

Assessment of Impacts of Maritime Usage Report

larnród Eireann

East Coast Railway Infrastructure Protection Programme



Jacobs

Assessment of Impacts of Maritime Usage Report

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Acronyms and Abbreviations

Acronym	Full Name	
АА	Appropriate Assessment	
AIMU	Assessment of Impacts on Maritime Usage Report	
САР	Climate Action Plan	
CCA's	Coastal Cell Areas	
ССАР	Climate Change Action Plan	
CFRAM	Catchment Flood Risk Assessment and Management	
СРТ	Core Penetration Testing	
DCC	Dublin County Council	
DCDP	Dublin City Development Plan	
DCP	Dynamic Cone Penetrometer	
DLR	Dún Laoghaire– Rathdown	
DLRCC	Dún Laoghaire-Rathdown County Council	
DLRCDP	Dún Laoghaire-Rathdown County Development Plan	
DoHPLG	Department of Housing, Planning and Local Government	
ECRIPP	East Coast Railway Infrastructure Protection Projects	
EIA	Environmental Impact Assessment	
EIAR	Environmental Impact Assessment Report	
EPA	Environmental Protection Agency	
EU	European Union	
GES	Good Environmental Status	
GI	Geotechnical Investigation	
ICZM	Integrated Coastal Zone Management	
IÉ	larnród Éireann	
LAP	Local Area Plans	
МАС	Maritime Area Consent	
МАРА	Maritime Area Planning Act	
MARA	Maritime Area Regulatory Authority	
MASW	Multichannel Analysis of Surfaces Waves	
ммо	Marine Mammal Observer	
MSFD	Marine Strategy Framework Directive	
MUL	Maritime Usage Licence	
NDP	National Development Plan	
NMPF	National Marine Planning Framework	

Acronym	Full Name
NPAD	National Planning Application Map Database
NPF	National Planning Framework
NSO's	National Strategic Outcomes
ОМРР	Overarching Marine Planning Policies
OPW	Office for Public Works
pNHAs	Proposed Natural Heritage Areas
PPE	Personal Protective Equipment
RPO	Regional Policy Objectives
RSES	Regional Spatial and Economic Strategy
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SI	Site Investigation
SISAA	Supporting Information for Screening for Appropriate Assessment
SMPP	Sectoral Marine Planning Policies
SPA	Special Protection Area
SRT	Seismic Refraction Tomography
UXO	Unexploded ordnances
wcc	Wicklow County Council
WCDP	Wicklow County Development Plan
WHO	World Health Organisation
WFD	Water Framework Directive

1. Introduction

1.1 Project Background

Iarnród Éireann (IÉ) are applying for a Maritime Usage Licence (MUL) to undertake geotechnical investigations, geophysical, bathymetric and environmental surveys (hereafter referred to as the Proposed Survey Works) within the intertidal and subtidal areas at five identified Coastal Cell Areas (CCA's) on Ireland's East Coast. The purpose of the Proposed Survey Works is to inform the selection and design of preferred coastal management options for the East Coast Railway Infrastructure Protection Projects (ECRIPP). The purpose of ECRIPP is to implement protection measures to 'at risk' sections of the Dublin to Wexford railway line from coastal erosion and coastal flooding, to maintain the operational integrity of the railway in the face of climate change impacts.

This document is the Assessment of Impacts on Maritime Usage Report (AIMU) and has been prepared to present and evaluate the potential environmental impacts of carrying out the Proposed Survey Works within the five CCA's. This report has been prepared to provide the Maritime Area Regulatory Authority (MARA) as the Competent Authority with the relevant information to allow them to make an informed decision of any potential impacts of the Proposed Survey Works on the receiving environment.

1.2 Licence Areas

As part of ECRIPP, five CCA's have been identified as vulnerable to coastal erosion and climate change effects. As part of this assessment of the Proposed Survey Works and throughout the licence documentation these will be referenced as "Licence Areas". These Licence Areas as they relate to the CCA's can be seen in Table 1.1 and are shown on Figure 1.1.

CCA	Description	Licence Area
1	Merrion Gates to Dun Laoghaire	А
2/3	Dalkey Tunnel to Killiney South	В
5	Bray Head to Greystones North Beach	C
6.1	Greystones South to Newcastle	D
6.2	Newcastle to Wicklow	D

Table 1.1: Licence Areas

For the purpose of this assessment, CCA6.1 and CCA6.2 are combined into one – Licence Area D. The licence areas are shown on in Appendix D.



Figure 1.1: Map of CCAs for ECRIPP

1.3 Content of the Report

This AIMU Report contains the following information:

- Introduction (Chapter 1);
- Description of Proposed Survey Works (Chapter 2);
- Planning and development policy (Chapter 3), including a statement of consistency with the Water Framework Directive (Section 5.3) and National Marine Planning Framework (Section 3.3);
- Environmental Impact Assessment Screening (Chapter 4);
- Environmental Appraisal (Chapter 5); and
- Conclusions (Chapter 6).

In addition to this report, the following information and documents accompany the MARA licence application:

- Supporting Information for Screening for Appropriate Assessment (SISAA) Report
- Natura Impact Statement
- Risk Assessment for Annex IV Species Report
- Drawings (Appendix D)
 - Figure 1 Licence Areas
 - Figure 2 Licence Area Overview
 - Figure 3 Licence Areas with European Sites

- Figure 4 Licence Area A with Geotechnical and Geophysical Surveys
- Figure 5 Licence Areas with Bathymetric Surveys
- Figure 6 Licence Areas with Environmental Features

2. Description of Proposed Survey Works

Full methodologies for all Proposed Survey Works and their locations are described below and summarised in Table 2.1.

	Works to be undertaken			
Licence Area	Foreshore and intertidal zone (land-based)	Intertidal and subtidal zone (boat-based)		
А	Geotechnical investigations, geophysical investigations, <u>bathymetric surveys</u> , benthic ecology surveys (intertidal cores and transects), licenced metal detection surveys	Bathymetric surveys		
В	Licenced metal detection surveys, bathymetric surveys, benthic ecology surveys (intertidal transects and subtidal day grabs)	Bathymetric surveys		
С	Licenced metal detection surveys, <u>bathymetric</u> <u>surveys,</u> benthic ecology surveys (intertidal transects and subtidal day grabs)	Bathymetric surveys, breeding bird surveys, drop down camera surveys, bat surveys <u>, subtidal day</u> <u>grabs</u>		
D	Licenced metal detection surveys <u>, bathymetric</u> <u>surveys,</u> benthic ecology surveys (intertidal transects)	Bathymetric surveys <u>, subtidal day grabs</u>		

Table 2.1: Summary of works to be undertaken in each Licence Area

2.1 Need and Alternatives

The Proposed Survey Works outlined in Section 2.2 comprise: -

- Geotechnical investigations (Section 2.2.1) to inform the design of the future ECRIPP works by improving an understanding of the structural integrity of the existing coastal defence structures and investigating the beach sediment and underlying geology of the intertidal areas.
- Geophysical site investigations (Section 2.2.2) to map the sub-surface geology and groundwater bodies; locate geological anomalies such as faults and voids or man-made anomalies such as shafts, underlying foundations and buried structures; and detect potential hazards, for example unexploded ordnances (UXOs) and utilities.
- Ecology surveys (Section 2.2.3) to understand the ecology present at the site so that ECRIPP works can be designed in a way that minimises potential impacts to biodiversity.
- Archaeology surveys (Section 2.2.4)- to better understand the archaeological resource of the licence areas to ensure future ECRIPP works avoid adversely impacting known or potential marine and intertidal archaeology and cultural heritage.

It is assumed that the Proposed Survey Works described above, will be sufficient to provide the necessary information to inform the design of the future ECRIPP works. However, if additional information is required then bathymetric surveys (Section 2.3) will be carried out to provide current and accurate seabed data.

The alternative to conducting the Proposed Survey Works is to rely solely on a desk-based study of the existing publicly available data. This data has been reviewed and utilised to inform the project design; however, collection of project specific data is necessary to optimise project design.

2.2 Proposed Survey Works

2.2.1 Geotechnical Investigations

The geotechnical investigations are proposed to be carried out within Licence Area A, as shown on the supporting maps in Appendix D.3.

Subject to approval of a MUL, the geotechnical investigations are scheduled to commence from August 2024 with a maximum duration of six months. The works are likely to take approximately one month to complete within the six-month period (i.e., the window of works on the intertidal).

Four methods of geotechnical investigation surveys are proposed, as outlined below.

2.2.1.1 Proposed Methodology

Window/Windowless sample boreholes

Twenty-two borehole surveys are proposed in Licence Area A, to investigate substrate by boring through soft shallow soils.

Of these 22 borehole surveys, 18 will be windowless samples. This method involves driving cylindrical steel tubes into the ground using a hydraulic hammer. The resulting samples will have a maximum surface diameter of 100mm and a maximum depth of 8m. The drilling rig will be mounted onto rubber tracks to minimise disturbance and ensure the method is suitable for use on environmentally sensitive sites. Each windowless sample will take between 1 to 4 hours to complete depending on ground conditions. The backfilling of locations on the beach will be made using the extracted soil horizons. Any additional backfill material required will comprise bentonite pellets.

In addition to the windowless samples, there will be four (4 no.) window samples carried out on the slope of the existing revetment. This method is similar to the windowless samples described above, with one initial additional step due to the need to core through the hard strata before commencing with the windowless sample technique. The initial upper layers in the revetment will be cored using the coring application on the drill rig. This core-drilling is designed to produce cores up to 150mm diameter from asphalt, concrete and similar materials. The backfilling of locations on the revetment face will be used via a combination of bentonite pellets, and bentonite grout cement. The cored coping stone will then be placed back into the hole and grouted in place.

Trial Pits

One (1 no.) hand-dug trial pit and 18 machine excavated pits are proposed to help determine the ground conditions within Licence Area A.

The hand-dug trial pit will have a maximum depth of 2m below ground level and will be excavated using hand digging tools with length and width measurements of us to 1m. This pit is estimated to take approximately 30 minutes to excavate and will be backfilled by the contractors within the same day. This pit will be dug by hand due to access restrictions for an excavator.

The machine excavated pits, also referred to as slit trenches, will be excavated to a maximum depth of 2m below ground level. They will be excavated using a tracked excavator or a wheeler back-hoe excavator that is up to 4m long and 1m wide. These slit trenches will take approximately 1-2 hours to complete depending on ground conditions. These trial pits will be backfilled with the beach sediment or soil arisings as appropriate by the contractors on the same day. Generally, the material will be backfilled in the order it was excavated so as to reinstate the different horizons/ layers to their prior locations. In order to achieve this, during excavation any soil risings/spoil will be placed adjacent to the pit on a tarpaulin or similar material.

Dynamic Cone Penetrometer test

One Dynamic Cone Penetrometer (DCP) test will be located on the beach near Blackrock station (see Appendix D.4) and will take approximately 5-10 minutes to carry out. The DCP test will involve driving a steel cone vertically into the ground using a sliding hammer. The number of blows required for each 100mm of

penetration will be measured and used to determine the strength and thickness of unbound pavement layers. The resulting depth profile is useful for identifying anomalously weak layers.

Particle size analysis of beach material

This sediment samples for particle size analysis will be carried out on Seapoint Beach in Licence Area A, in close proximity to Salthill/Monkstown Station. The samples will be taken using hand excavation tools to a maximum depth of 0.5m. Samples will be collected in plastic bulk bags, with one (1 no.) sample taken from:

- Mean High Water Spring (MHWS);
- Mean Sea Level (MSL); and
- Mean Low Water Spring (MLWS)

2.2.2 Geophysical Site Investigation Surveys

The geophysical site investigations are proposed to be carried out within Licence Area A, as shown on the supporting maps in Appendix D.1. Subject to approval of the MARA licence, the geophysical site investigations are scheduled to commence from August 2024.

These proposed surveys will comprise two techniques; Seismic Refraction Tomography (SRT) and Multichannel Analysis of Surface Waves (MASW).

2.2.2.1 Proposed Methodology

Seismic Refraction Tomography

The Seismic Refraction Tomography (SRT) technique is based on the refraction of seismic energy at the interfaces of geological layers of different velocity. A geophysics technician will use a drop weight such as a hammer to transmit a series of signals into the ground. These geophysical signals will be detected by a series of receivers which will be laid out along a transect line at a set distance, with each receiver connected to a control box. These receivers comprise of geophones with 100mm metal spikes that are inserted into the ground. The signals received by these receivers helps determine velocity of these input signals and infer the depth of underlying objects/interface between layers.

Multichannel Analysis of Surface Waves

The Multichannel Analysis of Surface Waves (MASW) technique generates surface waves, which allow the measurement of the variation in soil stiffness with depth. A geophysics technician will use a drop weight such as a hammer to transmit a series of signals into the ground. These geophysical signals will be detected by a series of receivers which will be laid out along a transect line at a set distance, with each receiver connected to a control box. These receivers comprise of geophones with 100mm metal spikes that are inserted into the ground. The signals received are used to determine the velocity of surface waves generated. A stiffness profile can be generated, and ground properties determined at different depths. A transect line can be numbered at 0.5m, or 1m intervals, all the way along its length. This line will be laid across the study area. This method allows for 15m-70m length of geophysical transect per hour.

2.2.3 Ecology Surveys

The proposed ecology surveys will comprise: -

• **Breeding bird surveys** by boat or drone to establish the locations of breeding sites for breeding birds on the cliff face in Licence Area C.

The sea cliffs and waters in Licence Area C between Bray and Greystones have a high ecological value for coastal birds and their prey. These cliffs are a key breeding site for coastal bird species including herring gull, common gull, black-headed gull, greater black-backed gull, lesser black-backed gull, kittiwake, fulmar, guillemot, black guillemot, razorbill, shag and cormorant. Additionally, the coastal waters at the base of the cliffs are a key foraging site for these bird species and additional species which breed in the vicinity which may include arctic tern, common tern, little tern and roseate tern.

These breeding birds (aside from black guillemot) are protected by European sites Special Protection Areas (SPAs) in the vicinity of ECRIPP and therefore the Bray Head cliffs may be considered functionally linked habitat to these SPAs. As the ECRIPP works have the potential to affect the conservation objectives of these SPAs, the location of bird breeding sites is therefore needed to inform the design of ECRIPP to avoid or minimise potential impacts on these qualifying features of the European sites.

• **Drop down camera work from a boat** in Licence Area C to establish the substrate to check for suitable sand eel habitat, and thus feeding areas for coastal birds.

Tern species and other coastal birds typically feed on sand eel. Sand eel burrow into fine sandy habitats at night and come up to the surface waters to feed on plankton blooms during the day. There are five species of sand eel found in Irish waters. These species use sandy substrate at a range of depths with some using intertidal areas down to 20m and other species using waters deeper than 20m. While the aforementioned breeding birds consume a range of fish species, sand eel are the most important source of food in the breeding period as they are small, fatty and abundant and are the ideal size and shape to feed the bird's offspring.

Sand eel exhibit high site fidelity which means they do not stray from their natural range. It is imperative to know if suitable habitat exists within Licence Area C as if this habitat is present and removed then it is highly likely that sand eel will not be able to travel to suitable habitat areas elsewhere and this source of food will be lost for bird species in this location.

- Mapping and photographing of sea caves from a boat in Licence Area C to identify any caves in the cliff face, which could provide high quality roosting habitats for bats. These findings will enable a bat structure assessment to help determine if the future ECRIPP works have potential to block bats from accessing any roosts, as bats are known to forage and migrate over the sea.
- Intertidal and subtidal ecology surveys in Licence Areas A to D to understand the potential changes in habitat that may result from future ECRIPP works; both direct impacts on intertidal and subtidal habitat in the footprint of new coastal defence structures and indirect impacts on habitats, as well as associated qualifying interest species that may be using the Licence Areas for feeding and nesting. The surveys are proposed to be undertaken between May and September.

2.2.3.1 Proposed Methodology

Breeding Bird Surveys by Boat

When determining the breeding activity on the cliff face, at least three surveys will be completed between the months of April and August, however the ideal period is between May and June. The survey will be conducted in daylight hours between 07:00 and 18:00. The entire length of the cliff face from grid reference: O 27668 17934 to grid reference O 28717 15209 will be surveyed, which is approximately 3.3km long.

