Dalkey Island SAC
- Baldoyle Bay SAC

5.3.2 Annex II Otter

The European sites with relevant Annex II otter QIs to be considered in this SISAA are:

- All European sites that physically overlap with the MUL Area; and,
- All European sites that have otter as a QI that have a realistic potential for connectivity with the MUL Area. While otter is a mobile species, individuals have defined territories. Female territories range between 7.5 ± 1.5 km for riverine and 6.5 ± 1.0 km for coastal environments where male territories are approximately 13.2 ± 5.3 km along rivers but with a high degree of variability (Reid et al., 2013). In lowland rivers and fish-rich lakes otters only need to maintain small territories (up to 6km), but along smaller river systems and in upland areas where prey may be less abundant, otter territories can stretch to 20 km (Mullen et al., 2021). Otter activity has been recorded in the adjacent areas of Baldoyle Bay (see Section 4.2.1), therefore a precautionary approach to the identification of relevant sites has been adopted, which has considered European sites designated for otter within 20 km of the MUL Area.

The Wicklow Mountains SAC (002122) is the nearest SAC for which otter is a QI (NPWS, 2017) and is located approximately 21 km inland to the southwest of the MUL Area. There is no pathway from the SI works to this European site, as otter from the Wicklow Mountains SAC would have to cross Dublin City to be present within the MUL Area at Baldoyle Bay and Portmarnock during the SI works. This is unlikely as more suitable habitat is available within range of the Wicklow Mountains SAC, therefore, this species is not considered further in this SISAA.

5.3.3 Annex II Marine Mammals

The European sites with relevant Annex II marine mammal QIs to be considered in this SISAA are:

- All European sites that physically overlap with the MUL Area; and,

- All European sites that have marine mammal QIs with a realistic potential for connectivity with the MUL Area. A conservative approach has been adopted which has considered all sites within a 100 km buffer of the MUL Area. This buffer is considered over-precautionary with respect to capturing the zone of influence of underwater noise impacts associated with the proposed surveys, however, it allows for the possibility that marine mammals from distant SACs may be foraging or passing through the survey area.

It is noted that MARA's Applicant Technical Guidance Note[7] proposes that foraging ranges of 274 km and 448 km for harbour and grey seal, respectively, are applied in order to identify relevant European sites for Stage 1 screening, using maximum foraging distances quoted in the methodology of Carter *et al*. (2020). However, Carter *et al*. (2020) concludes that the drivers of distribution for both grey and harbour seals differ regionally, likely related to regional variation in diet and population trends and provide SAC-specific estimates of at-sea density in the UK and Ireland. These show that hotspots of seal density at sea are not necessarily attributable to nearby designated sites. While it is documented that grey seals can forage hundreds of kilometres from their breeding sides (Cronin et al., 2011; Russell & McConnell, 2014), and harbour seals may travel up to 100 km, this is dependent on seasonality, habitat preference and animal maturity. For the present assessment, given the maximum range for auditory injury expected for marine mammals (during operation of the SBPs and UHRS equipment in Baldoyle Bay, could occur to harbour porpoise within 270 m of the sound source or to 150 m in the Irish Sea (no SBP or UHRS equipment); see Section 6.2.2 for assessment of underwater noise for marine mammals), it is considered sufficiently precautionary to apply a 100 km buffer for the identification of marine mammal SACs to allow for consideration of foraging or transiting seals from distant SACs. Beyond this distance, there is no realistic S-P-R link which may have implications for the conservation objectives of more distant European sites (e.g. ability of these species to access habitats within these sites, effects on the natural range of the population etc.).

JNCC management units (MU) refer to geographical areas in which the animals of a particular cetacean species are found, to which management of human activities is applied (IAMMWG, 2023). It is noted that MUs are not estimates of populations, and that almost all species of cetacean are part of larger biological populations. The MU boundary is based on the best understanding of the population structure of species, taking into account jurisdictional boundaries and divisions already used for the management of human activities. According to IAMMWG (2023), MUs may be subdivided to provide advice on a smaller spatial scale for a given purpose.

It is recognised that MARA proposes that all harbour porpoise and bottlenose dolphin SACs within the JNCC MU boundaries should be used in order to identify relevant European sites for Stage 1 screening, however, given that the maximum range for auditory injury to all marine mammals is 270 m (see Section 6.2.2.3), and considering the vast scale of the relevant MUs for these species, it is considered that this this would result in an overly precautionary and lengthy assessment.

In summary, a suitably precautionary approach to the identification of relevant sites has been adopted, which has considered European sites designated for Annex II marine mammals within 100 km of the MUL Area. In addition, due to their occasional presence in the region and as a precautionary measure, the two closest SACs that support bottlenose dolphin have been considered, which are 102 km and 141 km from the MUL Area.

[7] https://www.maritimeregulator.ie/wp-content/uploads/2025/04/Licence_Technical_Guidance_V08.pdf accessed August 2025

The sites selected for consideration of marine mammal QIs in this SISAA are listed below and outlined in **Figure 5.2**:

- Lambay Island SAC (Ireland)
- Rockabill to Dalkey Island SAC (Ireland)
- Codling Fault Zone SAC (Ireland)
- Blackwater Bank SAC (Ireland)
- North Channel SAC (UK)
- Murlough SAC (UK)
- North Anglesey Marine SAC (UK)
- Lleyn Peninsula and the Sarnau SAC (UK)
- Hook Head SAC (Ireland)

5.3.4 Annex II Migratory Fish

The European sites with relevant Annex II migratory fish QIs to be considered in this SISAA are:

- All European sites that physically overlap with the MUL Area; and,
- All European sites that have migratory fish as a QI that have a realistic potential for connectivity with the MUL Area. A precautionary approach to the identification of relevant sites has been adopted which considers all European sites within a 50 km buffer of the MUL Area. It should be noted that this buffer is considered to be over precautionary with respect to capturing the zone of influence of impacts (e.g. underwater noise) associated with the proposed surveys on the basis of the typically small ranges of effects on fish resulting from geophysical, bathymetric and geotechnical surveys within the Irish Sea, however, it allows for the possibility that migratory fish from nearby SACs may be passing through the survey area. There is, therefore, considered to be no realistic S-P-R link which may have implications for the conservation objectives of the European sites beyond this range (e.g. ability of these species to access habitats within these sites, effects on the natural range of the population etc).

The sites selected for consideration of migratory fish QIs in this SISAA are listed below and outlined in **Table 5-2**:

- River Boyne and River Blackwater SAC

5.3.5 Birds

The European sites with relevant bird SCIs to be considered in this SISAA are:

- All European sites that physically overlap with the MUL Area; and,
- All European sites that have bird species as a SCI that have a realistic potential for connectivity with the MUL Area. Seabirds can forage considerable distances from their colonies with species such as Manx shearwater, storm petrel, gannet and fulmar capable of foraging hundreds of kilometres away (Woodward et al., 2019). Given the limited size, scale and duration of the SI works within the context of these extensive foraging ranges, seabirds from distant SPAs will not be foraging within the MUL Area in numbers that would lead to implications to the conservation objectives of those sites (e.g. the ability of these species to access habitats within these sites, effects on the natural range of the population etc). Wintering swan and goose species can have foraging ranges of up to 20 km from

their night roosts (SNH, 2016). Given this ex-situ potential, it is possible that wintering birds occurring in the vicinity of the intertidal SI works are associated with SPAs located up to 20 km away. As a precautionary measure, all SPAs within 20 km of the MUL Area boundary have been considered for screening.

The sites selected for consideration of bird species SCI in this SISAA are listed below and outlined in **Figure 5.2**:

- Baldoyle Bay SPA
- North-West Irish Sea SPA
- Ireland's Eye SPA
- Howth Head Coast SPA
- North Bull Island SPA
- Malahide Estuary SPA
- South Dublin Bay and River Tolka Estuary SPA
- Lambay Island SPA
- Rogerstown Estuary SPA
- Dalkey Islands SPA
- Rockabill SPA
- Skerries Islands SPA

Table 5-2 Relevant European Sites and Qualifying Interests to be Considered in Stage 1 Screening for Likely Significant Effects

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Qualifying Interests[8]	Connections (Source-Pathway Receptors)	Considered further in screening Yes/No
Rockabill to Dalkey Island SAC (003000)	Within SAC boundary	Reefs [1170] *Phocoena phocoena* (Harbour porpoise) [1351]	Yes. MUL Area overlaps with SAC boundary (potential S-P-R connection with reef habitats and harbour porpoise).	Yes
Baldoyle Bay SAC (000199)	Within SAC boundary	Mudflats and sandflats not covered by seawater at low tide [1140] *Salicornia* and other annuals colonising mud and sand [1310] Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows (*Juncetalia maritime*) [1410]	Yes. MUL Area overlaps with SAC boundary (potential S-P-R connection with habitats).	Yes
Ireland's Eye SAC (002193)	<1	Perennial vegetation of stony banks [1220] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	No. MUL Area does not overlap with SAC boundary and QIs are above HWM (no potential S-P-R connection).	No
Lambay Island SAC (000204)	7	Reefs [1170] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	No. MUL Area does not overlap with SAC boundary, therefore there is no S-P-R connection with habitat QIs.	No

[8] Qualifying interests that have not been identified as relevant to this assessment are greyed out.

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Qualifying Interests[8]	Connections (Source-Pathway Receptors)	Considered further in screening Yes/No
		Halichoerus grypus (Grey Seal) [1364] *Phoca vitulina* (Common (Harbour) Seal) [1365] *Phocoena phocoena* (Harbour porpoise) [1351]	Yes. Potential S-P-R connection with grey seal, harbour seal and harbour porpoise as SAC is within 100km of MUL Area.	Yes
Codling Fault Zone SAC (003015)	25	Submarine structures made by leaking gases [1180]	No. MUL Area does not overlap with SAC boundary (no potential S-P-R connection with QI habitat).	No
		Phocoena phocoena (Harbour porpoise) [1351]	Yes. Potential S-P-R connection with grey seal, harbour seal and harbour porpoise as SAC is within 100km.	Yes
River Boyne and River Blackwater SAC (002299)	37	Alkaline Fens [7230] Alluvial Forests with *Alnus glutinosa* and *Fraxinus excelsio*r (Alno-Padion, Alnion incanae, Slaicon albae) [91E0] *Lutra lutra* (Otter) [1355]	No. MUL Area does not overlap with SAC boundary (no potential S-P-R connection with QI habitats or otter).	No
		Lampetra fluviatilis (River Lamprey) [1099] *Salmo salar* (Atlantic Salmon) [1106]	Yes. Potential S-P-R connection with SAC as within 50 km of MUL Area.	Yes.
North Anglesey Marine SAC (UK0030398)	47	*Phocoena phocoena* (Harbour porpoise) [1351]	Yes. Potential S-P-R connection with harbour porpoise as SAC is within 100km of MUL Area.	Yes
Murlough SAC (UK0016612)	79	*Phoca vitulina* (harbour seal) [1365]	Yes. Potential S-P-R connection with harbour seal as SAC is within 100km of MUL Area.	Yes

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Qualifying Interests[8]	Connections (Source-Pathway Receptors)	Considered further in screening Yes/No
North Channel SAC (UK0030399)	93	*Phocoena phocoena* (Harbour porpoise) [1351]	Yes. Potential S-P-R connection with harbour porpoise as SAC is within 100km of MUL Area	Yes
Blackwater Bank SAC (002953)	98	Sandbanks which are slightly covered by seawater all the time [1110]	No. MUL Area does not overlap with SAC boundary (no potential S-P-R connection with QI habitat).	No
		Phocoena phocoena (Harbour porpoise) [1351]	Yes. Potential S-P-R connection with harbour porpoise as SAC is within 100km of MUL Area.	Yes
Lleyn Peninsula and the Sarnau SAC (UK0013117)	102	*Tursiops truncatus* (Bottlenose Dolphin) [1349]	Yes. Potential S-P-R connection with bottlenose dolphin as species are found in the MUL Area, and this is one of the closest SACs for this species. No other QIs considered due to distance from MUL Area.	Yes
Hook Head SAC (000764)	141	*Tursiops truncatus* (Bottlenose Dolphin) [1349]	Yes. Potential S-P-R connection with bottlenose dolphin as species found in the area, and this is one of the closest SACs for this species. No other QIs considered due to distance from MUL Area.	Yes
Baldoyle Bay SPA (004016)	Within the SPA boundary	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Tadorna tadorna* (Shelduck) [A048] *Charadrius hiaticula* (Ringed Plover) [A137] *Pluvialis apricaria* (Golden Plover) [A140]	Yes. MUL Area boundary overlaps with SPA (potential S-P-R connection).	Yes

