DEEPSEA
Fibre Networks Ltd
Specialists in Sub-Sea Cable Systems

PISCES Telecoms Cable System

APPLICATION FOR MARITIME USAGE LICENCE

FOR MARINE SURVEY & SITE INVESTIGATION WORKS AT BALLYLOUGHANE, COUNTY GALWAY & ATLANTIC OCEAN

REF: LIC230024

Assessment of Impacts on the Maritime Usage (AIMU) Report

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1.0 INTRODUCTION

1.1 This Assessment of Impact on the Maritime Usage (AIMU) Report has been prepared by McMahon Design and Management Ltd on behalf of the applicant, Deep Sea Fibre Networks Ltd., and forms part of an application for a Maritime Usage Licence for Marine Survey and Site Investigations for a cable route for the PISCES subsea telecoms cable system from a landfall at Ballyloughane County Galway traversing the Irish Maritime Area to the south west of Ireland.

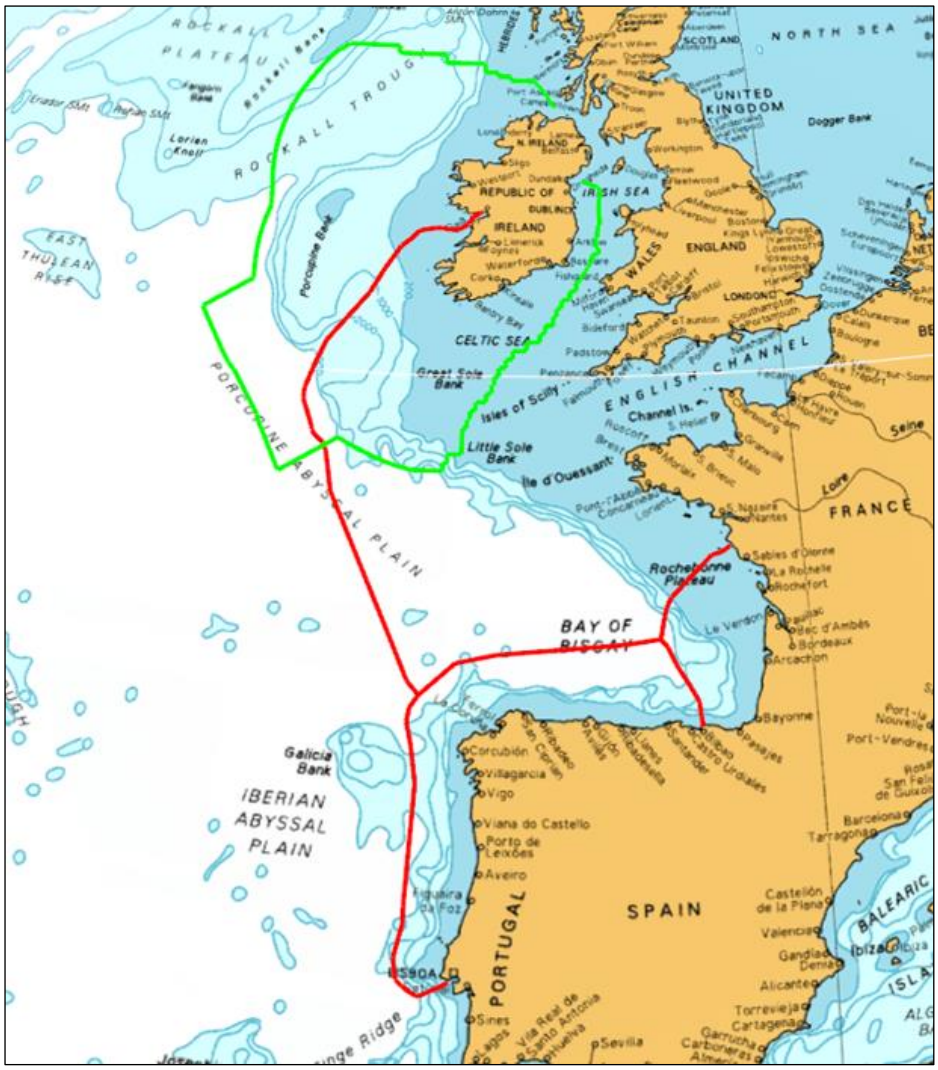

Figure 1: The PISCES Telecoms Cable System and IRL Maritime Area

1.2 The applicant plans to investigate the feasibility of constructing a new subsea telecoms cable system, PISCES, linking Ireland from a landfall at Ballyloughane to landfalls in France, Spain and Portugal as shown in Figure 1 above.

1.3 This AIMU report is produced in support of an application for a marine survey and site investigations licence under the Maritime Area Planning Act 2021 and should not be used for any other purpose apart from that expressly stated in this document.

2.0 PROJECT DESCRIPTION

2.1 The License Application Area begins at a landfall at Ballyloughane Strand in Galway Bay, traverses Galway Bay and through the South Sound to the 12nm limit, continuing to the west offshore of the County Clare coast and onwards in a southwest to south direction until it crosses the continental shelf and leaves the Irish Maritime Area (Figure 2). The survey corridor has total length of approx. 710km and a total area of 3,607km^2 within the Maritime Area. A cable route corridor of between 250m to 12,000m in width will be surveyed within the licence application area.

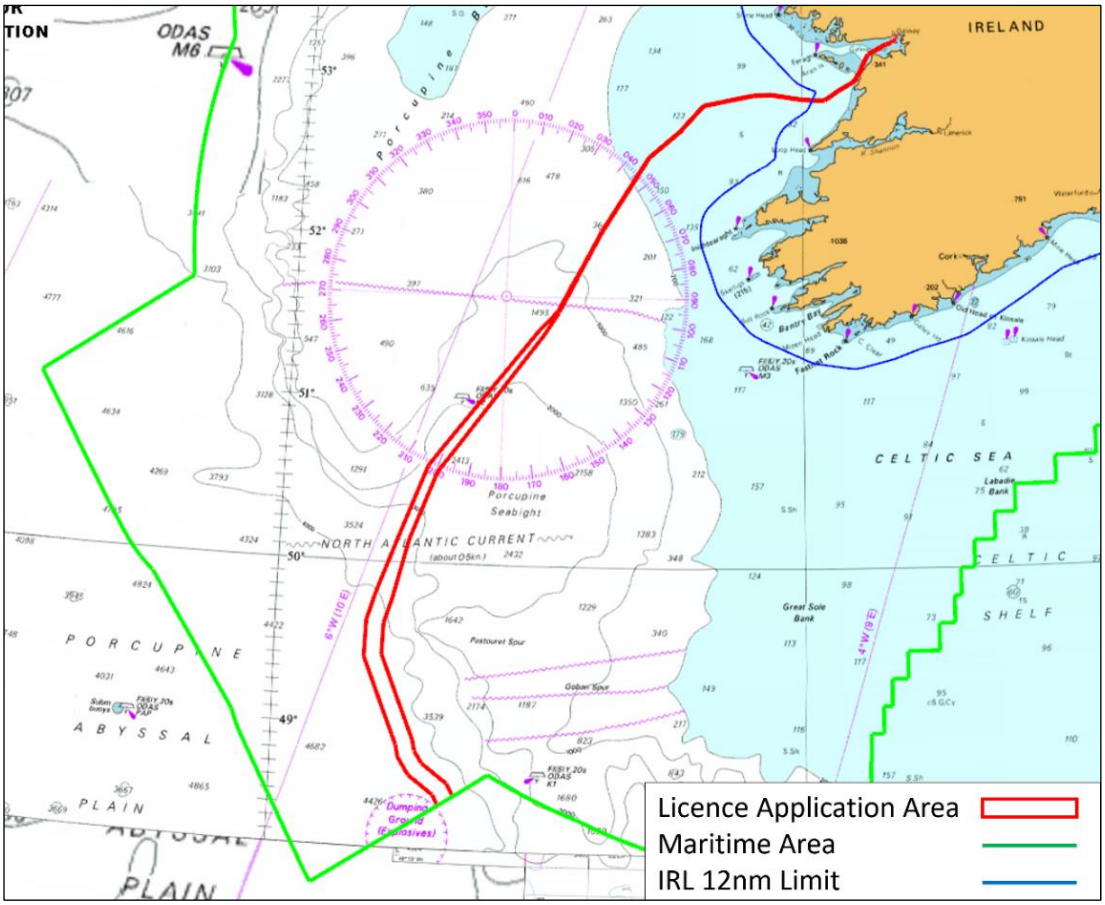

Figure 2: Survey Licence Application Area

2.2 The Licence Application Area covers the landfall at Ballyloughane, Co. Galway with a survey corridor traversing Galway Bay. The general location of the landfall is shown in Figure 3. A more detailed overview of the route and landfall is provided in the Works Methodology report.

Figure 3. Landfall at Ballyloughane Strand, Renmore, Co Galway

2.3 The principal objective of the Marine Survey & Site Investigations is to ascertain a feasible and safe route for cable system design, deployment, survivability, and subsequent maintenance with due regard for environmental and ecological considerations. The survey will also enable decisions to be made on cable armouring and burial. The survey will identify the necessary water depths, route features, seabed obstructions, seabed geomorphology and cable hazards and will also provide detailed information on the seabed sediment, subsurface stratigraphy and upper sediment layers to support cable route and installation engineering. The site investigations will provide "ground-truthing" of the geophysical data along the route.

2.4 The objectives of the marine geophysical survey shall be:

- To collect up to date high-resolution bathymetry along a 250 – 12,000m wide cable corridor within the License Application Area.
- To obtain information on the seabed surface (type, texture, variability, etc.) and to identify any seabed features that may be of interest.
- Identify any shallow geohazards and man-made hazards (including but not limited to outcropping rock, boulders, shallow gas, wrecks, debris etc.).
- Determine the stratigraphy of the upper layers of the seabed along the cable route and quantify the variability in the lateral and vertical extents to depths of 2-5m.
- Identify any seabed obstructions.
- Identify sensitive marine habitats which will need to be avoided during site investigations and sampling.

2.5 The works will be carried out predominantly by remote sensing seabed mapping techniques (geophysical survey) with some selective sampling of the upper layers of the seabed (geotechnical survey). Once the results of the survey are obtained and analysed a preferred route corridor will be determined, design and method statements will be developed, and a final Route Position List (RPL) will be defined as part of a further submission for a Licence for installation works.

2.6 There are no construction, operation, maintenance or decommissioning aspects relating to this phase of the project.

2.7 The survey works will be carried out in accordance with the European Union (Eu) Environmental Impact Assessment (EIA) Directive, Water Framework Directive (WFD), Marine Strategy Framework Directive (MSFD) and Ireland's National Marine Planning Framework (NMPF).

Surveys

2.8 The surveys to be carried out within the Licence Area are:

- Marine Geophysical Survey
- Marine Site Investigations and Seabed Sampling
- Underwater Video Survey
- Archaeology Survey

2.9 The survey works will adhere to the MSFD by remaining within the bounds of each of the 11 Descriptors in the Directive.

2.10 Table 1 below summarises the requirements and activities for the cable route survey. Further details are provided in the Works Methodology.

Table 1: Planned Surveys

Survey Area	Survey Requirements
Landfall Beach Survey	Non-intrusive topographic (GPS Rover, Total Station or UAV Aerial Drone) and geophysical (Ground Penetrating Radar (GPR), Electrical Resistivity Tomography (ERT), metal detector) survey of the beach along the line of the proposed cable route at each landfall is required to the low water mark.
Landfall Beach Survey	Site Investigations may include 3 Trial Pits on the beach (target depth 2.5m), Bar probes on the beach at 10m spacing (approx. 8 to 10) and Bar probes from the Low Water Line to the 3m water depth contour at 10m spacing. (approx. 8 to 10).
Landfall Beach Survey	Ecological and Archaeological walk-over survey on beach and intertidal to Low Water Mark.
Inshore Marine Survey	Geophysical survey with a small craft or Unmanned Survey Vessel (USV) using Multibeam Echosounder (MBES), side scan sonar, marine magnetometer, and sub-bottom profile equipment.
Offshore Marine Survey	Geophysical survey with primary survey vessel using Multibeam Echosounder (MBES), side scan sonar, marine magnetometer, and sub-bottom profile equipment.
Offshore Marine Survey	Site Investigations including: Cone Penetration Tests - up to 85 along the route corridor to a target depth of 2 - 3m.
Offshore Marine Survey	Site Investigations including: Grab Samples - up to 11 along the route corridor, Gravity Cores / Vibrocores - up to 35 along the route corridor to a target depth of 3m.
Marine Licence Application Area	Underwater Video Survey as required.

Landfall Beach Survey

2.11 A non-intrusive topographic and geophysical survey of the beach along the line of the proposed cable route at each landfall will be carried out to the low water mark.

2.12 The topographical survey would typically be carried out by GPS Rover, Total Station or UAV Aerial Drone using photogrammetry or LiDAR techniques. The terrestrial geophysical survey will comprise remote sensing techniques such as Ground Penetrating Radar or Electrical Resistivity Tomography (ERT) to establish subsurface features and depth to bedrock and magnetometer or handheld marine metal detector to locate buried ferrous objects.

2.13 Intertidal and beach surveys (walkover survey) will be carried out on the beach by the project ecologist and the project archaeologist.

2.14 Landfall Site Investigations will be undertaken on the beach to establish the depth and nature of the sediment and depth to bedrock. The focus of the site investigations will be on the upper layers of sediment to assess the feasibility of cable burial and installation techniques. The following may be undertaken at each landfall:

- 3 Trial Pits on the beach (target depth 2.5m).
- Bar probes on the beach at 10m spacing (approx. 8 to 10).
- Bar probes from the Low Water Line to the 3m water depth contour at 10m spacing. (approx. 8 to 10).

Marine Geophysical Survey

2.15 Marine Geophysical Survey will be carried out from the low water mark at the landfall with a small shallow draft survey vessel, primary survey vessel or Unmanned Survey Vessel (USV) using Multibeam Echosounder (MBES), sidescan sonar, marine magnetometer and sub-bottom profile equipment. Sub-bottom profile equipment will be able to discern the nature and density of the upper 3 metres of seabed and will be used on a non-interfering basis with other sounding systems. A minimum of one survey lines, based upon the water depth, will be run to obtain the required data coverage as indicated in Table 2.

Table 2: Marine Geophysical Survey

Survey Area	Depth Range	Survey Corridor Width	Min. # of Lines	Min. Overlap	Typical Survey Speed
Inshore	0m to 15m	250m	7	SSS: 100% MBES Bathy: 20%	4 knots
Offshore	15m to 100m	500m	7	SSS: 100% MBES Bathy: 20%	4 knots
Offshore	100m to 1,000m	500m	5	SSS: 100% MBES Bathy: 20%	4 knots
Offshore	1,000m to 1,500m	1,000m	7	SSS: 100% MBES Bathy: 20%	4 knots
Offshore	> 1,500m	3 x WD Max. approx. 12,000m	1	NA	4 knots

Marine Site Investigations and Seabed Sampling

2.16 The purpose of the marine site investigations and seabed sampling is to evaluate the physical properties of the superficial seabed sediments along the cable route. These methodologies will ensure that a full understanding of the subsurface is achieved, focussing on the upper 3 metres of sediment to subsequently develop a cable burial assessment, installation and burial plan.

2.17 Site investigations and seabed sampling will only be undertaken up to a limit of 1,500m water depth and the scheduled site investigations and seabed sampling within Maritime Area limits will comprise of the following techniques:

- Up to 85 CPTs (2m to 3m deep at approximately 4km spacing along the route to a limit of 1,500m water depth)
- Up to 35 Gravity Cores / Vibrocores (3m deep at approximately 10km spacing along the route to a limit of 1,500m water depth)
- Up to 11 Grab Samples (at approximately 1km spacing up to 15m water depth)

2.18 Indicative locations for the relevant site investigation activities (Gravity or Vibrocore and CPT's) are shown in Figures 4-7. Typically, individual sampling positions will be determined following initial interpretation of the geophysical survey data. The positioning of individual site investigation locations will also take into consideration environmental constraints such as the position of sensitive habitats or archaeological features.