Surveyors will be equipped with:

- Binoculars (one per team member)
- A scope with a tripod
- A high-quality camera e.g., Nikon D800E digital camera using a 70mm lens.
- PPE
- Weather writer (one per team member)
- Printed maps (one per team member)
- iPad

The boat will be driven 100m to 200m from the cliff face, with surveyors keeping an eye for bird disturbance, which would not allow for an accurate assessment of breeding activity. If the boat is causing disturbance, the boat will move out to a maximum of 400m from the cliff face within the application area.

Surveyors will stop approximately every 300m and will spend up to one hour surveying the stretch of cliff face at each point. These distances may be adjusted on site if the aspect of the cliff face blocks the field of view for surveyors. Indicative boat survey locations within Licence Area C are shown on Figures 2.5 to 2.7. Surveyors will

first survey for breeding activity on the cliff face, looking for nesting sites and resting birds. If time allows then a count of birds foraging in the waters at the base of the cliff will be conducted.

Species, breeding activity and number of birds will be drawn onto the printed maps/ iPad mapping app. The entire length of the cliff face will be photographed using a high-quality camera.

Surveyors will aim to carry out in situ counts of breeding bird activity. However, photographs taken on the day may be used for counts (if needed) if the surveyors check the accuracy of the photography (which tends to be low). This can be done by taking a sample count of 200 birds then photographing the area immediately and repeating this five times. Subsequently, at the desk the photographs can be analysed for accuracy and all other photographs can be used for completing counts with this error reported alongside the count data.



Figure 2.1: Proposed Boat Viewing Point Locations (Licence Area C North of Bray Head)



Figure 2.2: Proposed Boat Viewing Point Locations (Licence Area C South of Bray Head)





Breeding Bird Survey by Drone

Alternatively, bird surveys may be conducted using a drone, mounted with a high-resolution camera, should the boat survey work not be feasible. The drone must provide real-time information to surveyors as it is flying so that ecologists can assess if breeding birds are disturbed by the drone.

Should this methodology be used, surveyors will be located at a safe location on land and will launch the drone. Using an iPad/relevant device which provides real-time footage from the drone, surveyors will conduct counts of breeding colonies. The drone will be flown at a slow even pace at a safe distance from the cliff, stopping every 100m to allow the surveyors to conduct counts. Footage will be analysed during a desk base review to recheck counts and map the locations of nests.

Three surveys between the months of April to August are required with May – July being the preferred period.

Drop Down Camera Work to Determine Substrate

During one of the boat survey trips, the drop-down camera work will be conducted. These surveys will be conducted on a day with calm weather conditions to reduce turbidity in the water and allow for maximum camera clarity. A waterproof camera will be lowered to the sea floor and images gathered to check for the presence or absence of sandy substrate. The camera will be dropped and dragged along the entire length of Licence Area C as close to the cliff face as is safe following the boat crew's advice. The camera work will be conducted after the breeding bird surveys are complete to prevent any potential disturbance from effecting those surveys.

Footage will be assessed off site during a desk-based assessment.

Bat Roosting Assessment

During one of the boat survey trips, a bat roosting assessment will be undertaken to examine the cliffs for cliffs and cracks above the sea level and assess these structures for bat roost potential.

Surveyors will be equipped with:

- Binoculars (one per team member)
- A scope with a tripod
- PPE
- Weather writer (one per team member)
- iPad

Upon completion of the breeding bird surveys on the return trip the bat roosting assessment will take place. The boat will drive at a pace guided by ecologists so that all features can be recorded and photographed. Ecologists will instruct the boat crew to stop if required. Potential roosts will be mapped on the iPad and photographs will be taken.

Benthic Ecology Surveys

The benthic ecology surveys will comprise the following works: -

- Intertidal cores
 - In Licence Area A, six replicates will be taken at 15 intertidal core sites, with 75 replicates in total for infaunal analysis and 15 replicates for sediment particle size and chemistry. Each intertidal core will cover an area of approximately 0.01m2, and the core will be taken to a depth of 20cm, sieved and infaunal preserved for laboratory identification.
 - The cores are proposed to be undertaken in September to replicate the overwintering bird period.
- Intertidal transects.
 - In Licence Area A, up to ten intertidal transects are proposed from the high water mark to the low water mark with quadrats undertaken to allow for accurate biotope mapping to be established.
 - In Licence Area B, up to 13 intertidal transects are proposed from the high water mark to the low water mark with quadrats undertaken to allow for accurate biotope mapping to be established. Between two and four transects are proposed per 1km of frontage, with up to eight transects completed in one day per team. Where intertidal areas are homogenous then a lower number of transects may be required (>500m apart).
 - In Licence Area C, up to three (3 no.) transects are proposed from the high water mark to the low water mark with quadrats undertaken to allow for accurate biotope mapping to be established.
 - In Licence Area D, up to 88 intertidal transects are proposed from the high water mark to the low water mark with quadrats undertaken to allow for accurate biotope mapping to be established. Between two and four transects are proposed per 1km of frontage (which extends approximately 22km), with up to eight transects completed in one day per team. Where intertidal areas are homogenous then a lower number of transects may be required (>500m apart).
 - The intertidal transects would be undertaken between May and August in Licence Areas B, C and D, subject to consenting.
- Subtidal day grabs (or equivalent)
 - In Licence Area B, up to six (6 no.) 0.1m subtidal day grabs (or equivalent) are proposed to allow the collection of benthic fauna and to allow habitat categorisation, with three replicates for each sample (and up to 18 replicates in total).
 - In Licence Area C, up to three (3 no.) 0.1m subtidal day grabs (or equivalent) are proposed to allow the collection of benthic fauna and to allow habitat categorisation, with three replicates for each sample (and up to nine (9 no.) replicates in total).
 - The subtidal day grabs would be undertaken between May and August, subject to consenting.

2.2.4 Marine Archaeology Surveys

The archaeology surveys are proposed to be carried out within all four licence areas. Subject to approval of the MUL, these surveys are scheduled to commence from August 2024.

The purpose of these surveys is to better understand the archaeological resource of the licence areas to ensure future ECRIPP works avoid adversely impacting known or potential marine and intertidal archaeology and cultural heritage.

2.2.4.1 Proposed Methodology

The archaeology surveys will comprise the following works in all Licence Areas: -

Licenced Metal Detection Surveys

These will involve a two person intertidal (foreshore) walkover survey in all Licence Areas using a metal detector, as and where appropriate in the footprint of future ECRIPP works and areas affected by the proposed ground investigations.

Other Archaeological Considerations

Archaeological considerations will be integrated with the planning and execution of the proposed geotechnical and geophysical site investigations (see Sections 2.2.1 and 2.2.2 respectively) and the resultant data will be assessed for archaeological purposes, as appropriate. Any additional survey requirements agreed in consultation with the Underwater Unit of the National Monuments Service would be subject to a separate MARA licence application.

2.3 Additional Survey Works

It is assumed that the geotechnical and geophysical site investigations described above, will be sufficient to provide the necessary information to inform the design of the future ECRIPP works. However, in the unlikely event that this is not the case, bathymetric surveys will be required.

2.3.1 Bathymetry

The bathymetric and sub-bottom profiling (SBP) surveys are proposed to be carried out within all four Licence Areas A to D, with coverage between MHW and either 500m seaward of MHW or to -10m OD Malin bathymetric contour. The surveys will comprise: -

- Offshore bathymetric survey to identify and capture seabed form, submerged structures and toes of cliffs, as well as underwater structures (such as a marine outfall pipe located at Killiney Bay – offshore of Ballybrack)
- SBP survey to inform our understanding of the geological composition below the bed surface and locate any significant changes in sub-strata.

2.3.1.1 Proposed Methodology

The bathymetric and SBP surveys are proposed to be carried out within all areas, with coverage between mean high water and either 500m seaward of mean high water or to -10m OD Malin bathymetric contour. The Proposed Survey Works will require mobilisation of survey vessel(s) with survey equipment on board.

The survey team shall mobilise the survey equipment and carry out all necessary calibrations and verifications of the survey set. Following satisfactory completion of the calibrations and verifications, survey lines shall commence along the planned line plans for the vessel(s).

In order to ensure coverage of seabed levels up to MHW, an Aerial Drone Survey Contractor will be achieving coverage of the Licence Areas at low water to provide sufficient overlap between the two survey techniques; vessel based, and aerial drone based.

A qualified and experienced marine mammal observer (MMO) will be appointed to monitor for marine mammals on each survey vessel, to log all relevant events using standardised data forms.

Offshore Bathymetric Surveys

The bathymetric survey will be undertaken with the following parameters:

- A sura nominal planned main line spacing of 20m in water depths below -6m OD.
- A nominal planned main line spacing of 40m in water depths between -6m OD and -10m OD.
- A cross line spacing of 250m, perpendicular to main lines.

In practice, in extreme shallows, lines will be spaced closer than 20m, and around water depths of between 4 - 6m, line spacing may be greater than 20m. Therefore, a line spacing of 20m has been assumed to be a mean

line spacing in this region. Line spacing shall be modified in real time whilst on site in order to ensure 100% coverage in the most efficient manner, whilst achieving the project specifications. Bathymetric survey coverage will be continually assessed, and line planning will be adjusted in real time in order to ensure 100% coverage. In order to ensure maximum bathymetric coverage as close as possible up towards mean high water, shoreline survey lines will be carried out during periods of high water. This line will progress simultaneously while collecting bathymetric coverage.

Sub-bottom Profiling Surveys

For the SBP, it is proposed to carry out a single SBP line, in each of the six areas of Multi-Beam Echo Sounder (MBES) data capture at 300 ±50m offshore of mean high water. In general, shallow-water MBESs operate at a frequency between 100 and 700kHz. A single line of sub-bottom profiler data shall be conducted, around 300m +/-50m from mean high water. These lines have been planned to have the following lengths:

- Licence Area A; SBP Line 6.4km length
- Licence Area B; SBP Line 4.1km length
- Licence Area C; SBP Line 5.5km length
- Licence Area D; SBP Line 9.1km length
- Licence Area D; SBP Line 10.4km length

2.4 Site Access Points

It is anticipated that access to the intertidal areas of the licence areas to carry out the Proposed Survey Works will be from the following locations:

- Licence Area A
 - The junction of the R131 Strand Road and R118 Merrion Road at Merrion (northern section)
 - Dun Laoghaire West Pier (southern section).

The proposed access route for rigs and excavators onto the beach in this licence area will be as described for the northern section i.e., via the R131, which is adjacent to Merrion Strand and to the north-west of Blackrock Station. The proposed route towards Booterstown and Blackrock Stations will be along the northern section of the spit formation, along the flat sandy area of the beach. Any rigs travelling along the beach will stay as close to the coastal embankment wall as possible due to the presence of less saturated ground. The intertidal area is considered suitable and should be capable of supporting a 3T excavator or Terrier Rig. There will be one channel crossing necessary, but it is narrow and shallow in nature.

- Licence Area B
 - through Killiney Beach Car Park and down the already established track down to the beach. Small compound set up in the Killiney Beach Car Park or Killiney Station Car Park.
- Licence Area C
 - Access onto North Beach Greystones will be through the Strand Road at the southern extent of the Proposed Survey Works. Small compound proposed at Greystones Marina Playground.
- Licence Area D
 - Greystones Beach Car Park in Ballygannon and Kilcoole Station (northern section)
 - Newcastle Station and the Murrough Carpark in Wicklow (southern section)

3. Planning and Development Policy

A planning and policy review has been undertaken in this chapter to demonstrate compliance of the Proposed Survey Works with all relevant plans and strategies.

3.1 Marine Strategy Framework Directive 2008

The Marine Strategy Framework Directive (MSFD) is the mechanism which member states can set marine environment policy and it came into force in 2008. The aim of the framework is to protect the marine environment through an ecosystem forward approach to manage human activities whilst securing the use of sustainable marine resources. The main goal of the framework directive is to achieve 'good environmental status' of European Union (EU) marine waters.

The Directive establishes a legal framework for the development of marine strategies designed to achieve Good Environmental Status (GES) within the marine environment by 2020. The Strategy involves defining GES, setting environmental targets and indicators, implementing monitoring programmes for ongoing assessment and to develop and implement programmes of measures which achieve or maintain GES. The assessment of GES is based upon qualitative descriptors which define the overarching objectives, over a range of key areas including (inter alia) Biodiversity, Contaminants and Energy and Noise.

Chapter 5 'Environmental appraisal' includes environmental appraisals associated with the qualitative descriptors set out above, and in particular, includes Section 5.3 Water, Section 5.4 Biodiversity, Section 5.5 Fisheries and aquaculture, Section 5.6 Air quality and climate and Section 5.7 Noise and vibration. The Proposed Survey Works are temporary and minor in nature and will not significantly impact on the marine environment or compromise the marine environment from achieving or maintaining GES. Furthermore, as the proposed survey works are temporary and do not involve development within the License Areas, The Proposed Survey Works do not have construction, operation, maintenance or decommissioning phases that need to be discussed in this report.

3.2 Maritime Area Planning Act (MAPA) 2021

MAPA which came into operation on the 10 March 2022, provides a new maritime consenting regime for Ireland.

Schedule 7 of the MAPA sets out the 'Maritime Usages which may be undertaken in Maritime Area pursuant to Licence'. This includes (inter alia):

2. "Marine environmental surveys for the purposes of scientific discovery or research.

3. Marine environmental surveys for the purposes of site investigation or in support of an application under Part XXI of the Act of 2000."

In line with the above, the Proposed Survey Works described in Chapter 2 'Description of Proposed Survey Works', are proposed to be undertaken in the Maritime Area, subject to a licence for the defined activities.

3.3 National Marine Planning Framework (NMPF) 2040

The NMPF was published in July 2021 and is intended as the marine equivalent to the National Planning Framework (NPF). It stands as a single plan for the entire maritime area with more detailed regional plans to be developed at a later date. There are a number of "Overarching Marine Planning Policies" (OMPPs) along with "Sectoral Marine Planning Policies" (SMPPs). Appendix C provides a review of the Proposed Survey Works with consideration of their alignment to the NMPF.

The NMPF enables the Government to:

- Set a clear direction for managing our seas;
- Clarify objectives and priorities; and
- Direct decision makers, users and stakeholders towards strategic, plan-led, and efficient use of our marine resources.

Coastal change and coastal erosion are key issues facing marine planning. The NMPF outlines that climate change is anticipated to play an important part in coastal change and sets out under the heading 'Key Issues for Marine Planning' that: 'Coastal change is primarily concerned with coastal erosion and accretion. Climate change is expected to alter patterns in storm surges, sea level rise, and floods that can all play a part in coastal change.' it further states that 'Proposals that are likely to be at risk from climate change and do not include appropriate adaptation measures to make them resilient, should identify existing measures such as flood defences, providing resilience to any adverse change.'

In regard to coastal erosion and flood defence works it sets out the following under Climate Change Policy 1 : "Proposals should demonstrate how they:

- Avoid contribution to adverse changes to physical features of the coast; and
- Enhance, restore or recreate habitats that provide a flood defence or carbon sequestration ecosystem services where possible".

It is clear that the NMPF both acknowledges that climate change will impact upon our coastline and that action must be taken to address this issue.

As well as general guidance for marine development, the NMPF also includes Marine Map Based Objectives (MMBOs) and Marine Spatially Specific Policy Objectives (SSPOs) outlined in Appendix C together with the licence areas of relevance to these objectives .

3.4 National Development Plan 2021 - 2030

Project Ireland 2040 is the government's long-term overarching strategy to make Ireland a better country for all its people. The National Development Plan (hereafter referred to as the NDP) (Government of Ireland 2021a) and the National Planning Framework (hereafter referred to as the NPF) (Government of Ireland 2018b) combine to form Project Ireland 2040. The NDP is the National capital investment strategy plan. It sets out the framework of expenditure commitments to secure the Strategic Investment Priorities to the year 2030 and support the delivery of the 10 National Strategic Outcomes (NSO's) outline below.

The NPF and NDP outline a set of ten NSO's which are as follows:

- NSO 1 Compact Growth
- NSO 2 Enhanced Regional Accessibility
- NSO 3 Strengthened Rural Economies and Communities
- NSO 4 Sustainable Mobility
- NSO 5 A Strong Economy Supported by Enterprise, Innovation & Skills
- NSO 6 High Quality International Connectivity
- NSO 7 Enhanced Amenity & Heritage
- NSO 8 Climate Action
- NSO 9 Sustainable Management of Water & Other Environmental Resources
- NSO 10 Access to Quality Childcare, Education & Health Services

The aim of NSO 2, which is relevant to the future ECRIPP works for which these Survey Works are proposed, is to:

"improve transport links enhance intra-regional accessibility through improving transport links between key urban centres of population and their respective regions, as well as improving transport links between the regions themselves."