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Qualifying Interests[8]	Connections (Source-Pathway Receptors)	Considered further in screening Yes/No
		Pluvialis squatarola (Grey Plover) [A141] *Limosa lapponica* (Bar-tailed Godwit) [A157] Wetland and Waterbirds [A999]		
North-West Irish Sea SPA (004236)	Within the SPA boundary	*Gavia stellata* (Red-throated Diver) [A001] *Gavia immer* (Great Northern Diver) [A003] *Fulmaris glacialis* (Fulmar) [A009] *Puffinus puffinus* (Manx Shearwater) [A013] *Phalacrocorax carbo* (Cormorant) [A017] *Phalacrocorax aristotelis* (Shag) [A018] *Melanitta nigra* (Common Scooter) [A065] *Chroicocephalus ridibundus* (Black-headed Gull) [A179] *Larus canus* (Common Gull) [A182] *Larus fuscus* (Lesser Black-backed Gull) [A183] *Larus argentatus* (Herring Gull) [A184] *Larus marinus* (Great Black-backed Gull) [A187] *Rissa tridactyla* (Kittiwake) [A188] *Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna Paradisaea* (Arctic Tern) [A194] *Sterna albifrons* (Little Tern) [A195] *Uria aalge* (Guillemot) [A199]	Yes. MUL Area boundary overlaps with SPA (potential S-P-R connection).	Yes

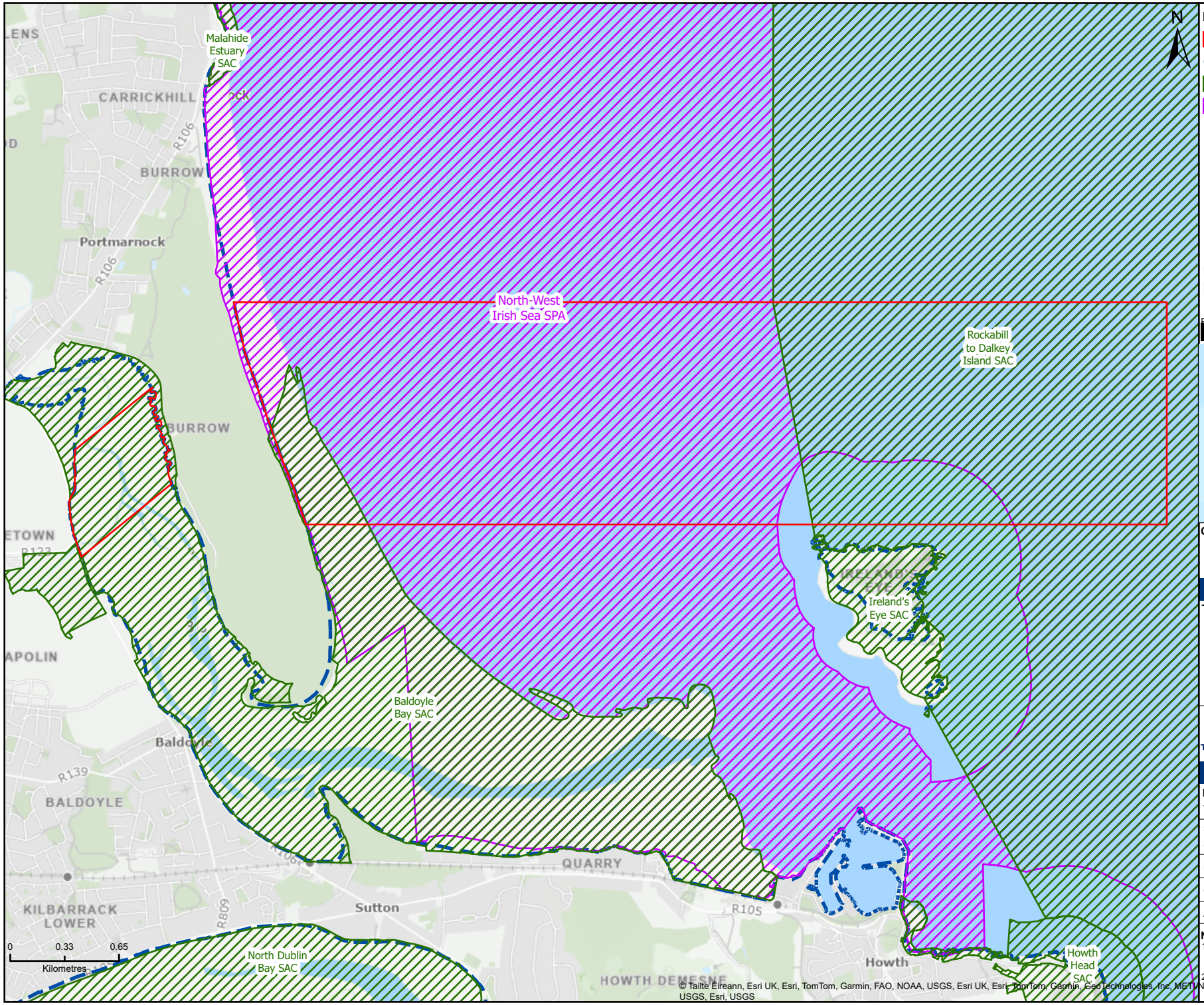
European Site (Code)	Distance from the MUL Area (km)	List of Relevant Qualifying Interests[8]	Connections (Source-Pathway Receptors)	Considered further in screening Yes/No
		Alca torda (Razorbill) [A200] *Fratercula arctica* (Puffin) [A204] *Hydrocoloeus minutus* (Little Gull) [A862]		
Ireland's Eye SPA (004117)	Within the SPA boundary	*Phalacrocorax carbo* (Cormorant) [A017] *Larus argentatus* (Herring Gull) [A184] *Rissa tridactyla* (Kittiwake) [A188] *Uria aalge* (Guillemot) [A199] *Alca torda* (Razorbill) [A200]	Yes. MUL Area boundary overlaps with SPA (potential S-P-R connection).	Yes
Howth Head Coast SPA (004113)	2	*Rissa tridactyla* (Kittiwake) [A188]	Yes. Potential S-P-R connection as SPA is within 20km of MUL Area.	Yes
North Bull Island SPA (004006)	2	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Tadorna tadorna* (Shelduck) [A048] *Anas crecca* (Teal) [A048] *Anas acuta* (Pintail) [A054] *Anas clypeata* (Shoveler) [A056] *Haematopus ostralegus* (Oystercatcher) [A130] *Pluvialis apricaria* (Golden Plover) [A140] *Pluvialis squatarola* (Grey Plover) [A141] *Calidris canutus* (Knot) [A143] *Calidris alba* (Sanderling) [A144] *Calidris alpina* (Dunlin) [A149] *Limosa limosa* (Black-tailed Godwit) [A156]	Yes. Potential S-P-R connection as SPA is within 20km of MUL Area.	Yes

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Qualifying Interests[8]	Connections (Source-Pathway Receptors)	Considered further in screening Yes/No
		Limosa lapponica (Bar-tailed Godwit) [A157] *Numenius Arquata* (Curlew) [A160] *Tringa totanus* (Redshank) [A162] *Arenaria interpres* (Turnstone) [A169] *Chroicocephalus ridibundus* (Black-headed Gull) [A179] Wetland and Waterbirds [A999]		
Malahide Estuary SPA (004025)	2	*Podiceps cristatus* (Great Crested Grebe) [A005] *Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Tadorna tadorna* (Shelduck) [A048] *Anas acuta* (Pintail) [A054] *Bucephala clangula* (Goldeneye) [A140] *Mergus serrator* (Red-breasted Merganser) [A069] *Haematopus ostralegus* (Oystercatcher) [A130] *Pluvialis apricaria* (Golden Plover) [A140] *Pluvialis squatarola* (Grey Plover) [A141] *Calidris canutus* (Knot) [A143] *Calidris alpina* (Dunlin) [A149] *Limosa limosa* (Black-tailed Godwit) [A156] *Limosa lapponica* (Bar-tailed Godwit) [A157]	Yes. Potential S-P-R connection as SPA is within 20km of MUL Area.	Yes

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Qualifying Interests[8]	Connections (Source-Pathway Receptors)	Considered further in screening Yes/No
		Tringa totanus (Redshank) [A162] Wetland and Waterbirds [A999]		
South Dublin Bay and River Tolka Estuary SPA (004024)	6	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Haematopus ostralegus* (Oystercatcher) [A130] *Charadrius hiaticula* (Ringed Plover) [A137] *Pluvialis squatarola* (Grey Plover) [A141] *Calidris canutus* (Knot) [A143] *Calidris alba* (Sanderling) [A144] *Calidris alpina* (Dunlin) [A149] *Limosa lapponica* (Bar-tailed Godwit) [A157] *Tringa totanus* (Redshank) [A162] *Chroicocephalus ridibundus* (Black-headed Gull) [A179] *Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna Paradisaea* (Arctic Tern) [A194] Wetland and Waterbirds [A999]	Yes. Potential S-P-R connection as SPA is within 20km of MUL Area.	Yes
Lambay Island SPA (004069)	7	*Fulmaris glacialis* (Fulmar) [A009] *Phalacrocorax carbo* (Cormorant) [A017] *Phalacrocorax aristotelis* (Shag) [A018] *Anser anser* (Greylag Goose) [A043] *Larus fuscus* (Lesser Black-backed Gull) [A183]	Yes. Potential S-P-R connection as SPA is within 20km of MUL Area.	Yes

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Qualifying Interests[8]	Connections (Source-Pathway Receptors)	Considered further in screening Yes/No
		Larus argentatus (Herring Gull) [A184] *Rissa tridactyla* (Kittiwake) [A188] *Uria aalge* (Guillemot) [A199] *Alca torda* (Razorbill) [A200] *Fratercula arctica* (Puffin) [A204]		
Rogerstown Estuary SPA (004015)	7	*Anser anser* (Greylag Goose) [A043] *Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Tadorna tadorna* (Shelduck) [A048] *Anas clypeata* (Shoveler) [A056] *Haematopus ostralegus* (Oystercatcher) [A130] *Charadrius hiaticula* (Ringed Plover) [A137] *Pluvialis squatarola* (Grey Plover) [A141] *Calidris canutus* (Knot) [A143] *Calidris alpina* (Dunlin) [A149] *Limosa limosa* (Black-tailed Godwit) [A156] *Tringa totanus* (Redshank) [A162] Wetland and Waterbirds [A999]	Yes. Potential S-P-R connection as SPA is within 20km of MUL Area.	Yes
Dalkey Islands SPA (004172)	14	*Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna Paradisaea* (Arctic Tern) [A194]	Yes. Potential S-P-R connection as SPA is within 20km of MUL Area.	Yes
Rockabill SPA (004014)	16	*Calidris maritima* (Purple Sandpiper) [A148] *Sterna dougallii* (Roseate Tern) [A192]	Yes. Potential S-P-R connection as SPA is within 20km of MUL Area.	Yes

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Qualifying Interests[8]	Connections (Source-Pathway Receptors)	Considered further in screening Yes/No
		Sterna Hirundo (Common Tern) [A193] *Sterna paradisaea* (Arctic Tern) [A194]		
Skerries Islands SPA (004122)	16	*Phalacrocorax carbo* (Cormorant) [A017] *Phalacrocorax aristotelis* (Shag) [A018] *Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Calidris maritima* (Purple Sandpiper) [A148] *Arenaria interpres* (Turnstone) [A169] *Larus argentatus* (Herring Gull) [A184]	Yes. Potential S-P-R connection as SPA is within 20km of MUL Area.	Yes



Legend

- Maritime Usage Licence Area
- High Water Mark (HWM)
- Special Area Conservation (SAC)
- Special Protection Area (SPA)

Where the licence area adjoins or abuts the land the High Water Mark as defined by the Chief Boundary Surveyor is the boundary of the licence area

MARA File Reference No: PA/MUL/022

[redacted]

Data Source: NPWS

Client

Uisce Éireann Irish Water

Greater Dublin Drainage

Title

Figure 5.1

MUL Area relative to nearby European sites

TETRA TECH
rps A TETRA TECH COMPANY
West Pier Business Campus,
Dun Laoghaire,
Co Dublin,
Ireland.
+353 (0) 1 4882900
rpsgroup.com

Issue Details

File Identifier:
10028814-RPS-ZZ-XX-DR-N-DR2228

Status:	Rev:	Model File Identifier:
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Drawn:	IP	Date:	29/08/2025	
Checked:	AE	Scale:	1:30,000	(A4)
Approved:	DC	Projection:	IRENET95 Irish Transverse Mercator	

NOTE:

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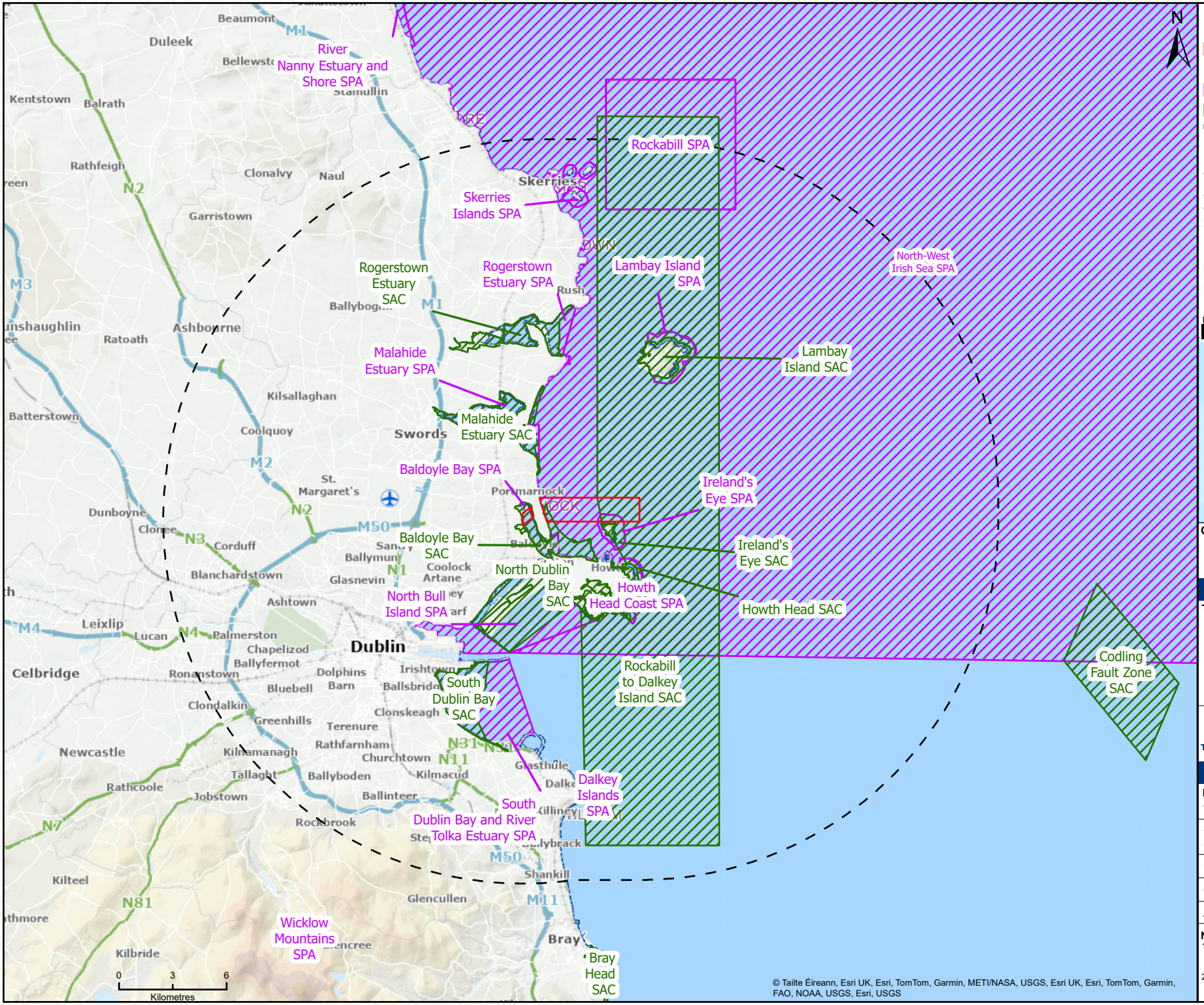

Legend

- Maritime Usage Licence Area
- High Water Mark (HWM)
- Special Protection Area (SPA)
- Special Area Of Conservation (SAC)
- 20 KM Buffer from MUL Area

Where the licence area adjoins or abuts the land the High Water Mark as defined by the Chief Boundary Surveyor is the boundary of the licence area

MARA File Reference No: PA/MUL/022

Prepared by: [redacted]

Data Source: NPWS

Client

Uisce Éireann Irish Water

Greater Dublin Drainage

Title

Figure 5.2

European Sites within 20km of MUL Area

TETRA TECH
rps
West Pier Business Campus,
Dun Laoghaire,
Co Dublin,
Ireland.
+353 (0) 1 4882900
rpsgroup.com

Issue Details

File Identifier:
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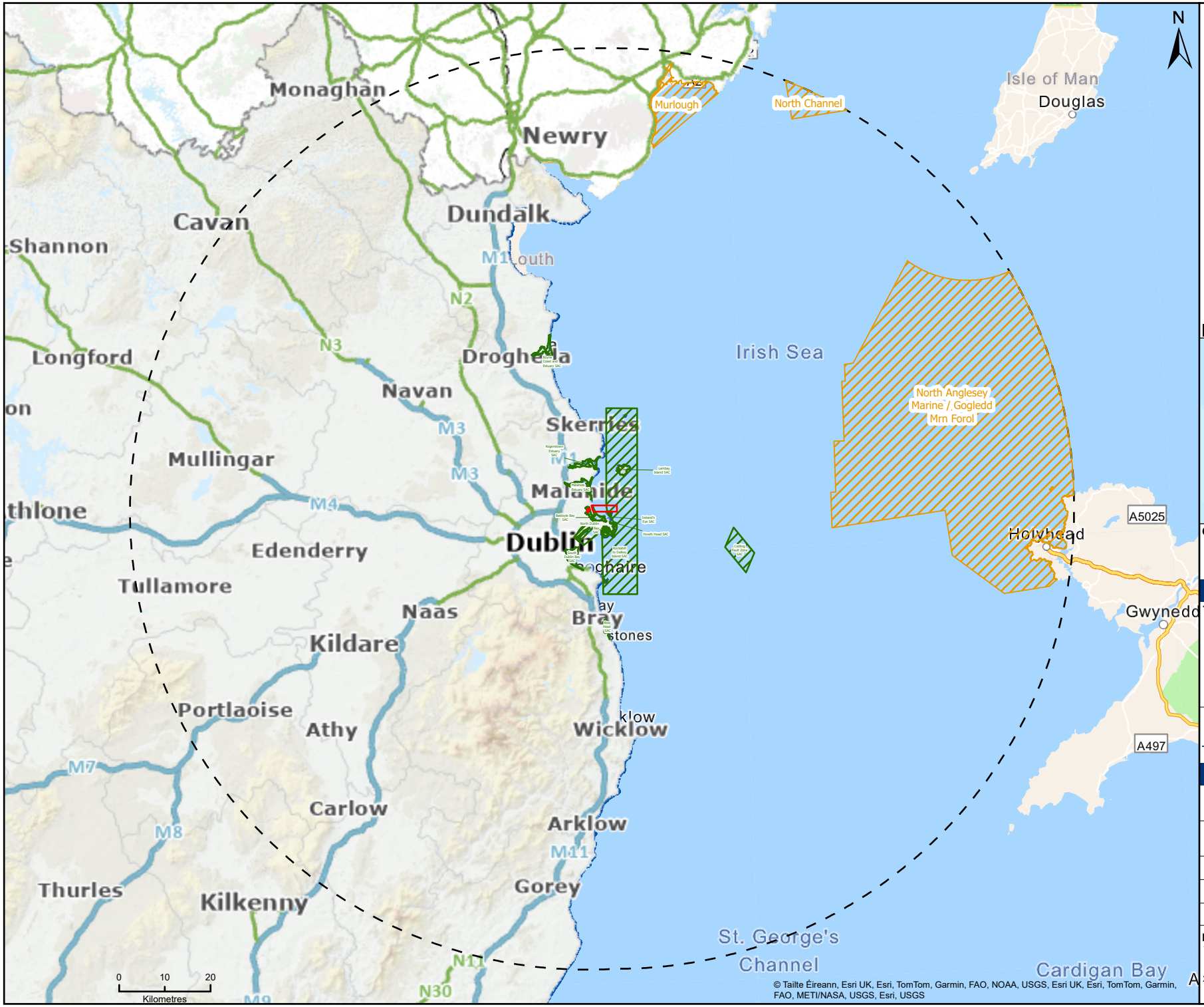

Legend

- Maritime Usage Licence Area
- High Water Mark (HWM)
- Special Area Of Conservation (SAC)
- UK, Special Area of Conservation (SAC)
- 100 KM Buffer from MUL Area

Where the licence area adjoins or abuts the land the High Water Mark as defined by the Chief Boundary Surveyor is the boundary of the licence area

MARA File Reference No: PA/MUL/022

Prepared by: [redacted]

Data Source: NPWS

Client

Uisce Éireann Irish Water

Greater Dublin Drainage

Title

Figure 5.3

Marine Mammal SACs within 100 km of the MUL Area

TETRA TECH
rps A TETRA TECH COMPANY
West Pier Business Campus,
Dun Laoghaire,
Co Dublin,
Ireland.
+353 (0) 1 4882900
rpsgroup.com

Issue Details

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NOTE:

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5.4 Conservation Objectives

The integrity of a European site (referred to in Article 6(3) of the EU Habitats Directive) is determined based on the conservation status of the QI of these sites.

European and national legislation places a collective obligation on Ireland to maintain at favourable conservation status areas designated as SAC and SPA. The government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

Favourable conservation status of a habitat is achieved when:

- Its natural range and area it covers within that range are stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- The conservation status of its typical species is favourable;

  The favourable conservation status of a species is achieved when:
- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The specific conservation objectives for each European site in Ireland are available on www.npws.ie.

6 SUPPORTING INFORMATION FOR SCREENING FOR APPROPRIATE ASSESSMENT

6.1 Management of European Sites

The SI works are not directly connected with or necessary to the management of any European site(s).

6.2 Assessment of Likely Significant Impacts

This section determines whether the impacts identified in Section 5.2.1 could have significant effects on the QI or SCIs of the European sites identified in Section 5.3 in view of the conservation objectives of the sites. As described in **Table 5-1**, the potential impacts arising from the SI works have been identified as follows:

- Noise, vibration, lighting, and human presence-related species disturbance (including the presence of increased marine traffic, where relevant);
- Habitat loss, alteration and/ or fragmentation (including increased SSC/ smothering);
- Underwater noise, including injury and or displacement of Annex II marine mammals, fish and diving birds from underwater noise; and
- Accidental pollution event.

The following sections will assess whether these impacts are likely to give rise to significant effects on the QIs or SCIs of European sites. The assessment has been split into sections based on receptor type, i.e. habitats, marine mammals, fish, and birds.

6.2.1 Annex I Habitats

This section assesses the potential for likely significant effects on those SACs designated for Annex I habitats, where there is potential for connectivity with the MUL Area and the proposed SI works. The assessment is based on the precautionary principle and has been undertaken in the absence of mitigation.

The S-P-R assessment (**Table 5-1**) concluded that the following impacts have the potential to affect Annex I habitats as a result of the SI works:

- Habitat loss, alteration and/or fragmentation (including increased SSC/smothering – relevant to subtidal habitats only); and
- Accidental pollution event.

European sites taken forward for assessment and their relevant QI habitats are listed in **Table 6-1** below. The following sections assess the likelihood for significant effects to Annex I habitats and summarise the screening for relevant European sites.

Table 6-1 European sites selected for consideration in the Screening for Appropriate Assessment for Annex I Habitats

European Site Code	Distance from the MUL Area (km)	List of Relevant Annex I Habitat Qualifying Interests[9]
Baldoyle Bay SAC (000199)	Within SAC boundary	Mudflats and sandflats not covered by seawater at low tide [1140] *Salicornia* and other annuals colonising mud and sand [1310] Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean Salt Meadows (*Juncetalia maritime*) [1410]
Rockabill to Dalkey Island SAC (003000)	Within SAC boundary	Reefs [1170]

6.2.1.1 Baldoyle Bay Surveys (MUL Area A)

SI works activities (below the HWM) with the potential to interact with QI habitats at Baldoyle Bay SAC are as follows:

- Land-based geophysical surveys; and,
- Geotechnical surveys (4no. boreholes).

There is overlap between these land-based activities and Baldoyle Bay SAC.

The land-based geophysical surveys will involve a small team of surveyors walking along the estuarine/intertidal zone using non-intrusive hand-held equipment or minimally intrusive equipment such as seismic refraction, GPR and Electrical Resistivity Tomography (ERT) equipment and utilising bog mats for access/egress, where required bog mats to provide stability and support for access to personnel and equipment, in addition to minimising ground disturbance. During these non-intrusive surveys, no sediment or vegetation will be removed, however, temporary disturbance of habitats cannot be ruled out at this stage.

Boat-based geophysical and bathymetric surveys will involve a small nearshore vessel within the Bay utilising non-intrusive, therefore there is no potential for impacts to habitats due to boat-based geophysical and bathymetric surveys within Baldoyle Bay.