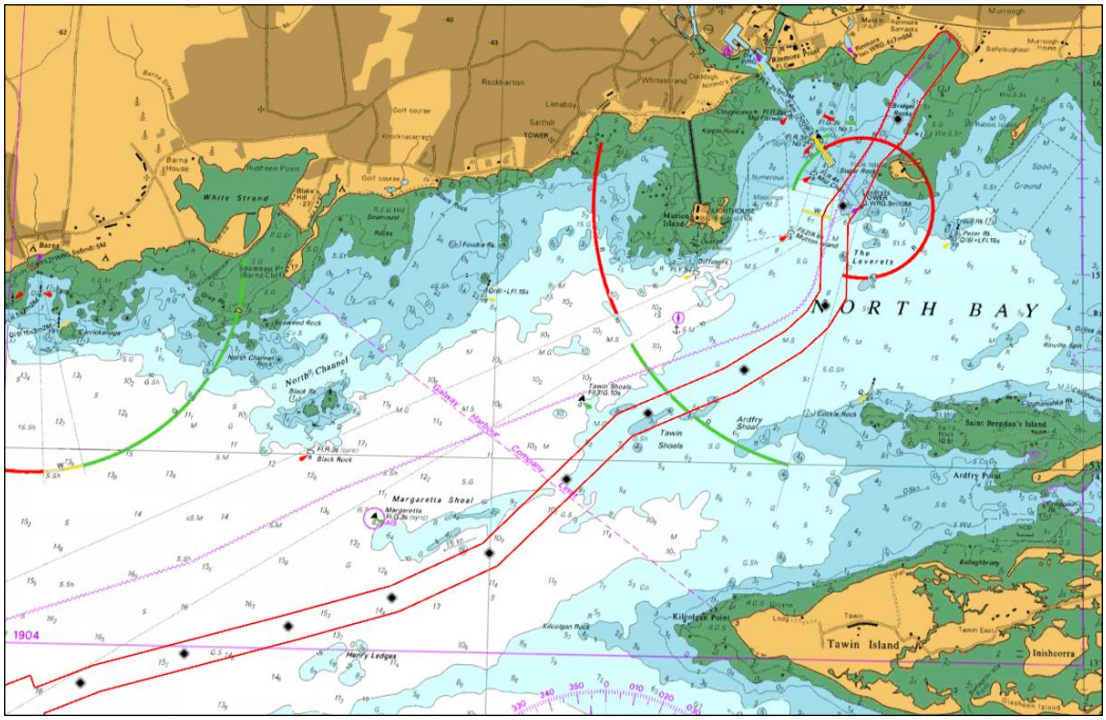

Figure 4. Indicative Grab Sample Locations (11no. to 15m water depth)

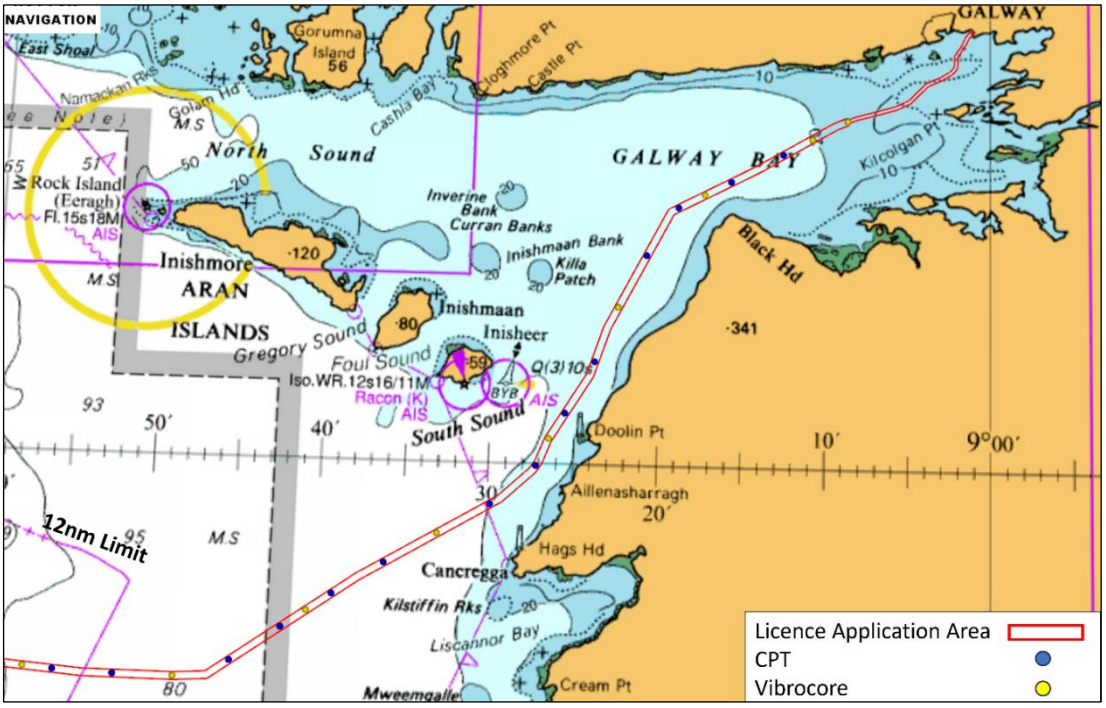

Figure 5. Indicative CPT and Vibrocore Locations (1 of 3)

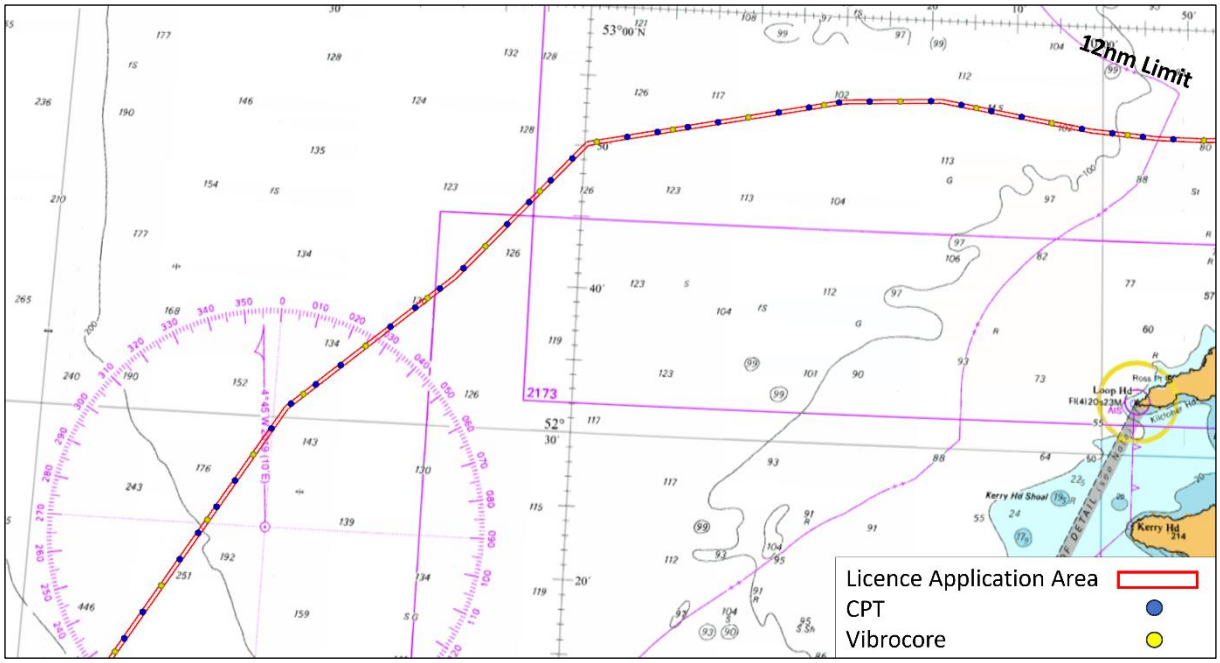

Figure 6. Indicative CPT and Vibrocore Locations continued (2 of 3)

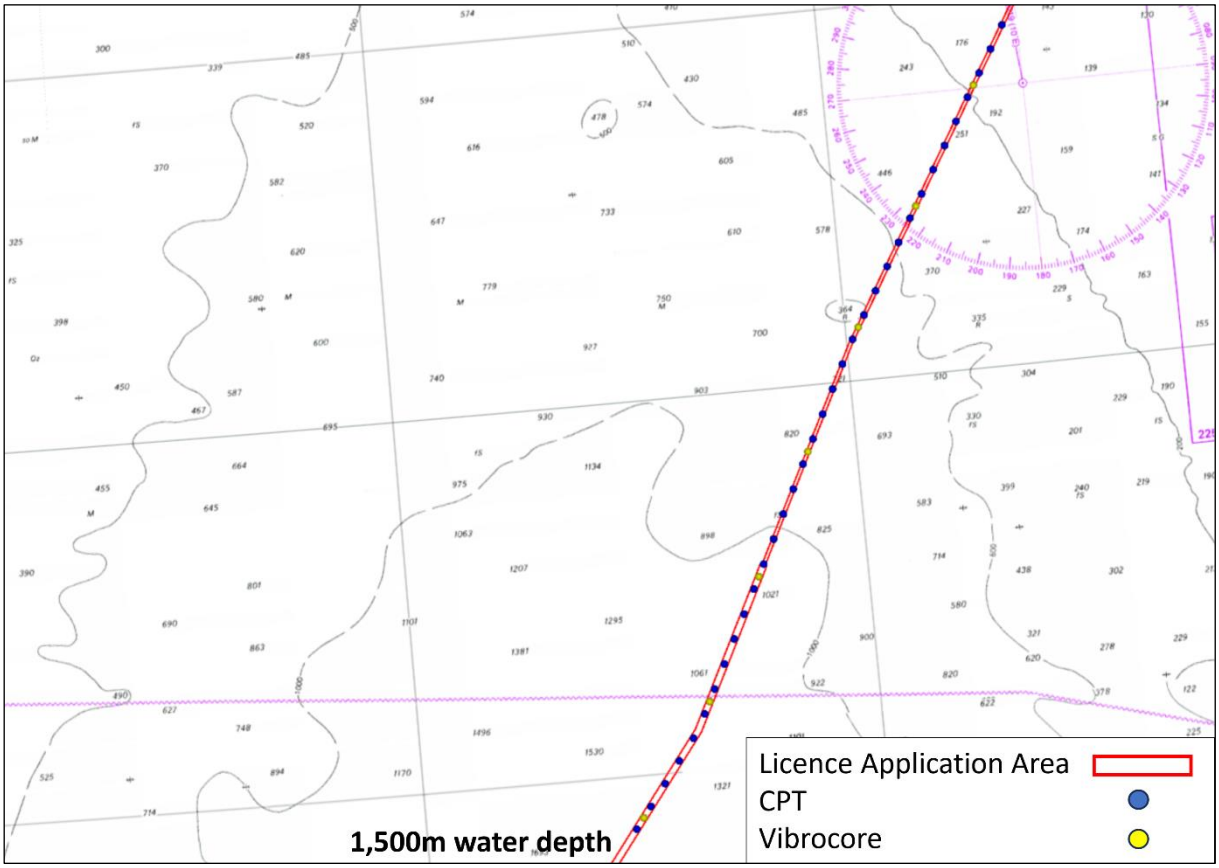

Figure 7. Indicative CPT and Vibrocore Locations continued (3 of 3)

Underwater Video Survey

2.19 Underwater video camera system may be used for inspections of the seabed to investigate seabed obstructions, marine archaeology or benthic habitats. An underwater drop-down camera system or similar may be used in a series of video transects which would be georeferenced and later mapped in GIS.

Archaeological Survey

2.20 The survey specification takes into account archaeological data acquisition to enable professional archaeological interpretation and analysis of data. The survey equipment deployed and data acquisition and processing shall comply with the requirements of the National Monuments Service, Underwater Archaeology Unit.

2.21 All archaeological assessments will be carried out under by a suitably qualified and experienced marine archaeologist to determine the location of all known archaeological features in advance of the intrusive site investigations and seabed sampling. The data collected will be used to support the archaeological assessments.

Survey Vessel Requirements

2.22 Offshore survey vessels are typically between 15m and 75m in length with potential for smaller vessels to be used in nearshore / shallow water areas. Offshore survey vessel typically have an endurance of approximately 14 to 28 days. A vessel with a shallow water draft will be utilised for the inshore survey area. An unmanned surface vehicle (USV) and/or autonomous surface vehicle (ASV) may also be used for the geophysical survey. The survey vessels may use a local port for personnel / equipment mobilisation, bunkering and provisioning.

2.23 All survey vessels will be fit for purpose, will possess all relevant classification certificates and capable of safely undertaking the survey work required. The primary survey vessel will use dynamic positioning for accurate navigation and station keeping. A deck mounted crane or A-frame will be utilised for equipment deployment and recovery. Health, safety, environment and welfare considerations will be a priority and will be actively managed during the course of the survey scopes of work. Appointed contractors will be required to comply with all legislation relevant to the activities within their scope of work.

2.24 The vessels will conform to the following minimum requirements as appropriate:

- Compliance with Safety of Life at Sea (SOLAS), International Maritime Organization (IMO) and national requirements for operating within Irish territorial waters.
- Station-keeping and sea keeping capabilities required to carry out the proposed survey operations safely;
- Calibrated equipment and spares with necessary tools for all specified works;

- Endurance (e.g. fuel, water, stores) to undertake the required survey works;
- Sufficient qualified staff to allow the survey operations to be carried out efficiently, (typically 24 hour continuous for offshore survey, 12 hour for nearshore survey); and
- Appropriate accommodation and crew welfare facilities.

2.25 Survey vessels will follow appropriate Biosecurity protocols and regulations such as the International Maritime Organisation (IMO) Guidelines for the control and management of ships' ballast water, to minimise the transfer of harmful aquatic organisms and pathogens.

Survey Duration

2.26 The intention is to commence the survey as soon as feasible following license award, taking into account survey vessel availability, the overall transatlantic cable route survey programme, seasonality and suitable weather windows. The exact mobilisation dates will not be known until the process of procuring a contractor and issue of the licence is complete. It is anticipated that the marine geophysical survey and site investigations activities within the licence application area will take less than 6 weeks in total and will be completed over a 6 month period.

2.27 The estimated time required to complete the cable route survey campaign activities is described in Table 3 below.

Table 3: Estimated Time and Duration of Survey Activities

Activity	Typical Time Period Required for Activity	Total Number of Site Investigation Locations	Total Time for Survey Activity
Inshore Geophysical Survey (to 15m WD)	2 to 3 days (weather and sea state dependent)	250 m cable route corridor	2 to 3 days (weather and sea state dependent)
Offshore Geophysical Survey (100m – 1,500m WD)	35 to 40 days (weather and sea state dependent)	500 - 1000 m cable route corridor	35 to 40 days (weather and sea state dependent)
Deep Water Geophysical Survey (>1,500m WD)	5 to 10 days (weather and sea state dependent)	4,500 – 12,000 m cable route corridor	5 to 10 days (weather and sea state dependent)
CPT	30 minutes - 2 hours in any one location	85	170 hours within total 50 days of Site Investigations campaign (weather and sea state dependent)
Gravity Corer	30 minutes - 2 hours in any one location	35	70 hours within total 50 days of Site Investigations campaign (weather and sea state dependent)
Vibro Corer	30 minutes - 2 hours in any one location	35	70 hours within total 50 days of Site Investigations campaign (weather and sea state dependent)
Grab Samples	20 minutes - 45 minutes in any one location	11	8 hours within total 50 days of Site Investigations campaign (weather and sea state dependent)

3.0 NEEDS & ALTERNATIVES

3.1 The overall objective of the PISCES project is to provide direct strategic telecommunications connectivity between Ireland and its fellow EU Member States through a subsea cable to France, Spain and Portugal. Ireland's telecommunications situation differs significantly from other EU Member States in that it has almost no direct backbone network connectivity with the rest of the EU with almost all connectivity through the UK. The PISCES project will address this shortfall with direct, high capacity, open access, scalable dark fibre availability directly to France, Spain and Portugal.

3.2 The need for the PISCES project has been recognised by the Irish government and by the European Union which has awarded the project two grants through the Connecting Europe Facility (CEF) digital stream which supports and catalyses investments in digital connectivity infrastructures of common European interest.

3.3 There are currently no feasible alternative projects foreseen that will address this specific issue.

3.4 Landfall Feasibility and Cable Route Studies have been completed to determine the landfall location and survey corridor. The planned marine survey and site investigation works subject to this application are necessary for the assessment of the proposed route. Feasibility of the cable installation and the final routing and design of the cable are dependent on the survey which allows for evaluation of the seabed conditions, depth, identification of any existing infrastructure, identification of any environmental or cultural heritage constraints, or any potential hazards and risks to the cable during the installation or throughout its lifespan.

3.5 There are no recognised alternatives to the proposed marine survey and site investigation works and the proposed survey route corridor is considered the most suitable.