NSO 2, under the heading 'Public Transport: Protection & Renewal' makes reference to the ECRIPP works, as follows:

"...over the next ten years an extensive programme of coastal protection works is planned between Dublin and Rosslare to address erosion issues in the area and improve the climate resilience of the railway."

The Proposed Survey Works proposed within this application are necessary to assess the suitability of the Licence Areas for the implementation of the future ECRIPP works.

3.5 National Planning Framework 2040

The NPF was adopted in May 2018 and sets out the Government's Strategic Framework to guide development and investment. The NPF pairs with the NDP to comprise Project Ireland 2040. The NPF's ambition is to create a single vision and a shared set of goals for each community to shape the growth and development of Ireland by providing a framework up to the year 2040.

National Policy Objectives (NPO's) outlined within the NPF that are of relevance to the future ECRIPP works include NPO 41a and NPO 41b, as set out below.

National Policy Objective 41a – "Ensure that Ireland's coastal resource is managed to sustain its physical character and environmental quality."

National Policy Objective 41b – "In line with the collective aims of national policy regarding climate adaptation, to address the effects of sea level changes and coastal flooding and erosion and to support the implementation of adaptation responses in vulnerable areas."

Furthermore, the NPF sets out under the heading 'Coastal Environment and Planning for Climate Change', the following: "As a result of climate change, sea levels and patterns of accretion and erosion are key issues for planning and flood risk assessment, especially in managing the ongoing development of our cities and towns."

The Proposed Survey Works will inform the future delivery of enhanced coastal protection measures along the Dublin to Wicklow rail network (ECRIPP), which will help to facilitate the goals of the NPF .

3.6 Transport Climate Change Sectoral Adaptation Plan 2019

The Transport Climate Change Sectoral Adaptation Plan 2019 (hereafter referred to as the Transport Adaptation Plan) recognises the risk of climate change impacts on the Irish transport sector and its infrastructure. The plan sets out adaptation measures to protect the transport sector. The plan references the 'Eastern Rail Corridor', (of which a section includes the ECRIPP works), as a case study to show the coastal erosion impacts already incurred in this region.

'There was a 135m recession of the coastline between 1905 and 1990 at an average of 1.4m per year. This rate has accelerated in recent years to 2m annually. Notably, the sea cliff near Ballygerry at Rosslare Harbour suffers erosion of up to two metres annually which could mean that the rail corridor could be unable to be used by 2030. From data and modelling prepared by the OPW, it is estimated that the coastline will continue to recede and could impact the existing rail corridor before 2030.'

The Plan has an overarching adaptation goal which is to "ensure that the sector can fulfil its continuing economic, social and environmental objectives by ensuring that transport infrastructure is safeguarded from the impacts of climate change."

The Proposed Survey Works are proposed to inform the design and assessment of the future ECRIPP works, which would (subject to separate and future consenting) contribute to achieving the goals of this Adaptation Plan.

3.7 Coastal Change Management Strategy 2023

The Coastal Change Management Strategy was published by the OPW in 2023 to provide a roadmap for responding to coastal change management in a structured and planned way to provide the basis for a long term strategy for an integrated and coordinated approach to coastal change management.

This Coastal Change Management Strategy emphasises the importance of having high quality data to inform decision-making associated with coastal change management. This is considered of particular relevance to the Proposed Survey Works, which will provide the necessary survey and investigation findings to support the design and appraisal of the future ECRIPP works.

3.8 Climate Action Plan 2024

The Climate Action Plan (CAP) 2024 (Department of the Environment, Climate and Communications [DECC], 2023) was published in December 2023 and is the third update to CAP 2019. CAP 2024 builds on the introduction of carbon budgets and sectoral emissions ceilings outlined in CAP 2023 and sets a course for Ireland's targets to halve emissions by 2030 and reach net-zero no later than 2050.

CAP 2024 states that "Sea level rise and increased extreme weather events will impact on coastal infrastructure such as fishing harbours and the communities that rely on them."

The Proposed Survey Works will provide information to help develop interventions for improved and sustainable coastal protection works to protect the key east coast railway corridor.

3.9 Regional Spatial and Economic Strategy 2019-2031

The Regional Spatial and Economic Strategy (RSES) provides the framework to deliver the objectives of Project Ireland 2040 in specific regions. The RSES that is relevant to the Proposed Survey Works is the Eastern and Midlands Region (Dublin and Wicklow). The RSES states under Section 7.1 'Introduction' that "*Climate change is already affecting the terrestrial and marine environment due to rising sea levels, increased sea temperatures, precipitation changes, coastal flooding and erosion and ocean acidification and these changes are likely to continue and intensify of the lifetime of the RSES.*"

The following RPO's support the future ECRIPP works:

- RPO 4.58 "To support ongoing investment in rail infrastructure to ensure its continued renewal, maintenance and improvement to a high level to ensure high quality of frequency, safety, service, accessibility and connectivity."
- RPO 7.3 "EMRA (Eastern & Midland Regional Assembly) will support the use of Integrated Coastal Zone Management (ICZM) to enable collaborative and stakeholder engagement approaches to the management and protection of coastal resources against coastal erosion, flooding and other threats."
- **RPO 7.4** "Statutory land use plans shall take account of the risk of coastal erosion; whereby new development should be avoided in areas at risk of coastal erosion to the greatest extent practicable."
- RSO 8 Climate Resilience "Ensure the long-term management of flood risk and build resilience to increased risks of extreme weather events, changes in sea level and patterns of coastal erosion to protect property, critical infrastructure and food security in the Region."
- RPO 8.16 "Support the improvement and protection of the TEN-T network to strengthen access routes to Ireland's ports, including investment in the ongoing development of the N11/M11 to improve connectivity to Rosslare and improvements to the Dublin-Wexford Rail line."

The above objectives focus on continuing investment in both railway infrastructure and coastal protection within the region, for which the Proposed Survey Works are necessary to inform ECRIPP.

3.10 Local Policy

The licence areas are located within three local authority areas, namely Dublin City Council (DCC), Dún Laoghaire-Rathdown County Council (DLRCC) and Wicklow County Council (WCC), and therefore fall under three separate County Development Plans.

- Licence Area A is within the functional areas of DCC and DLR.
- Licence Area B is within the functional area of DLR.
- Licence Area C is within the functional area of WCC.

Licence Area D is within the functional area of WCC.

3.10.1 Dublin City Development Plan 2022-2028

The Dublin City Development Plan (DCDP) 2022 - 2028 (DCC 2022) guides the future growth and development of the DCC area. Whilst the future ECRIPP works are not specifically mentioned in the Plan it is clear that coastal zone management and the protection of the coastal area is an important objective.

The Plan does include,

 Policy SMT23 – 'The Rail Network and Freight Transport', which supports working with larnród Éireann/Irish Rail to achieve a coordinated approach to improving the rail network.

In addition to the above, the DCDP 2022 sets out a range of applicable policies including, among others:

- CA29 'Coastal Zone Management';
- SI14 'Strategic Flood Risk Assessment';
- SI18 'Protection of Flood Alleviation Infrastructure';
- GI35 'General Protection of Coastal Zone'; and
- SMT23 'The Rail Network and Freight Transport'.

The only licence area located within DCC's functional area is Licence Area A. The northern section of Licence Area A begins from approximately Sydney Parade Avenue and ends at the Booterstown Nature Reserve, where the DLRCC administration zone begins.

In terms of land use zonings, the following land use zonings are within the licence area within DCC lands:

- Z2: Residential Neighbourhoods (Conservation Area)
- **Z9:** Amenity/Open Space/Green Network

3.10.2 Dún Laoghaire-Rathdown County Development Plan 2022-2028

The Dún Laoghaire– Rathdown (DLR) County Development Plan 2022 – 2028 (DLR 2022) sets out the primary goals and objectives that will help to guide and shape the proper planning and continuing sustainable development of the County.

The Plan does not mention ECRIPP; however, it is clear that coastal zone management and the protection of the coastal area is important. A number of distinct map-based objectives are relevant to Licence Areas within the DLR functional area; notably records of monuments and places which are likely to be Martello towers (see Section 5.9). A number of protected areas are within the licence areas including Architectural Conservation Areas (ACA's).

The majority of Licence Area A, and the entirety of Licence Area B are located within the DLR functional area.

The DLRCDP 2022 sets out a range of applicable policies including, among others:

- El24 'Coastal Defence';
- EI23 'Cross Boundary Flood Management';
- GIB8 'Coastline Parks and Harbours'; and
- GIB11 'Coastal Area Feasibility Study'.

In terms of land use zonings, the following land use zonings are within the Licence Areas within DLR lands :

- Objective A To provide residential development and improve residential amenity while protecting the existing residential amenities;
- Objective F To preserve and provide for open space with ancillary active recreational amenities; and
- **Objective W** To provide for waterfront development and harbour-related uses (Licence Area A only)

There are also a number of location-specific objectives within the boundaries of both licence areas.

- Specific Local Objective 17 To protect and conserve South Dublin Bay SAC;
- Specific Local Objective 18 To promote the development of the Sutton to Sandycove Promenade and Cycleway as a component part of the National East Coast Trail Cycle Route, and also the Dublin Bay trail from the boundary with Dublin City up to the boundary with County Wicklow. Any development proposal will protect and enhance public access to the coast where feasible. Any development proposals shall be subject to Appropriate Assessment Screening in accordance with the requirements of the EU Habitats Directive to ensure the protection and preservation of all designated Special Areas of Conservation (SACs), Special Protection Areas (SPAs), and Proposed Natural Heritage Areas (pNHAs) in Dublin Bay and the surrounding area;
- Specific Local Objective 46 To protect and conserve Rockabill to Dalkey Island Special Area of Conservation.
- Specific Local Objective 130 To ensure that development within this objective area does not (i) have a significant negative impact on the environmental sensitivities in the area including those identified in the SEA Environmental Report, and/or (ii) does not significantly detract from the character of the area either visually or by generating traffic volumes which would necessitate road widening or other significant improvements.
- Specific Local Objective 152 To offer a requisite level of protection and maintenance to the site known
 as Eire sign #7 (Hawk Cliff, Vico Road) such that this site will be afforded protection from any future
 activities which may either intentionally or unintentionally damage, undermine or remove this important
 historical heritage site and that this Council agrees to a reasonable level of maintenance of the site insofar
 as is practicable.

3.10.3 Dún Laoghaire-Rathdown County Council Coastal Strategy

The Coastal Defence Strategy Study was published in September 2010. It was prepared to manage the coastal defence issues within the DLR functional area.

The recommendations of the Strategy state:

- "Whole coast measures to reduce risk Monitoring, Planning Restrictions, Access and Warning signs and forecasting/emergency planning;
- Undertake defence measures to specific identified risk areas;
- Site investigations and assessments carried out to determine preferred defences;
- Prepare relevant assessments to acquire the planning and foreshore permissions;
- Work with the OPW to obtain funding; and
- Adopt the findings of the strategy into the County Development Plan."

The DLR Coastal Defence Strategy is referenced within the DLR County Development Plan 2022-2028. However, the Strategy is currently under review and due to be updated. The Proposed Survey Works will help to inform and guide future policy objectives related to this strategy.

3.10.4 Wicklow County Development Plan 2022-2028

The Wicklow County Development Plan (WCDP) 2022 – 2028 was adopted on the 12 September 2022 and came into effect on the 23 October 2022. The WCDP 2022 sets out a strategic spatial planning framework for guiding the physical, economic and social development of the County. The land use zonings of the key towns within the overall functional area of Wicklow County Council are not set out as part of the Plan. These areas and the map-based objectives are set out within the specific Local Area Plans (LAP); these plans are to be read in conjunction with the WCDP 2022-2028. The Surveys Works in Licence Area C and Licence Area D fall within the functional area of WCC for which the WCDP has been prepared.

3.10.4.1 Bray Municipal District Local Area Plan 2018-2024

Licence Area C is partly within the functional area of the Bray Municipal District Local Area Plan (LAP); however, Licence Area C does not interact with any of the zonings identified in the LAP and therefore the policies of this plan are not considered further.

3.10.4.1.1 Greystones-Delgany and Kilcoole Local Area Plan 2013-2019

The southern portion of Licence Area C and all of Licence Area D are within the functional area of the Greystones-Delgany and Kilcoole LAP, however these licence areas do not interact with any of the zonings identified in the LAP and therefore the policies of this plan are not considered further.

3.10.4.1.2 Wicklow Town-Rathnew Development Plan 2013-2019

Licence Area D encompasses the majority of this LAP area at the southern end of the licence area. Therefore, all of the zoning types within this LAP are represented within the licence area. Of particular relevance is the area zoned as "CZ Conservation Zone", which covers much of the northern coastal part of Wicklow Town and has the most direct impact on the licence area.

Whilst ECRIPP is not specifically mentioned within the aforementioned County Development Plans, coastal defence and the need to tackle climate change are consistent themes. The Proposed Survey Works will inform the design and layout of the proposed infrastructure that is entirely consistent with local authority objectives to protect the coast.

3.11 Climate Change Action Plans

Each of the three local authorities have Climate Change Action Plans (CCAP) for their functional authorities. Dublin City Councils CCAP was adopted in 2023 and Dún Laoghaire Rathdown CCAP was adopted in 2024, however the adopted plan has not yet been released. The CCAP's are collaborative responses to the impact that climate change is having on the Dublin Region, and their commitment to lead by example in tackling this global issue. Each plan is unique to the local authority's functional area, they contain actions covering five key areas – Energy and Buildings, Transport, Flood Resilience, Nature Based Solutions and Resource Management (waste and water). There are four key targets:

- 1. 50% better energy use by the Council by 2030.
- 2. 51% reduction in the Council's greenhouse gas emissions by 2030.
- 3. To make Dublin a climate resilient region, by reducing the impacts of future climate change-related events.
- 4. To actively engage and inform citizens on climate change.

Wicklow County Council adopted their Climate Action Plan in January 2024. This is in response to the provision of the Climate Action and Low Carbon Development Act 2021, requiring such a plan to be adopted. The plan is split into eight key goals categorised under five thematic areas:

- Governance and Leadership
- Built Environment and Transport
- Natural Environment and Green Infrastructure
- Communities: Resilience and Transition
- Sustainability and Resource Management

Theme 3 Goal states: 'Deliver on climate adaptation, biodiversity resilience and enhanced capacity for our environment to adapt to changing conditions.' The Proposed Survey Works will inform the design and assessment of the future ECRIPP works, which align with this goal.

4. Environmental Impact Assessment: Screening

4.1 Introduction

This chapter presents the findings of an Environmental Impact Assessment (EIA) Screening assessment to enable MARA as the Competent Authority to decide whether or not an EIA is required for the Proposed Survey Works in accordance with Directive (2011/92/EU) of the European Parliament and of the Council of 13 December 2011 on the Assessment of the Effects of Certain Public and Private Projects on the Environment, as amended by Directive 2014/52/EU (hereafter referred to as the EIA Directive).

EIA Screening is the first stage of the EIA process and determines whether a proposed development or project requires a statutory EIA.

EIA Screening for the Proposed Survey Works was undertaken with consideration of the following legislation and guidance:

- EIA Directive 2014/52/EU (European Commission, 2018);
- Environmental Impact Assessment of Projects Guidance on Screening (European Commission, 2017);
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA 2022);
- Planning and Development Act, 2000 (as amended); and
- Planning and Development Regulations, 2001 to 2023.

4.2 Legislative Context

4.2.1 EIA Directive

The EIA Directive was adopted in 2014 and transposed into Irish legislation on 01 September 2018 by way of the EU (Planning and Development) (EIA) Regulations 2018 (hereafter referred to as the EIA Regulations).

The EIA Directive sets out the requirements of the EIA process, which includes the process of screening whether an EIA is required for projects. This is based on the principle that effects on the environment should be taken into account at the earliest possible stage in all technical planning and decision-making processes.

Annex I of the EIA Directive outlines projects that are subject to a mandatory EIA process. Annex II of the EIA Directive lists projects that should be subject to the EIA process where it is determined that they are likely to have significant effects on the environment.

4.2.2 Planning and Development Regulations 2001-2023

The Proposed Survey Works have been reviewed against the classes of development and thresholds set out in Annexes I and II of the EIA Directive, as transposed into Irish law by Schedule 5 of the Planning and Development Regulations 2001 to 2023 (hereafter referred to as the "Planning Regulations").