Geotechnical boreholes are intrusive and have the potential to remove and/or disturb sedimentary estuarine habitats within Baldoyle Bay. 4no. boreholes will be drilled within MUL Area A in Baldoyle Bay. Bog mats will be used to access soft intertidal areas to provide stability and support which will allow machinery and personnel to transverse these areas. Therefore, intrusive and extractive geotechnical surveys within Baldoyle Bay have the potential to directly remove, alter or fragment the estuarine QI habitats of Baldoyle Bay SAC. **The likelihood of significant effects cannot be excluded and the QI habitats of Baldoyle Bay SAC are screened in.**

[9] Qualifying interests that have not been identified as relevant to this specific assessment are excluded from this table.

Relevant QI habitats at Baldoyle Bay SAC:

- Mudflats and sandflats not covered by seawater at low tide [1140]
- *Salicornia* and other annuals colonising mud and sand [1310]
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]
- Mediterranean salt meadows (*Juncetalia maritimi*) [1410]

6.2.1.2 Irish Sea Surveys (MUL Area B)

Marine survey activities to be undertaken in MUL Area B with the potential to interact with Annex I habitats are as follows:

- Marine geotechnical surveys (10 no. boreholes and associated JUB legs); and
- Marine environmental surveys (environmental grab sampling).

Proposed locations for intrusive geotechnical and environmental sampling are presented in the drawings included in Appendix A to the Project Description report accompanying the MULA. However, as final sampling locations will be subject to the analysis of the bathymetric survey findings, the entire subtidal area within the MUL Area must be considered for sampling, in line with the precautionary principle. As a result, there is potential for direct overlap of the above-listed surveys with subtidal Annex I habitats at Rockabill to Dalkey Island SAC (Reefs) and Baldoyle Bay SAC (Mudflats and sandflats not covered by seawater at low tide).

Intrusive sampling equipment, including grab samples, borehole drilling and jack-up barge (JUB) legs and anchoring points have the potential to lead to marine habitat loss or damage. There is also potential for water quality impacts due to the suspension of sediments and subsequent smothering of sensitive habitats or accidental water pollution from survey vessels. Based on NPWS mapping of Reef habitats within Rockabill to Dalkey Island SAC, and based on previous benthic survey results carried out in support of the GDD Project Planning Application, it is not anticipated that reef habitats will overlap with MUL Area B. However, as final sampling locations may change dependent on review and interpretation of the marine bathymetric data, out of an abundance of caution, it is considered that there is the potential for overlap with Annex I habitats. **Likely significant effects to subtidal QI habitats cannot be excluded in the absence of mitigation, and as a result, Rockabill to Dalkey Island SAC and Baldoyle Bay SAC are screened in.**

6.2.2 Annex II Marine Mammals

This section assesses the potential for likely significant effects on those SACs designated for Annex II marine mammals, where there is potential for connectivity with the MUL Area and the proposed SI works. The assessment is based on the precautionary principle and has been undertaken in the absence of mitigation.

The S-P-R assessment (**Table 5-1**) concluded that the following impacts have the potential to affect Annex II marine mammal species as a result of the SI works:

- Above-water noise, vibration and lighting;
- Habitat loss, alteration and/or fragmentation (including increased SSC/smothering);
- Underwater noise; and

- Accidental pollution event.

European sites taken forward for assessment for Annex II marine mammals are listed in **Table 6-2** below. The following sections assess the likelihood for significant effects to marine mammals and summarise the screening for relevant European sites.

Table 6-2 European sites selected for consideration in the Screening for Appropriate Assessment for Annex II Marine Mammals

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Annex II Qualifying Interests[10]
Rockabill to Dalkey Island SAC (003000)	Within SAC boundary	*Phocoena phocoena* (Harbour porpoise) [1351]
Lambay Island SAC (000204)	7	*Halichoerus grypus* (Grey seal) [1364] *Phoca vitulina* (Harbour seal) [1365] *Phocoena phocoena* (Harbour porpoise) [1351]
Codling Fault Zone SAC (003015)	25	*Phocoena phocoena* (Harbour porpoise) [1351]
North Anglesey Marine SAC (UK0030398)	47	*Phocoena phocoena* (Harbour porpoise) [1351]
Murlough SAC (UK0016612)	79	*Phoca vitulina* (harbour seal) [1365]
North Channel SAC (UK0030399)	93	*Phocoena phocoena* (Harbour porpoise) [1351]
Blackwater Bank SAC (002953)	98	*Phocoena phocoena* (Harbour porpoise) [1351]
Lleyn Peninsula and the Sarnau SAC (UK0013117)	102	*Tursiops truncatus* (Bottlenose Dolphin) [1349]
Hook Head SAC (000764)	141	*Tursiops truncatus* (Bottlenose Dolphin) [1349]

6.2.2.1 Above-water Noise, Vibration and Lighting

6.2.2.1.1 Baldoyle Bay Survey (MUL Area A)

Based on the marine mammal desk study results, it is considered highly unlikely that marine mammal species utilise the inner estuary at Baldoyle Bay. Baldoyle Bay is estuarine in nature and is protected from the open sea by a large sand dune system (NPWS, 2013). There have been no live sightings of grey seal, harbour seal, harbour porpoise or bottlenose dolphin recorded beyond the mouth of the estuary in the last ten years[11], however there was single reporting of a dead grey seal on the west bank of the estuary in 2022, roughly 900 m from the mouth of Baldoyle Bay. As there are no live recordings of grey seal within the estuary, it is assumed that this seal was washed into Baldoyle by the tide after death. Given that more suitable haul out habitats and prey opportunities within the Irish Sea, it is not expected that marine mammals will have any interaction with the proposed SI works capable of causing above-

[10] Qualifying interests that have not been identified as relevant to this specific assessment are excluded from this table.

[11] Maps - Biodiversity Maps Baldoyle Bay marine mammal records accessed July 2025

water noise, vibration and lighting impacts within Baldoyle Bay, and therefore no likely significant effects are predicted.

6.2.2.1.2 Irish Sea Surveys (MUL Area B)

The MUL Area does not overlap with SACs designated for Annex I harbour seal or grey seal or known haul-outs for these species. Lambay Island SAC is the closest site designated for grey seal and its boundary is over 7 km from the MUL Area boundary; therefore, above-water noise, vibration and lighting from the SI works will not result in likely significant effects on the grey seals hauled out on Lambay Islands or Ireland's Eye.

The marine mammal desk study found that seals typically haul out on Irelands Eye off the Martello Tower and further south between Tulla and Rowan Rocks[12], approximately 350 m and 1.2 km to the south of the MUL Area around the headland of Ireland's Eye. The part of the Irish Sea is subject to regular vessel traffic from Howth Harbour and passenger vessels to and from Ireland's Eye which typically consists of five winter sailing trips (October - February), sailing seven days a week, increasing during the summer period (March- September) to ten trips, seven days a week around the Island[13]. Therefore, it is reasonable to assume that any seals that may be hauled out at Ireland's Eye will show some level of habituation to the presence of vessels and associated low levels of above-water noise within the area. **Likely significant effects due to above-water disturbance can therefore be ruled out for all marine mammal SACs.**

6.2.2.2 Habitat Loss, Alteration and/or Fragmentation (Including Increased SSC/Smothering)

6.2.2.2.1 Baldoyle Bay Survey (MUL Area A)

Baldoyle Bay is estuarine in nature and is fed by the rivers Mayne and Sluice, and the bay is protected from the open sea by a large sand dune system (NPWS, 2013). It is highly unlikely that Annex II marine mammal species would utilise the Bay to forage given the more suitable foraging and hauling out habitats within the Irish Sea. **Likely significant effects due to habitat loss, alteration or fragmentation as a result of the Baldoyle Bay surveys can therefore be ruled out for marine mammals from all relevant SACs.**

6.2.2.2.2 Irish Sea Surveys (MUL Area B)

As above, the proposed SI works do not overlap spatially with European sites designated for harbour seal and grey seal, therefore there is no risk of direct habitat loss to haul-out sites or supporting habitats for these species. The proposed SI works overlap with Rockabill to Dalkey Island SAC (designated for harbour porpoise), therefore there is potential for interaction between the proposed SI works and supporting habitats for harbour porpoise.

There is potential for minimal benthic habitat loss due to intrusive sampling methodologies (grab sampling and boreholes) and water quality deterioration from survey activities or survey vessels, leading to impacts on marine mammals or smothering of benthic and pelagic prey species due to increased SSC. The MUL

[12] Dublin Port Seal Survey of Dublin Bay 2025 accessed July 2025

[13] Howth Cliff Cruises | Sailing-times Us accessed August 2025

Area is in an exposed location within the Irish Sea, and benthic habitats in the area are generally moderate to high energy sediments (see Section 4), therefore it can be expected that habitats will recover quickly from relatively limited sediment extraction, suspension and settling of sediment. Similarly, it is likely that prey species such as benthic and pelagic fish are adapted to the high energy environment and as such will not be affected by the temporary and spatially limited sediment sampling. The extent of sediment to be removed is limited (maximum of 48 grab samples and 10 boreholes) within the Irish Sea section of the MUL Area, therefore, there will be plenty of alternative foraging habitat and prey sources available for temporarily displaced foraging marine mammals. While the precise sampling locations are not known within the MUL Area, the conclusion remains the same. **Likely significant effects due to habitat loss, alteration or fragmentation for marine mammals as a result of the Irish Sea surveys can therefore be ruled out for all marine mammal SACs.**

6.2.2.3 Underwater Noise

There is the potential for underwater noise generated during the boat-based geophysical, bathymetric and geotechnical surveys, as well as from survey vessels, to result in injury and/or disturbance to QI marine mammal species. Although it is considered highly unlikely that marine mammals will be in Baldoyle Bay, out of an abundance of caution, underwater noise impacts have been considered for these surveys in addition to the surveys in the Irish Sea, which are more likely to encounter Annex II marine mammals.

This SISAA has drawn upon the results of the Subsea Noise Technical Report (provided under separate cover with the MULA documents) to inform this assessment of underwater noise effects. Full details of the technical report have not been repeated here, but the main conclusions relevant to this screening are outlined below. The assessment has used the latest guidance (National Oceanic and Atmospheric Administration, 2024), reflecting the current best available method for assessing impact from noise on marine mammals. Based on this guidance, auditory impacts to marine mammals can be defined as non-reversible auditory injury (previously referred to as permanent threshold shift (PTS)), or as a temporary threshold shift (TTS) in hearing sensitivity, which can have negative effects on the ability to use natural sounds (e.g. to communicate, navigate, locate prey) for a period of minutes, hours or days.

The zone of injury is classified as the distance over which a fleeing marine mammal can suffer non-reversible auditory injury. Injury thresholds are based on a dual criteria approach using both un-weighted L_P (maximal instantaneous sound pressure level (SPL)) and marine mammal hearing weighted sound exposure level (SEL). The hearing weighting function is designed to represent the sensitivity for each hearing group within which acoustic exposures can have auditory effects. For full details on marine mammal hearing groups, please refer to the Subsea Noise Technical Report.

To assess the impacts of the geophysical and bathymetric surveys within Baldoyle Bay each scenario assumed that the vessel, SSS, MBES and USBL sources were active, with only the SBP and UHRS (sparker or boomer) active or not active between the scenarios modelled.

To assess the impacts of the geotechnical surveys within Baldoyle Bay, the scenario assumed a rotary and/or sonic drilling rig and use of a small vessel up to 25m in length.

To assess the impacts of the bathymetric surveys within the Irish Sea, the scenario assumed that the vessel, SSS, MBES and USBL sources were active with no SBP or UHRS in use.

To assess the impacts of the geotechnical surveys within the Irish Sea, the scenario assumed a difference in vessel size i.e., small or large vessel (<25 m and < 85 m respectively).

The results have been summarised below to present the conservative 'worst-case scenario', and it should be noted that no mitigation (i.e. soft-start measures, or marine mammal observers) has been applied at this stage. The maximum range with risk of auditory injury is 270 m for harbour porpoise within Baldoyle Bay during UHRS / SBP geophysical surveys. As discussed, it is considered highly unlikely that marine mammals will be present in Baldoyle Bay due to geographical constraints at the mouth of the estuary. Within the Irish Sea the maximum range with risk of auditory injury is limited to 150 m for harbour porpoise during bathymetric surveys.

6.2.2.4 Baldoyle Bay Survey (MUL Area A)

6.2.2.4.1 Bathymetric Survey - not including SBP and UHRS

- For bottlenose dolphin, auditory injury could occur within <10 m of the sound source, and TTS could occur within 60 m.
- For seals, auditory injury could occur within <10 m of the sound source, and TTS could occur within 240 m.
- For harbour porpoise, auditory injury could occur within 50 m of the sound source, while TTS could occur within 1.1 km.
- For all marine mammals, behavioural disturbance could occur out to 1.2 km when applying the criterion strictly (unweighted for hearing groups).