4.0 PLANNING & DEVELOPMENT

Statement of Consistency with the National Marine Planning Framework (NMPF)

4.1 The NMPF details how marine-based human activities will interact with each other and the marine environment. It is the marine equivalent of the National Planning Framework. It enables the Irish Government to "direct decision makers, users and stakeholders towards strategic, plan-led and efficient use of our marine resources" (Department of Housing, Local Government and Heritage, 2021). It brings together the various EU Directives mentioned previously to set a clear direction for managing our seas. The survey work's adherence to EU Directives, coupled with the localised and temporary nature of the work, ensures that it will be consistent with the NMPF.

4.2 As stated in the Telecommunications chapter of the National Marine Planning Framework (March 2021), guaranteeing existing and future international telecommunications connectivity is critically important to support the future needs of society and enterprise in Ireland. The value of the digital economy in Ireland is estimated at €12.3bn or 6% of GDP and is expected to grow significantly over the coming years. In an increasingly interconnected world, continued investment in sustainable telecommunications connectivity will be critical to ensuring that Ireland can address digital related challenges, enabling citizens to participate and benefit fully from a more integrated digital single market, improving skills, reducing the digital divide, fostering and strengthening innovation, and providing better job opportunities.

4.3 Recent developments at European level, including an initiative led by the Portuguese presidency – the "European Data-Gateway Platforms Strategy" as part of "Shaping Europe's Digital Future" –outlines an increased ambition to further strengthen the international connectivity of the EU including in respect of telecommunications and subsea telecommunications connectivity. '2030 Digital Compass: The European way for the Digital Decade' also sets a vision, targets, and avenues for a successful digital transformation of Europe by 2030. Europe's digital leadership and global competitiveness is dependent on strong internal and external connectivity. In that regard, the Commission highlights the importance of improving connectivity with external partners including via subsea cables.

4.4 In March 2021, Minister Eamon Ryan, on behalf of Ireland, signed the Declaration on "European Data Gateways as a key element of the EU's Digital Decade." In doing so, Ireland joined 24 EU Member States, as well as Iceland and Norway, in committing to reinforcing digital connectivity between Europe and its global partners. The development of the new fibre optic cable system will support and enhance these policy objectives.

Statement of Consistency with the Marine Strategy Framework Directive

4.5 The Marine Strategy Framework Directive (MSFD) is European legislation, which aims to protect the marine environment. It requires the application of an ecosystem-based approach to the management of human activities, enabling a sustainable use of marine goods and services.

4.6 To implement the MSFD, Ireland is required to:

- Describe what they consider is a clean, healthy, and productive sea.
- Monitor and assess the quality of their seas against Good Environmental Status
- Ensure they take appropriate action by 2020 to maintain or achieve Good Environmental Status.

4.7 This process started in 2012, with a review every six years. Marine Strategy Framework Directive habitat mapping was consulted during the preparation of the Ecological Impact Assessment Report (EcIA) for this application.

4.8 Due to the temporary nature of the survey works, there will be no permanent or lasting change or development to the Licence Area, thus eliminating the need for a discussion of the construction, operations, maintenance, and decommissioning phases, as they will not be occurring during the survey works.

5.0 LAND & SOILS

5.1 Ballyloughane Strand is a shaley, sandy beach with a low stub wall protecting the footway which defines the land-sea boundary. Inland of the footway there is a grass strip which separates the footway from an end-on parking bay and a local road.

5.2 The bedrock around Galway Bay includes a wide range of igneous, sedimentary, and metamorphic rocks. The area encompasses the Carboniferous limestone upland of the Burren and the large, composite Galway granite batholith. A fault runs across the northern side of the bay.

5.3 The seabed substrate along the proposed survey area consists of mainly sand across the intertidal and nearshore zones. Sands and muddy sands are indicated within the survey corridor offshore, progressing to further areas of sands close to the IRL EEZ limits.

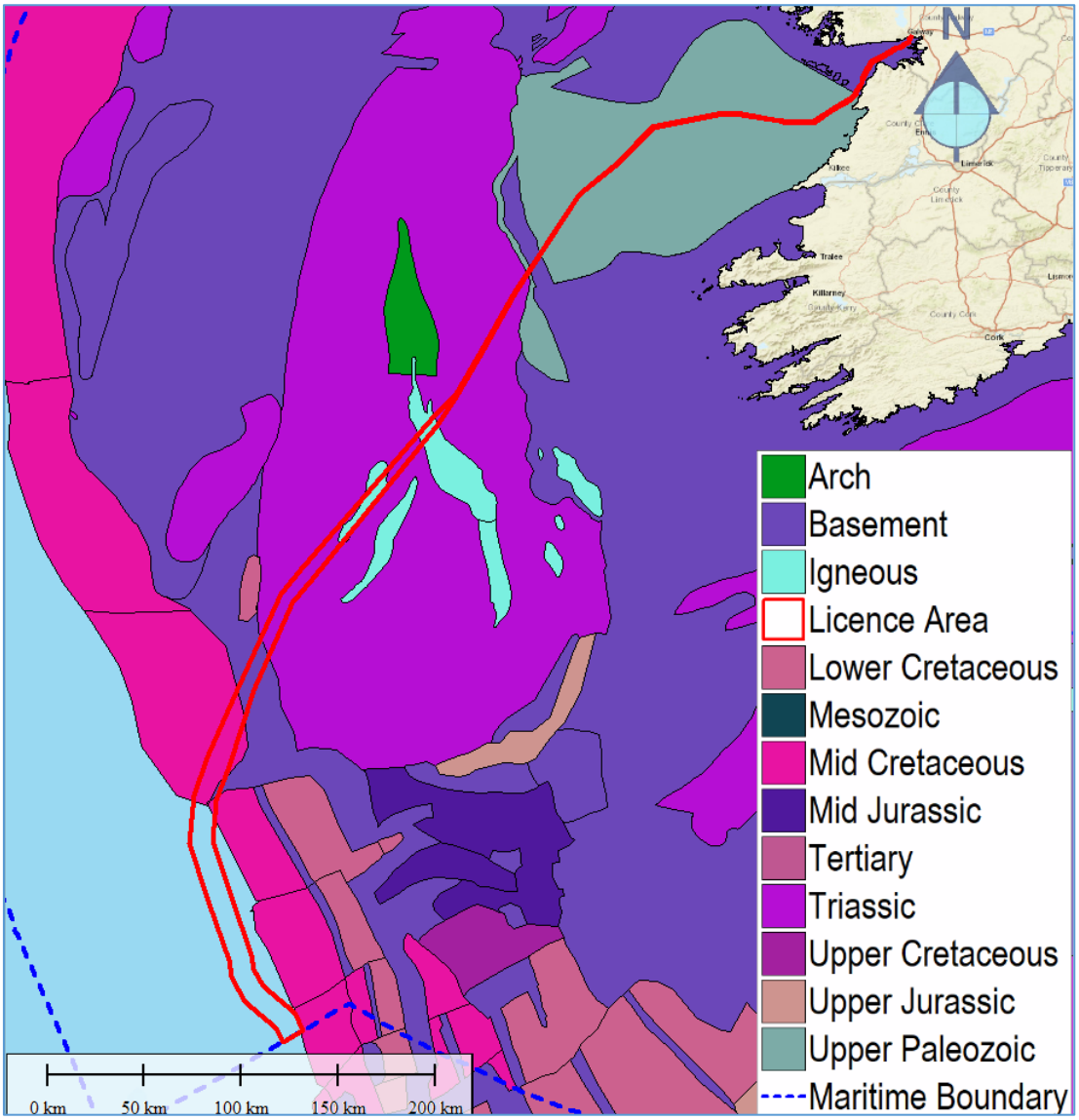

Figure 8. Geology of the Survey Corridor

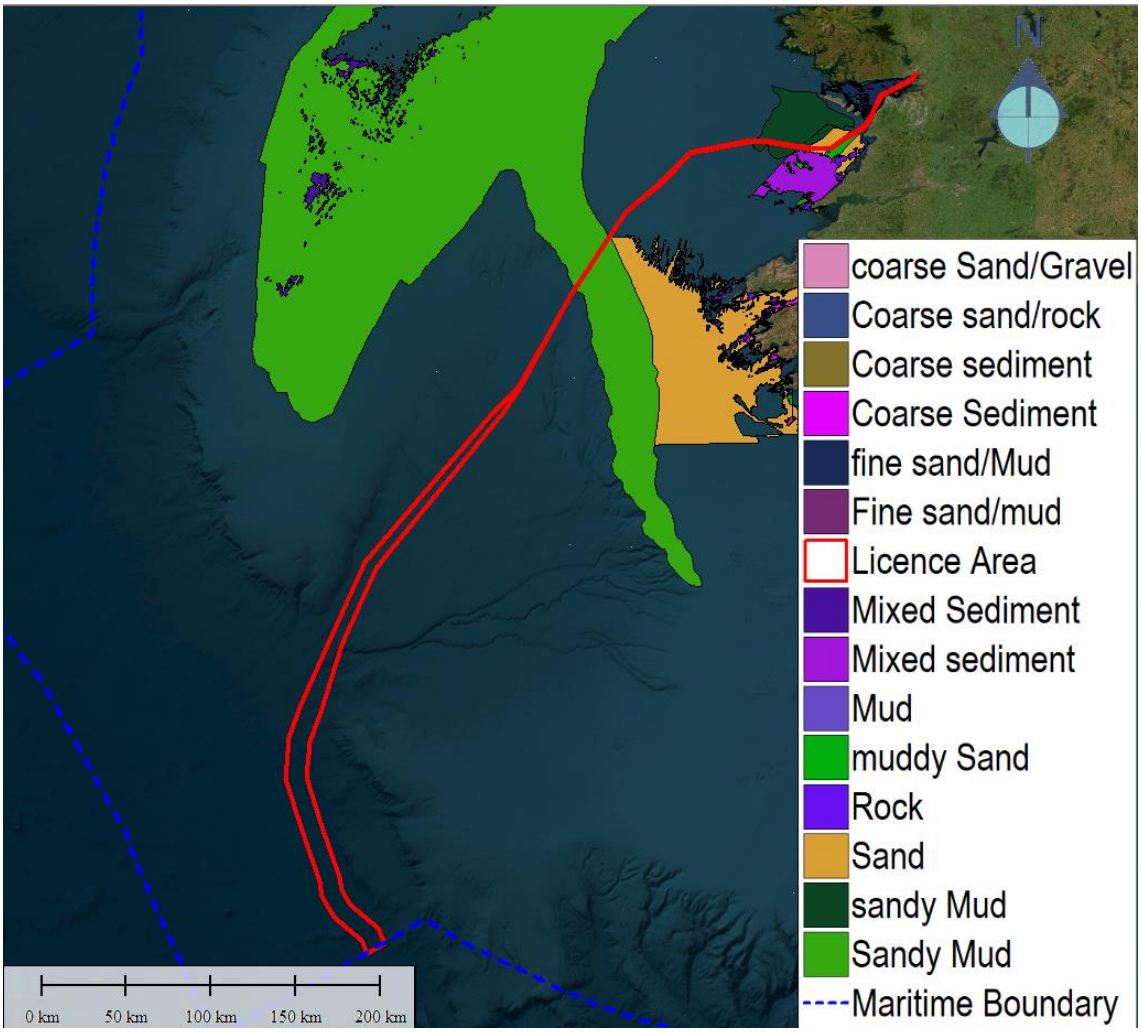

Figure 9. Indicative Seabed Sediments within the Survey Area

5.4 The seabed is regularly disturbed by natural processes. The cumulative volume of sediment collected in the grab samples and shallow cores is small. Any sediment disturbed or suspended by the sampling will settle almost immediately. Any trial pits on the beach will be backfilled immediately with the excavated material. Overall, the work relates to the marine geophysical survey, site investigations and landfall surveys. The survey is transient, of short duration, with reinstatement of any areas of seabed impacted by sampling completed naturally by tidal movements and currents. There will be no significant impact nor any significant effects on land and soils within the survey area because of the proposed survey activities.

6.0 WATER

6.1 The proximity of the proposed survey route corridor to designated conservation sites is assessed in the EcIA. Water bodies located proximate to the survey route corridor are shown in Figure 10 which is extracted from the EcIA.

6.2 There are no offshore SACs in proximity to any of the proposed survey works. The inshore coastal waterbodies through which the survey route corridor traverses are classed as unpolluted under the Water Framework Directive (WFD) (Figure 11).

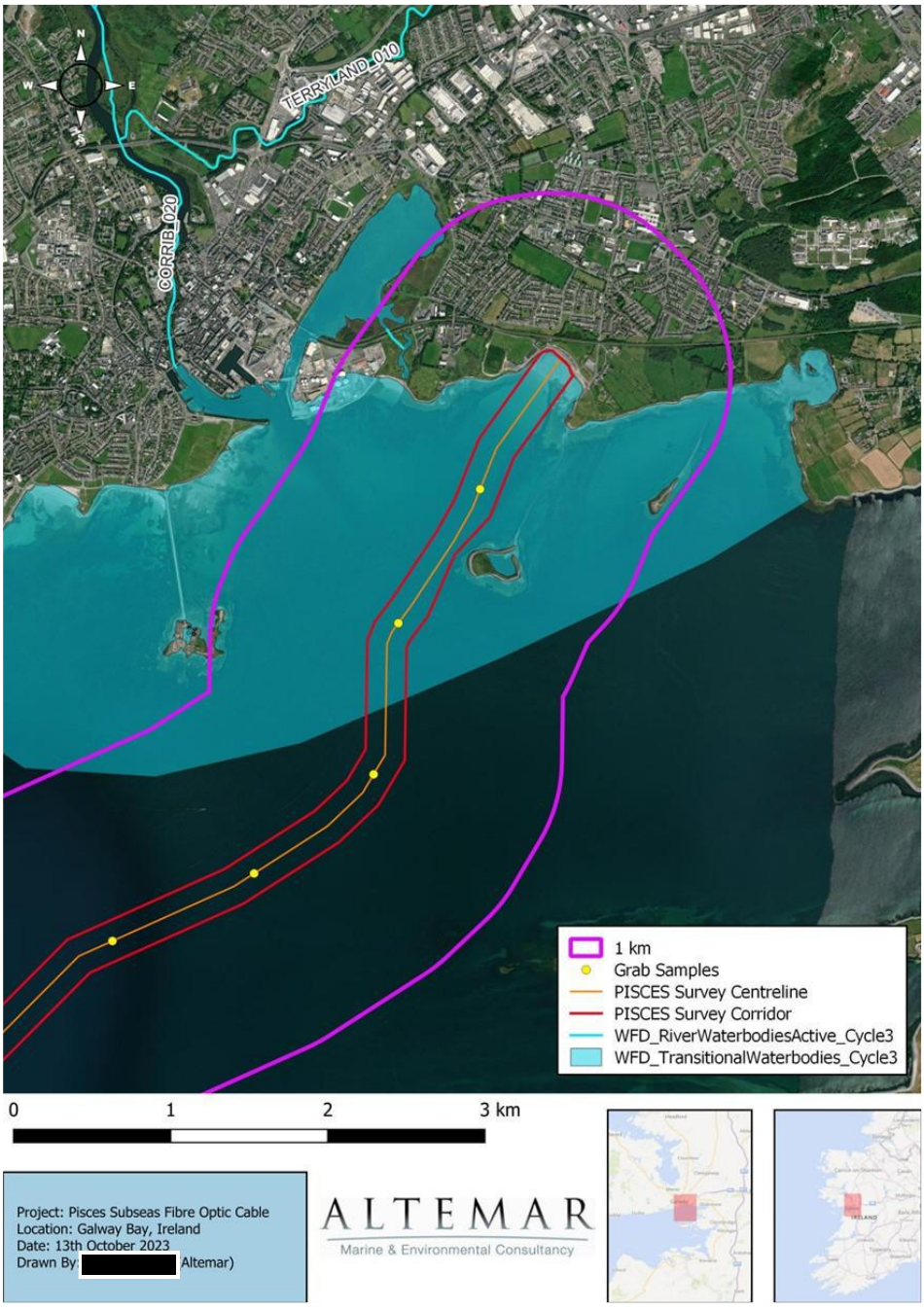

Figure 10. Waterbodies Proximate to the Proposed Survey Route Corridor

6.3 Refuelling of equipment, machinery or plant will not take place on the foreshore. All survey vessels will comply with the International Convention for the Prevention of Marine Pollution from Ships (MARPOL) as per best practice which will reduce the risk of contamination incidents or accidents to protect the water quality status of Galway Bay and the Atlantic in compliance with the Water Framework Directive.