4.3 EIA Screening – Requirement for mandatory EIA

The EIA Directive specifies the classes of project for which an EIA is required and the information which must be furnished within an EIA Report (EIAR). In accordance with Article 4(1) of the EIA Directive, all projects listed in Annex I to the EIA Directive are considered as having significant effects on the environment and shall be subject to Environmental Assessment. For projects listed in Annex II to the EIA Directive, the national authorities may determine whether an EIA is needed, either on the basis of thresholds/criteria or on a case-by-case examination.

The obligations as set out in the EIA Directive have been implemented into Irish law by the provisions of the Planning and Development Act 2000 (as amended), and the Planning and Development Regulations 2001 to 2023.

In order to determine whether an EIA is required for the Proposed Survey Works, it is necessary to determine whether it is a project listed in one of the Annexes to the 2014 EIA Directive. These Annexes have been transposed into domestic law by the provisions of the Planning and Development Act 2000, as amended (hereafter referred to as the Planning Act), and the Planning and Development Regulations.

The relevant classes of developments that require EIA are set out in Schedule 5 of the Planning Regulations. Classes within Schedule 5, Parts 1 and 2, that are most relevant to the Proposed Survey Works have been considered and a determination against each one made, as follows.

- Schedule 5, Part 1
 - The Proposed Survey Works do not fall within any classes of developments outlined in Schedule 5, Part 1 of the Planning Regulations.
- Schedule 5, Part 2
 - The Proposed Survey Works do not fall within any classes of developments outlined in Schedule 5, Part 1 of the Planning Regulations.

There is one class of development listed in Part 2 of Schedule 5 of the Planning Regulations that is considered of some relevance to the Proposed Survey Works:

"Extractive Industry

(e) With the exception of drilling for investigating the stability of the soil, deep drilling, consisting of-

....'(iv) Any other deep drilling, except where, in considering whether or not an environmental impact assessment should be carried out-

(iv) it is decided, in accordance with section 13A of the Foreshore Act 1933 (no. 12 of 1933) (in this subparagraph referred to as the "Act of 1933"), by the appropriate Minister (within the meaning of the Act of 1933) that the drilling concerned would not have a significant effect on the environment"....'.

The Proposed Survey Works include geotechnical and geophysical investigations (outlined in Sections 2.1 and 2.2 respectively) which will comprise window/windowless boreholes, trial pits and geophysical survey to investigate beach sediment/soil characteristics such as stability, sediment thickness and ground conditions. This information will be used to determine the preferred design solution for the future ECRIPP works. The Proposed Survey Works are not an extractive industry involving deep drilling and are therefore not considered to be an EIA development listed in Part 2 of Schedule 5 of the Planning Regulations.

It is therefore concluded that an EIA is not required on this basis.

4.4 Sub-Threshold Development Requiring EIA – Criteria to Determine Significance

The EIA Directive states at paragraph 27 that "the Screening procedure should ensure that an environmental impact assessment is only required for projects likely to have significant effects on the environment."

As noted above, the Proposed Survey Works do not constitute the nature or scale of any of the class of developments within Schedule 5, Part 1 or Part 2 of the Planning Regulations, and therefore a sub-threshold assessment of the potential for significant environmental effects on the environment is required.

The EIA Directive includes an updated Annex III 'Selection Criteria Referred to in Article 4(3)' (Criteria to determine whether the projects listed in Annex II should be subject to an Environmental Impact Assessment). This Annex is mirrored in Schedule 7 and 7a of the Planning Regulations.

The criteria are grouped under three headings:

- Characteristics of projects;
- Location of projects; and
- Type and characteristics of the potential impacts.

The sub-criteria associated with each of the above criteria have been taken into account and are considered in the context of the Proposed Survey Works in the sections below. The European Commission publication, Environmental Impact Assessment of Projects - Guidance on Screening (European Union, 2017) has been used to support these considerations and subsequently inform the EIA screening recommendation.

4.4.1 Screening Criteria and Sub-Threshold Assessment

The EIA Regulations draw from the EIA Directive 2014 to set out screening criteria for EIA to assist in determining likely significant impacts and the requirement for EIA for projects which do not meet the thresholds in Schedule 5 Part 1 and Part 2 of the Planning Regulations.

Table 4.1 presents a summary of the findings of the sub-threshold assessment. It sets out the EIA screening criteria, a commentary on each of these, where these are addressed within the sub-threshold assessment, and a conclusion is drawn as to whether a significant impact against each criterion is identified.

Table 4.1: EIA Screening Table

EIA Screening Criteria	Commentary	Sub-Threshold Assessment Topic Area(s)		
Characteristics of Project: Survey Works				
The size and design of the whole of the proposed development	The Proposed Survey Works are described in Section 2. The application boundary (total licence area extents), shown on maps in Appendix D is 2,644ha.	N/A		
Cumulation with other existing development and/or development the subject of a consent for proposed development for the purposes of section 172(1A)(b) of the Act and/or development the subject of any development consent for the purposes of the EIA Directive by or under any other enactment	A review was conducted of Foreshore Licences that overlap with the licence areas. There are fourteen other developments that overlap with the study area. With consultation with other developments and mitigation measures, no significant impact is envisaged.	Section 5.11 Other Developments		
The nature of any associated demolition works	No demolition works are proposed as part of the Proposed Survey Works.	N/A		
The use of natural resources, in particular land, soil, water and biodiversity	The Proposed Survey Works will include temporary shallow excavations (boreholes and trial pits) and boat surveys. All works in sensitive ecological locations will be observed by an Ecological Clerk of Works to minimise impacts on habitats and ensure no loss of designated or ecologically valuable habitat. No significant volumes of water will be utilised in the coring of boreholes.	Section 5.2 Land and Soils Section 5.3 Water Section 5.4 Biodiversity		
The production of waste	Very minor volumes of waste materials will be produced during The Proposed Survey Works, which will be handled, transferred and disposed of in accordance with relevant waste management legislation.	N/A		
Pollution and nuisances	Best practice measures will be in place during the Proposed Survey Works to ensure that the works do not result in increased air pollution, dust or increased emissions of greenhouse gases. Sampling and survey methods will follow best practise measures to avoid and minimise impacts to air	Section 5.3 Water Section 5.6 Air quality and climate Section 5.7 Noise and vibration Section 5.10 Population & Human Health		

EIA Screening Criteria	Commentary	Sub-Threshold Assessment Topic Area(s)	
	quality. This includes the application of standard best practice measures such as turning off plant, machinery and survey vessel engines when not running.		
	Given the predominantly small scale, overall nature and expected duration of the Proposed Survey Works, the survey activities will not have a significant impact on the background noise and vibration levels in the licence areas nor marine environment. The survey team will ensure adherence to best practice noise suppression methods (e.g., using well- maintained survey plant and equipment).		
	The temporary nature of the boat surveys and grab sampling will not cause a deterioration to the water quality in this area as standard pollution control measures will be implemented by the survey vessel. Safeguards will be in place to ensure that the grab used to collect the sample is free of contamination prior to being deployed. Adequate risk assessments will be undertaken regarding safety and use of chemical onboard the survey vessel. Any localised seabed sediment disturbance and mobilisation will be no greater than natural background variability during storms.		
The risk of major accidents and / or disasters which are relevant to the project concerned, including those caused by climate change, in accordance with scientific knowledge	The Proposed Survey Works will not increase the risk of natural disasters. All activities will be managed in accordance with relevant health and safety legislation and by the implementation of best practice construction and operational procedure management.	N/A	
The risks to human health (for example, due to water contamination or air pollution)	Significant impacts on human health are not anticipated as a result of air or water pollution or contamination.	Section 5.3 Water Section 5.6 Air quality and climate	
	Best practice measures will be in place during the Proposed Survey Works to ensure that the works do not result in increased air pollution, dust or increased emissions of greenhouse gases, which could impact on human health. Sampling and survey methods will follow best practise measures to avoid and minimise impacts to air quality. This	Section 5.7 Population & Human Health	

EIA Screening Criteria	Commentary	Sub-Threshold Assessment Topic Area(s)		
	includes the application of standard best practice measures such as turning off plant, machinery and survey vessel engines when not running. The temporary nature of the Proposed Survey Works will not cause a deterioration to the water quality in this area as standard pollution control measures will be implemented by the survey teams.			
Location of Proposed Development				
The existing and approved land use	On completion of all surveys, all affected areas will be returned to their previous use. There will be no change to the sea or intertidal areas as a result of The Proposed Survey Works.	N/A		
The relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground	The Proposed Survey Works are temporary in nature and will not affect natural resources in the licence areas.	N/A		
 The absorption capacity of the natural environment, paying particular attention to the following areas: Wetlands, riparian areas, river mouths; Coastal zones and the marine environment; Mountain and forest areas; Nature reserves and parks; Areas classified or protected under legislation, including Natura 2000 areas designated pursuant to the Habitats Directive and the Birds Directive; Areas in which there has already been a failure to meet the environmental quality standards, laid down in legislation of the EU and relevant to the project, or in which it is considered that there is such a failure; 	The location of the Proposed Survey Works comprise beach areas along the coast of Dublin and Wicklow which is listed as (ii) Coastal zones and the marine environment. The Proposed Survey Works will not have an impact on the absorption capacity of this environment.	Section 5.3 Water Section 5.4 Biodiversity Section 5.8 Landscape, seascape and visual Section 5.9 Cultural heritage		

EIA Screening Criteria	Commentary	Sub-Threshold Assessment Topic Area(s)	
Densely populated areas; and			
 Landscapes and sites of historical, cultural or archaeological significance. 			
Types and Characteristics of Potential Impacts			
The magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected)	The potential impacts of The Proposed Survey Works are outlined in Chapter 5 'Environmental Appraisal'.		
The nature of the impact			
The transboundary nature of the impact	There are no transboundary works proposed.	N/A	
The intensity and complexity of the impact	The potential impacts of the Proposed Survey Works are outlined in Chapter 5 'Environmental Appraisal'.		
The probability of the impact			
The expected onset, duration, frequency and reversibility of the impact			
The cumulation of the impact with the impact of other existing and/or development the subject of a consent for proposed development for the purposes of section 172(1A)(b) of the Act and/or development the subject of any development consent for the purposes of the Environmental Impact Assessment Directive by or under any other enactment	A review was conducted of Foreshore Licences that overlap with the licence areas. There are fourteen other developments that overlap with the study area. With consultation with other developments and mitigation measures, no significant impact is envisaged.	Section 5.11 Other Developments	
The possibility of effectively reducing the impact	The potential impacts of the Proposed Survey Works are outlined in Chapter 5, together with management measures that will be taken to avoid or minimise impacts to an acceptable level (and to ensure that there will be no adverse significant impacts).	All environmental topic areas – Sections 5.2 to 5.10.	

5. Environmental Appraisal

5.1 Introduction

Environmental topics that have the potential to be impacted by the Proposed Survey Works are discussed in subsequent Sections 5.2 to 5.10. An assessment has been carried out to determine the level of potential impacts along with any proposed mitigation measures as necessary.

In addition to the AIMU, the following documents are also submitted in support of the MUL Application. These are as follows:

- Supporting Information for Screening Appropriate Assessment
 - Describes the potential impacts on European Sites as a result of the Proposed Surveys.
- Natura Impact Statement (NIS)
 - Describes and assesses the likelihood of significant effects from the Proposed Survey Works against the impacted European Sites and their associated Conservation Objectives.
 - Proposes potential mitigation measures require to avoid, reduce or offset any identified significant effects.
- Risk Assessment for Annex IV Species.
 - Describes and assesses the impact of the Proposed Survey Works on Annex IV species.
 - Proposes potential mitigation measures require to avoid, reduce or offset any identified significant effects.

5.2 Land and Soils

5.2.1 Baseline

A preliminary study of the existing soils and geology of the licence areas has been undertaken using:

- Online databases, including the Public Data Viewer and OPALS Public Viewer (Department of the Environment, Climate and Communications 2023), and;
- Mapping by the EPA (EPA 2024), Geological Survey Ireland (GSI) (GSI 2024) and Ordnance Survey Ireland (OSI) (OSI 2024).

5.2.1.1 Licence Area A

The Geotechnical Investigation works are to be undertaken on or below the high water mark in areas predominantly comprising marine beach sands and estuarine silts and clays, with some areas of bedrock outcrop / subcrop around the high water mark. Above the high water mark the shallow geology mainly comprises till derived from limestones, with some smaller areas of alluvium. Bedrock Geology comprises sedimentary rocks of the Lucan and Ballysteen Formations (limestones and shales) in the northern half of this area, while granite (Type 2p Microcline Porphyritic granite) is present towards the south.

No Geological Heritage Audited Sites are present in Licence Area A.

The bedrock in the area is classified as a Locally Important Aquifer, bedrock which is moderately productive in local zones. The groundwater vulnerability classification is variable across this area, ranging from moderate to extreme/ rock at or near surface. Wells or springs are not present in the area that is directly affected by the proposed GI.

5.2.1.1 Licence Area B

Steep topography is present in parts of Licence Area B with resulting higher risk of land instability.

Bedrock subcrop / outcrop is present across much of Licence Area B, with Irish Sea Till derived from limestones present towards the south, and marine beach sands and gravels derived from limestones present at the foreshore. Bedrock Geology comprises granite (Type 2p Microcline Porphyritic granite) towards the north, with the Maulin Formation (slate, schist and minor greywacke) towards the south.

Four Geological Heritage Audited Sites are present in Licence Area B:

- White Rock, Killiney: A coastal section of cliffs at the northern end of Killiney Beach including a small mine audit.
- Killiney Bay: a 5km long coastal section exposes a succession of several units of glacial till.
- Dalkey Hill: a large disused granite quarry.
- Killiney Hill: A coastal hill site, laid out as a public park with a mixture of heath and outcrop around the summit.

The bedrock in the area is classified as a Locally Important or Poor Aquifer, bedrock which is moderately productive in local zones, or unproductive except for Local Zones. The groundwater vulnerability classification is variable across this area, ranging from moderate to extreme/ rock at or near surface. Wells or springs are not indicated in the area.

5.2.1.1 Licence Area C

Steep topography is present in parts of Licence Area C with resulting higher risk of land instability.

Bedrock subcrop / outcrop is present across much of the northern part of Licence Area C, with Irish Sea Till derived from sandstones and shales present towards the south, and marine beach sands and gravels derived from limestones present at the foreshore. Bedrock Geology comprises greywacke and shale.

Four Geological Heritage Audited Sites are present in Licence Area C:

- Bray Head: A coastal headland with extensive natural exposure and sea cliffs, plus railway cuttings.
- Greystones Beach: A 2km long coastal section exposing several units of glacial till.

The bedrock in the area is classified as a Poor Aquifer, bedrock which is unproductive except for Local Zones. The groundwater vulnerability classification is variable across this area, ranging from moderate to extreme/ rock at or near surface. Wells or springs are not indicated in the area.

5.2.1.1 Licence Area D

The shallow geology comprises marine beach sands at the foreshore, with alluvium and till derived from sandstones present further inshore. Bedrock Geology comprises greywacke and shale towards the north and deep marine deposits of slate, schist and minor greywacke towards the south.

One Geological Heritage Audited Site is present in Licence Area D:

 Wicklow-Greystones Coast: An uninterrupted shingle beach extending for over 17km long between Greystones and Wicklow.

The bedrock in the area is classified as a Locally Important or Poor Aquifer, bedrock which is moderately productive in local zones, or unproductive except for Local Zones. The groundwater vulnerability classification is variable across this area, ranging from low to high, with high vulnerability areas corresponding to marine beach sands. Wells or springs are not indicated in the area.

5.2.2 Potential Impacts and Proposed Management

Geotechnical investigation works will be undertaken within License Area A only. These survey works have the potential to result in accidental pollution of groundwater bodies in the coastal and transitional environment, and as for impacts relating to water strict adherence to pollution prevention guidelines will be undertaken during the works to protect the water environment. These measures will include (but not be restricted) to:

• The cleaning of plant before entry to the licence areas to prevent any cross contamination.

- All refuelling of equipment shall not take place within 50m of the foreshore and will take place on areas of hardstanding such as within the temporary site compound.
- All storage of fuel, water and other materials in the site compounds shall appropriately bunded and sealed to prevent releases to the ground and groundwater.