6.2.2.4.2 Geophysical Surveys including SBP and UHRS

- For bottlenose dolphin, auditory injury could occur within <10 m of the sound source, and TTS could occur within 190 m.
- For seals, auditory injury could occur within <10 m of the sound source, and TTS could occur within 400 m.
- For harbour porpoise, auditory injury could occur within 270 m of the sound source, while TTS could occur within 1.1 km.
- For all marine mammals, behavioural disturbance could occur out to 1.3 km when applying the criterion strictly (unweighted for hearing groups).

6.2.2.4.3 Geotechnical Survey

- For bottlenose dolphin, auditory injury could occur within <10 m of the sound source, and TTS could occur within 24 m.
- For seals, auditory injury could occur within <10 m of the sound source, and TTS could occur within 240 m.
- For harbour porpoise, auditory injury could occur within <10 m of the sound source, while TTS could occur within 600 m.
- For all marine mammals, behavioural disturbance could occur out to 1.2 km, however, this is unweighted for the hearing groups and as such, is considered to be highly precautionary, as low frequency drilling noise is likely to be below the hearing range of seals, dolphins and harbour porpoise (DAHG, 2014).

6.2.2.5 Irish Sea Survey (MUL Area B)

6.2.2.5.1 Bathymetric Surveys (no SBP or UHRS)

- For bottlenose dolphin, auditory injury could occur within <10 m of the sound source, and TTS could occur within 180 m.
- For seals, auditory injury could occur within <10 m of the sound source, and TTS could occur within 1.3 km.
- For harbour porpoise, auditory injury could occur within 150 m of the sound source, while TTS could occur within 11 km.
- Part of the reason for TTS ranges up to 11 km is the potential for 24-hour active survey operations, meaning that even modest received levels can build up over time to exceed the TTS thresholds.
- For all marine mammals, behavioural disturbance could occur 20 km or more when applying the criterion strictly (unweighted for hearing groups). However, depending on the presence of other vessels in the area and the habituation of the animals, the actual ranges for disturbance are likely to be significantly smaller. In their guidance document for assessing noise disturbance against the conservation objectives of harbour porpoise SACs, JNCC (2020) advises that fixed distances should be applied to assess behavioural disturbance, based on empirical evidence. For geophysical and bathymetric surveys, the JNCC's 'effective deterrence range' is 5 km. While the JNCC document focuses on harbour porpoise, this is precautionary for all other hearing groups, as harbour porpoise is considered to be the most sensitive.

6.2.2.5.2 Geotechnical surveys: Small Vessel < 25 m

- For bottlenose dolphin, auditory injury could occur within <10 m of the sound source, and TTS could occur within 120 m.
- For seals, auditory injury could occur within <10 m of the sound source, and TTS could occur within 6 km.
- For harbour porpoise, auditory injury could occur within <10 m of the sound source, while TTS could occur within 11 km.
- While TTS ranges appear to be large (up to 11 km), depending on the actual activity pattern (vessel speed, use of thrusters) this range will likely reduce. Part of the reason for these ranges is the potential for 24-hour active survey operations, meaning that even modest received levels can build up over time to exceed the TTS thresholds. It is likely that marine mammals will avoid the area due to the presence of the vessel.
- For all marine mammals, behavioural disturbance could occur 20 km or more. Depending on the presence of other vessels in the area and the habituation of the animals, the actual ranges for disturbance are likely to be significantly smaller, however, as this is unweighted for the hearing groups and as such, is considered to be highly precautionary, as low frequency drilling noise is likely to be below the hearing range of seals, dolphins and harbour porpoise (DAHG, 2014).

6.2.2.5.3 Geotechnical surveys: Large Vessel < 85 m

- For bottlenose dolphin, auditory injury could occur within < 10 m of the sound source, and TTS could occur within 270 m.
- For seals, auditory injury could occur within <10 m of the sound source, and TTS could occur within 10 km.

- For harbour porpoise, auditory injury could occur within <10 m of the sound source, while TTS could occur within 13 km.
- While TTS ranges appear to be large (up to 13 km), depending on the actual activity pattern (vessel speed, use of thrusters) this range will likely reduce. Part of the reason for these ranges is the potential for 24-hour active survey operations, meaning that even modest received levels can build up over time to exceed the TTS thresholds. It is likely that marine mammals will avoid the area due to the presence of the vessel.
- For all marine mammals, behavioural disturbance could occur 20 km or more. Depending on the presence of other vessels in the area and the habituation of the animals, the actual ranges for disturbance are likely to be significantly smaller, however, as this is unweighted for the hearing groups and as such, is considered to be highly precautionary, as low frequency drilling noise is likely to be below the hearing range of seals, dolphins and harbour porpoise (DAHG, 2014).

In summary, in the absence of mitigation and in light of the precautionary principle, likely significant effects due to underwater noise disturbance cannot be excluded for all marine mammal SACs considered in this SISAA:

- Rockabill to Dalkey Island SAC
- Lambay Island SAC
- Codling Fault Zone SAC
- North Anglesey Marine SAC
- Murlough SAC
- North Channel SAC
- Blackwater Bank SAC
- Lleyn Peninsula and the Sarnau SAC
- Hook Head SAC

6.2.3 Annex II Migratory Fish

This section assesses the potential for likely significant effects on those SACs designated for Annex II migratory fish species, where there is potential for connectivity with the MUL Area and the proposed SI works. The assessment is based on the precautionary principle and has been undertaken in the absence of mitigation.

The S-P-R assessment (**Table 5-1**) concluded that the following impacts have the potential to affect Annex II marine mammal species as a result of the SI works:

- Underwater noise.
- Water quality.

European sites taken forward for assessment for Annex II migratory fish species are listed in **Table 6-3** below. The following sections assess the likelihood for significant effects to migratory fish and summarise the screening for relevant European sites.

Table 6-3 European sites selected for consideration in the Screening for Appropriate Assessment for Annex II Migratory Fish

European Site (Code)	Distance from the Area of Interest (km)	List of Relevant Annex II Qualifying Interests[14]
River Boyne and River Blackwater SAC (002299)	37	River lamprey (*Lampetra fluviatilis*) Salmon (*Salmo salar*)

6.2.3.1 Underwater Noise

The proposed bathymetric and geotechnical surveys within the Irish Sea will produce underwater noise which has the potential to impact Annex II migratory fish. As no European sites designated for migratory fish overlap with the MUL Area, the risk is that fish could experience adverse effects as they migrate to/from their natal rivers and transit through the MUL Area.

The impacts of noise on fish can broadly be split into three categories: i) lethal and physical injury; ii) auditory injury; and iii) behavioural response. Hearing loss can be permanent or comprise a temporary reduction in hearing sensitivity (i.e. Temporary Threshold Shift (TTS)). At sound levels lower than those that may cause physical injury or mortality, noise may also cause behavioural effects on a species, for example, avoidance of an area or changes in swimming speed (Mueller-Blenke., 2010). This may be significant if it causes, for example, a migratory species to be delayed or diverted from their course.

Most fish species are capable of hearing within a frequency range of 50 Hz up to 500 to 1,500 Hz. A smaller number of species (notably clupeids) can detect sounds to over 3 kHz while a few species can detect sounds to well over 100 kHz (Popper and Hastings, 2009). Fish can be grouped into the following categories based on the presence or absence of a swim bladder and on the potential for that swim bladder to improve the hearing sensitivity and range of hearing (Popper et al., 2014):

- Group 1 fish: fish with no swim bladder or other gas chamber - with regards to migratory fish, this includes sea lamprey and river lamprey. These species are less susceptible to barotrauma and only detect particle motion, not sound pressure. However, some barotrauma may result from exposure to sound pressure;
- Group 2 fish: fish with swim bladders in which hearing does not involve the swim bladder or other gas volume - with regards to migratory fish, this category includes Atlantic salmon. These species are susceptible to barotrauma although hearing only involves particle motion, not sound pressure;
- Group 3 fish: fish in which hearing involves a swim bladder or other gas volume - with regards to migratory fish, this category includes species such as Allis shad and Twaite shad. These species are susceptible to barotrauma and detect sound pressure as well as particle motion; and
- Fish eggs and larvae.

As detailed in Section 5.3.4 above, the migratory fish species which are qualifying interests of the European sites identified to have potential connectivity with the MUL Area are river lamprey and Atlantic salmon. As outlined in section 3.4, the Irish Sea is not a known migration route for Atlantic salmon. This SISAA Report has drawn upon the results of the underwater noise assessment presented in full in the accompanying Subsea Noise Technical Report to inform this assessment of underwater noise effects on migratory fish. The thresholds for harm to fish species have been based on the sound exposure

[14]Qualifying interests that have not been identified as relevant to this specific assessment are excluded from this table.

guidelines for fish proposed by the ANSI-Accredited Standards Committee S3/SC 1, Animal Bioacoustics Working Group (Popper et al., 2014). The full details of this assessment have not been repeated here, but the main conclusions of the noise assessment relevant to Annex II migratory fish found, that no impact would occur beyond 10 m of the sound sources for both auditory injury and TTS. Therefore, given the distance between the SAC for which migratory fish are designated (37 km), the risk ranges for both auditory injury and TTS being <10 m for all survey scenarios and the scale and duration of the proposed SI works within the Irish Sea, it is considered unlikely that there will be interaction between the underwater noise sources and river lamprey and salmon migrating to/from the River Boyne and River Blackwater SAC. Therefore, **likely significant effects to migratory fish species of the River Boyne and River Blackwater SAC due to underwater noise can be screened out.**

6.2.3.2 Water Quality

There is potential for minimal benthic habitat loss due to intrusive sampling methodologies (grab sampling and boreholes) and water quality deterioration from survey activities or survey vessels, leading to impacts on migratory fish or smothering of prey species due to increased SSC. The MUL Area is in an exposed location within the Irish Sea, and benthic habitats in the area are generally moderate to high energy sediments (see Section 4), therefore it can be expected that habitats will recover quickly from relatively limited sediment extraction, suspension and settling of sediment. Similarly, it is likely that prey species such as smaller fish are adapted to the high energy environment and as such will not be affected by the temporary and spatially limited sediment sampling. The extent of sediment to be removed is limited (maximum of 48 grab samples and 10 boreholes) within the Irish Sea section of the MUL Area, therefore, there will be plenty of alternative foraging habitat and prey sources available for temporarily displaced foraging migratory fish. While the precise sampling locations are not known within the MUL Area, the conclusion remains the same. **Likely significant effects due to disturbance of water quality for migratory fish as a result of the Irish Sea surveys can therefore be screened out for all migratory fish SACs.**

6.2.4 Birds

This section assesses the likelihood of significant effects on those SPAs where there is potential for connectivity with the MUL Area and the proposed SI works. The assessment is based on the precautionary principle and has been undertaken in the absence of mitigation.

The S-P-R assessment (Table 5-1) outlined the following potential sources of impacts to birds as a result of the SI works:

- Above water noise, vibration and lighting;
- Habitat loss, alteration and/ or fragmentation (including increased SSC/smothering and accidental pollution); and,
- Underwater noise.

Relevant SPAs and QI bird species have been listed in **Table 5-2** above. The following sections assess the likelihood for significant effects to these SPAs and species and summarise the screening for relevant European sites.

European sites taken forward for assessment for bird species are listed in **Table 6-4** below. The following sections assess the likelihood for significant effects to birds and summarise the screening for relevant European sites.

Table 6-4 European sites selected for consideration in the Screening for Appropriate Assessment for Birds.

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Bird QI/ SCI[15]
Baldoyle Bay SPA (004016)	Within the SPA boundary	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Tadorna tadorna* (Shelduck) [A048] *Charadrius hiaticula* (Ringed Plover) [A137] *Pluvialis apricaria* (Golden Plover) [A140] *Pluvialis squatarola* (Grey Plover) [A141] *Limosa lapponica* (Bar-tailed Godwit) [A157] Wetland and Waterbirds [A999]
North-West Irish Sea SPA (004236)	Within the SPA boundary	*Gavia stellata* (Red-throated Diver) [A001] *Gavia immer* (Great Northern Diver) [A003] *Fulmaris glacialis* (Fulmar) [A009] *Puffinus puffinus* (Manx Shearwater) [A013] *Phalacrocorax carbo* (Cormorant) [A017] *Phalacrocorax aristotelis* (Shag) [A018] *Melanitta nigra* (Common Scooter) [A065] *Chroicocephalus ridibundus* (Black-headed Gull) [A179] *Larus canus* (Common Gull) [A182] *Larus fuscus* (Lesser Black-backed Gull) [A183] *Larus argentatus* (Herring Gull) [A184] *Larus marinus* (Great Black-backed Gull) [A187] *Rissa tridactyla* (Kittiwake) [A188] *Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna Paradisaea* (Arctic Tern) [A194] *Sterna albifrons* (Little Tern) [A195] *Uria aalge* (Guillemot) [A199] *Alca torda* (Razorbill) [A200] *Fratercula arctica* (Puffin) [A204] *Hydrocoloeus minutus* (Little Gull) [A862]
Ireland's Eye SPA (004117)	Within the SPA boundary	*Phalacrocorax carbo* (Cormorant) [A017] *Larus argentatus* (Herring Gull) [A184] *Rissa tridactyla* (Kittiwake) [A188] *Uria aalge* (Guillemot) [A199] *Alca torda* (Razorbill) [A200]
Howth Head Coast SPA (004113)	2	*Rissa tridactyla* (Kittiwake) [A188]
North Bull Island SPA (004006)	2	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Tadorna tadorna* (Shelduck) [A048] *Anas crecca* (Teal) [A048] *Anas acuta* (Pintail) [A054] *Anas clypeata* (Shoveler) [A056] *Haematopus ostralegus* (Oystercatcher) [A130] *Pluvialis apricaria* (Golden Plover) [A140]

[15]Qualifying interests that have not been identified as relevant to this specific assessment are excluded from this table.