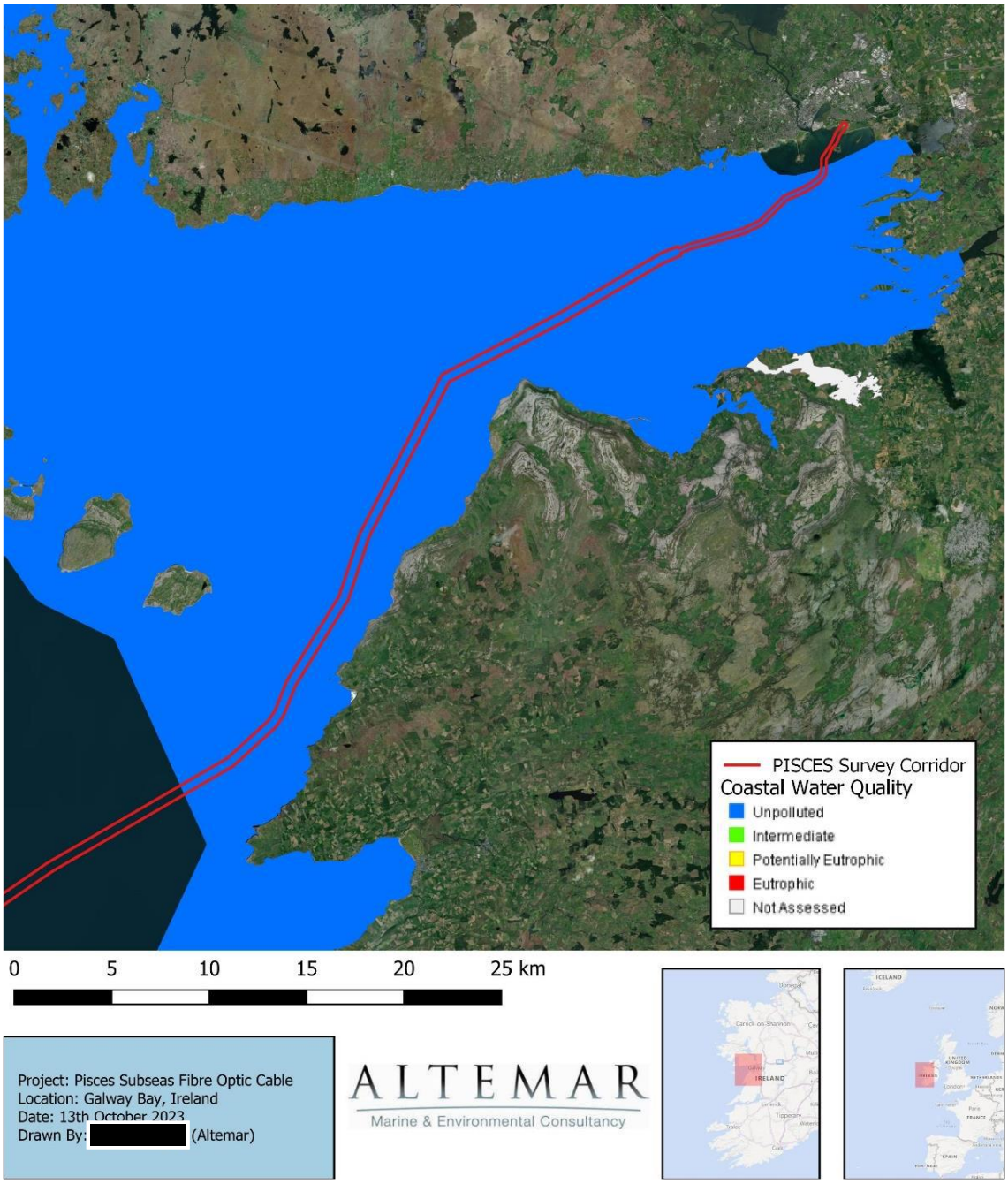

Figure 11. Coastal Waterbody Quality under the Water Framework Directive (WFD)

7.0 BIODIVERSITY

Biodiversity, Flora, and Fauna

7.1 Ecological field surveys at the landfall area were carried out on the 27th of October 2023, with field surveys having been previously conducted onsite on 6th February 2021, 27th February 2021, 13th June 2022, 11th November 2022. Observations on species were made at Low Water (0.7m). The purpose of the field surveys was to identify habitat types according to the Fossitt (2000)/ Habitats Directive habitats classification schemes and map their extent. The National Parks and Wildlife Service (NPWS) were consulted in relation to species and sites of conservation interest. Data of rare and threatened species were acquired from NPWS. The National Biological Data Centre records were consulted for species of conservation significance.

Birds

7.2 The proposed landfall is an important area for overwintering birds. Please see main NIS document for information on the species of importance in this area. The site was visited within and outside overwintering bird season. Bird species noted on site included black-headed gull (Larus ridibundus), little egret (Egretta garzetta), grey heron (Ardea cinerea) and pied wagtail (Motacilla alba yarrellii). A flock of Eurasian oystercatcher (Haematopus ostralegus) (~20) were noted in 2022.

Amphibians

7.3 The common frog (Rana temporaria) was not observed in the amenity grassland or surrounding terrestrial areas. NPWS records of rare and threatened species in addition to the NBDC sightings records were investigated and showed no records in proximity of the landfall or beach area. No streams or drainage ditches were observed in the terrestrial element of Ballyloughane Beach. No amphibians of conservation importance are recorded on NPWS data.

Terrestrial Mammals

7.4 No badger setts or evidence of terrestrial mammals of conservation importance were seen in the vicinity of the landfall area. Records of sightings of the badger, pine marten, otter and hedgehog were examined from the NBDC and NPWS rare and threatened species records showed no records in proximity of the landfall area. However, the conservation objectives supporting document highlights a 250m buffer from High Water as otter habitat within the SAC. Otters were not observed on site. Otter (Lutra lutra) may be present on site at periods of low human/canine presence.

Marine Mammals

7.5 Figure 12 shows all Marine Mammal sightings within the vicinity of the survey route corridor, with monthly activity trends, as recorded by the IWDG sightings scheme. Cetacean activity has been seen in the vicinity of the cable route corridor. Species seen in the area and along the survey route include Harbour porpoise (Phocoena phocoena), Orca (Orcinus orca), and Minke whale (balaenoptera acutorostrata).

7.6 Inner Galway Bay is an important site for harbour seals but, not for grey seals. It would also be expected that both grey and common seals could be present in the vicinity of the cable route survey as these species are features of interest in designated SACs located within these species' foraging range.

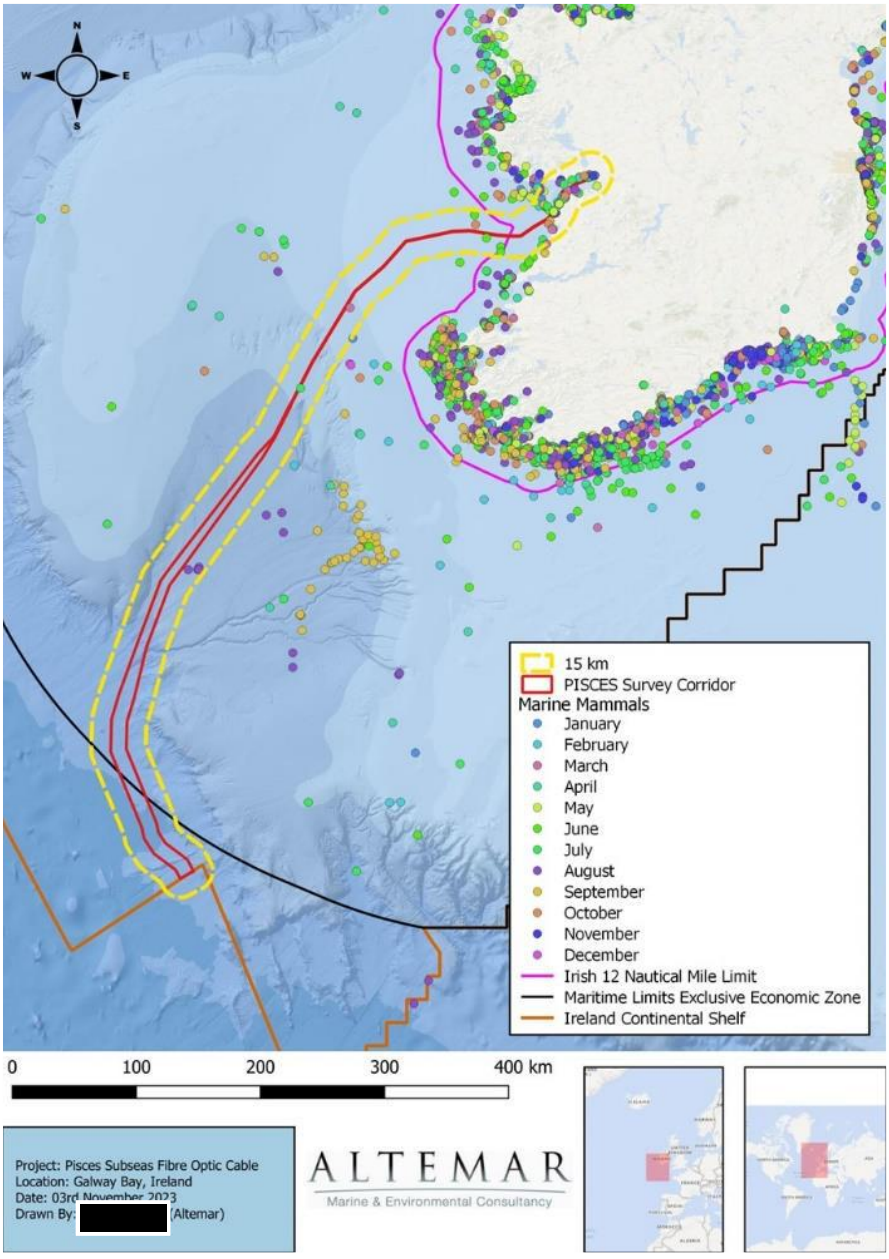

Figure 12. Marine Mammal Sightings in the Vicinity of the Survey Corridor

Historic Records of Biodiversity

7.8 The National Biodiversity Data Centre's online viewer was consulted to determine the extent of biodiversity and/or species of interest in the area. Appendix I of the EcIA report provides a list of all species recorded in custom polygons drawn to the outline of the survey area and 10km grid areas that possess a specific designation, such as Invasive Species or Protected Species.

Potential Effects

7.9 The marine and intertidal survey of a deep sea fibre-optic cable is a complex and challenging procedure. From the beginning of the planning stage to determining the final cable route, careful thought has gone into ensuring the longevity of the cable and uninterrupted service. This, in tandem with licencing and environmental legislation, results in the routing of the cable in as stable an environment as possible that will have minimal impact on the environment and threat of anthropogenic disturbance. The laying of a cable within the Irish EEZ, will involve burial in sediment, surface laying on hard substrate, elements of diver works in the shallow subtidal and marine ROV at cable crossings, if required. The purpose of the marine survey is to identify the optimal route for the cable. The survey elements will involve intertidal bar probes (by boat/diver) and acoustic & geophysical survey off shore.

7.10 The terrestrial activities will involve the movement of personnel and machinery on existing roads and a topographic survey (hand held) of the landfall area. No excavation is proposed in the terrestrial areas. The principal elements of the terrestrial activities are the facilitation of topographic surveys. Intertidal works involve bar probes and machinery on the beach during a single tide, where the intertidal area is covered by water. The presence of boats, machinery, and personnel in the intertidal may temporally disturb wildlife. However, it is important to note that these works are within a busy beach area that is accustomed to human, canine and boat traffic. Minor disturbance of the sediments in the intertidal will occur during the bar probing but this effect would be deemed to be minor and localised. Pollution generated from machinery/construction activities could potentially impact the intertidal and terrestrial habitats.

7.11 In the subtidal the process will involve a ship moving at a speed of approximately 4kn and generating acoustic noise with the use of acoustic equipment. In addition, geotechnical sampling will also generate localised noise but also localised disturbance of sediment. However, as the vessel will be stationary during geotechnical sampling (cores grabs etc.) this disturbance of silt will be very localised. During the acoustic survey disturbance of cetaceans may occur due to the presence of the vessel and underwater noise.

8.0 FISHERIES AND AQUACULTURE

Fisheries: Conclusions on Fisheries Impact from ECIA Report

8.1 The proposed survey route passes through the following known spawning and nursery grounds;

- black-bellied monkfish nursery area;
- blue whiting nursery and spawning grounds;
- cod nursery area;
- haddock nursery and spawning grounds;
- hake nursery and spawning grounds;
- herring nursery grounds;
- horse mackerel nursery and spawning grounds;;
- megrim nursery and spawning grounds;
- white monkfish nursery area;
- whiting nursery and spawning grounds;

8.2 The proposed survey route also passes through prawn grounds and through the range of wild Atlantic salmon.

8.3 Most of these grounds and areas concerning these species span large areas and locations that make the area through which the survey is proposed to be not of specific importance to the respective species. However, there is potential for minor disturbances to some species relating to the timing of the survey impacting with spawning periods which can be mitigated. The risk of insignificant short-term disturbance to known fish spawning areas through which the proposed routes pass is highest from February to June. Therefore, the time frames for which the proposed survey routes would least impact known fish spawning activities are July – January.

8.4 The proposed survey route and license application area passes through the following fishing areas;

- an area of mixed demersal bottom trawl fishing within and outside of Galway Bay.
- the eastern boundary of an area of pollack and mackerel line fishing activity.
- areas of lobster and crab potting activity in Galway Bay.
- a corner boundary of a scallop dredging area within inner Galway Bay.
- the perimeter of second scallop dredging area in southern Galway Bay.

8.5 Due to the scale of the proposed site investigations and seabed sampling within the proposed license application area in relation to the fishing area, and the mixed species nature of the fishery, no impact on this fishery is foreseen. Consultation with fisheries representatives and engagement with local fleets will be carried out prior to works to avoid disruption to fisheries and prevent a direct overlap of fishing with site investigations and sampling associated with the proposed licence.

8.6 The proposed survey works should not result in the direct mortality of any fish species due to the slow-moving nature of the survey vessel, limited seabed disturbance of sampling methods, and temporary nature of acoustic surveys. The risk

of insignificant short-term disturbance to known fish spawning areas through which the proposed routes pass is highest from February to June. Therefore, the time frames for which the proposed survey routes would least impact known fish spawning activities are July – January. Additionally, the risk of insignificant short-term disturbance to nephrops reproduction in Aran Grounds can be mitigated by avoiding survey/sampling activities in this specific area in August and September. No significant impacts on fish nursery areas are predicted. Considering the nature of the proposed survey and site investigations methodology, there should be no disruption to the stocks of trawl, pot, line, and dredge fisheries. Consultation with fisheries representatives and engagement with local fleets will be carried out prior to works to avoid disruption to fisheries and prevent a direct overlap of fishing activities with site investigations and sampling associated with the proposed licence.

Aquaculture

8.7 There are no licensed aquaculture sites within the survey area. The nearest aquaculture site is 2.4km away from the licence area, in Mweeloon Bay (Figure 13). It is a licensed shellfish site for Pacific Oysters (Registered to Galway Gourmet Oysters Ltd.) The marine survey activities will not impact on aquaculture operations.