The Proposed geotechnical investigation Works will have no significant effect on the physical properties of soil, geology and hydrogeology in License Area A, provided that good practice site management measures to manage the risks of damage to and pollution of the environment are adhered to during The Proposed Survey Works. Where possible, investigation locations will be backfilled using arisings from the borehole or trial pit. Where this is not possible, bentonite (a type of clay) will be used, and where investigation locations have penetrated revetments they will be reinstated with concrete.

The proposed geophysical site investigation surveys, ecology surveys and archaeology surveys do not have the potential to impact soils, geology or hydrogeology as they are non-intrusive in nature.

5.3 Water

5.3.1 Baseline

Water quality in Ireland is regulated by the European Union (EU) Water Framework Directive (WFD) which is monitored by the EPA. A desktop review of waterbodies within the licence areas was carried out using the EPA Mapper (2024) and the Bathing Water Quality in Ireland in 2022 Report (EPA, 2023).

The relevant waterbodies and bathing waters are shown on Figure 5 in Appendix D.6

5.3.1.1 Licence Area A

The Proposed Survey Works in Licence Area A are located within the Dublin Bay coastal waterbody (and the Brewery Stream river waterbody enters Dublin Bay within the licence area) as outlined in Table 5.1.

Waterbody Type	Waterbody	WFD Code	Waterbody WFD Status 2016-2021	WFD Risk
Coastal	Dublin Bay	IE_EA_090_0000	Good (High Confidence)	Not at Risk
River	Brewery Stream	IE_EA_09B130400	Poor (Low Confidence)	Review

Table 5.1: Waterbodies present within Licence Area A

There are two bathing water quality monitoring points within this licence area. These are located at Sandymount Strand and Seapoint. Sandymount Strand was noted as "Sufficient" quality and Seapoint was noted as "Excellent" quality.

5.3.1.1 Licence Area B

The Proposed Survey Works in Licence Area B are located within the Southwestern Irish Sea - Killiney Bay coastal waterbody (and the Kill of the Grange Stream river waterbody enters the bay within the licence area) as outlined in Table 5.2.

Table 5.2: Waterb	odies present within Licer	ice Area B

Waterbody Type	Waterbody	WFD Code	Waterbody WFD Status 2016-2021	WFD Risk
Coastal	Southwestern Irish Sea - Killiney Bay (HA10)	IE_EA_100_0000	High (High Confidence)	Not at Risk
River	KILL OF THE GRANGE STREAM	IE_EA_10K020200	Poor (Medium Confidence)	At Risk
There are two bathing water quality monitoring points within this licence area. These are located at Whiterock Beach and Killiney. Both were noted as "Excellent" quality.

5.3.1.1 Licence Area C

The Proposed Survey Works in Licence Area C are located within the Southwestern Irish Sea - Killiney Bay coastal waterbody (and the Kilruddery Deerpark river waterbody enters the bay within the licence area) as outlined in Table 5.3.

Waterbody Type	Waterbody	WFD Code	Waterbody WFD Status 2016-2021	WFD Risk
Coastal	Southwestern Irish Sea - Killiney Bay (HA10)	IE_EA_100_0000	High (High Confidence)	Not at Risk
River	KILRUDDERY_DEERPARK	IE_EA_10K520710	Good (Low Confidence)	Review

There is one bathing water quality monitoring point within this licence area, which is located at Bray South Promenade. This area is currently classified as "Good Water Quality".

5.3.1.1 Licence Area D

The Proposed Survey Works in Licence Area D are located within the Southwestern Irish Sea - Killiney Bay coastal waterbody. The Three Trout's Stream is the only river waterbody that crosses over the licence area just south of Greystones (see Table 5.4).

Waterbody Type	Waterbody	WFD Code	Waterbody WFD Status 2016-2021	WFD Risk
Coastal	Southwestern Irish Sea - Killiney Bay (HA10)	IE_EA_100_0000	High (High Confidence)	Not at Risk
Transitional	Kilcoole Marsh	IE_EA_120_0100	Moderate (n/a)	Review
River	KILRUDDERY_DEERPARK_010	IE_EA_10K520710	Good (Low Confidence)	Review
River	THREE TROUTS STREAM_010	IE_EA_10T030580	Good (Low Confidence)	Not at Risk
River	KILCOOLE STREAM_010	IE_EA_10K010580	Poor (Medium Confidence)	At Risk
River	BALLYRONAN STREAM_010	IE_EA_10B080500	Moderate (High Confidence)	At Risk
River	NEWTOWNMOUNTKENNEDY_020	IE_EA_10N020600	Moderate (High Confidence)	At Risk
River	NEWCASTLE (WICKLOW)_010	IE_EA_10N010600	Poor (Medium Confidence)	At Risk
River	INCHANAPPA_010	IE_EA_10I020430	Good (Low Confidence)	Review

Table 5.4: Waterbodies present within Licence Area D

There is one bathing water quality monitoring point within this licence area. This is located at Greystones South. This is currently classified as "Excellent" quality.

5.3.2 Potential Impacts and Proposed Management

The Proposed Survey Works have the potential for accidental pollution of the coastal and transitional waterbodies and therefore, strict adherence to pollution prevention guidelines will be undertaken during the works to protect the water environment. These measures will include (but not be restricted to): -

The cleaning of plant before entry to the licence areas to prevent any cross-contamination.

- All refuelling of equipment shall not take place within 50m of the foreshore and will take place on areas of hardstanding such as within the temporary site compound.
- All storage of fuel water and concrete will be contained within the site compound.
- The minimum setback for fuel storage in the site compound shall be 15m from any watercourse while there shall be no stockpiling of materials within 10m of any watercourse.
- Survey vessels will adhere to the guidelines in the International Convention for the Prevention of Marine Pollution from Ships (MARPOL) as part of industry best practices. This commitment aims to minimize the risk of contamination incidents or accidents, thereby safeguarding water quality, in alignment with the Water Framework Directive.

The Proposed Survey Works will have no significant effect on any hydromorphological, physio-chemical or chemical quality elements in the aforementioned water bodies, subject to the implementation of good practice site management measures to manage any risks of pollution during construction. Best practice measures will be used throughout the Proposed Survey Works which will reduce the risk of contamination incidents or accidents in order to protect the water quality status of nearby waterbodies and in compliance with the WFD.

5.4 Biodiversity

5.4.1 Baseline

5.4.1.1 Nature Conservation Sites

The Proposed Survey Works in Licence Areas A and B fall within Dublin Bay Biosphere Site which supports rare and internationally important habitats and species of wildlife in three zones, as follows: -

- Core zone (50km²) of high natural value comprising Tolka and Baldoyle Estuaries, Booterstown Marsh, Howth Head, North Bull Island, Dalkey Island and Ireland's Eye;
- Buffer zone comprising 82km² of public and private green spaces such as parks, greenbelts and golf courses, which surround and adjoin the core zones; and
- Transition zone comprising 173km² in the outer part of the Biosphere and includes residential areas, harbours, ports and industrial and commercial areas.

Additionally, some of the Proposed Survey Works fall within European Sites as shown Appendix D.3. In support of the MUL Application a Supporting Information for Screening for Appropriate Assessment (SISAA) Report and a Risk Assessment for Annex IV Species Report has been carried out. The outcomes of both reports shows that there is no adverse effects on the integrity of those European sites or any Annex IV species as a result of the Proposed Survey Works.

5.4.1.1 Protected and Notable Habitats and Species

Ecology walkovers were carried out by Jacobs ecologists between October 2022 and September 2023 to assess the botanical and faunal value of all areas potential affected by the Proposed Survey Works, to enable an assessment of the likely habitat communities and species that may be affected by the Proposed Survey Works. The surveys identified the following habitats and species in the licence areas: -

Licence Area A:

 Located within South Dublin Bay and supports Annex I sand dune, saltmarsh and Annex I mudflat and sandflat habitat, which transitioned into Annex I large shallow inlet and bay habitat during high tide. The mudflat and sandflat habitat/large shallow inlet and bay habitat was found to support large flocks of gulls, waders and wildfowl. No marine mammals were observed utilising this habitat within the license area.

Licence Area B:

 Located along the lower stretch of a shingle shoreline on Killiney Beach and extends into the Irish Sea. No Annex I habitats were recorded within Licence Area B. The coast and shore was suitable for tern foraging and gull species. One grey seal was observed hauling out along Killiney beach; however, the seal was sick and passed away on the same day it was recorded. There were also several records of grey seal and porpoise in the sea between the Vico Baths and Dalkey Island.

Licence Area C:

Located directly adjacent to the lower stretch of Annex I vegetated sea cliffs on Wicklow Head Beach and extends into the Irish Sea. A small stretch of lower shingle shore is located within Licence Area C to the north and a small area of a man-made marina in Greystones is within Licence Area C to the south. The cliffs adjacent to Licence Area C and the sea are suitable breeding and foraging habitat for gulls, auks, divers and other coastal bird species. Additionally, there were several records of seal species along Wicklow Head within the sea.

Licence Area D:

 Located along the lower stretch of a shingle shoreline on the Murrough Beach and extends into the Irish Sea. One Annex I habitat was found within this licence area. Annex I embryonic dune was recorded at the northern most point of Licence Area D on Greystones South Beach. The lower shoreline was suitable for small numbers of waders and gulls to roost and forage. Additionally, the sea was a key foraging site for terns, gulls, auks and divers. Additionally, there were two records of grey seal within the sea.

Additionally, it is understood that the following species may be using the licence areas: -

- Evidence of otter was observed along the Licence Area A in the form of scat, prints, slide and a potential couch. However, only otter scat was found within licence areas and no otter holts were found. A report by Dublin City Council found evidence of otter in Licence Area A in the form of spraint and jelly smear (Macklin et.al., 2019). No other evidence was found within the licence areas.
- Incidental sightings of seals and porpoises were recorded throughout the survey period. Both grey and
 common seals were observed infrequently as individuals or in pairs. Typically, seals were observed in the
 water for brief periods of time. One seal was observed hauled out on the beach, this was in Area B and the
 seal was sick and passed away on the same day it was recorded. Porpoise were recorded three times off the
 coast of Killiney beach, however outside of the licence area.

No invasive species were observed within licence areas.

5.4.2 Potential Impacts and Proposed Mitigation

All Proposed Survey Works are located within the coastal and marine environment, and no terrestrial habitats will be impacted. However, there is potential for the Proposed Survey Works to disturb breeding birds which may be feeding or nesting within the marine environment and otters through increased noise levels or through visual disturbance.

There is potential for introduction of non-native species during the Proposed Survey Works. The works will therefore be undertaken in accordance with best practice measures to reduce the risk of introducing or spreading non-native species. Biosecurity measures will be adhered to including the disposal of any removed material, and the cleaning of vehicles, equipment, clothing and footwear to prevent the transfer of INNS from another site.

A full assessment of the potential for impacts on species and habitats protected under the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC) are presented in the Natura Impact Statement accompanying this application.

5.5 Fisheries and Aquaculture

5.5.1 Baseline

Commercial: Two main harbours are used for commercial landings within the ECRIPP project boundaries. Dun Laoghaire (just south of Licence Area A) and Wicklow (Licence Area D) both support a fleet of commercial fishing vessels (<12m). Landings may occur at these harbours from vessels operating outside of the ECRIPP

project boundaries. In 2022 landings by Irish vessels at Dun Laoghaire and Wicklow were 25 tonnes (worth \in 590,000) and 1695 tonnes (worth \in 2,960,000) respectively. A further 742 tonnes (\in 6,969,000) was landed by foreign vessels at Dun Laoghaire[1]. Near shore fishing effort within the ECRIPP project boundary and associated licence areas is typically low in comparison to other areas of the Irish Exclusive Economic Zone[2].

Near shore fisheries predominantly comprise of whelk potting, which is carried out over the entire stretch of the license areas (A-D). Lobster and crab are targeted by demersal creel fishermen to the south-east of Dalkey (Licence Area B) and Dunbar Head (Licence Area D). In the same locations trammel net fishing is also undertaken for demersal (sea bed) fish species.

In coastal waters east of Licence Area D, dredging is undertaken for mussel seed. The majority of this activity is undertaken between 1km and 7km off the shoreline extending out to 15km in License Area D.

Within the License Areas are the nursery and spawning grounds of commercially important species (Table 5.5). These commercially important species include; Whiting, Cod, Atlantic Haddock, Atlantic Mackerel and Horse Mackerel.

Species	Nursery Grounds	Spawning Ground
Whiting		A,B
Cod	A,B,C,D	A,B,C,D
Atlantic Haddock	A,B,C	A,B,C,D
Atlantic Mackerel	A,B,C,D	
Horse Mackerel	A,B,C,D	

Table 5.5: Commercial Fish Species Nursery and Spawning Areas within the Licence Areas.

There is no Aquaculture activity within the proposed License Areas.

Recreational: The inshore areas throughout the ECRIPP project boundary support recreational sea angling. A number of active sea angling clubs are present in Licence Area D – Bray head Fishing and Social Club and Greystones Ridge Angling Club. Popular fishing locations within and around the licence areas and target species are listed in Table 5.6. In addition, recreational angling charter vessels deploy from principal harbours in the area but tend to operate at least 1.6km from the shoreline.

Licence Area	Location	Recreational species
	Sandymount	Beach fishing for bass and flounder
Area A	Dun Laoghaire	Pier fishing for whiting, pout, codling and pollack (autumn)
	Dun Laoghaire	Harbour fishing for dab, plaice and conger (summer)
	Bullock harbour	Rock fishing for wrasse
Arris D	Coliemore harbour	Pier fishing for conger, small pollack and codling
Area B	Killiney beach	Beach fishing for plaice, bass and pollack
	Corbawan Lane	Beach fishing for flounder, codling, plaice, dab, dogfish and bass
	Bray	Pier fishing for codling, pollack, dogfish and conger. Beach fishing for bass, plaice, dab, gurnard, coalfish, dogfish, ray and tope.
Area C		Rock fishing for codling, small conger, wrasse, pollack and coalfish.
	North Beach	Beach fishing for codling, dogfish, dab, plaice, black sole, turbot bass and conger (night)
Area D	Greystones	Shore fishing for coalfish, codling, dogfish, dab, plaice, turbot, sole and conger.
	Greystones	Pier fishing for codling, pollack and bass.
	Harbour	Rock fishing onto sand for codling, coalfish, whiting and plaice.

Table 5.6: Popular Fishing Locations and Key Target Species.

Licence Area	Location	Recreational species
		Boat fishing for plaice, codling, whiting, ray, tope, dogfish, dab, gurnard and mackerel (in season)
	South Beach	Beach fishing for codling, pollack, coalfish, plaice, dab, dogfish, flounder, ray and bass
	Kilcoole	Beach fishing for codling, pollack, flounder, coalfish, plaice, dab, dogfish, bass, ray and whiting
	The Breeches	Beach fishing for codling, flounder, dab, dogfish, plaice, bass and lemon sole
	Newcastle	Beach fishing for codling, coalfish, dab, conger, bass and gurnard
	Five Mile Point	Beach fishing for codling, dab, bass, ray and dogfish (night)
	Killoughter	Beach fishing for codling, dab, ray and bass
	Broadlough	Flounder
	North Beach Wicklow	Beach fishing for codling, dogfish, dab, plaice, coalfish and bass
	Wicklow	Bass, plaice, dab, gurnard, coalfish, conger, dogfish, plaice, pollack, codling, whiting, mackerel, ray, bullhuss, smoothound, spurdog and tope

^[1] <u>https://www.cso.ie/en/releasesandpublications/ep/p-fl/fishlandings2022/</u>

^[2] Marine Institute. 2024. Atlas of Commercial Fisheries Around Ireland. 4th edition.

5.5.2 Potential Impacts and Proposed Mitigation

Geotechnical investigations (notably windowless samples) will involve drilling into soft sediment with a hydraulic hammer. This will be carried out during low tide to ensure that underwater noise with the potential to affect fisheries is limited and that no significant impact is caused. These survey works will only be undertaken within License Area A only.

The use of boats during ecology surveys will be temporary and localised in nature so will not adversely affect habitats that fish rely on for feeding, spawning or nursing. Fisheries could potentially be affected through an increase in suspended solids in and around the benthic subtidal sampling sites. However, given the existing high background turbidity, any localised seabed sediment disturbance will be no greater than natural background variability during storms. Fish will be able to move away from the area during the short duration of the sampling, given that they are highly mobile. However, care will be taken to create the least disturbance to the sampling site as possible and avoid significance sediment disturbance in the water column.