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Bird QI/ SCI[15]
		Pluvialis squatarola (Grey Plover) [A141] *Calidris canutus* (Knot) [A143] *Calidris alba* (Sanderling) [A144] *Calidris alpina* (Dunlin) [A149] *Limosa limosa* (Black-tailed Godwit) [A156] *Limosa lapponica* (Bar-tailed Godwit) [A157] *Numenius Arquata* (Curlew) [A160] *Tringa totanus* (Redshank) [A162] *Arenaria interpres* (Turnstone) [A169] *Chroicocephalus ridibundus* (Black-headed Gull) [A179] Wetland and Waterbirds [A999]
Malahide Estuary SPA (004025)	2	*Podiceps cristatus* (Great Crested Grebe) [A005] *Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Tadorna tadorna* (Shelduck) [A048] *Anas acuta* (Pintail) [A054] *Bucephala clangula* (Goldeneye) [A140] *Mergus serrator* (Red-breasted Merganser) [A069] *Haematopus ostralegus* (Oystercatcher) [A130] *Pluvialis apricaria* (Golden Plover) [A140] *Pluvialis squatarola* (Grey Plover) [A141] *Calidris canutus* (Knot) [A143] *Calidris alpina* (Dunlin) [A149] *Limosa limosa* (Black-tailed Godwit) [A156] *Limosa lapponica* (Bar-tailed Godwit) [A157] *Tringa totanus* (Redshank) [A162] Wetland and Waterbirds [A999]
South Dublin Bay and River Tolka Estuary SPA (004024)	6	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Haematopus ostralegus* (Oystercatcher) [A130] *Charadrius hiaticula* (Ringed Plover) [A137] *Pluvialis squatarola* (Grey Plover) [A141] *Calidris canutus* (Knot) [A143] *Calidris alba* (Sanderling) [A144] *Calidris alpina* (Dunlin) [A149] *Limosa lapponica* (Bar-tailed Godwit) [A157] *Tringa totanus* (Redshank) [A162] *Chroicocephalus ridibundus* (Black-headed Gull) [A179] *Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna Paradisaea* (Arctic Tern) [A194] Wetland and Waterbirds [A999]
Lambay Island SPA (004069)	7	*Fulmaris glacialis* (Fulmar) [A009] *Phalacrocorax carbo* (Cormorant) [A017] *Phalacrocorax aristotelis* (Shag) [A018] *Anser anser* (Greylag Goose) [A043] *Larus fuscus* (Lesser Black-backed Gull) [A183] *Larus argentatus* (Herring Gull) [A184] *Rissa tridactyla* (Kittiwake) [A188] *Uria aalge* (Guillemot) [A199]

European Site (Code)	Distance from the MUL Area (km)	List of Relevant Bird QI/ SCI[15]
		Alca torda (Razorbill) [A200] *Fratercula arctica* (Puffin) [A204]
Rogerstown Estuary SPA (004015)	7	*Anser anser* (Greylag Goose) [A043] *Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Tadorna tadorna* (Shelduck) [A048] *Anas clypeata* (Shoveler) [A056] *Haematopus ostralegus* (Oystercatcher) [A130] *Charadrius hiaticula* (Ringed Plover) [A137] *Pluvialis squatarola* (Grey Plover) [A141] *Calidris canutus* (Knot) [A143] *Calidris alpina* (Dunlin) [A149] *Limosa limosa* (Black-tailed Godwit) [A156] *Tringa totanus* (Redshank) [A162] Wetland and Waterbirds [A999]
Dalkey Islands SPA (004172)	14	*Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna Paradisaea* (Arctic Tern) [A194]
Rockabill SPA (004014)	16	*Calidris maritima* (Purple Sandpiper) [A148] *Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna paradisaea* (Arctic Tern) [A194]
Skerries Islands SPA (004122)	16	*Phalacrocorax carbo* (Cormorant) [A017] *Phalacrocorax aristotelis* (Shag) [A018] *Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Calidris maritima* (Purple Sandpiper) [A148] *Arenaria interpres* (Turnstone) [A169] *Larus argentatus* (Herring Gull) [A184]

6.2.4.1 Above Water Noise, Vibration and Lighting

6.2.4.1.1 Baldoyle Bay Surveys (MUL Area A)

SI works activities (below the HWM) with the potential to interact with SCI bird species within Baldoyle Bay are as follows:

- Land-based geophysical surveys including access routes via bog mats;
- Geotechnical surveys (2no. boreholes) including access routes via bog mats; and
- Boat-based geophysical and bathymetric surveys within Baldoyle Bay.

The land-based geophysical surveys will involve a small team of surveyors walking in the estuarine/intertidal zone using non-intrusive hand-held equipment or minimally intrusive equipment such as seismic refraction, GPR and Electrical Resistivity Tomography (ERT) equipment, using bog mats for access to soft sediment areas. Boat-based geophysical and bathymetric surveys will likely take place at high tide, however, there is potential for disturbance of roosting birds above the high tide mark. Although only one vessel will undertake these surveys, this is likely to represent a novel disturbance within Baldoyle Bay. Geotechnical borehole drilling during low tide will introduce above-water noise and

vibration to any birds feeding or resting within Baldoyle Bay. If these activities are undertaken in the overwintering period (usually October to March), likely significant effects due to disturbance cannot be excluded in the absence of mitigation. Therefore, above-water disturbance to the SCI birds of Baldoyle Bay SPA cannot be ruled out at this stage.

While Baldoyle Bay SPA is the only SPA for wintering birds that overlaps with the proposed SI works, SPAs within 20 km were also be considered due to the potential for these species to travel to Baldoyle Bay forage, e.g. swan and goose species. **Therefore, the following SPAs for wintering species are screened in:**

- **Baldoyle Bay SPA**
- **North Bull Island SPA**
- **Malahide Estuary SPA**
- **South Dublin Bay and River Tolka Estuary SPA (also a seabird SPA, see below)**
- **Lambay Island SPA (also a seabird SPA, see below)**
- **Rogerstown Estuary SPA**
- **Skerries Islands SPA (also a seabird SPA, see below)**

6.2.4.1.2 Irish Sea Surveys (MUL Area B)

The physical presence of survey vessels in the marine environment, and the noise associated with the operation of survey equipment, could result in a limited degree of disturbance to seabirds in the vicinity of the survey vessel. Birds present on the surface waters near the survey vessels could be temporarily displaced from their chosen feeding/resting locations. For all surveys, vessel activity in any one location will be of short duration with the vessels moving steadily forward along the transect lines (e.g. during bathymetric surveys) or remaining stationary at sample locations for short durations (e.g. during geotechnical sampling and benthic sampling) before transitioning to the next location. This activity will not differ considerably to existing vessel activity in the region, which includes commercial shipping, ferries, fishing and recreational vessels and it is not anticipated that above-water noise emitted by the survey vessels and equipment will differ significantly from that emitted by vessels already using the area. Birds using the area are likely to be habituated to the baseline levels of activity and are unlikely to be significantly disturbed by the presence of a one survey vessel operating within the MUL Area. MUL Area B overlaps with the North-West Irish Sea SPA (designated to provide supporting habitat for foraging and maintenance behaviours for seabirds breeding at colonies in the north-west Irish Sea) and Ireland's Eye SPA (designated for breeding seabirds).

The operation of vessels and equipment in close proximity to Ireland's Eye has the potential to disturb nesting birds at this coastal SPA which borders the MUL Area, if the timing of the proposed surveys was to overlap with breeding periods. The North-West Irish Sea SPA provides additional supporting habitats for foraging and maintenance behaviours for those seabirds that breed at colonies on the north-west Irish Sea's islands and coastal headlands (NPWS, 2023a). The North-West Irish Sea provides foraging at sea habitat for breeding seabirds at Lambay Island, Skerries Islands SPA, Ireland's Eye SPA, Howth Head SPA, Rockabill Island SPA, Boyne Estuary SPA and South Dublin Bay and River Tolka Estuary SPA (NPWS, 2023a). With the exception of Ireland's Eye, the above-listed SPAs that support nesting sites for breeding birds are at least 7 km from the boundary of the MUL Area, therefore significant above-water disturbance to nesting sites at these SPAs can be excluded. These species will all be protected for ex situ disturbance effects within MUL Area B through the assessment of the North-West Irish Sea SPA.

Dalkey Islands SPA is designated for the protection of Roseate tern, common tern and Arctic tern and is located 14 km south of MUL Area B. The North-West Irish Sea SPA site synopsis (NPWS, 2023a) does

not include this SPA in the list of ecologically connected SPAs, however, as these tern species have maximum foraging range of 23.9 km, 30 km and 46 km (Woodward et al., 2019), respectively, as a precautionary measure it considered likely that individuals could forage within the MUL Area.

Therefore, despite the relatively low level of disturbance anticipated, based on the precautionary principle, **likely significant effects to seabirds as a result of above-water disturbance cannot be excluded for Ireland's Eye SPA for breeding birds at nesting sites and the North-West Irish Sea SPA and Dalkey Islands SPA for foraging seabirds.**

6.2.4.2 Habitat Loss, Alteration and/or Fragmentation (Including Increased SSC/Smothering)

6.2.4.2.1 Baldoyle Bay Surveys (MUL Area A)

Wetlands habitat is a qualifying interest of Baldoyle Bay SPA for wintering birds which overlap with the MUL Area. Wetlands provide food, shelter and breeding habitat for many species. Habitat loss, alteration and/ or fragmentation to these wetlands has the potential to have a significant effect on bird QIs for which these SPAs are designated. As outlined in Section 6.2.4 above, the land-based geophysical surveys within Baldoyle Bay will involve a small team of surveyors walking along the estuarine/intertidal zone using non-intrusive hand-held equipment or minimally intrusive equipment such as seismic refraction, GPR and Electrical Resistivity Tomography (ERT) equipment utilising bog mats for access, where required. During these non-intrusive surveys, no sediment or vegetation will be removed, however, there could be temporary disturbance to wetland habitat during access/egress to sampling locations.

The boat-based geophysical and bathymetric surveys will involve a small nearshore vessel within the Bay utilising non-intusive techniques , therefore there will be no interaction with wetland habitats.

Geotechnical boreholes are intrusive and have the potential to remove or alter SPA wetland habitats within Baldoyle Bay SPA. Four boreholes will be drilled within MUL Area A in Baldoyle Bay. Intrusive and extractive geotechnical surveys within Baldoyle Bay have the potential to directly remove, alter or fragment the wetland habitat of Baldoyle Bay SPA. There is no overlap with any other SPAs for wintering birds, and therefore no potential for loss of wetland habitats at those sites.

The likelihood of significant effects cannot be excluded at Baldoyle Bay SPA due to habitat loss, alteration or fragmentation of wetland habitats.

6.2.4.2.2 Irish Sea Surveys (MUL Area B)

MUL Area B overlaps the following SPAs: North-West Irish Sea SPA, which provides foraging opportunities for seabirds from neighbouring SPAs (Lambay Island, Skerries Islands SPA, Ireland's Eye SPA, Howth Head SPA, Rockabill Island SPA, Boyne Estuary SPA and South Dublin Bay and River Tolka Estuary SPA (NPWS, 2023a)), and Ireland's Eye SPA, which is designated for breeding seabirds. There will be minimal benthic habitat loss due to intrusive sampling methodologies (grab sampling and boreholes) and water quality deterioration from survey activities or survey vessels, leading to impacts on marine mammals or smothering of benthic and pelagic prey species due to increased SSC.