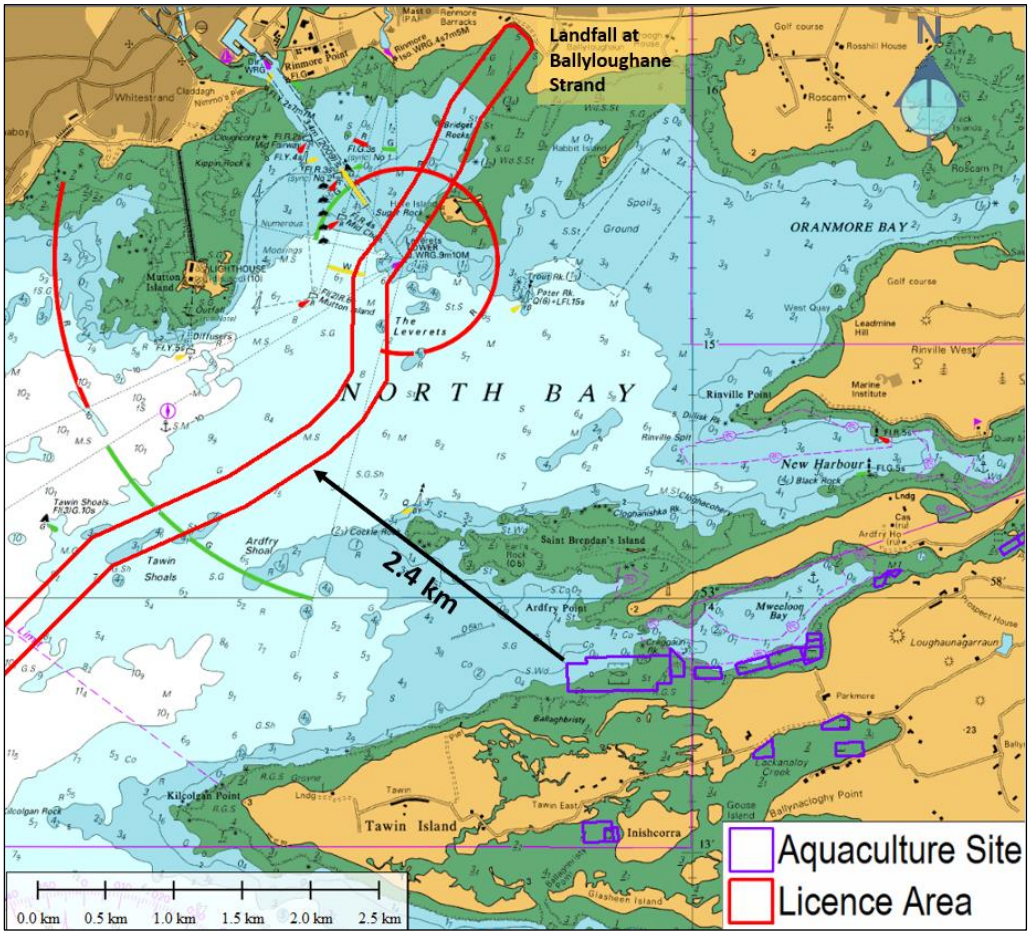

Figure 13. Licensed Aquaculture Areas

9.0 AIR QUALITY

9.1 The survey area (at the landfall) is designated as Zone C of the EPA Air Quality Zones which comprises cities outside of Dublin and Cork. During the survey, there will be no releases of emissions to air, other than routine vessels exhausts. Air Quality standards will not be exceeded.

9.2 The operation of the survey vessels will result in the emission of exhaust gases associated with fossil fuel use. The transport of people, equipment and materials and use of machinery to dig trial pits will also result in emissions of exhaust gases. Given the nature of the survey operations which will be conducted over a short timeframe, the quantity of emissions will be small and effects contributing to climate change will not arise. There will be no significant impact on the air and climate because of the proposed survey.

10.0 NOISE & VIBRATION

10.1 Shipping and general vessel traffic is a major contributor to background noise in oceans and seas. Vessels generally produce low frequency continuous sound. The vessels associated with the survey and sampling operations will contribute to background ocean noise. As seen in Figures 14 & 15 below, there is existing vessel traffic (shipping, fishing, recreation) transiting the survey area which generates anthropogenic sound and therefore the operation of the survey vessel in the area will not create significant additional noise or disturbance. Marine mammals are often seen near human activity and exhibit some tolerance to anthropogenic noise and other stimuli and range over a wide area when foraging.

10.2 The multi-beam and single beam echosounders, side-scan sonar and sub-bottom profiler are noise emitting technologies. The sound levels and frequencies of the sources are at higher frequency than the frequencies which the most sensitive cetaceans are capable of hearing. Acoustic disturbance could occur during the site investigations due to the use of a wide range of frequencies during the geophysical surveys and the localised noise during sampling operations. Noise generated from vibro-coring will be of low intensity, very localised, will move around the survey area and may result in short-term displacement.

10.3 The risk of disrupting the life cycle of marine mammals is extremely low. The geophysical and geotechnical surveys could cause temporary displacement from the immediate area and if it occurs, it would only occur during short periods. Any effect is likely to be quite localized and of relatively short duration. The potential for impact was considered within the Applicant's NIS assessment and Risk Assessment for Annex IV Species.

10.4 The survey operations shall comply with the NPWS (2014) "*Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters*". These guidelines are considered adequate to mitigate the negative impacts of the proposed works. Cetaceans in the vicinity of the vessel during start up procedures would be given ample time to leave the site with the soft start procedures outlined in the guidelines. In addition, vessel speeds are extremely slow which would give marine mammals ample opportunity to move from the area. With the implementation of mitigation measures, there is no significant risk for potential impact on cetaceans and any possible disturbance from the works would be contained within the very limited local disturbance from the presence of vessels.

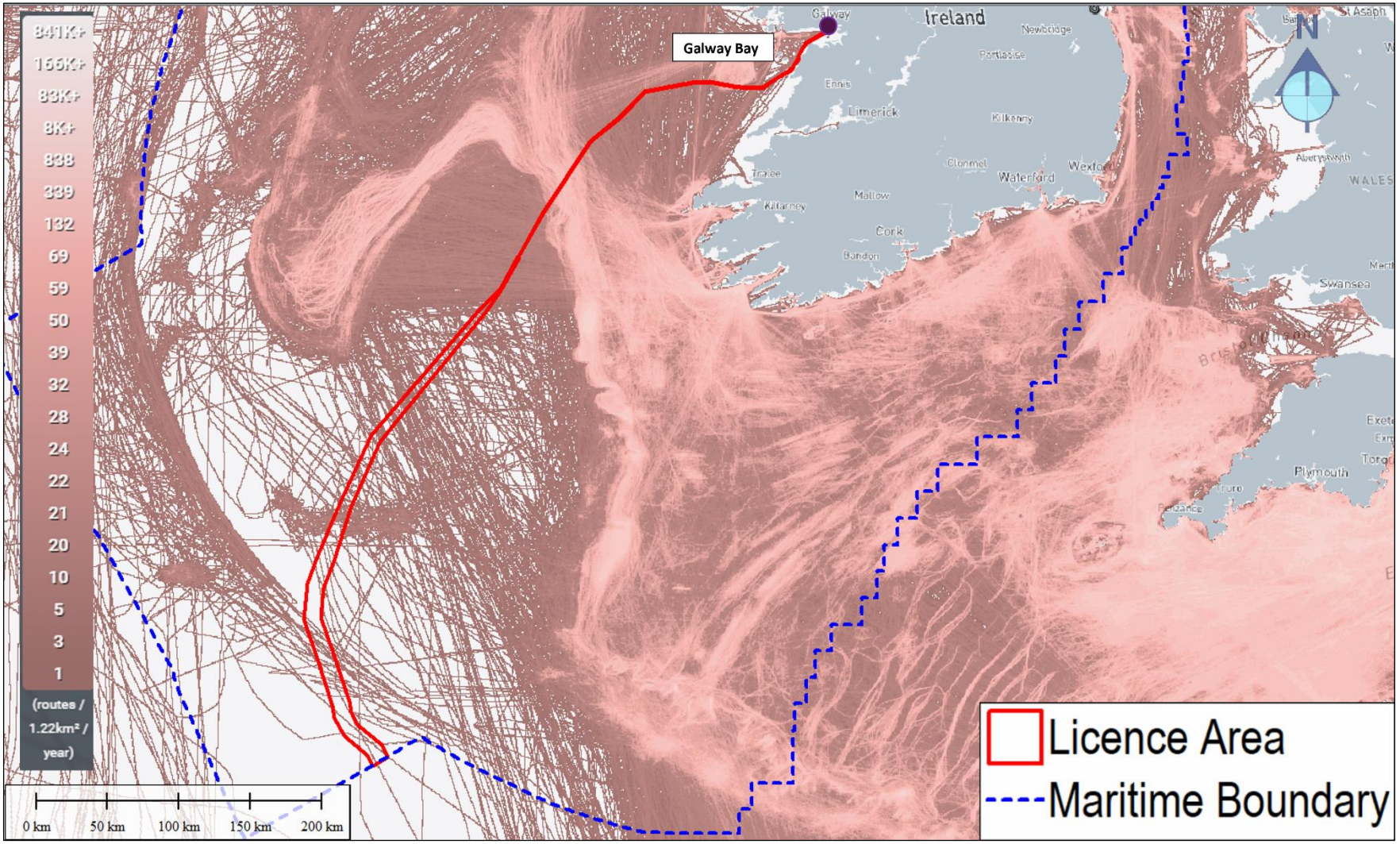

Figure 14. Fishing Traffic (AIS 2022)

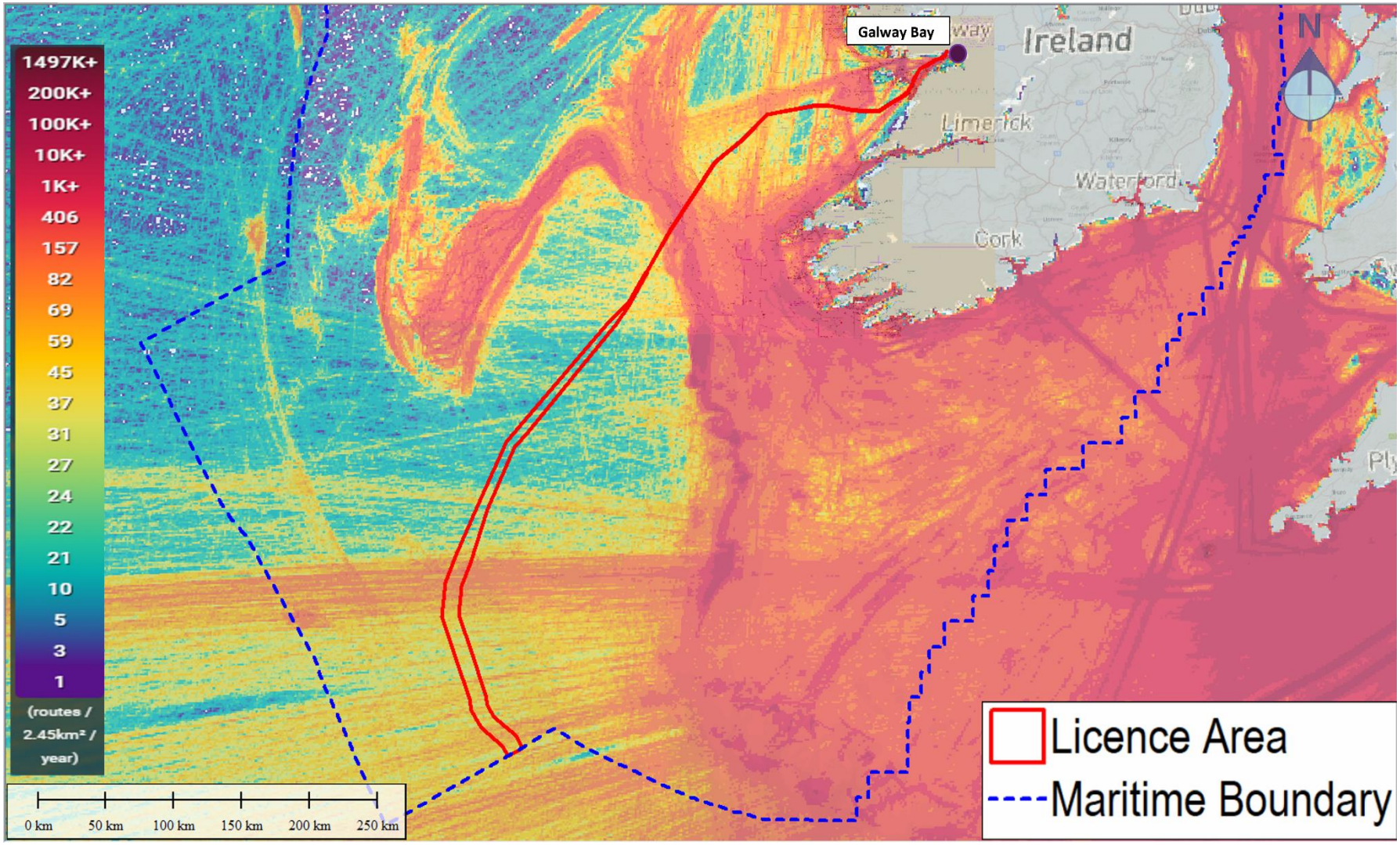

Figure 15. Shipping Traffic (AIS 2022)

11.0 LANDSCAPE/SEASCAPE

11.1 The survey area consists of a landfall survey location at Ballyloughane Strand which is bounded by the Ballyloughane Road to the North. The survey area comprises a marine corridor from the landfall traversing Galway Bay and through the South Sound to the 12nm limit, continuing to the west offshore of the County Clare coast and onwards in a southwest to south direction until it crosses the continental shelf and leaves the Irish Maritime Area.

11.2 The Marine Institute Regional Seascape Character Assessment for Ireland published in 2020 defined the Seascape Character Area in the survey area as Atlantic Galway Bay and Islands and classified the seascape as comprising a broad sweeping bay with diverse and iconic coastline.

11.3 The location of the survey corridor (landfall and offshore marine) is visible from some areas of Galway. Given the nature of the survey operations which will be small scale, temporary and conducted over a short timeframe, the visual impact will be limited to the presence of the survey vessels in Galway Bay and the Atlantic Ocean.

11.4 The surveys are temporary in nature and given the existing marine vessel traffic in the general area, the survey will not present a negative visual impact. There will be no significant impact on the landscape and seascape because of the proposed survey operations.

12.0 TRAFFIC & TRANSPORT (including navigation)

12.1 There are no designated shipping lanes, Traffic Separation Zones, Vessel Traffic Services (VTS) or anchorages within the survey application area. The Commissioners of Irish Lights is the responsible authority for the principal navigation buoys and lights on or around the coast of Ireland. There are no Aids to Navigation situated within the survey area.

12.2 The survey corridor has been designed to avoid the dredged channel entering the Port of Galway. Plans for the redevelopment of the Port have also been taken into account in consultation with the Port Authorities.

12.3 Close to the landfall, many vessel movements are related to local fishing vessels and passenger ferries transiting to the Aran Islands, 5km West of the survey area. In summer, pleasure craft and sailing vessels traverse the survey area as they navigate along the coast. The route of the survey corridor through the South Sound ensures that it doesn't cross the ferry routes out of Rossaveal. In the case of ferries operating out of Doolin it is planned to have direct liaison between the survey vessel and the ferry companies in advance of and during the survey operations while traversing the South Sound.

12.3 Further offshore, commercial shipping traffic crosses the survey area as it routes through the Atlantic Ocean. This shipping activity transits to and from the commercial ports on the west coast of Ireland, (The Port of Galway, Port of Shannon Foynes, Port of Bantry Bay) and shipping routes through the Atlantic to access the English Channel. The intensity of shipping traffic along the West and South West coast is quite low and the pattern of shipping movements is quite diverse.

12.4 During the marine survey operations, survey vessels will display lights, shapes and internationally recognised identification or warning signals. Other vessels will be requested to maintain a safe distance from survey vessels due to their restricted manoeuvrability.

12.5 Mitigation measures will be in place to ensure compliance with the International Regulations for Preventing Collisions at Sea and standards, including the issuing of a formal marine notice. Local liaison with fishers will also be undertaken. As the surveys will be temporary and of limited duration, the effect on shipping and navigation is expected to be minor.

13.0 Cultural Heritage (including underwater archaeology)

13.1 An Underwater Archaeological Impact Assessment (UAIA) has been prepared by Mizen Archaeology on behalf of the applicant to assess the potential impacts of the survey on archaeology and cultural heritage. The UAIA covers the Licence Area within Irish Maritime Area and focuses on the proposed site investigation works.

13.2 The proposed survey specification considers archaeological data acquisition to enable professional archaeological interpretation and analysis of data. The survey equipment and data acquisition and processing shall comply with the requirements of the National Monuments Service, Underwater Archaeology Unit. Walk over surveys will be conducted within the intertidal area to check for marine archaeology features and evidence of features of cultural heritage significance.

13.3 The UAIA is summarised as follows: "*The archaeological data for recorded monuments and wreck sites suggest there is a high potential for archaeological remains for the general area of the cable corridor. Immediately onshore are RMPs (Record of Monuments and Places) and RPS (Register of Protected Structures) sites which are sited to ensure control of the harbour and a focus on the sea. New discoveries on the foreshore at Ballyloughane in recent times following survey for storm damage also provides tangible evidence for archaeological features. The shipwreck records held by the National Monuments Service are voluminous for the coast of Galway; there are 51 wrecks with known locations listed within c. 5km of the proposed cable route survey corridor, with six wrecks within the corridor*."