Due to the nature of The Proposed Survey Works, there will be no impacts on commercial fisheries, recreational sea angling or aquaculture. There will be no changes to commercial fisheries, or to employment within the fishing industry anticipated as a result of the works.

5.6 Air Quality & Climate

5.6.1 Baseline

The License Areas span over multiple EPA Air Quality Index Regions, all are classified as 3-Good according to the Air Quality Index. There are no air monitoring stations located within any of the licence areas. The closest air monitoring stations to each of the licence areas are:

- Licence Area A: (D14) Clonskeagh.
- Licence Area B: (D13) Dun Laoghaire.
- Licence Area C: (WW3) Greystones
- Licence Area D (WW3) Greystones

The air quality recorded at all of these air monitoring stations is reported as being of 'Good' status (EPA).

Dust/emission sensitive receptors in proximity to the Proposed Survey Works are a low number of residential, commercial and community receptors. The nearest residential dwellings are those located to the west of the railway line, as listed below.

- Licence Area A : residential receptors located at Idrone Terrace and at Salthill, landward of the existing railway line.
- Licence Area B : residential receptors located along Strand Road and Station Road, seaward of the existing railway line.
- Licence Area C : residential receptors located along The Shore and the Grove (approximately 125m and 210m from Proposed Survey Works respectively).
- Licence Area D: residential receptors located along Mill Road, Sea Road north of Kilcoole Station and at Five Mile Point and individual residential receptors along the southern length of the licence area which are landward of the existing railway line, which are landward of the existing railway line.

5.6.2 Potential Impacts and Proposed Mitigation

The Proposed Survey Works are not anticipated to have any significant impacts on air quality for sensitive receptors. Construction methods will follow best practice measures to ensure that the works do not result in increased air pollution or dust. This includes the application of standard best practice measures secured through the contractor's method statement and/or Construction Environmental Management Plan (CEMP) to include the following aspects:

- Dust suppression;
- Maintenance of plant;
- Switching off engines (both construction plant and survey vessels) when not in use;
- Site speed limits; and
- Appropriate storage of volatile materials.

Exhaust gases emitted from survey vessels and vehicles used for the transport of equipment and materials will not be of the magnitude to significantly contribute to climate change, due to the temporary nature of The Proposed Survey Works.

5.7 Noise and Vibration

5.7.1 Baseline

Noise sensitive receptors in proximity to the Proposed Survey Works are a low number of residential, commercial and community receptors. The nearest noise sensitive receptor(s) to the Proposed Survey Works are a number of residential dwellings to the west of the railway line and are listed below.

- Licence Area A
 - Residential receptors located at Idrone Terrace and at Salthill, which are on the landside of the existing railway line.
- Licence Area B
 - Residential receptors located along the Strand Road and Station Road on the seaside of the existing railway line.
- Licence Area C
 - Residential receptors located along The Shore and The Grove, approximately 125m and 210m from the Proposed Survey Works respectively.
- Licence Area D

- Residential receptors located along Mill Road and Sea Road, north of Kilcoole Station, which are on the landside of the existing railway line.
- Residential receptors located Five Mile Point and individual residential receptors along the length of the licence area, on the landside of the existing railway line.

The main sources of noise across all licence areas are from road and rail sources (Noise Round 4 Mapping: EPA Mapper, 2023a).

- Licence Area A :
 - Road noise from R118, R131 & N31
 - Rail noise from DART and Intercity Services
- Licence Area B :
 - Primary noise source is rail noise from DART and Intercity Services
 - Some local traffic noise impacts from R119
- Licence Areas C and D:
 - Primary noise source is rail noise from DART and Intercity Services

5.7.2 Potential Impacts and Proposed Mitigation

Sources of noise and vibration include vessels (for ecology surveys), road vehicles (for transport of equipment) and survey equipment (including hydraulic hammer, excavators and sliding hammer). Residential receptors and beach users may be subject to a short-term increase in noise within the immediate vicinity of the survey activities throughout the duration of the surveys. Given the predominantly small scale, overall nature and expected duration of the Proposed Survey Works, the survey activities will not have a significant impact on the background noise and vibration levels in the licence areas.

All Proposed Survey Works will be carried out according to best practice noise suppression methods and guidelines for the management of noise and vibration, such as the British Standard 5228: Code of Practice for Noise Control on Construction and Demolition Sites, and Safety, Health and Welfare at Work (General Application) Regulations 2007, including (but not exclusive to the following):

- Use of suitable survey and investigation equipment: adoption of suitable plant and machinery for carrying
 out the work required and maintained in good condition with regard to minimising noise output;
- Control of normal site working hours. No heavy construction equipment/machinery (to include pneumatic drills, construction vehicles, generators etc.) shall be operated on or adjacent to the construction sites outside of the agreed working hours;
- During the construction phase noise levels at noise sensitive locations shall not exceed 70dB(A) between 0800 to 1630 hours Monday to Friday; and
- The Contractors will prepare working method statements that consider noise impacts arising from the works, including adherence to defined working hours and best practice noise suppression methods (e.g., minimise vehicle movements, use well-maintained plant and equipment, turning off engines when not in use).

5.8 Landscape, Seascape and Visual

5.8.1 Baseline

There are no sites designated for landscape and visual receptors within the licence areas (although licence areas A and B are located wholly or partially in Dublin Bay Biosphere Reserve – see Section 5.4 and Appendix D.6).

A review of the baseline seascape and landscape typology and policies areas as defined by the National Marine Planning Framework (NMPF) was undertaken for each licence area using MarinePlan.ie (DHHLG 2024b). The most relevant NMPF policy is Seascape and Landscape Policy 1, ORE Policy 9, defined as: -

Proposals should demonstrate how the likely significant impacts of a development on the seascape and landscape of an area have been considered. Proposals will only be supported if they demonstrate that they, in order of preference:

- a. Avoid,
- b. Minimise, or
- c. Mitigate significant adverse impacts on the seascape and landscape of the area.
- d. If it is not possible to mitigate significant adverse impacts, proposals must set out the reasons for proceeding.

The seascape types (SCT) and seascape character areas (SCA) for each licence area are shown below: -

- Licence Area A
 - SCT10: modified historic urban bay.
 - SCA15: Dublin Bay
- Licence Area B
 - SCT7: broad estuarine bay and complex low plateau and cliff coastline
 - SCA15: Dublin Bay
- Licence Areas C and D
 - SCT7: broad estuarine bay and complex low plateau and cliff coastline
 - SCA14: Irish sea, sandbanks and broad bays

All relevant seascape character areas are shown on Appendix D.6.

5.8.2 Potential Impacts and Proposed Mitigation

The Proposed Survey Works will be temporary in nature and will not involve the installation of any permanent structures.

There will be some temporary visual disturbance to residents, recreational users and visitors in localised areas adjacent to the works on the foreshore, predominantly in Licence Area A where construction plant will temporarily be using the beach as part of the geotechnical survey works. Due to the existing marine traffic in the area and short-term nature of the works, survey vessels will not cause a negative visual impact to the seascape.

The survey sites (i.e., intertidal areas) will be maintained in a tidy condition and all activities and materials storage will be confined to designated working areas/compounds.

There will be no long-term change in landscape/SCAs or SCTs as a result of the Proposed Survey Works.

5.9 Cultural Heritage including Underwater Archaeology

5.9.1 Baseline

Data on the historic environment within the licence areas and in the 'heritage study area' (defined as an area extending up to 100m from the licence areas) has been sourced from the Historic Environment Viewer (DHHLG 2024a) and the National Monuments Service Wreck Viewer (NMS 2024).

Table 5.7 shows the historic features within the licence areas and in the heritage study area.

Licence area	Heritage feature	Approximate distance from licence area
	Merrion fish pond (SMR DUO23-001005)	90m inland (west)
	Williamstown Martello Tower No. 15 (SMR DUO23-002)	30m inland (west) and 100m from the geotechnical survey works
A	Site of former castle (Seapoint or Templehill) (SMR DUO23-048)	30m inland (west)
	Seapoint Martello Tower No.14 (SMR DUO23- 010)	Immediately bordering western boundary
	Battery Killiney (SMR DUO26-012)	90m inland (west)
	Flying Hawk Iron Steam Tug Shipwreck - The wreck lies at base of Maiden Rock broken up and scattered in a depth of 5-10m.	Immediately bordering eastern boundary
В	Loch Fergus Shipwreck, Killiney Bay opposite railway station, approximately 150m offshore	Within licence area – approximately 450m seaward of HWM (although record states 150m offshore)
	Loughlinstown Martello Tower and Battery No. 6 (SMR DU026-014001)	60m inland (west) but seaward of railway line
	Earthwork : Killiney (SMR DU026-014002)	50m inland (west) but seaward of railway line
	Battery Shanganagh - tower listed as No.5 was a Battery and ruins still in place (SMR DU026-089)	30m inland (west) but seaward of railway line
	Bray Martello Tower No. 1 (demolished) (WI004- 003)	15m inland (west)
	Historic buildings on National Inventory of Architectural Heritage	Between 30m and 100m inland (west)
	R766 Strand Road between Bray and Newcourt	
C	Cliff Road and Marine Road at Rathdown Lower	
C	Mill Road at Greystones	
	Moated site : RATHDOWN UPPER (WI008- 011001)	55m inland (west)
	Midden : RATHDOWN UPPER (WI008-011003)	25m inland (west)
	Castle - unclassified : RATHDOWN UPPER (WI008- 011)	75m inland (west)
D	Historic buildings on National Inventory of Architectural Heritage	Between 90m and 100m inland (west)
	Leitrim Place at Wicklow	

Table 5	5.7:	Heritage	Features	within	Heritage	Study	Area
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Of particular note is the Seapoint Martello Tower (Sites and Monuments Record (SMR DU023-010) in Licence Area A, and two designated shipwrecks (the Flying Hawk Iron Steam Tug and Lock Fergus wreck) both located within or immediately bordering Licence Area B (Appendix D.6).

5.9.2 Potential Impacts and Proposed Mitigation

The Proposed Survey Works have the potential to impact on the visual setting of some of the heritage features along the coastline, including the Martello towers (notably Seapoint Martello Tower (DU023-010) in License Area A), however, due to the small-scale nature and temporary duration of the works, any impacts will not be significant. An exclusion zone of 50m around the Seapoint Martello Tower in Licence Area A (where the sediment sampling will be undertaken) will be adhered to throughout the works.

There is also potential for the proposed benthic grab sampling from boat(s) in Licence Area B to negatively impact the sites of two designated shipwrecks, Flying Hawk Iron Steam Tug Shipwreck and Loch Fergus Shipwreck. However, the samples undertaken will be very shallow (0.1m) and a 200m exclusion zone will be enforced, within which no grab samples will be taken; these measures will minimise the risk of impact to the two designated shipwrecks.

The Proposed Survey Works also have the potential to impact buried archaeology through exposure and disturbance of material, particularly during the drilling of windowless boreholes and excavation of trial pits in Licence Area A. However, minor areas of excavation will be undertaken on previously disturbed areas of recreational beach and the archaeological potential can reasonably be identified to be low.

Archaeological considerations will be integrated with the planning and execution of the proposed geotechnical and geophysical site investigations (see Sections 2.2.1 and 2.2.2 respectively). These may include an archaeological watching brief during the works, and the resultant data (geological and geophysical) will be assessed for archaeological purposes, as appropriate.

A tool box talk will be provided to the contractor relating to archaeological potential, together with information regarding clear reporting mechanism/call-in procedure, should any potential archaeology be identified during the Proposed Survey Works. Should any finds or features of archaeological interest be encountered during the works, the works will cease and the National Monuments Service will be consulted to advise further. If archaeological potential is identified, mitigation is likely to take the form of preservation by record.

Any additional survey requirements (below MHWS) agreed in consultation with the Underwater Unit of the National Monuments Service will be subject to a separate MARA licence application.

5.10 Population and Human Health

5.10.1 Baseline

Population refers to the way in which people live, work, relate to one another, organise to meet their needs and generally operate as members of society. The World Health Organization (WHO) Constitution, which came into force in 1948, defines health as 'a state of complete physical, mental and social well-being and not merely the absence or infirmity' (WHO, 1948).

Receptors likely to be impacted by the Proposed Survey Works include local residents and coastal amenity group such as walkers, swimming groups, fishermen across the Licence Areas.

5.10.2 Potential impacts and Proposed Mitigation

The Proposed Survey Works will be short term and the affected intertidal areas will be reinstated to their original condition. There will be an exclusion zone on the beach whilst the geophysical and geotechnical investigation surveys are being undertaken. This exclusion zone will ensure the safety of the general public whilst the geotechnical and geophysical surveys are undertaken. There are community groups such as Dublin Sea Swimming that carry out weekly events year-round such as sea swimming, yoga or picnics at varying locations around the Dublin coastline. A lack of access to the beach may temporarily inconvenience the local population. Therefore, to ensure that there is no significant impact to population and human health as a result of the Proposed Survey Works, local stakeholders will be communicated with and made aware of the Proposed Survey Works schedule and pedestrian exclusion zones.

5.11 Other Developments

A review of other developments was undertaken to determine the potential for cumulative impacts with the Proposed Survey Works. Dublin City Council, Dun Laoghaire-Rathdown County Council and Wicklow County Council planning permission applications were assessed for potential cumulative impacts. There were no planning applications identified within the study area.

A review of Foreshore Licences was conducted through the Foreshore Licences and Determinations search tool (Department of Housing, Local Government and Heritage (DHLGH) 2024). A search was also conducted on

MULs and Maritime Area Consents (MAC's) through the MARA website (MARA 2024). The search criteria was projects within Dublin and Wicklow since 2019 (five year search) up until 24th May 2024.

Thirteen other developments were found to overlap with the Proposed Survey Works. Only one other development, Licence LIC230028 will not have overlap as they are the first phase of surveys for the ECRIPP project which will be completed prior to the Proposed Survey Works. Appendix B provides details on the other developments, their activities and at which point they overlap with the Proposed Survey Works. Due to the long nature of foreshore licence duration, there is potential for overlap with the Bathymetry and marine elements of the ecology surveys with the other developments. To mitigate the impact and potential overlap of works, consultation will be undertaken with the relevant parties.

5.12 Summary of Mitigations

The Proposed Survey Works are temporary and short-term in nature. They will be undertaken with best practice guidelines incorporated into the design and exclusion zones will be employed where necessary, to protect people and underwater archaeology. Any further mitigation proposed in this report, Natura Impact Statement or Annex IV Risk Assessment will be discussed in the sections below according to survey type.

5.12.1 Geotechnical Investigations

Geotechnical Investigations will be carried out in License Area A only.

5.12.1.1 Impact on Habitats

There is a potential for habitat damage as a result of undertaking windowless samples and slit trenches as a part of the proposed survey works. To avoid damage to flora, the drilling rig will be mounted onto rubber tracks. Backfilling of windowless samples and trial pits will be carried out on the same day as excavation, for windowless samples this will be using the extracted soil horizons.

An on-site Ecological Clerk of Works (ECoW) will be on site for any works deemed sensitive i.e., within European sites. The ECoW will be at sensitive locations where there is potential for disturbance to QI habitats and implement mitigation measures as described below. Prior to the GI works the ECoW will deliver a toolbox talk to all personnel to highlight the environmental sensitivities and the boundaries of sensitive habitats.

5.12.1.1 Impact on Water

Geotechnical investigations have the potential to result in accidental pollution of groundwater bodies in the coastal and transitional environment, and as for impacts relating to water strict adherence to pollution prevention guidelines will be undertaken during the works to protect the water environment. These measures will include (but not be restricted) to:

- The cleaning of plant before entry to the licence areas to prevent any cross contamination.
- All refuelling of equipment shall not take place within 50m of the foreshore and will take place on areas of hardstanding such as within the temporary site compound.
- All storage of fuel, water and other materials in the site compounds shall appropriately bunded and sealed to prevent releases to the ground and groundwater.

5.12.1.1 Impact on Fisheries

Geotechnical investigations (notably windowless samples) will involve drilling into soft sediment with a hydraulic hammer. This will be carried out during low tide to ensure that underwater noise with the potential to affect fisheries is limited and that no significant impact is caused.

5.12.2 Bathymetry

5.12.1.1 Impact on Marine Mammals

A qualified Marine Mammal Observer (MMO) will be present to monitor for marine mammals following the NPWS *Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters*' (NPWS, 2014). All relevant events will be logged using standardised data forms. Monitoring will be conducted prior to commencement of operations for 60 minutes to ensure no marine mammals are present within the 2000m disturbance area. Should any marine mammals be detected any surveys will be delayed until the species have left the relevant zone of disturbance with an additional 30-minute buffer period f<u>ro</u>m the last sighting.