The North-West Irish Sea SPA has been designated in order to protect foraging and roosting opportunities for a wide range of seabirds which are ecologically connected to nearby coastal breeding SPAs in addition to wintering and migrating seabirds (NPWS, 2023a). The site-specific conservation objectives for seabirds at the North-West Irish Sea SPA advise that the spatial distribution, extent, abundance and availability of foraging habitat should be sufficient for each species (NPWS, 2023b). As

stated above, the North-West Irish Sea SPA protects seabirds from the above-listed regional seabird SPAs when using the north-west Irish Sea for foraging and other maintenance behaviours. Therefore, it is considered that inclusion of the North-West Irish Sea SPA is sufficient to assess habitat-related impacts to these species within MUL Area B.

The MUL Area is in an exposed location within the Irish Sea, and benthic habitats in the area are generally high energy, therefore it can be expected that habitats will recover quickly from relatively limited sediment extraction and suspension and settling of sediment. Similarly, it is likely that prey species such as invertebrates and benthic and pelagic fish are adapted to the high energy environment and as such will not be affected to a large extent by the temporary and spatially limited sediment sampling. The extent of sediment to be removed is relatively limited (maximum of 48 grab samples and 10 boreholes), while the North-West Irish Sea SPA covers an area of approximately 2,333km^2 (NPWS, 2023a), therefore there will be plenty of alternative foraging habitat available for temporarily displaced foraging birds. While the precise sampling locations are not known, they will be within the MUL Area, and regardless of the location of sampling, the conclusion remains the same. **Therefore, there is no likelihood for significant effects to any SPAs due to habitat loss, alteration or fragmentation of subtidal habitats.**

6.2.4.3 Underwater Noise

There is potential for diving seabirds to interact with the marine surveys while underwater noise is being produced. The following SPAs are designated for the protection of diving species, including cormorant, gannet, shag, red-throated diver, great Northern diver and common scoter:

- Skerries Islands SPA
- Lambay Island SPA
- North-West Irish Sea SPA
- Ireland's Eye SPA
- Howth Head Coast SPA

Hartley Anderson Limited (2020) provide a summary of the available evidence on the auditory abilities and effects of underwater noise of diving birds, however, this evidence is very limited. Findings from more recent empirical research on a cormorant subspecies (whose physiology may be broadly comparable to the cormorant typically found in the Celtic Sea) suggest that at least some diving birds have underwater hearing sensitivity is at least as good as their aerial sensitivity (Larsen et al., 2020). And a 2024 study of auks (two species of which occur in the Celtic Sea) found that frequencies of sensitive hearing overlap with many anthropogenic noise sources, indicating susceptibility to disturbance from a range of noise types (Smith et al., 2024).

While seabird responses to approaching vessels are highly variable (e.g. Fliessbach et al. 2019), flushing disturbance would be expected to displace most diving seabirds from close proximity to the survey vessel and any towed equipment, thereby limiting their exposure to the highest sound pressures generated. Similarly, behavioural disturbance of seabirds due to acoustic survey activities is most likely to be temporary displacement associated with the physical presence of the vessel, comparable to that experienced by routine shipping traffic (Hartley Anderson Limited, 2020) and when the survey vessel has left the area, birds can resume diving activities. Therefore, despite the findings of Smith (et al., 2024), impacts on bird fitness will not lead to population-level effects at SPAs.

Given the limited extent of sound-producing activity, the limited time diving birds spend underwater, and given that birds are likely to be temporarily displaced to the surrounding area due to the presence of the vessel, it is considered that there is a very low likelihood of interaction between underwater noise sources and diving birds during the proposed SI works. **Therefore, no likely significant effects to diving birds due to underwater noise are expected, and no further assessment is required.**

6.3 In-combination effects

Even if projects are unlikely to have significant effects on their own, the effects in-combination with those of other plans or projects could be significant. An in-combination screening assessment has been carried out to identify other projects/plans that could act in-combination with the SI works to affect site conservation objectives (in accordance with OPR, 2021).

MARA has identified the following key steps for assessing in-combination effects:

- Defining the Cumulative Effects Spatial Scope (CESS);
- Defining the Cumulative Effects Temporal Scope (CETS);
- Impact identification;
- Pathway identification;
- Prediction;
- Identification of Plans or Projects that could act in combination;
- Screening Stage Cumulative Effects Assessment conclusion; and
- Managing cumulative impacts - to be carried out as part of Stage 2 AA process.

6.3.1 Cumulative Effects Spatial Scope (CESS)

The CESS was based on the maximum impact range identified in the accompanying SISAA when considering impacts of the proposed SI works. Beyond this maximum distance, the proposed SI works will have no effect and therefore no potential pathway to cumulative effects with other projects. The CESS was identified as 5km from the boundary of the MUL Area, based on the JNCC's guidance document for assessing noise disturbance for harbour porpoise SACs (JNCC, 2020). For geophysical and bathymetric surveys, the JNCC recommend that an effective deterrence range is 5 km. For all other proposed survey types, impact ranges are less than 5 km, therefore 5 km is considered to be the furthest distance at which other projects could act cumulatively with the SI works.

6.3.2 Cumulative Effects Temporal Scope (CETS)

The CETS was based on the potential for temporal overlap with the proposed SI works. As the proposed SI will have a five-year licence, projects likely to take place within the next six years were identified as potentially relevant, allowing for a precautionary one-year buffer to allow for the time between submission of this MULA and an MUL being granted.

6.3.3 Impact Identification

Potential impacts related to the proposed SI works are described in Section 5.2.1 of this SISAA Report. In the absence of mitigation, the proposed SI works individually have the potential to give rise to likely significant effects, due to above-water disturbance, habitat loss/disturbance and underwater noise disturbance.

In order for other plans/ projects to act in-combination with the proposed SI works, they must also give rise to the above impacts.

6.3.4 Pathway Identification and Prediction of Impacts

6.3.4.1 Above-water Disturbance

Above-water disturbance due to the presence of humans, vessels and equipment, noise, vibration and lighting has the potential to occur during the SI works. The SI works and related effects will be temporary and of relatively short duration which will be limited to within the MUL Area. Therefore, it is considered that only projects which also have the potential to cause above-water disturbance and which are likely to occur at the same time as the SI works and are within the MUL Area have the potential to act in-combination.

It is considered unlikely that high-level plans have the potential to contribute to above-water disturbance occurring at the same time and in the same place as the SI works.

6.3.4.2 Habitat Loss and/or Disturbance

There is potential for habitat loss and/or disturbance due to intrusive sampling methodologies (i.e. boreholes and grab sampling) in the Irish Sea and due to land-based geophysical surveys (including access) and land-based boreholes within Baldoyle Bay.

The SI works and related effects will be temporary and of short duration and will occur only within the MUL Areas at each of relevant works locations. Therefore, it is considered that only projects occurring at the same time as the SI works and within the MUL Area have the potential to act in-combination.

It is considered unlikely that high-level plans have the potential to contribute directly to habitat loss and/or disturbance occurring at the same time and in the same place as the SI works.

6.3.4.3 Underwater Noise Disturbance

The proposed SI works will give rise to underwater noise, which, in the absence of mitigation, will lead to likely significant effects. Therefore, other projects in the marine environment with the potential to emit underwater noise within the CESS should be considered in-combination with the proposed SI works.

It is considered unlikely that high-level plans have the potential to contribute directly to underwater noise disturbance occurring at the same time and in the same place as the SI works.

6.3.5 Identification of Plans or Projects

RPS undertook a desk study using internet searches, planning databases and other available sources, as outlined below, to identify other plans, projects and activities likely to overlap with the CESS and CETS of the proposed SI works, which have the potential to give rise to in-combination effects.

6.3.5.1 Plans

Following the identification of likely pathways for in-combination impacts, it is considered that for a plan to be able to act in-combination with the proposed SI works, it must determine the precise location of a project or designate specific land uses. A review was undertaken of national, regional and local plans using planning portals and expert knowledge. While the proposed GDD project aligns with the objectives of high-level plans such as the National Development Plan and the National Marine Planning Framework (NMPF), without geographically specific actions or objectives, there is no pathway to interaction with the proposed SI works that could lead to likely significant effects.

The River Basin Management Plan for Ireland 2022-2027 provides a plan to protect and restore good water quality in Irelands rivers, lakes, estuaries, groundwater and coastal waters. The GDD project will directly assist in realising provisions of the River Basin Management Plan, as it will provide additional wastewater services infrastructure and capacity to a rapidly growing region that is currently constrained by inadequate infrastructure. Therefore, the GDD project will support the aims and objectives of the River Basin Management Plan for Ireland 2022-2027 by providing additional wastewater infrastructure in the GDA area in support of this plan.

Other potentially relevant plans include the Recast Directive, Water Services Policy Statement, Water Quality and Water Services Infrastructure and the Biodiversity Action Plan however, given the temporary nature of the proposed SI works and the lack of specific detail available at the plan level, it is considered more appropriate to consider in-combination impacts with projects, as they are submitted to relevant consenting authorities

There are no anticipated in-combination effects from plans and therefore plan-level in-combination effects are screened out from further assessment.

6.3.5.2 Projects

Other projects could potentially give rise to either direct impacts on habitats or species (loss of habitat, disturbance to species) or indirect impacts (e.g., activities which could affect water quality or hydrology which could in turn affect the status/health of populations of water dependant habitats or species).

A search of foreshore licence and MUL applications/determinations which could interact with the SI works was conducted using the relevant consenting authority websites (DHLGH - foreshore applications, MARA - Maritime Usage Licences (MULs), An Bord Pleanála (ABP) - Strategic Infrastructure Development (SID) - marine developments, Environmental Protection Agency (EPA) – Dumping at Sea (DaS) permits). A full list of all relevant consent applications is available in Appendix A.

The MULA application for the proposed SI works discussed above will not overlap temporally with the main GDD project. This MULA and associated SI works will be conducted and completed prior to any ancillary or infrastructure works commencing as part of the overall GDD project. Therefore, there is no potential for cumulative effects between the proposed SI works and the overall GDD project.

No DaS licences overlap or are within the MUL Area, only one licence occurs within the CESS (S0031-01) at Malahide Marina for dredged material with a permit end date of 31/01/2025. Therefore, there is no spatial or temporal overlap with the GDD project and no potential for in-combination effects due to habitat loss/disturbance, above-water disturbance effects with dredging and associated dumping within the MUL Area.

Two MUL applications and three foreshore licence applications within the CESS have been granted licences, as discussed below.

- Microsoft Ireland Ltd. was granted a MUL (LIC230018) to undertake geophysical, bathymetric and SI investigations for a subsea fibre optic cable which has a landfall in Portmarnock transversing the Irish Sea. This licence has a period of two years from the commencement date (03/07/2024), with surveys anticipated to take less than 6 weeks in total and will be completed over a 6-month period. It is not known whether SI works have been completed to date, therefore there is potential for spatial and temporal overlap with the proposed SI works.
- Microsoft Ireland Ltd. was granted a MUL (LIC230016) to undertake geophysical, bathymetric and SI investigations for a subsea fibre optic cable which has a landfall at Dublin Port crossing Dublin Bay

across the Irish Sea. This licence has a period of two years from the commencement date (28/06/2024), with surveys anticipated to take less than 3 weeks in total and will be completed over a 2-month period. It is not known whether SI works have been completed to date, therefore there is potential for spatial and temporal overlap with the proposed SI works.

- Mares Connect was granted a foreshore licence (FS007635) for marine SI works for the MaresConnect Ltd (MCL) Interconnector which landfalls at Portmarnock Co. Dublin. This licence was for a period of five years from the commencement date (04/07/2024). Geophysical and bathymetric works commenced on the 28th of March 2025 and lasted for 13 days[16]. Geotechnical works were completed between the 21st to the 26th of May 2025[17]. Although surveys have been undertaken, as the licence is still valid, spatial and temporal overlap with future surveys with the proposed SI works is possible. Note that Mares Connect was also granted a MUL (MUL240008) to conduct SI works from the 12 nm limit to the EEZ for a period of five years from the commencement date (30/06/2025), however, as this survey area is >25 km from the MUL Area, and therefore beyond the CESS, this MUL is not considered here.
- RWE renewables was granted a foreshore licence (FS007188) to undertake geotechnical, bathymetric and geophysical site investigations and ecological, wind, wave and current monitoring to provide further data to refine wind farm design, cable routing, landfall design and associated installation methodologies for the proposed Dublin Array offshore wind farm. This licence was for a period of five years from the commencement date (13/01/2023) and survey works took place in summer 2024[18], however, as the licence is still valid, temporal overlap with the proposed SI works is possible.
- Broadmeadow Way Greenway was granted a foreshore licence (FS006909) to develop a new greenway (shared footpath and cycleway) between Malahide Demesne and Newbridge Demesne via the railway causeway across the Malahide Estuary. This licence was for a period of five years from the commencement date (02/05/2024). There is no spatial overlap with the proposed SI works and given the location of the Greenway (located within the Malahide Estuary) and the nature of the works which will be limited within the marine environment, no in-combination impacts are predicted.