13.4 The UAIA provides the following recommendations for mitigation specific to the planned survey works which will be implemented;

- *The proposed geophysical survey shall be carried out in advance of the geotechnical works to ensure that invasive works avoid impacting on any individual cultural heritage sites identified in the geophysical data.*
- *Areas of the seabed which shall be impacted by geotechnical/invasive works shall be included in the geophysical survey (sidescan/multi-beam and magnetometer) and be licenced by the National Monuments Service. The results of geophysical survey data shall be assessed by and underwater archaeologist experienced in the interpretation of archaeological geophysical data. Exclusion zones will be implemented around any potential sites of archaeological significance identified in the geophysical survey to ensure that geotechnical works avoid impacting on any additional cultural heritage sites identified in the geophysical data.*
- *Taking into consideration the results of the desktop study a 100m exclusion zone shall be implemented around Wreck no. W17455 and a 250m exclusion zone shall be implemented around Wrecks no. 05621, W09545, W12423, W12671, W14648, and W17455. No geotechnical/invasive surveys shall be undertaken within these exclusion zones.*
- *All marine sediment samples retrieved during site investigation works shall be physically inspected and assessed by an archaeologist in order to identify any potential evidence of archaeological significance. Where potential archaeological*

material including submerged palaeo-landscape deposits are identified they shall be, where suitable samples are available, radiocarbon-dated following agreement with the National Monuments Service and licenced by the National Museum of Ireland.

- *The excavation of trial pits on the foreshore at Ballyloughan shall be monitored by an underwater archaeologist under licence from the National Monuments Service. The plant and machinery required to carry out the work will utilize the established access route along the northern edge of the strand.*
- *Following the completion of all site investigation works a report detailing the results will be submitted to the National Monuments Service.*

13.5 The above recommendations will all be implemented during to the survey works in relation to cultural heritage and underwater archaeology.

14.0 POPULATION & HUMAN HEALTH

14.1 The geographic extents of the survey area are predominantly offshore with limited survey and site investigations planned at the beach landfall. The landfall is within approximately 200m of Renmore to the north, a suburb of Galway City with a population of approximately 5,000 people. The townland of Murrough is also within 1km of the landfall to the northeast and Galway City, with a total population of approximately 85,000 is approximately 2km to the west as shown in Figure 6. There are also some one-off houses near the landfall.

Figure 16. Settlements close to survey area.

14.2 The landfall location is adjacent to Ballyloughane Road. Any requirement for beach access for vehicles or equipment at the landfalls will be via the existing established slipways from this road. Public access to the beach will be always maintained during the survey operations but in the interests of public safety, beach users may be temporarily diverted away from certain areas while surveys or site investigations are underway.

14.3 All proposed surveys and site investigations will be conducted in accordance with all relevant national and international Health and Safety Legislation and Regulations, such as the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005) and Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended and in adherence to all major international shipping conventions, adopted by the International Maritime Organization (and the International Labour Organization) concerning maritime safety and pollution prevention. With the implementation of these, there will be no impact nor any significant effects on people and human health during the proposed survey activities.

Recreational Considerations

14.4 Galway Bay is a popular destination for recreational marine based activities such as sailing and angling. There is also plenty of recreational boating traffic along the coast and between Galway and the nearby Aran Islands.

14.5 Ballyloughane Beach is currently not a blue flag beach, meaning that it currently is not meeting high standards of water quality, environmental management, safety, and services. It is a popular beach for windsurfing and kitesurfing. The beach is well suited for children and families due to the sandy, gentle slopes and shallow water depth. There is a lifeguard on duty during the bathing season. Public access will be maintained throughout the landfall survey and site investigations.

14.6 The nearest RNLI Station is in the Port of Galway, which was founded in 1997 with a B class Atlantic 85 lifeboat.

14.7 During the marine survey operations, survey vessels will display lights, shapes and internationally recognised identification or warning signals. Other vessels and marine users will be requested to maintain a safe distance from survey vessels due to their restricted manoeuvrability.

14.8 Mitigation measures will be in place to ensure compliance with the International Regulations for Preventing Collisions at Sea and standards, including the issuing of a formal marine notice. As the surveys will be temporary and of limited duration, the effect on recreation activities is expected to be minor.

15.0 MAJOR ACCIDENTS & DISASTERS

15.1 Given the nature of the survey operations which will be small scale, temporary and conducted over a short timeframe, they will not influence natural disasters, such as earthquakes, subsidence, landslides, erosion or flooding. Coastal fog or adverse stormy weather and related sea states can occur in the survey area and wider coastal / offshore marine zones.

15.2 The potential for a major accident to arise because of the marine survey operations is low and will be further minimised through mitigation measures. With relevance to safety of shipping and navigation, mitigation will include publication of a formal Marine Notice, display of lights, shapes and other internationally recognised identification or warning signals on survey vessels and compliance with all requirements of the International Regulations for Preventing Collisions at Sea.

16.0 CLIMATE

16.1 The operation of the survey vessels will result in the emission of exhaust gases associated with fossil fuel use. The transport of people, equipment and materials and use of machinery to dig trial pits will also result in emissions of exhaust gases. Given the nature of the survey operations which will be conducted over a short timeframe, the quantity of emissions will be small and effects contributing to climate change will not arise. There will be no significant impact on the climate because of the proposed survey.

17.0 WASTE

17.1 A very small amount of non-hazardous refuse will be produced on board the survey vessels from the normal day-to-day operations of the vessels such as kitchen waste, consumables etc. No waste material will be dumped into the sea. All refuse waste shall be stored on board the vessel and safely disposed of onshore in accordance with the MARPOL Convention.

18.0 MATERIAL ASSETS

18.1 The planned marine surveys and site investigations will not involve either the temporary or permanent placement or installation of material assets within the licence area.

18.2 There are no existing pipelines, oil and gas production facilities, marine aggregate extraction operations or marine outfalls within the survey area. There are several active Oil and Gas Exploration Licences within the survey area (Figure 18, Table 4). However, as new oil extraction was banned in 2021, these licences will not interfere with the survey operations (DECC, 2021).

Table 4: Active Oil and Gas Licences in the Survey Area

Licence Name	Type	Status	Validity	Operator
EL2/19	Exploration	Active	2019 - 2034	Providence Resources
EL5/13	Exploration	Active	2013 – 2028	Woodside Energy
EL1/13	Exploration	Active	2013 – 2030	Antrim Exploration
EL1/19	Exploration	Active	2019 - 2034	AzEire
EL3/04	Exploration	Active	2004 – 2025	Eni Ireland

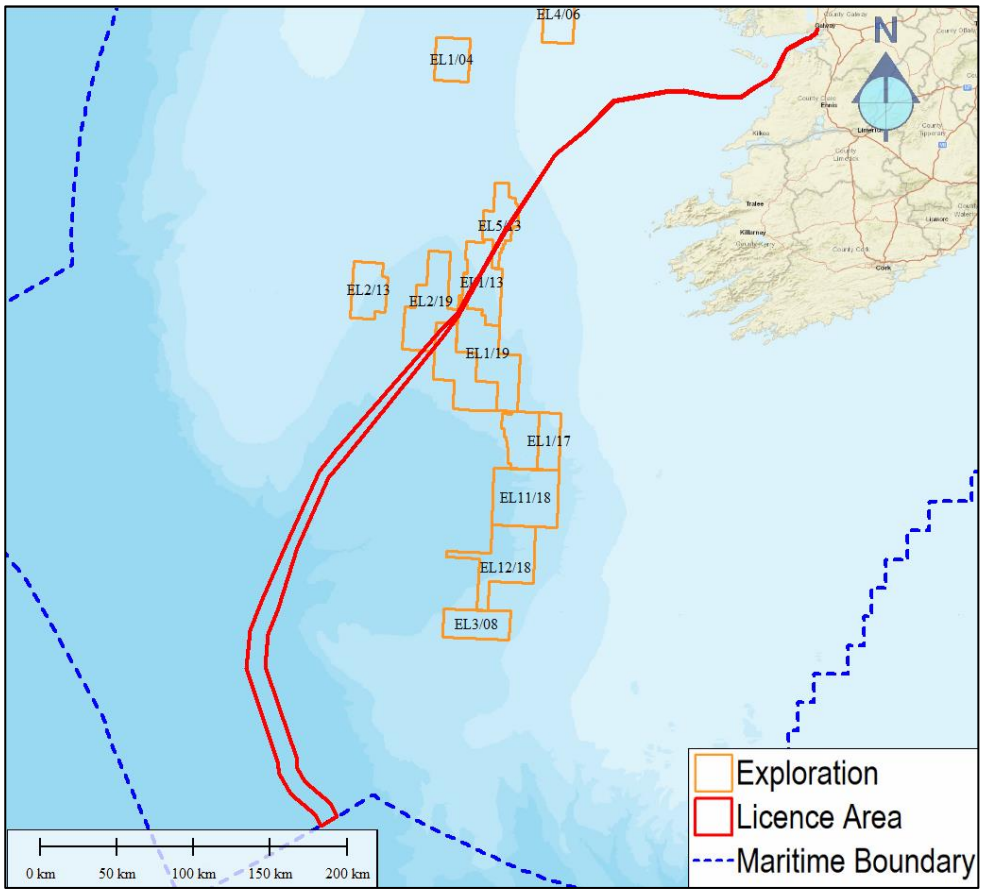

Figure 17. Active Oil and Gas Licences in the Survey Area

18.3 Table 5 and Figure 19 show the in-service and disused subsea telecoms cables that cross the Licence Area in Irish Waters.

18.4 The as-found position of these cables across the survey route will be confirmed by the marine geophysical survey (marine magnetometer). Any sampling or intrusive site investigations will be positioned a minimum of 100m from the as-found position of these existing cables or 250m from the as-laid position if the position is not confirmed during the geophysical survey. Third party asset owners will be informed prior to survey works commencing.

Table 5: Subsea Cable Crossings

System Name	Type	Location	Status	Owner
IRIS	Telecom	IRL EEZ	In-Service	Farice
Hibernia Express	Telecom	IRL EEZ	In-Service	Hibernia Express
Hibernia Atlantic	Telecom	IRL EEZ	In-Service	Hibernia Atlantic
Apollo North	Telecom	IRL EEZ	In-Service	Vodafone
Flag Atlantic North	Telecom	IRL EEZ	In-Service	Reliance Global
TATA Atlantic North	Telecom	IRL EEZ	In-Service	TATA Communications
Yellow	Telecom	IRL EEZ	In-Service	Century Link
TATA Atlantic South	Telecom	IRL EEZ	In-Service	TATA Communications
TAT12	Telecom	IRL EEZ	In-Service	BT
TAT14	Telecom	IRL EEZ	In-Service	BT
Atlantic Crossing 1	Telecom	IRL EEZ	In-Service	Century Link
Gemini North	Telecom	IRL EEZ	Disused	Vodafone
PTAT	Telecom	IRL EEZ	Disused	CWC

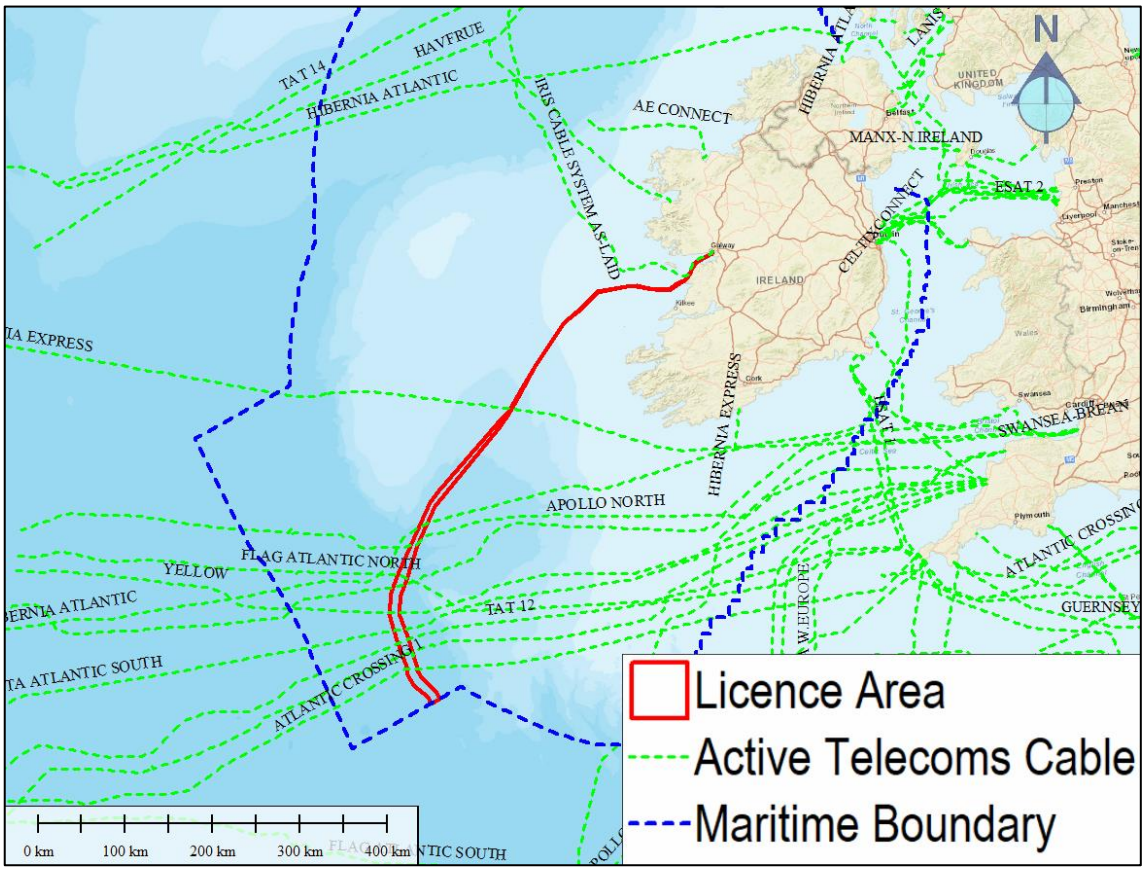

Figure 18. Subsea Cables in the Survey Area

19.0 INTERACTIONS

19.1 The proposed landfall survey site at Ballyloughane is a popular location for pedestrians, dog walkers and beach users. The cable survey route is in an area that experiences significant, constant vessel activity (within Galway Bay). There is also the potential for interaction with other works or projects planned within the survey corridor.

19.2 Galway City Council planning permissions, Foreshore Applications and EIA portal were examined, and the potential for in-combination effects or interactions due to development in the area assessed.

Table 6: Galway City Council Planning Permissions

Ref. No.	Address	Proposal
22127	Ballyloughane, Renmore, Galway	Permission for development which will consist of a dwelling house, domestic garage, on-site treatment system along with all associated site works. Access from the site to the public road is to be via proposed roadway permitted under pl. ref. no. 20/221
21405	Ballyloughane, Renmore, Galway	Permission for development which will consist of: (a) conversion of attic storage void to habitable space (b) additional roof windows to front and rear facades (c) all associated building works and site works
21391	Ballyloughane, Renmore, Galway	Permission for development which will consist of the construction of a dwelling house, domestic garage, on-site treatment system along with all associated site works.
20221	Ballyloughane, Renmore, Galway	Permission for the development which will consist of the construction of a new two storey dwelling and garage, with new access road plus wastewater treatment system and associated site works

19.3 There are no significant projects, identified within Galway City Council planning records, that have been granted planning or currently under construction, that would have an interaction with the proposed survey works.

19.4 A review of the DHLGH Foreshore Licence Applications and Determinations search tool (Department of Housing, Local Government and Heritage (DHLGH), was undertaken for foreshore licence applications for projects in ‘County Galway’ up to 17th July 2023, when the Maritime Area Regulatory Authority (MARA) became operational. The NMPF Activities Map was also consulted for relevant licence applications (MarinePlan.ie, 2023). This is considered a conservative approach, considering the very temporary and localised nature of the survey and site investigation activities detailed in this application.

19.5 Details of these projects and the potential for likely interactions are set out in Table 7. There is potential for some interaction with other projects, but any possible interactions will be limited in nature and of short duration. Any potentially affected third parties will be consulted with and notified of the planned survey works.