At the beginning of the survey period there will be a gradual increase to peak frequency output over 20 minutes. This will provide any undetected marine mammals time to leave the disturbance area. If a marine mammal is detected during this start-up period, the frequency will not be increased until it has left the 2000m disturbance zone. If there is a break in the output over 5-minutes than pre-commencement checks and gradual start-up should be repeated.

5.12.1.1 Impact on QI Bird Species

To minimise disturbance to seabirds and species foraging offshore, the surveys will be undertaken outside of the important breeding season (April-August) and the peak wintering bird season (December-February). Where large feeding flocks are present within the survey path, these will be approached under 5 knots or avoided, where possible.

5.12.3 Ecology - Boat Surveys

5.12.1.1 Impact on Marine Mammals

These surveys will be closer to shore and not creating major noise, however there is the possibility to disturb grey seals and harbour seals at haul out locations. To minimise disturbance the small vessel will not exceed 5 knots within the survey area. Where a haul out is identified the distance from the area will be increased from 100m up to 400m to minimise the potential to flush seals off land. The experienced helmsman will also slow the boat or steer away from any seals that are present within the water during the surveys.

5.12.1.1 Impact on QI bird species

To minimise disturbance from these surveys the small boat will be kept at a speed below 5 knots and a minimum distance of 100m from the cliff. This will be increased up to 400m dependant on any visual signs of disturbance amongst the breeding seabirds. The boat will only stop in locations for long enough to complete the surveys before moving on. Human noise within the boat will be kept to a minimum.

5.12.4 Intertidal Surveys

5.12.1.1 Impact on QI Bird Species

GI, Geophysical, metal detector surveys and benthic ecology surveys are being undertaken within intertidal areas within the Licence Area A. Metal detector surveys and benthic surveys will be undertaken in Licence Areas B, C and D.

GI and geophysical surveys will be more likely to cause disturbance at a greater distance due to the creation of noise from machinery and the use of a drop weight. Disturbance will be minimised by conducting surveys outside of the peak wintering bird period (October-April). In addition, these surveys will be temporary and localised in a small area to allow bird species to utilise other habitat within the South Dublin Bay and Tolka Estuary SPA for foraging.

Metal detector and benthic surveys will take place within the intertidal areas. These surveys will not produce a high noise disturbance, will be temporary and localised within a small area. To minimise disturbance to wintering birds in Licence Areas A, B and C, these surveys will be undertaken outside of the wintering bird season

(October-April) and independently from other surveys, including GI and geophysical surveys, therefore producing a lower level of disturbance and increasing the additional areas available for forging bird species. Due to the presence of breeding QI bird species on the foreshore in Licence Area D, surveys will take place outside of April – August. The majority of wintering birds present in Licence Area D do not utilise the area within The Proposed Survey Works and therefore work can be undertaken within October to March if required.

6. Conclusions

This report has been undertaken to assess the potential impacts of the Proposed Survey Works on the maritime environment. Consideration has been given to the following supporting documents:

- Supporting Information for Screening Appropriate Assessment;
- Natura Impact Statement (NIS); and
- Risk Assessment for Annex IV Species.

The assessment of the impacts of the maritime usage has determined that due to the nature and scale of the Proposed Survey Works that there will be no significant environmental impacts and that an EIA is not required.

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Appendix A: Programme of Works

Not Used

Appendix B: Cumulative Effects Assessment

Project No.	Status	Proposed Activities	Overlap?
LIC230028 Iarnród Éireann	Applied	A Geotechnical Investigation (GI) and Geophysical site investigation surveys to inform design options for the proposed East Coast Rail Infrastructure Protection Projects (ECRIPP). The purpose of ECRIPP is to implement protection measures to at risk sections of the Dublin to Wexford railway line from the effects of climate change and coastal erosion.	Overlap - Same project
FS007583 Wicklow Port Dredging	Determination	Dredging works at Wicklow Harbour	Licence Area D
FS007472 Mac Lir Offshore Wind Array	Applied	Mac Lir Offshore Wind Limited is seeking to undertake benthic ecology surveys within a potential offshore export cable corridor area. The proposed surveys will be conducted on the shoreline and in the marine area and are routine in establishing the baseline benthic ecology conditions for areas for a number of purposes including conservation, environmental status and in this particular case to support the Environmental Impact Assessment Report for the proposed Mac Lir Offshore Wind Farm.	Licence Area A & D
FS007330 Réalt na Mara Offshore Wind Array	Applied	Site investigation works to determine the suitability for cable routeing, and positioning of turbines and other electrical infrastructure associated with the development of an OWF.	All Licence Areas
FS007367 Greystones Offshore Wind Array	Applied	Variety of marine surveys at the proposed site to inform the specific location, design and layout of the proposed offshore wind farm and export cable route to shore.	Licence Area A & C
FS007588 Site Investigations by Wicklow Sea Wind Ltd	Consultation	Survey an area suitable for the installation of an export cable corridor to connect a proposed fixed foundation offshore wind project in the Celtic Sea (approximately 8km off the east coast of Wicklow) to the grid. The Foreshore License application is to undertake the surveys and investigations to inform the route of the export cable corridor.	Licence Area D
FS007546 Codling Wind Park Ltd. Site Investigations for proposed Offshore Wind Farm	Determination	The main aims and objectives of the proposed activities are to: • Provide up to date detailed bathymetric mapping of the seabed; • Provide further information on the soil stability and morphology of the seabed; • Provide detailed information on ground conditions and geology; • Obtain up to date wind resource and metocean data for the site; and • To generate environmental and ecological data to inform the EIA and AA for the Codling Wind Park project.	Licence Area D

Project No.	Status	Proposed Activities	Overlap?
FS007134 Sea Stacks Offshore Wind Array	Consultation	ESB Wind Development Limited have applied for a Licence to carry out site investigations relating to a possible wind farm on a site named "Sea Stacks Offshore Wind", situated off the coasts of Dublin and Wicklow.	Licence Area A
FS007188 RWE Renewables Ireland, Site Investigations for Dublin Array	Determination	Foreshore Licence to undertake geotechnical 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.	All Licence Areas
FS007004 OPW Wicklow Town Revetment Repairs	Determination	Foreshore application for the maintenance and repair of an existing revetment	Licence Area D
FS007029 Site Investigation – Dublin Array	Determination	Application for a Site Investigation Licence to carry out Geophysical Surveys, Geotechnical Surveys, Ecological Surveys and Wind and Metocean Surveys	Licence Areas B and C.
FS007045 Codling Wind Park Ltd	Determination	Codling Wind Park - Site Investigation Licence Application to inform the design of a possible windfarm at this site	All Licence Areas
Bray Offshore Wind Limited and Kish Offshore Wind Limited 2022-MAC- 003 and 004	MAC Granted	Dublin Array - OWF Cables and Array	Cable Route overlap at Licence Area A & B
Codling Wind Park, 2022-MAC-006	MAC Granted	Codling Wind Park - OWF Cables and Array	Cable Route overlap at Licence Area A & B

Appendix C: Consistency with National Marine Planning Framework (NMPF)

Policy	Description	Discussion / Compliance
Environmental Ocean Health - Ocean Health Policy 1	Compliance with NMPF policies relating to: Biodiversity Non-Indigenous Species Water Quality Seafloor and Water Column Integrity Marine litter Underwater Noise should include demonstration of contribution to the relevant MSFD targets identified.	The Proposed Survey Works will not compromise any of the Environmental Targets for the receptors outlined. Biodiversity and non-indigenous species: The ecology component of The Proposed Survey Works are proposed to better understand the potential impacts of the future ECRIPP works on the biological diversity of the licence areas. The Proposed Survey Works will not compromise the biological diversity of the licence areas. The Proposed Survey Works will be undertaken in accordance with best practice. Biosecurity measures will be adhered to including the cleaning of sea vessels and survey equipment to prevent the transfer of non-native species from elsewhere. After all samples have been removed, gear will be thoroughly washed to prevent cross-contamination. Water quality/seafloor/water column integrity : The temporary nature of the boat surveys and grab sampling will not cause a deterioration to the water quality in this area as standard pollution control measures will be implemented by the survey vessel. Safeguards will be in place to ensure that the grab used to collect the sample is free of contamination prior to being deployed. Adequate risk assessments will be undertaken regarding safety and use of chemical onboard the survey vessel. Any localised seabed sediment disturbance and mobilisation will be no greater than natural background variability during storms. Marine litter: The Proposed Survey Works will not increase the amount of marine litter in the licence areas beyond that existing. The Waste Mitigation Hierarchy will be considered as appropriate. Underwater noise (see Section 5.7): Given the predominantly small scale, overall nature and expected duration of The Proposed Survey Works, the survey activities will not have a significant impact on the background noise and vibration levels in the licence areas nor marine environment. The geotechnical survey works will be carried out in the dry and therefore will not result in underwater noise impacts. The survey team will ensure adherence to best p
Environmental Ocean Health - Biodiversity Policy 1	Proposals incorporating features that enhance or facilitate species adaptation or migration, or natural native habitat connectivity will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of	The Proposed Survey Works will not compromise biological diversity and will not affect species adaptation/migration or habitat connectivity.

Policy	Description	Discussion / Compliance
	this NMPF. Proposals that may have significant adverse impacts on species adaptation or migration, or on natural native habitat connectivity must demonstrate that they will, in order of preference and in accordance with legal requirements:	
	a) avoid,	
	b) minimise, or	
	c) mitigate	
	significant adverse impacts on species adaptation or migration, or on natural native habitat connectivity	
	Proposals that protect, maintain, restore and enhance the distribution and net extent of important habitats and distribution of important	The Proposed Survey Works will not affect the distribution and net extent of important habitats and other habitats that important species depend on.
Environmental Ocean Health - Biodiversity Policy 2	species will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals must avoid significant reduction in the distribution and net extent of important habitats and other habitats that important species depend on, including avoidance of activity that may result in disturbance or displacement of habitats.	Fish could potentially be disturbed by a slight increase in suspended solids in and around the subtidal sampling sites. However, given the existing high background turbidity, any localised seabed sediment disturbance will be no greater than natural background variability during storms and fish will be able to move away from the area during the short duration of the sampling, given that they are highly mobile. Care will be taken to create the least disturbance to the sampling site as possible and avoid significance sediment disturbance in the water column.
	Where marine or coastal natural capital assets are recognised by Government: • Proposals must seek to enhance marine or coastal natural capital assets where possible.	
	 Proposals must demonstrate that they will in order of preference, and in accordance with legal requirements: 	The Proposed Survey Works will not affect or deplete any marine or coastal natural capital
Environmental	a) avoid,	assets (i.e., coastal habitats that deliver any services on which economies depend on for
Biodiversity	b) minimise, or	food, fuel etc or on non-market services). The Proposed Survey Works will not affect flood
Policy 3	c) mitigate	nsk, all quality, carbon sequestration of non-tangible benefits.
	significant adverse impacts on marine or coastal natural capital assets, or	
	d) if it is not possible to mitigate significant adverse impacts on marine or coastal natural capital assets proposals must set out the reasons for proceeding.	

Policy	Description	Discussion / Compliance	
Environmental Ocean Health - Biodiversity Policy 4	 Proposals must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant disturbance to, or displacement of, highly mobile species 	The Proposed Survey Works will not significantly disturb mobile species. As described above, there may be a slight increase in suspended solids in and around the subtidal sampling sites. However, given the existing high background turbidity, any localised seabed sediment disturbance will be no greater than natural background variability during storms and mobile species such as fish will be able to move away from the area during the short duration of the sampling. Care will be taken to create the least disturbance to the sampling site as possible and avoid significance sediment disturbance in the water column.	
Environmental Ocean Health - Protected Marine Sites Policy 1	Proposals must demonstrate that they can be implemented without adverse effects on the integrity of Special Areas of Conservation (SACs) or Special Protection Areas (SPAs). Where adverse effects from proposals remain following mitigation, in line with Habitats Directive Article 6(3), consent for the proposals cannot be granted unless the prerequisites set by Article 6(4) are met.	The Proposed Survey Works will not have an adverse effect on the integrity of any European Sites - see supporting Information for Screening for Appropriate Assessment (SISAA) Report and Natura Impact Statement (NIS).	
Environmental Ocean Health - Protected Marine Sites Policy 2	 Proposals supporting the objectives of protected marine sites should be supported and: be informed by appropriate guidance must demonstrate that they are in accordance with legal requirements, including statutory advice provided by authorities relevant to protected marine sites 	The Proposed Survey Works will not compromise the objectives of any protected marine s, sites - see Section 5.4 and supporting Information for SISAA Report and NIS.	
Environmental Ocean Health - Protected Marine Sites Policy 3	 Proposals that enhance a protected marine site's ability to adapt to climate change, enhancing the resilience of the protected site, should be supported and: be informed by appropriate guidance must demonstrate that they are in accordance with legal requirements, including statutory advice provided by authorities relevant to protected marine sites. 	Due to their temporary nature, The Proposed Survey Works will not enhance nor compromise the ability of a marine site to adapt to climate change.	

Policy	Description	Discussion / Compliance
Environmental Ocean Health - Protected Marine Sites 4	Until the ecological coherence of the network of protected marine sites is examined and understood, proposals should identify, by review of best available evidence (including consultation with the competent authority with responsibility for designating such areas as required), the features, under consideration at the time the application is made, that may be required to develop and further establish the network. Based upon identified features that may be required to develop and further establish the network, proposals should demonstrate that they will, in order of preference, and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant impacts on features that may be required to develop and further establish the network, or d) if it is not possible to mitigate significant impacts, proposals should set out the reasons for proceeding	The Proposed Survey Works will not compromise the ecological coherence of the network of protected marine sites - see Section 5.4 and supporting Information for SISAA Report and NIS.
Environmental Ocean Health - Non- indigenous Species Policy 1	Reducing the risk of the introduction and / or spread of non-indigenous species is a requirement of all proposals. Proposals must demonstrate a risk management approach to prevent the introduction of and / or spread of non-indigenous species, particularly when: a) moving equipment, boats or livestock (for example fish or shellfish) from one water body to another, b) introducing structures suitable for settlement of non-indigenous species, or the spread of non-indigenous species known to exist in the area of the proposal.	The Proposed Survey Works will be undertaken in accordance with best practice. Biosecurity measures will be adhered to including the cleaning of sea vessels and survey equipment to prevent the transfer of non-native species from elsewhere. After all samples have been removed, gear will be thoroughly washed to prevent cross-contamination. Additionally, boat hulls will be maintained such that they are clear of fouling organisms, particularly when moving to and from different areas.
Environmental Ocean Health - Water Quality Policy 1	Proposals that may have significant adverse impacts upon water quality, including upon habitats and species beneficial to water quality, must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant adverse impacts.	The temporary nature of The Proposed Survey Works will not cause a deterioration to the water quality in the licence areas as standard pollution control measures will be implemented by the survey vessel. Safeguards will be in place to ensure that any subtidal grab used to collect samples is free of contamination prior to being deployed. Adequate risk assessments will be undertaken regarding safety and use of chemical onboard the survey vessel. Any localised seabed sediment disturbance and mobilisation will be no greater than natural background variability during storms.

Policy	Description	Discussion / Compliance
Environmental Ocean Health - Water Quality Policy 2	Proposals delivering improvements to water quality, or enhancing habitats and species, which can be of benefit to water quality, should be supported.	The Proposed Survey Works will not deliver improvements to water quality.
Environmental Ocean Health - Sea-floor Integrity Policy 1	Proposals that incorporate measures to support the resilience of marine habitats will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority and where they contribute to the policies and objectives of this NMPF. Proposals which may have significant adverse impacts on marine, particularly deep sea, habitats must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant adverse impacts on marine habitats, or d) if it is not possible to mitigate significant adverse impacts on marine habitats must set out the reasons for proceeding.	The only Survey Works affecting the seafloor are the subtidal grab samples. The subtidal sampling methodology has been designed to ensure that there will be no adverse impacts on the marine ecosystem. The sampling findings will be used to further an understanding of the marine ecosystem, helping to support monitoring findings and the overall protection of the marine environment during the design and assessment of the future ECRIPP works.
Environmental Ocean Health - Sea-floor Integrity Policy 2	 Proposals, including those that increase access to the maritime area, must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate adverse impacts on important habitats and species. 	The Proposed Survey Works will not adversely affect important habitats or species - see Section 5.4 and supporting Information for SISAA Report and NIS.
Environmental Ocean Health - Sea-floor Integrity Policy 3	Proposals that protect, maintain, restore and enhance coastal habitats for ecosystem functioning and provision of ecosystem services will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals must take account of the space required for	The Proposed Survey Works will not enhance nor compromise the ecological functioning of coastal habitats - see Section 5.4 and supporting Information for SISAA Report and NIS. However, the ecological survey findings will be used to further an understanding of the marine ecosystem, helping to support monitoring findings and the overall protection of the marine environment during the design and assessment of the future ECRIPP works.