There is one MUL application which has not yet been determined which overlaps with the CESS, for the introduction of native oysters into nearshore sites along with eco-engineered habitat units and appropriate substrate at Sutton, Rogerstown, Irelands Eye, Tolka Estuary and Malahide Marina and Estuary (MUL230032). This MUL application will be considered further as there is potential for overlap temporally as well as spatially with the proposed SI works when/if licences are granted.

A foreshore licence application (FS006843) was submitted in 2020 by Irish Water (now Uisce Éireann) for the GDD marine outfall pipe, which is out-of-date and no longer live as it has been superseded by the current GDD Project, which has been granted planning approval by An Coimisiún Pleanála on 10 July 2025. Therefore, this foreshore licence application can be disregarded.

Uisce Éireann are in the processes of submitting a MUL application for the East/North-East Strategic Modelling Study, which involved a strategic modelling study of water currents along the Irish coast from

[16] Mars Connect Cable Route Geophysical Surveys Accessed July 2025

[17] MN_31_of_2025_Mares_Connect_Cable_Route_Geotechnical_Survey.pdf Accessed July 2025

[18] Dublin Array 2024 Offshore Survey Works Campaign accessed July 2025

Carlingford Lough in Co. Louth to Kilcoole in Co. Wicklow. The proposed works which overlap the MUL Area include deployment of ADCPs, vessel mounted ADCPs, tide gauges, bathymetric surveys and water quality sampling from the shoreline and a vessel. As the proposed surveys are yet to be granted a licence, commencement of works is unknown at this time. However, a licence period of five years is being sought therefore there is potential for temporal overlap.

6.3.6 Screening Stage In-combination Effects Assessment Conclusion

Based on the above review of other projects occurring within the CESS and CETS of the proposed SI works, there is potential that the following projects could act in combination and likely significant effects in-combination cannot be excluded at this stage:

- Mares Connect (FS007635)
- RWE Renewables Ireland (DS007188)
- Microsoft Ireland Ltd. (LIC230018)
- Microsoft Ireland Ltd. (LIC230016)
- University College Dublin (MUL230032);
- Uisce Éireann East/North-East Strategic Modelling Study (No MUL reference yet).

In the absence of mitigation measures, there is the potential for in-combination effects with other projects and therefore in-combination effects are screened in for further assessment.

7 SUMMARY AND CONCLUSIONS

7.1 Summary

In accordance with the relevant legislation and the methodology followed, supporting information to inform a Stage 1 Screening for Appropriate Assessment was compiled. This SISAA report has been compiled in order to ascertain whether the proposed SI works are likely to have a significant effect on any European site.

Table 7-1 summarises the findings of this assessment and lists the 20 European sites for which likely significant effects cannot be excluded alone, or in-combination with other plans or projects, without further evaluation or analysis, or the application of mitigation measures. The relevant QI/ SCI of these 20 sites will be investigated in the applicant's Natura Impact Statement (NIS).

Table 7-1 Summary of European sites and relevant qualifying interests screened in for Likely Significant Effects.

European Site	Distance to MUL Area	Relevant QI/ SCI	Likely Significant Effect
Rockabill to Dalkey Island SAC	Within SAC boundary	Reefs [1170] *Phocoena phocoena* (Harbour porpoise) [1351]	Habitat loss, alteration or fragmentation, including increased SSC/smothering (for subtidal habitats). Underwater noise disturbance.
Baldoyle Bay SAC	Within SAC boundary	Mudflats and sandflats not covered by seawater at low tide [1140] *Salicornia* and other annuals colonising mud and sand [1310] Atlantic Salt Meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean Salt Meadows (*Juncetalia maritime*) [1410]	Habitat loss, alteration or fragmentation.
Lambay Island SAC	7	*Halichoerus grypus* (Grey Seal) [1364] *Phoca vitulina* (Common (Harbour) Seal) [1365] *Phocoena phocoena* (Harbour porpoise) [1351]	Underwater noise disturbance.
Codling Fault Zone SAC	25	*Phocoena phocoena* (Harbour porpoise) [1351]	Underwater noise disturbance.
North Anglesey Marine SAC	47	*Phocoena phocoena* (Harbour porpoise)	Underwater noise disturbance.
Murlough SAC	79	*Phoca vitulina* (harbour seal)	Underwater noise disturbance.
North Channel SAC	93	*Phocoena phocoena* (Harbour porpoise)	Underwater noise disturbance.

European Site	Distance to MUL Area	Relevant QI/ SCI	Likely Significant Effect
Blackwater Bank SAC	98	*Phocoena phocoena* (Harbour porpoise) [1351]	Underwater noise disturbance.
Lleyn Peninsula and the Sarnau SAC	102	*Tursiops truncatus* (Bottlenose Dolphin) [1349]	Underwater noise disturbance.
Hook Head SAC	141	*Tursiops truncatus* (Bottlenose Dolphin) [1349]	Underwater noise disturbance.
Baldoyle Bay SPA	Within the SPA boundary	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Tadorna tadorna* (Shelduck) [A048] *Charadrius hiaticula* (Ringed Plover) [A137] *Pluvialis apricaria* (Golden Plover) [A140] *Pluvialis squatarola* (Grey Plover) [A141] *Limosa lapponica* (Bar-tailed Godwit) [A157] Wetland and Waterbirds [A999]	Above water noise, vibration and lighting disturbance. Habitat loss, alteration or fragmentation.
North-West Irish Sea SPA	Within the SPA boundary	*Gavia stellata* (Red-throated Diver) [A001] *Gavia immer* (Great Northern Diver) [A003] *Fulmaris glacialis* (Fulmar) [A009] *Puffinus puffinus* (Manx Shearwater) [A013] *Phalacrocorax carbo* (Cormorant) [A017] *Phalacrocorax aristotelis* (Shag) [A018] *Melanitta nigra* (Common Scooter) [A065] *Chroicocephalus ridibundus* (Black-headed Gull) [A179] *Larus canus* (Common Gull) [A182] *Larus fuscus* (Lesser Black-backed Gull) [A183] *Larus argentatus* (Herring Gull) [A184] *Larus marinus* (Great Black-backed Gull) [A187] *Rissa tridactyla* (Kittiwake) [A188] *Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna Paradisaea* (Arctic Tern) [A194] *Sterna albifrons* (Little Tern) [A885] *Uria aalge* (Guillemot) [A199] *Alca torda* (Razorbill) [A200] *Fratercula arctica* (Puffin) [A204] *Hydrocoloeus minutus* (Little Gull) [A862]	Above water noise, vibration and lighting disturbance (at sea).
Ireland's Eye SPA	Within the SPA boundary	*Phalacrocorax carbo* (Cormorant) [A107] *Larus argentatus* (Herring Gull) [A184] *Rissa tridactyla* (Kittiwake) [A188] *Uria aalge* (Guillemot) [A199] *Alca torda* (Razorbill) [A200]	Above-water disturbance to breeding birds at the nest during Irish Sea surveys.
North Bull Island SPA	2	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046]	Above water noise, vibration and lighting disturbance (ex situ)

European Site	Distance to MUL Area	Relevant QI/ SCI	Likely Significant Effect
Malahide Estuary SPA	2	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046]	Above water noise, vibration and lighting disturbance (ex situ for species utilising Baldoyle Bay only).
South Dublin Bay and River Tolka Estuary SPA	6	*Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Chroicocephalus ridibundus* (Black-headed Gull) [A179] *Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna Paradisaea* (Arctic Tern) [A194]	Above water noise, vibration and lighting disturbance (ex situ for species utilising Baldoyle Bay only).
Lambay Island SPA	7	*Fulmaris glacialis* (Fulmar) [A009] *Phalacrocorax carbo* (Cormorant) [A017] *Phalacrocorax aristotelis* (Shag) [A018] *Anser anser* (Greylag Goose) [A043] *Larus fuscus* (Lesser Black-backed Gull) [A183] *Larus argentatus* (Herring Gull) [A184] *Rissa tridactyla* (Kittiwake) [A188] *Uria aalge* (Guillemot) [A199] *Alca torda* (Razorbill) [A200] *Fratercula arctica* (Puffin) [A204]	Above water noise, vibration and lighting disturbance (ex situ for species utilising Baldoyle Bay only).
Rogerstown Estuary SPA	7	*Anser anser* (Greylag Goose) [A043] *Branta bernicla hrota* (Light-bellied Brent Goose) [A046]	Ex-situ above-water disturbance effects during Baldoyle Bay surveys
Dalkey Islands SPA	14	*Sterna dougallii* (Roseate Tern) [A192] *Sterna Hirundo* (Common Tern) [A193] *Sterna Paradisaea* (Arctic Tern) [A194]	Above water noise, vibration and lighting disturbance (ex situ, at sea).
Skerries Islands SPA	16	*Phalacrocorax carbo* (Cormorant) [A017] *Phalacrocorax aristotelis* (Shag) [A018] *Branta bernicla hrota* (Light-bellied Brent Goose) [A046] *Larus argentatus* (Herring Gull) [A184]	Above water noise, vibration and lighting disturbance (ex situ for species utilising Baldoyle Bay only).

7.2 Conclusion

RPS has prepared this report to provide the necessary information to MARA for them to complete a Screening for Appropriate Assessment of the potential for likely significant effects on European sites, in view of their conservation objectives, arising from the SI works either individually or in combination with other plans or projects. The potential impacts of the SI works have been considered in the context of the European sites potentially affected, their QI/ SCI and their conservation objectives, through the application of the S-P-R model, which considered the potential extent of effects from the SI works and the potential in-combination effects with other plans or projects. Measures intended to avoid or reduce the

harmful effects of the proposed development on European sites (i.e. “mitigation measures”) have not been taken into account in this SISAA. The overall findings are as follows:

The SI works are not connected with or necessary to the management of the nature conservation interest of any European site. The SI works, in the absence of mitigation, are likely to cause significant effects on 20 European sites, as listed in **Table 7-1** above. In the absence of mitigation measures, there is potential for in-combination effects with other projects and therefore in-combination effects with relevant projects will be considered for further assessment.

On the basis of objective information, it is our opinion that it cannot be excluded that the SI works, individually or in combination with other plans or projects, will have a significant effect on a European site. It is respectfully submitted that MARA should conduct an Appropriate Assessment and therefore a Natura Impact Statement (NIS) will be prepared to assist MARA in conducting an Appropriate Assessment.

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Appendix A List of Projects for In-Combination Assessment

Table A.1 List of projects identified following a search of the relevant databases undertaken on the 01/07/2025

No.	Application reference no.	Project	Approximate Distance from MUL Area	Project Status	In-combination Effects Assessment
1	FS007635	MaresConnect Electricity Interconnector Site Investigation	Overlaps	Permit end date 04/07/2029	Spatial overlap with MUL Area at Portmarnock Beach for benthic SI works extending 50 m from HWM, which end in 2029. Within the Cumulative Effects Spatial Scope (CESS). Possible temporal overlap.
2	FS006843	Irish Water Greater Dublin Drainage Outfall	Overlaps	Applied (although application now out-of-date and no longer relevant due to change in marine consenting regime).	No overlap as this foreshore application is no longer relevant. Project has Planning Approval from ACP as of 10 July 2025.
3	FS007188	RWE Renewables Ireland, Site Investigations for the proposed Dublin Array Offshore Wind Farm	Overlaps	Permit end date 13/01/2028	Spatial overlap with MUL Area. Within the CESS. Possible temporal overlap.
4	Unknown	Uisce Éireann, survey to support a strategic modelling study of water currents along the Irish coast from Carlingford Lough to Kilcoole.	Overlaps	Pending submission	Spatial overlap with MUL Area, Within CESS. Possible temporal overlap
4	LIC230018	Microsoft Ireland Operations Ltd – geophysical and bathymetric SI works for fibre optic cable.	1 km	Permit end date 03/07/2026	No spatial overlap with MUL Area. Within CESS. Possible temporal overlap.
5	LIC230016	Microsoft Ireland Operations Ltd- geophysical and bathymetric SI works for fibre optic cable.	3 km	Permit end date 28/06/2026	No spatial overlap with MUL Area. Within CESS. Possible temporal overlap.
6	MUL230032	UCD – Introduction of Native Oysters into nearshore sites along with eco-engineered habitat units and appropriate substrate.	4 km	Received	No spatial overlap with MUL Area. Within CESS. Possible temporal overlap.
7	FS006909	Broadmeadow Way Greenway	5 km	Permit end date 02/05/2029	No spatial overlap with MUL Area. Within the CESS.

No.	Application reference no.	Project	Approximate Distance from MUL Area	Project Status	In-combination Effects Assessment
					Possible temporal overlap, however, due to limited scale of marine works, no interaction predicted.
8	S0031-01	Malahide Marina Dumping at Sea licence	5 km	Permit end date 31/01/2025	No Spatial overlap with MUL Area. Within CESS. No temporal overlap as DaS licence expired.