Reference	Title	Year	Location	Activity	Status	Potential for Interaction
FS007569	Galway Wandering Kite Festival	2022	Omey Strand, Claddaghduff, Co. Galway	Galway Wandering Kite Festival	Determination	No
FS007161	Site Investigations for the proposed Sceirde Rocks Offshore Wind Farm	2022	Off County Galway	Site Investigation for Offshore Wind Farm	Determination	Yes – the PISCES survey corridor overlaps with the Sceirde Rocks Licence Area. Sceirde Rocks survey works were completed in 2023 and further surveys are planned for 2024 and there is potential for further survey works to be carried out. However, the PISCES survey vessel will be within the Sceirde Rocks Licence Area for approximately 5 hours. Sceirde Rocks will be consulted with and notified of the planned survey works. It is considered unlikely that there will be any interaction. However, any potential interaction would be limited and of very short duration.
FS007461	UCD Research Experiments, Inishmaan	2022	Inishmaan, Co. Galway	Short term deployment of 1 no. Offshore Met Ocean Data Buoy, 1 no. Acoustic Doppler Current Profiler (ADCP) on the seabed and 1 no. Inshore String of 5 Buoys with monitoring devices, all with associated moorings etc. at various of locations within the licensed area	Determination	No survey corridor overlap and very low probability for any interaction. However, UCD will be consulted with and notified of the planned survey works.
FS007495	Atlantic Offshore Renewable Energy 2	2021	Off County Galway	Site Investigations for proposed offshore wind farm	Applied	No – it is understood that the assessment and determination of existing consent applications relating to prospective ORE site investigation is

						paused until ORE Designated Areas have statutory effect. Therefore it is considered very low probability for any interaction.
FS007246	Main lay and construction works for installation of the IRIS sub-sea fibre optic cable system, Co. Galway	2021	Galway	Main lay and construction works for installation of the IRIS sub-sea fibre optic cable system	Determination. Installed in 2022	Yes – the PISCES survey corridor overlaps with the IRIS sub-sea cable system for approximately 2.5km from the landfall in Galway Bay. However, there will be no interference with the IRIS system as a result of the works and Farice, the owners of the system, will be consulted with and notified of the planned survey works.
FS007100	Health Service Executive Deployment of 6 Swim Buoys along Salthill Promenade	2021	Salthill Promenade, Co. Galway	To deploy 6 swim buoys along Salthill promenade in support of Healthy Galway City programme which is the structure to implement Healthy Ireland at the local level	Consultation	No survey corridor overlap and very low probability for any interaction.
FS007543	Fuinneamh Sceirde Teoranta	2022	Off County Galway	Sceirde Rocks export cable corridor site investigations is to determine geotechnical, geophysical and benthic characteristics within the Foreshore Licence Area.	Determination	Yes – the PISCES survey corridor overlaps with the Sceirde Rocks Licence Area. Sceirde Rocks survey works were completed in 2023 and further surveys are planned for 2024 and there is potential for further survey works to be carried out. However, the PISCES survey vessel will be within the Sceirde Rocks Licence Area for approximately 5 hours. Sceirde Rocks will be consulted with and notified of the planned survey works. It is considered unlikely that there will be any interaction. However, any potential interaction would be limited and of very short duration.

FS006916	EirGrid Celtic Interconnector Electricity Cable	2021	Co. Cork	Installation of Subsea Cable	Determination	No survey corridor overlap and very low probability for any interaction.
LIC230033	LIC230033 – Apollo Submarine Cable System Limited	2023	Irish Deep Offshore Subtidal	Proposed installation and operation of the 2Africa Submarine Cable System within the Irish Exclusive Economic Zone (EEZ). The planned cable will extend from Widemouth Bay in Cornwall to a number of countries in Europe, Africa, and the Middle East.	Applied	No survey corridor overlap and very low probability for any interaction within Irish Maritime Area.
LIC230014	LIC230014 – Shannon Foynes Port Company	2023	Foynes Island, Co. Limerick	A Marine Site Investigation to support the preliminary and detailed engineering design of the Deep-Water Terminal Development on Foynes Island.	Applied	No survey corridor overlap and very low probability for any interaction.

Table 7: Foreshore and Marine Licences in the vicinity of the Licence Area.

20.0 SUMMARY OF MITIGATIONS

20.1 Mitigation measures are prescribed for the planned works in the Ecological Impact Assessment (EcIA), Natura Impact Statement (NIS) and Underwater Archaeological Impact Assessment (UAIA) and which will be implemented as follows;

Ecological Impact Assessment (EcIA) & Natura Impact Statement (NIS)

Specific controls will be incorporated into the proposed project to minimise the potential negative effects on the features of interest of the Natura 2000 sites screened in for NIS and are outlined in below:

Minor short-term impacts may result as a consequence of the survey phase of the project, but these are believed not to be at the scale to impact on the integrity of the Natura 2000 sites, species or the site-specific conservation objectives. However, following the precautionary principle, mitigation measures have been developed to minimise the ecological impacts of the project, in relation to Natura 2000 Annex habitats and species. This is primarily as a result of noise disturbance and the potential for pollution within the marine environment.

Intertidal Works

As evident during the fieldwork, the beach at which the intertidal works are proposed is moderately exposed with coarse sand. On all site visits at low tide there was significant human and canine activity on the beach. It would be expected that there will be human and canine activity on the beach during the proposed survey works. The main access to the beach is via the proposed access route. This route is well used and consists of a slip. As a result, mitigation of impacts in the intertidal should concentrate on minimising the following:

Disturbance

The proposed survey route is within a popular beach which will have increased activity during summer months. As a result, the presence of additional personnel on the shore during summer would not be thought to cause a significant additional disturbance. However, there is potential for disturbance of the dune habitat and as a result the following mitigation measures would be carried out:

1. *An ecologist would be onsite during the surveys within the terrestrial/intertidal and subtidal within Ballyloughane Strand in order to minimise disturbance and ensure site integrity is maintained.*
2. *Drift lines and vegetation on the shore near the proposed route would contain the highest proportion of potential food source for bird species. If present, these should be avoided by machinery and personnel.*
3. *Any temporary access arrangements or structures that are put in place will be prepared in consultation with an ecologist, supervised by an ecologist and the site should be fully reinstated post works.*

Reinstatement

Reinstatement of the terrestrial and intertidal habitat should be carried out to pre-survey conditions.

Subtidal

Mitigation impacts are primarily concerned with the survey and the following mitigation measures would be enforced.

1. *Mitigation measures will include the presence of a MMO onboard the survey vessel out to the EEZ limit. The purpose of the MMO is to ensure that there is no disturbance of seal /cetacean populations.*
2. *The NPWS Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters' (NPWS, 2014) should be followed throughout the survey.*
3. *The MMO/ecologist will ensure that mitigation measures are carried out. Sufficient resources should be made immediately available on the survey vessel to deal with accidental oil spills including hydraulic hoses bursting etc. and reported to the on-board ecologist.*
4. *The vessels operating within Galway Bay will be inspected by the ecologist for pollution sources. Any pollution sources identified by the ecologist to form a risk to the environment will be rectified immediately before works commence/recommence. The ecologist will maintain a watching brief in relation to pollution risks and observations. A spill kit will be on board the vessel.*

Underwater Archaeological Impact Assessment (UAIA)

- *The proposed geophysical survey shall be carried out in advance of the geotechnical works to ensure that invasive works avoid impacting on any individual cultural heritage sites identified in the geophysical data.*
- *Areas of the seabed which shall be impacted by geotechnical/invasive works shall be included in the geophysical survey (sidescan/multi-beam and magnetometer) and be licenced by the National Monuments Service. The results of geophysical survey data shall be assessed by and underwater archaeologist experienced in the interpretation of archaeological geophysical data. Exclusion zones will be implemented around any potential sites of archaeological significance identified in the geophysical survey to ensure that geotechnical works avoid impacting on any additional cultural heritage sites identified in the geophysical data.*
- *Taking into consideration the results of the desktop study a 100m exclusion zone shall be implemented around Wreck no. W17455 and a 250m exclusion zone shall be implemented around Wrecks no. 05621, W09545, W12423, W12671, W14648, and W17455. No geotechnical/invasive surveys shall be undertaken within these exclusion zones.*

- *All marine sediment samples retrieved during site investigation works shall be physically inspected and assessed by an archaeologist in order to identify any potential evidence of archaeological significance. Where potential archaeological material including submerged palaeo-landscape deposits are identified they shall be, where suitable samples are available, radiocarbon-dated following agreement with the National Monuments Service and licenced by the National Museum of Ireland.*
- *The excavation of trial pits on the foreshore at Ballyloughan shall be monitored by an underwater archaeologist under licence from the National Monuments Service. The plant and machinery required to carry out the work will utilize the established access route along the northern edge of the strand.*
- *Following the completion of all site investigation works a report detailing the results will be submitted to the National Monuments Service.*

Table 8: Summary of Mitigations

Topic	Issue	Mitigation
Land & Soils	-	Refer to Ecological Mitigation Measures above.
Water	-	Refer to Ecological Mitigation Measures above.
	Contamination incident or accident.	Refuelling of equipment, machinery or plant will not take place on the foreshore. All survey vessels will comply with the International Convention for the Prevention of Marine Pollution from Ships (MARPOL) as per best practice.
Biodiversity	-	Refer to Ecological Mitigation Measures above.
Fisheries & Aquaculture	Disruption to fisheries.	Consultation with fisheries representatives and engagement with local fleets will be carried out prior to works to avoid disruption to fisheries and prevent a direct overlap of fishing activities with site investigations and sampling associated with the proposed licence.
Air Quality	-	No mitigation required.
Noise & Vibration	Disturbance to marine mammals.	The survey operations shall comply with the NPWS (2014) "*Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters*".
Landscape / Seascape	-	No mitigation required.
Traffic & Transport (including navigation)	Marine Safety.	Direct liaison between the survey vessel and the Doolin ferry companies in advance of and during the survey operations while traversing the South Sound. Survey vessels will display lights, shapes and internationally recognised identification or warning signals. Other vessels will be requested to maintain a safe distance from survey vessels due to their restricted manoeuvrability. Compliance with the International Regulations for Preventing Collisions at Sea and standards, including the issuing of a formal Marine Notice. Local liaison with fishers will be undertaken.
Cultural Heritage	-	Refer to UAIA Mitigation Measures above.
Population & Human Health	Disturbance by the works. Health & Safety.	All works will be conducted in accordance with all relevant national and international Health and Safety Legislation and Regulations, such as the Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005) and Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended and in adherence to all major international shipping conventions, adopted by the International Maritime Organization (and the International Labour Organization) concerning maritime safety and pollution prevention.
Major Accidents & Disasters	-	Publication of a formal Marine Notice. Display of lights, shapes and other internationally recognised identification or warning signals on survey vessels and compliance with all requirements of the International Regulations for Preventing Collisions at Sea.
Climate	-	No mitigation required.

Waste	-	All refuse waste shall be stored on board the vessel and safely disposed of onshore in accordance with the MARPOL Convention.
Material Assets	-	No mitigation required.
Interactions	-	Any potentially affected third parties will be consulted with and notified of the planned survey works. Publication of a formal Marine Notice.

21.0 SCREENING OF SIGNIFICANCE OF EFFECTS ON THE ENVIRONMENT

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
Brief Project Description: Marine Survey and Site Investigations for a cable route for the PISCES subsea telecoms cable system from a landfall at Ballyloughane County Galway traversing the Irish Maritime Area to the south west of Ireland.		
1. Will construction, operation, decommissioning or demolition works of the Project involve actions that will cause physical changes in the locality (topography, land use, changes in waterbodies, etc.)?	Yes. The excavation of trial pits on the beach, collection of grab samples, gravity cores & vibrocores of the seabed sediments will cause temporary and localised disturbance of the seabed and limited suspended sediments. There will be no topographic or land use changes.	The seabed is regularly disturbed by natural processes. The cumulative volume of sediment collected in the grab samples and shallow cores is small. Any sediment disturbed or suspended by the sampling will settle almost immediately. Any trial pits on the beach will be backfilled immediately with the excavated material. Overall, the work relates to the marine geophysical survey, site investigations and landfall surveys. The survey is transient, of short duration, with reinstatement of any areas of seabed impacted by sampling of the seabed completed naturally by tidal movements and currents. No likely significant impact.
2. Will construction or the operation of the Project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or are in short supply?	Yes. The marine survey and site investigations operations will be conducted by vessels or equipment that will use fuels such as diesel.	No likely significant impact.
3. Will the Project involve the use, storage, transport, handling or production of substances or materials which could be harmful to human health, to the environment or raise concerns about actual or perceived risks to human health?	Yes. The marine survey and site investigations operations will be conducted by vessels or equipment that will use fuels such as diesel and oil-based lubricants which have potential to be harmful to the environment in the event of an accidental fuel spill.	Normal vessel operating standards and precautions and mandatory maritime regulations such as the MARPOL Convention on Marine Pollution will ensure that the risk of an accidental release of harmful materials such as fuels will be low. To minimise risk at the landfall, machinery used to excavate any trial pits will only be fueled on the hard stand area of a car park or road, at least 10m from a drain or gulley. Spill kits will be available on site for the duration of works. No likely significant impact.

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
4. Will the Project produce solid wastes during construction or operation or decommissioning?	Yes. A very small amount of non-hazardous refuse will be produced on board from the normal day-to-day operations of the survey vessels such as kitchen waste, consumables etc.	No waste material will be dumped into the sea. All refuse waste shall be stored on board the vessel and safely disposed of onshore in accordance with the MARPOL Convention. No likely significant impact.
5. Will the Project release pollutants or any hazardous, toxic or noxious substances to air or lead to exceeding Ambient Air Quality standards in Directives 2008/50/EC and 2004/107/EC)?	No.	The surveys will be undertaken by vessels which comply with EU requirements in terms of operational controls and environmental standards. Air quality standards will not be exceeded. No likely significant impact.
6. Will the Project cause noise and vibration or the releasing of light, heat energy or electromagnetic radiation?	Yes. The Marine Survey uses acoustic / sonar techniques which emit underwater noise. Survey vessels also generate noise from engines, props etc.	The potential impacts from the survey are described in the Supporting Information for Screening of Appropriate Assessment and Natura Impact Statement accompanying the application. The best practice guidelines "Guidance to manage the risk to marine mammals from man-made sounds in Irish waters, NPWS 2014" is the standard practice to mitigate the risk to marine mammals from marine surveys and will be implemented for the duration of the survey operations including pre-start monitoring, soft start and ramp up procedures. A qualified and experienced marine mammal observer (MMO) will be employed during the surveys to monitor for marine mammals and log all sightings and events. No likely significant impact.
7. Will the Project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	Yes. Vessels or equipment will use fuels such as diesel and oil-based lubricants which have potential to be harmful to the environment in the event of an accidental fuel spill. Pollution may arise from machinery present in the intertidal habitat to excavate trial pits.	To minimise risk, all machinery will only be fuelled on the hard stand area of a car park or road, at least 10m from a drain or gulley. Normal vessel operating standards and precautions and mandatory maritime regulations such as the MARPOL Convention on Marine Pollution will ensure that the risk of an accidental release of harmful materials such as fuels will be low. Spill kits will be available on site for the duration of works. No likely significant impact.

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
8. Will there be any risk of accidents during construction or operation of the Project that could affect human health or the environment?	Yes. Marine survey vessels operate at low vessel speeds when carrying out survey operations and will be stationary at times when deploying and recovering equipment. This may pose an increased risk of vessel-to-vessel collision.	A Notice to Mariners will be published in advance of survey operations to inform the public and other marine users in the locality. The survey vessels will display the appropriate lights, shapes and have active AIS. Compliance with the requirements of the International Regulations for Preventing Collisions at Sea will be always followed and it is expected that there will be no impact on shipping movements in the area. Survey vessels will follow appropriate Biosecurity protocols and regulations such as the International Maritime Organisation (IMO) Guidelines for the control and management of ships' ballast water, to minimise the transfer of harmful aquatic organisms and pathogens. No likely significant impact.
9. Will the Project result in environmentally related social changes, for example, in demography, traditional lifestyles, employment?	No.	The survey operations are of short durations and will not result in any direct social changes such as demography, traditional lifestyles or employment. No likely significant impact.
10. Are there any other factors that should be considered such as consequential development which could lead to environmental impacts or the potential for cumulative impacts with other existing or planned activities in the locality?	Yes. The applicant is aware of proposals for renewable energy developments sites and associated marine survey across the West Coast and Atlantic Ocean. Cumulative impact of these developments is considered in this application. In due course, an application for the installation of the cable system will be made.	The NIS and supporting information did not identify any significant environmental cumulative impacts arising from the planned survey operations. To minimise risk of cumulative impacts on fisheries, shipping, and general navigation, notice to mariners, local fisheries liaison and other mitigation measures will be considered. No likely significant impact.
11. Is the project located within or close to any areas which are protected under international, EU, or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the Project?	Yes. In terms of European designated sites, the proposed foreshore licence application area passes through the Galway Bay Complex (SITECODE = 000268), the and the Inner Galway Bay SPA SAC (SITECODE = 004031). The following sites are also considered relevant to the proposed project and were assessed in the NIS.	The applicant NIS concluded that, with the implementation of specified mitigations measures, the proposed development alone or in combination with other activities, would not cause any adverse effect on the integrity of any European sites. The applicant Underwater Archaeological Impact Assessment (UAIA) recommended mitigation measures to minimise and avoid any potential impacts on identified or previously unidentified archaeological sites. No likely significant impact.