Policy	Description	Discussion / Compliance
	coastal habitats, for ecosystem functioning and provision of ecosystem services, and demonstrate that they will, in order of preference and in accordance with legal requirements:	
	a) avoid,	
	b) minimise, or	
	c) mitigate	
	for net loss of coastal habitat.	
Environmental Ocean Health - Marine Litter Policy 1	Proposals that facilitate waste re-use or recycling, or that reduce marine and coastal litter will be supported, where they contribute to the policies and objectives of this NMPF. Proposals that could potentially increase the amount of litter that is discharged into the maritime area, either intentionally or accidentally, must include measures (such as development of a waste management plan) to, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate the litter. Demonstration of these measures must provide satisfactory evidence that the proposal is able to manage all waste without creation of litter.	The Proposed Survey Works will not increase the amount of marine litter in the marine plan area beyond that existing nor reduce coastal litter. The Waste Mitigation Hierarchy will be considered as appropriate during the implementation of the works.
Environmental Ocean Health - Underwater Noise Policy 1	Proposals must take account of spatial distribution, temporal extent, and levels of impulsive and / or continuous sound (underwater noise) that may be generated and the potential for significant adverse impacts on marine fauna. Where the potential for significant impact on marine fauna from underwater noise is identified, a Noise Assessment Statement must be prepared by the proposer of development. The findings of the Noise Assessment Statement should demonstrably inform determination(s) related to the activity proposed and the carrying out of the activity itself. The content of the Noise Assessment Statement should be relevant to the particular circumstances and must include: • Demonstration of	See Section 5.7 - Given the predominantly small scale, overall nature and expected duration of The Proposed Survey Works, the survey activities will not have a significant impact on the background noise and vibration levels in the licence areas nor marine environment. The geotechnical survey works will be carried out in the dry and therefore will not result in underwater noise impacts. The survey team will ensure adherence to best practice noise suppression methods (e.g., using well-maintained survey plant and equipment).

Policy	Description	Discussion / Compliance
	compliance with applicable legal requirements, such as necessary assessment of proposals likely to have underwater noise implications, including but not limited to:	
	» Appropriate Assessment (AA);	
	» Environmental Impact Assessment (EIA); » Strategic Environmental Assessment (SEA);	
	» Specific response to 'strict protection' requirements of Article 12 of the Habitats Directive in relation to certain species listed in Annex IV of the Directive; and	
	» Species protected under the Wildlife Acts. • An assessment of the potential impact of the development or use on the affected species in terms of environmental sustainability;	
	 Demonstration that significant adverse impacts on marine fauna resulting from underwater noise will, in order of preference and in accordance with legal requirements be: 	
	a) avoided,	
	b) minimised, or	
	c) mitigated, or	
	d) if it is not possible to mitigate significant adverse impacts on marine fauna, the reasons for proceeding must be set out.	
	This policy should be included as part of statutory environmental assessments where such assessments require consideration of underwater noise.	
Environmental Ocean Health - Air Quality Policy 1	Proposals that support a reduction in air pollution should be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals must demonstrate consideration of their contribution to air pollution, both direct and cumulative.	See Section 5.6 - Best practice measures will be in place during The Proposed Survey Works to ensure that the works do not result in increased air pollution or increased emissions of greenhouse gases. Sampling and survey methods will follow best practise measures to avoid and minimise impacts to air quality. This includes the application of standard best practice measures such as turning off plant, machinery and survey vessel engines when not running.

Policy	Description	Discussion / Compliance
Environmental Ocean Health - Air Quality Policy 2	 Where proposals are likely to result in or facilitate an increase in air pollution, proposals should demonstrate that they will, in order of preference in accordance with legal requirements and standards: a) avoid, b) minimise, or c) mitigate air pollution 	As above. See Section 5.6 - Best practice measures will be in place during The Proposed Survey Works to ensure that the works do not result in increased air pollution or increased emissions of greenhouse gases.
Environmental Ocean Health - Climate Change Policy 1	 Proposals should demonstrate how they: avoid contribution to adverse changes to physical features of the coast; enhance, restore or recreate habitats that provide a flood defence or carbon sequestration ecosystem services where possible. Where potential significant adverse impacts upon habitats that provide a flood defence or carbon sequestration ecosystem services are identified, these must be in order of preference and in accordance with legal requirements: a) avoided, b) minimised, c) mitigated, d) if it is not possible to mitigate significant adverse impacts, the reasons for proceeding must be set out. This policy should be included as part of statutory environmental assessments where such assessments are required. 	As this application is for temporary Survey Works only, the surveys will not affect the physical features of the coastline or habitats providing flood defence/carbon sequestration and will not affect this marine policy.
Environmental Ocean Health - Climate Change Policy 2	 For the lifetime of the proposal, the following climate change matters must be demonstrated: estimation of likely generation of greenhouse gas emissions, both direct and indirect; measures to support reductions in greenhouse gas emissions where possible; 	As this application is for temporary Survey Works only, the surveys will not affect the emission of greenhouse gases or climate change and will not affect this marine policy.

Policy	Description	Discussion / Compliance
	 likely impact of climate change effects upon the proposal from factors including but not limited to: sea level rise, ocean acidification, changing weather patterns; 	
	 measures incorporated to enable adaptation climate change effects; 	
	 likely impact upon climate change adaptation measures adopted in the coastal area relevant to the proposal and/or adaptation measures adopted by adjacent activities; 	
	 where likely impact upon climate change adaptation measures in the coastal area relevant to the proposal and/or adaptation measures adopted by adjacent activities is identified, these impacts must be in order of preference and in accordance with legal requirements: 	
	a) avoided,	
	b) minimised,	
	c) mitigated,	
	d) if it is not possible to mitigate significant adverse impacts, the reasons for proceeding must be set out.	
Economic Thriving Maritime Economy - Co- existence Policy 1	Proposals should demonstrate that they have considered how to optimise the use of space, including through consideration of opportunities for co-existence and co-operation with other activities, enhancing other activities where appropriate.	
	If proposals cannot avoid significant adverse impacts (including displacement) on other activities they must, in order of preference:	The short-term nature of The Proposed Survey Works will not act in combination nor compromise other activities.
	a) minimise significant adverse impacts,	
	 b) mitigate significant adverse impacts, or c) if it is not possible to mitigate significant adverse impacts, proposals should set out the reasons for proceeding 	

Policy	Description	Discussion / Compliance
Economic Thriving Maritime Economy - Infrastructure Policy 1	Appropriate land-based infrastructure which facilitates marine activity (and vice versa) should be supported. Proposals for appropriate infrastructure that facilitates the diversification or regeneration of marine industries should be supported.	The Proposed Survey Works will not compromise the objectives to support new developments nor compromise the provision of infrastructure for marine industries.
Social Engagement With the Sea - Access Policy 1	 Proposals, including in relation to tourism and recreation, should demonstrate that they will, in order of preference: a) avoid, b) minimise, or c) mitigate significant adverse impacts on public access. 	The coastline of the licence areas is important for providing outdoor recreation. The small scale nature of The Proposed Survey Works will not compromise opportunities for tourism and recreation around the coastline. During The Proposed Survey Works, safe access to public areas including beaches will be maintained whilst the works are being undertaken. The only Blue Flag Beach affected by the geotechnical works is Seapoint where some sediment sampling is proposed by hand. This will not affect recreational use of the beach.
Social Engagement With the Sea - Access Policy 2	Proposals demonstrating appropriate enhanced and inclusive public access to and within the maritime area, and that consider the future provision of services for tourism and recreation activities, should be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF.	As above
Social Engagement With the Sea - Employment Policy 1	 Proposals should demonstrate contribution to a net increase in marine related employment in Ireland, particularly where the proposals are. in line with the skills available in Irish coastal communities adjacent to the maritime area, improve the sustainable use of natural resources, diversify skills to enable employment in emerging industries. 	The Proposed Survey Works will have no impact on economic growth or marine related employment but will help to support the management of natural resources through research and the provision of environmentally significant information.
Social Engagement With the Sea -	Proposals that demonstrate they will contribute to enhancing the significance of heritage assets will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the	See Section 5.9 – The Proposed Survey Works will avoid known heritage assets.

Policy	Description	Discussion / Compliance
Heritage Assets Policy 1	policies and objectives of this NMPF. Proposals unable to contribute to enhancing the significance of heritage assets will only be supported if they demonstrate that they will, in order of preference:	
	a) avoid,	
	b) minimise, or	
	c) mitigate	
	harm to the significance of heritage assets, and	
	d) if it is not possible, to mitigate harm, then the public benefits for proceeding with the proposal must outweigh the harm to the significance of the heritage assets. (see definition of 'Public Benefits' in the Glossary	
Social Engagement With the Sea - Rural Coastal and Island Communities Policy 1	Proposals contributing to access, communications, energy self- sufficiency or sustainability of rural coastal and / or island communities should be supported. Proposals should ideally be inclusive of continual education, skills development and training in marine sectors, thus improving the sustainability, social benefits and economic resilience of rural and island communities.	The Proposed Survey Works will be short term temporary works and so will have no long- term impacts on rural coastal or island communities.
	Proposals should demonstrate how the likely significant impacts of a development on the seascape and landscape of an area have been considered. Proposals will only be supported if they demonstrate that they, in order of preference:	
Social Engagement	a) avoid,	
With the Sea -	b) minimise, or	See Section 5.8 - The Proposed Survey Works are not being carried out within a designated
Seascape and Landscape Policy 1	c) mitigate	adverselv impact on the landscape/seascape character and visual resource of the coastline.
	significant adverse impacts on the seascape and landscape of the area.	
	d) If it is not possible to mitigate significant adverse impacts, proposals must set out the reasons for proceeding.	
	This policy should be included as part of statutory environmental assessments.	

Policy	Description	Discussion / Compliance
Social	Proposals that enhance or promote social benefits should be supported. Proposals unable to enhance or promote social benefits should demonstrate that they will, in order of preference:	
Engagement With the Sea -	a) minimise, or	The Proposed Survey Works will not enhance or promote social benefits nor will adversely
Social Benefits	b) mitigate	affect or displace other existing or authorised activities.
Policy 1	significant adverse impacts which result in the displacement of other existing or authorised (but yet to be implemented) activities that generate social benefits.	
Social Engagement With the Sea - Social Benefits Policy 2	Proposals that increase the understanding and enjoyment of the marine environment (including its natural, historic and social value), or that promote conservation management and increased education and skills, should be supported.	The Proposed Survey Works support this policy and are proposed to increase our understanding of the marine environment within the licence areas.
Social Engagement With the Sea - Transboundary Policy 1	Proposals that have transboundary impacts beyond the maritime area, on either the terrestrial environment or neighbouring international jurisdictions, must show evidence of consultation with the relevant public authorities, including terrestrial planning authorities and other country authorities. Proposals should consider transboundary impacts throughout the lifetime of the proposed activity.	There are no transboundary works proposed and therefore there is no impact.

National Marine Planning Framework (NMPF) and Marine Map Based Objectives (MMBOs) per Licence Area

NMPF MMBO Objective	Relevant Licence Area
	Licence Area A
Blue Flag beaches	Licence Area C
	Licence Area D
Bottlenose Dolphin Range	All Licence Areas
Coastal Built Heritage Sites	All Licence Areas

NMPF MMBO Objective	Relevant Licence Area
	Licence Area B
Coastal type – Broad Estuarine Bays and Complex Low Plateau and Cliff Coastline	Licence Area C
	Licence Area D
Coastal type – Modified Historic Urban Bay	Licence Area A
Common Dolphin Range	All Licence Areas
Grey Seal Distribution	All Licence Areas
Harbour Seal Distribution	All Licence Areas
Leatherback Turtle Distribution	All Licence Areas
Leatherback Turtle Range	All Licence Areas
Limits of Harbours	Licence Area A
	Licence Area B
SAC	All Licence Areas
	Licence Area A
Sea Cliff	Licence Area C
	Licence Area D
	Licence Area A
Seabird Breeding Distribution – Kittiwake	Licence Area C
	Licence Area D
	Licence Area B
Shipwrecks in Irish waters	Licence Area D
SPA	All Licence Areas
LINESCO Global Geoparks and Biospheres	Licence Area A
	Licence Area B

Descrir	ntion of Nat	ional Marine	Planning	Framework (NMPF)	and Marine S	natially	Specific	Policy ()	biectives (SSPOs)	ner Licence Area
		ionac mannie	i canning	i function (, and marine 5	paciacy	Specific	i oucy o	ojecuves (551 057	per Licence / licu

NMPF SSPO Objective	Description	Relevant Licence Area			
	Proposals that may have significant adverse impacts on access for existing fishing activities, must demonstrate that they will, in order of preference:				
	 Avoid; 				
Fisheries	 Minimise; or 	Licence Area B			
Policy 1	Mitigate such impacts.	Licence Area C			
	If it is not possible to mitigate significant adverse impacts on fishing activity, the public benefits for proceeding with the proposal that outweigh the significant adverse impacts on existing fishing activity must be demonstrated				
	Proposals, regardless of the type of activity they relate to, enhancing essential fish habitat, including spawning, nursery and feeding grounds, and migratory routes should be supported. If proposals cannot enhance essential fish habitat, they must demonstrate that they will, in order of preference:	Licence Area A			
Fishorios	a) avoid,				
Policy 5	b) minimise,				
rolley 5	c) mitigate significant adverse impact on essential fish habitat, including spawning, nursery and feeding grounds, and migration routes.				
	d) If it is not possible to mitigate significant adverse impact on essential fish habitat, proposals must set out the reasons for proceeding.				
	Proposals that demonstrate they will contribute to enhancing the significance of heritage assets will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of the NMPF. Proposals unable to contribute to enhancing the significance of heritage assets will only be supported if they demonstrate that they will, in order of preference:	All Licence Areas			
Heritage Assets	a) Avoid;				
Policy 1	b) Minimise; or				
	c) Mitigate harm to the significance of heritage assets; and				
	d) If it is not possible, to mitigate harm, then the public benefits for proceeding with the proposal must outweigh the harm to the				
	significance of the heritage assets.				

NMPF SSPO Objective	Description	Relevant Licence Area			
	Proposals within ports limits, beside or in the vicinity of ports, and / or that impact upon the main routes of significance to a port, must demonstrate within applications that they have:				
	Been informed by consultation at pre-application stage or earlier with the relevant port authority;				
Ports, Harbours and Shipping	Have carried out a navigational risk assessment including an analysis of maritime traffic in the area; and	Licence Area A Licence Area D			
Policy 4	Have consulted Department of Transport, [Main Survey Office] MSO and Commissioners of Irish Lights.				
	Applicants must continue to engage parties identified in pre-application processes as appropriate during the decision-making process.				
	Proposals supporting the objectives of protected marine sites should be supported and:				
Protected Marine Sites	Be informed by appropriate guidance; and	All Licence Areas			
Policy 2	Must demonstrate that they are in accordance with legal requirements, including statutory advice provided by authorities relevant to protected marine sites.				

Appendix D: Figures

Appendix D.1: Licence Areas








Appendix D.2: Licence Area Overview



Appendix D.3: Licence Areas with European Sites





Appendix D.4: Licence Area A Geotechnical and Geophysical Survey Works





FIGURE 5 Legend MARA Licence Area Area A Bathymetry Surveys oth Dubi SHD 18 RH DA Jacobs A larnród Éireann CT LEVE NEWTON Site Excetion Plan with ed Offshore Survey AD (Sheet 1 of 4) For Review and Comment Scate (BA) Clart No. inity No. 7694-XX-P2-DWG-EV-JAC-0003 inspright 2031 Jacobs Engineering behand Chukad. The s (125, 345/1, 187.3

Appendix D.5: Licence Areas A-D Bathymetric Surveys









Appendix D.6: Environmental Figures