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
	• Slaney River Valley SAC (IE) • Saltee Islands SAC (IE) • Roaring Water Bay and Islands SAC (IE) • Blasket Islands SAC (IE) • Kilkieran Bay And Islands SAC (IE) • Lower River Shannon SAC (IE) • Slyne Head Peninsula SAC (IE) • West Connacht Coast SAC (IE) • Slyne Head Islands SAC (IE) • Clew Bay Complex SAC (IE) • Slyne Head Islands SAC (IE) • Inishbofin and Inishshark SAC (IE) • Killala Bay/Moy Estuary SAC (IE) • Ballysadare Bay SAC (IE) • Kenmare River SAC (IE) • Cummeen Strand/Drumcliffe Bay (Sligo Bay) SAC (IE) • Duvillaun Islands SAC (IE) • Inishkea Islands SAC (IE) • Glengarriff Harbour and Woodland SAC (IE) • Slieve Tooey/Tormore Island/Loughbros Beg Bay SAC (IE) • Donegal Bay (Murvagh) SAC (IE) • West of Adara/Maas Road SAC (IE) • Rutland Island and Sound SAC (IE) • Rockabill to Dalkey Islands SAC (IE) • Lambay Island SAC (IE) • Horn Head and Rinclevan SAC (IE) • North Anglesey Marine/Gogledd Môn Forol (UK)	

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
	• West Wales Marine / Gorllewin Cymru Forol (UK) • Pen Llyn a'r Sarnau/Lleyn Peninsula and the Sarnau (UK) • Murlough (UK) • North Channel (UK) • Strangford Lough (UK) • Cardigan Bay / Bae Ceredigion (UK) • Pembrokeshire Marine / Sir Benfro Forol (UK) • The Maidens SAC (UK) • Bristol Channel Approaches/Dynesfeydd Môr Hafren (UK) • Treshnish Isles (UK) • Lundy (UK) • Isles of Scilly Complex (UK) • Nord Bretagne DH (FR) • Récifs et landes de la Hague (FR) • Anse de Vauville (FR) • Mers Celtiques – Talus du golfe de Gascogne (FR) • Banc et récifs de Surtainville (FR) • Côte de Granit rose-Sept-Iles (FR) • Trégor – Goëlo (FR) • Baie de Morlaix (FR) • Abers – Côtes des legends (FR) • Rivière Leguer, forêts de Beffou, Coat an Noz et Coat an Hay (FR) • Cap d'Erquy-Cap Fréhel (FR) • Ouessant-Molène (FR)	

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
	• Chausey (FR) • Baie de Saint-Brieuc – Est (FR) • Côtes de Crozon (FR) • Baie du Mont Saint-Michel (FR) • Baie de Lancieux, Baie de l'Arguenon, Archipel de Saint Malo et Dinard (FR) • Estuairie de la Rance (FR) • Chaussée de Sein (FR) • Récifs du talus du golfe de Gascogne (FR) The Underwater Archaeological Impact Assessment considers that there is high potential for archaeological remains for the general area of the survey corridor.	
12. Are there any other areas on or around the location that are important or sensitive for reasons of their ecology e.g. wetlands, watercourses or other waterbodies, the coastal zone, mountains, forests or woodlands, that could be affected by the Project?	Yes, The cable route traverses the general coastal zone of Galway Bay before entering the Atlantic.	Due to the localised and temporary nature of the survey works and the implementation of specified mitigations measures and industry best practices, the survey works are not likely to cause any significant adverse effects on the wider coastal zone and water bodies. No likely significant impact.
13. Are there any areas on or around the location that are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the Project?	Yes, Following a precautionary basis, the applicant Supporting Information for Screening for Appropriate Assessment identified potential disturbance to species and habitats.	The applicant NIS concluded that, with the implementation of specified mitigations measures, the proposed development alone or in combination with other activities, would not cause any adverse effect on the integrity of any European sites. Due to the localised and temporary nature of the survey works as well as the timing and mitigation measures to be employed, the proposed works are not likely to cause any significant adverse effects on any sensitive species of fauna or flora. No likely significant impact.

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
14. Are there any inland, coastal, marine or underground waters (or features of the marine environment) on or around the location that could be affected by the Project?	Yes. The cable route traverses the general coastal zone of Galway Bay before entering the Atlantic.	Due to the localised and temporary nature of the survey works and the implementation of specified mitigations measures and industry best practices, the proposed survey works are not likely to cause any significant adverse effects on the wider coastal zone and water bodies. No likely significant impact.
15. Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the Project?	Yes. The cable route traverses the general coastal zone of Galway Bay before entering the Atlantic and the coastline along the proposed survey route is designated as a coastal landscape in the Galway County Development Plan 2022 – 2028. However, it is noted that the landfall at Ballyloughane is within the Galway City area and is not characterised as a specific Landscape Character Type within the Development Plan.	The survey works are temporary in nature and will not present a negative impact on the landscape or scenic qualities of the area. No likely significant impact.
16. Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the Project?	Yes	The landfall survey will take place on the beach. No public facilities will be impacted by the proposed works. The existing access paths will be used by staff and machinery to access the beach. Use of these routes will be short term and will not inhibit the use of these areas by the public. Public access will be always maintained. No likely significant impact.
17. Are there any transport routes on or around the location that are susceptible to congestion or which cause environmental problems, which could be affected by the Project?	No	The landfall survey location at Ballyloughane is not affected by strategic routes or significant traffic volumes. Traffic generated during the landfall survey is expected to be 1-2 vehicles per day over an overall period of approximately 3 to 5 days. Close to the landfall, many vessel movements are related to local fishing vessels and passenger ferries transiting to the Aran Islands, 5km West of the survey area. In summer, pleasure craft and sailing vessels traverse the survey area as they navigate along the coast. However, traffic volumes are low and the survey route avoids much

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
		of the vessel traffic as it passes south of Galway Bay through the South Sound. Further offshore, commercial shipping traffic crosses the survey area as it routes through the Atlantic Ocean. This shipping activity transits to and from the commercial ports on the west coast of Ireland, (The Port of Galway, Port of Shannon Foynes, Port of Bantry Bay) and shipping routes through the Atlantic to access the English Channel. Offshore vessel traffic volumes are low. No congestion of vessel movements is expected as a result of the marine survey operations and any disruption will be temporary and of short duration. No likely significant impact.
18. Is the Project in a location in which it is likely to be highly visible to many people?	No	The surveys are temporary in nature and given the existing marine vessel traffic in the general area, the survey will not present a negative visual impact. No likely significant impact.
19. Are there any areas or features of historic or cultural importance on or around the location that could be affected by the Project?	Yes. There are six wrecks recorded within the survey corridor, an additional 45 within approximately 5km and an additional 63 recorded as lost near the corridor but with no known coordinates.	An Underwater Archaeological Impact Assessment (UAIA) has been prepared which considers the works in combination with historical and cultural sensitivity of the area. With the implementation of specified mitigations measures, no likely significant effects on cultural heritage or archaeology is foreseen. No likely significant impact.
20. Is the Project located in a previously undeveloped area where there will be loss of greenfield land?	No	The survey is temporary in nature. No likely significant impact.
21. Are there existing land uses within or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture,	Yes	The landfall will take place on the beach at Ballyloughane which is used for public recreation. There will be temporary restrictions around the works location at the beach and existing access paths will be used by staff and machinery to access the beach. Use of these routes will be short term and will not inhibit the use of these

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
forestry, tourism, mining or quarrying that could be affected by the Project?		areas by the public. Public access will be always maintained. Any impact on vessel movements during the survey works such as by local fishers or recreational sailing vessels because of the works will be temporary and of short duration. No likely significant impact.
22. Are there any plans for future land uses within or around the location that could be affected by the Project?	No	There is no indication of any plans for future land uses that could be affected by the project. No likely significant impact.
23. Are there areas within or around the location which are densely populated or built-up, that could be affected by the Project?	No	The area around the proposed landfalls is close to built up areas but the survey operations are temporary and of short duration. No likely significant impact.
24. Are there any areas within or around the location which are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities, that could be affected by the Project?	No	The landfall survey will take place on the beach which is used for public recreation. Public access will be always maintained. No likely significant impact.
25. Are there any areas within or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, that could be affected by the Project?	Yes. The cable route passes through fishing grounds.	The short term survey should be no impact on the interests of fishing grounds due to the slow-moving nature of the survey vessel or have any long lasting effects on any habitats of significant importance to any fish species No likely significant impact.
26. Are there any areas within or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, that could be affected by the Project?	No	Ballyloughane Beach achieved an Excellent Water Quality rating for the 2022 bathing season and a Good annual water quality rating for 2022. The is no knowledge of pollution or environmental damage in the wider area. However, the beach is potentially subject to short term pollution after heavy rainfall which can wash microbial contaminants into the water or cause storm water overflow runoff. The survey works will not affect water quality at the beach.

Questions to be Considered	Yes / No /? Briefly describe	Is this likely to result in a significant impact? Yes/No/? – Why?
		No likely significant impact.
27. Is the Project location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the Project to present environmental problems?	Yes. Coastal fog or adverse stormy weather and related sea states can occur in the licence application area and wider coastal / offshore marine zones.	The survey vessels and equipment will be operated in accordance with the weather limitations and will be fit for purpose. No likely significant impact.

22.0 Consideration and Reasoned Conclusions in relation to the EIA Directive, WFD Directive & MSFD Directive

22.1 The survey works will be carried out in accordance with the European Union (EU) Environmental Impact Assessment (EIA) Directive, Water Framework Directive (WFD), Marine Strategy Framework Directive (MSFD) and Ireland's National Marine Planning Framework (NMPF).

EIA Directive

22.2 The EIA Directive 2011/92/EU on the assessment of the effect of certain public and private projects on the environment, as amended by EIA Directive 2014/52/EU, sets out the process by which the likely significant effects of a project on the environment are assessed. The Planning and Development Regulations 2001 (as amended) transpose the requirements of the 2014 EIA Directive into planning consent procedures.

22.3 As stated in the regulations an environmental impact assessment (EIA) shall be carried out where either the proposed development would be of a class specified in Part 1 of Schedule 5 of the regulations (as amended) or Part 2 of Schedule 5 of the same regulations.

- Part 1 of Schedule 5 identifies projects of a class that will always have the potential for significant environmental effects and therefore will always require an EIA.
- Part 2 of Schedule 5 identifies projects that may have an environmental impact and, therefore, thresholds or criteria have been set by member states for the requirements of EIA.

22.4 It is a matter for the MARA as the competent authority, to determine whether a formal EIA Screening determination is required having regard to the provisions of the EIA Directive and Schedule 5 of the Planning Regulations. The information in this report is provided to inform the determination on a requirement for EIA screening, and if required, to inform the screening assessment and determination.

22.5 This report does not comprise an Environmental Impact Assessment Screening Report or an Environmental Impact Assessment (EIA) Report, nor does it form part of an Environmental Impact Assessment under the provisions of the EIA Directive 2011/92/EU, as amended by EIA Directive 2014/52/EU.

Screening for Mandatory EIA

21.6 EIA is required in one of three circumstances:

a) Project Type – Is the proposed development "a project" as understood by Article 1(2)(a) of Amended 2011/92/EU Directive? Is the proposed development of a class specified in Part 1 of Schedule 5 of the Planning and Development Regulations, 2001 (as amended) and exceeds any specified relevant quantity area or other limit specified?

Or

b) Mandatory Thresholds – Is the proposed development of a class specified in Part 2 of Schedule 5 of the Planning and Development Regulations, 2001 (as amended)? Does the Project exceed the applicable thresholds as listed in the Schedule 5 of the Planning & Development Regulations 2001 (as amended)?

Or

c) Sub-threshold Development – Is the proposed development of a class specified in Part 2 of Schedule 5 of the Planning and Development Regulations, 2001 (as amended), does not exceed the relevant quantity, area or other limit, but is in a sensitive location and / or of a type that could lead to significant effects on the environment.

Project Type

21.7 Article 1(2)(a) of the Amended 2011/92/EU Directive provides the following definition for a project: “the execution of construction works or of other installations or schemes” “other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources”

21.8 The proposed cable route survey and site investigation works comprises temporary and short-term investigations including the undertaking of non-intrusive geophysical survey, localised marine site investigations and seabed sampling such as CPT and Vibrocores as detailed by Section 4 above. The proposed cable route survey and site investigation works do not comprise a project for the purposes of EIA.

21.9 A review of the project types in Part 1 of Schedule 5 as described above have been considered in the preparation of this report. The proposed cable route survey and site investigation works is not a project type or class listed in Part 1 of Schedule 5 of the Regulations.

Mandatory Thresholds

21.10 A review of the project types in Part 2 of Schedule 5 have been considered in the preparation of this report. The proposed cable route survey and site investigation works is not a project type or class listed in Part 2 of Schedule 5 of the Regulations. For clarity, it is considered that the site investigations (shallow vibrocores, gravity cores and seabed CPT’s) proposed as part of the cable route survey do not constitute a project type under Class 2 Extractive Industry (e) as it does not involve ‘deep drilling’ and falls within the exception for drilling for investigating the stability of the soil.

Sub Threshold Development

21.11 It is the view of the applicant that the proposed cable route survey and site investigations do not comprise a project for the purposes of EIA and do not come within any class of development to which the EIA Directives apply, or which requires mandatory EIA as defined in Schedule 5 (Part 1 & Part 2). The survey operations (geophysical and

site investigations) are both temporary and short term in nature and not of a type that could lead to significant effects on the environment.

Water Framework Directive (WFD)

21.12 There are no offshore SACs in proximity to any of the proposed survey works. The inshore coastal waterbodies through which the survey route corridor traverses are classed as unpolluted under the WFD.

Marine Strategy Framework Directive (MSFD)

21.13 The Marine Strategy Framework Directive (MSFD) is European legislation, which aims to protect the marine environment. It requires the application of an ecosystem-based approach to the management of human activities, enabling a sustainable use of marine goods and services.

21.14 To implement the MSFD, Ireland is required to:

- Describe what they consider is a clean, healthy, and productive sea.
- Monitor and assess the quality of their seas against Good Environmental Status
- Ensure they take appropriate action by 2020 to maintain or achieve Good Environmental Status.

21.15 This process started in 2012, with a review every six years. Marine Strategy Framework Directive habitat mapping was consulted during the preparation of the Ecological Impact Assessment Report (EcIA) for this application.

21.16 Due to the temporary nature of the survey works, there will be no permanent or lasting change or development to the Licence Area, thus eliminating the need for a discussion of the construction, operations, maintenance, and decommissioning phases, as they will not be occurring during the survey works.

23.0 CONCLUSION

23.1 This report has been undertaken based on the information in the Schedule of Works, Supporting Information Report to inform AA Screening, Applicant NIS, Ecological Impact Assessment (EcIA) and Underwater Archaeological Impact Assessment Report and the implementation of mitigation measure proposed. The nature, scale and location of the proposed survey is such that there are no foreseeable significant effects on the environment arising from the survey operations. It is the conclusion of the AIMU Report and screening exercise that an EIA is not required.

Common Abbreviations

AA	Appropriate Assessment
AIMU	Assessment of Impact of the Maritime Usage
AIS	Automatic Identification System
BIM	Bord Iascaigh Mhara
CO	Conservation Objective
CPT	Cone Penetration Test
DAFM	Department of Agriculture, Food and the Marine
DAHG	Department of Culture, Heritage and the Gaeltacht
DHLGH	Department of Housing, Local Government and Heritage
EC	European Commission
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EPA	Environment Protection Agency
EPS	European Protected Species
EU	European Union
FLO	Fisheries Liaison Officer
HABs	Harmful Algal Blooms
ICES	International Council for the Exploration of the Sea
IMO	International Maritime Organization
ISO	International Organization for Standardization
ITM	Irish Transverse Mercator
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effects
MAP	Marine Area Planning Bill
MARPOL	The International Convention for the Prevention of Pollution from Ships
MBES	Multibeam echosounder
MI	Marine Institute
MMO	Marine Mammal Observer
NIS	Natura Impact Statement
NM	Nautical Mile
NPWS	National Parks and Wildlife Service
NSER	Non-Statutory Environmental Report
PTS	Permanent Threshold Shift
SCI	Special Conservation Interest
SISAA	Supporting Information for Screening for Appropriate Assessment
SPL	Sound Pressure Level
SSS	Side Scan Sonar
SWD	Shellfish Waters Directive
TTS	Temporary Threshold Shift
UTM	Universal Transverse Mercator
VC	Vibrocore
VMS	Vessel Electronic Monitoring System
WGS	World Geodetic System

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