AtkinsRéalis

Annex IV Species Risk Assessment Report

Fingal County Council

October 2026

5188509DG0307

FINGAL COASTAL WAY SECTION 2 – GROUND INVESTIGATION WORKS

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1. Introduction

AtkinsRéalis, on behalf of Fingal County Council ("the Applicant"), has prepared this Annex IV Species Risk Assessment in support of a Maritime Usage Licence (MUL) application to the Maritime Area Regulatory Authority (MARA). The licence application relates to proposed ground investigation works within Rogerstown Estuary, County Dublin, which form part of the site investigation programme required to inform the design and development of Section 2 of the Fingal Coastal Way Scheme ("the proposed scheme"). The MUL is being sought solely to facilitate the undertaking of ground investigation works within the maritime area associated with the proposed scheme. This report assesses and screens the potential effects of the ground investigations on species listed under Annex IV of the EU Habitats Directive, in accordance with the requirements of the Maritime Usage Licence application process. A description of the proposed ground investigation works is provided in Section 1.2 of this report.

1.1 Project Overview

The Fingal Coastal Way is a strategic greenway project being progressed by Fingal County Council to provide a high-quality, continuous corridor along the north Dublin coastline between Newbridge Demesne and Balbriggan.

The scheme is being delivered in a number of sections and will provide safe, accessible and sustainable connectivity for pedestrians and cyclists while enhancing links between coastal communities, recreational amenities, transport hubs and areas of landscape value. The scheme forms part of Fingal County Council's wider sustainable mobility objectives and will facilitate both recreational and commuter use.

The c. 3km Section 2 of the Fingal Coastal Way comprises one of the more environmentally sensitive sections of the overall scheme route and will provide a key connection between Donabate and west of Rush. The proposed section extends from the junction of Beaverstown Road and Kingsland in Donabate, crosses the Dublin to Drogheda railway corridor, traverses the Rogerstown Estuary area and terminates adjacent to Baleally at Rogerstown Park. The section incorporates new pedestrian and cycle infrastructure together with associated structures required to facilitate passage across the estuary.

Figure 1-1 illustrates the extent and alignment of the Section 2 of the Fingal Coastal Way scheme.

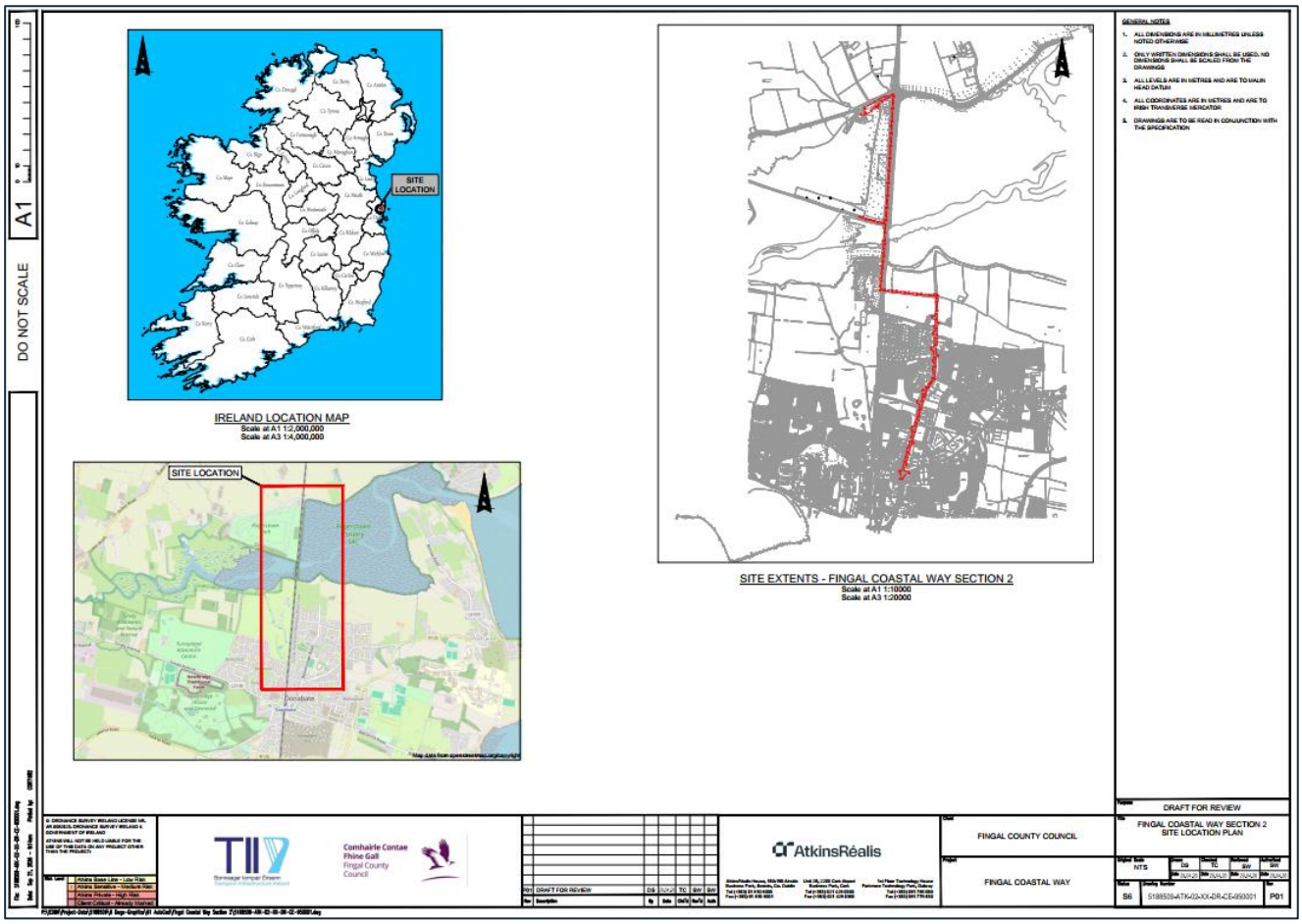


Figure 1-1 - Site Location of the Rogerstown Estuary Section

1.2 Description of the Proposed Ground Investigation Works

The works under assessment, hereafter referred to as the 'proposed project', comprises a programme of ground investigation (GI) works to inform the engineering design of the Rogerstown Estuary section of the Fingal Coastal Way. The investigations will provide information on underlying soil, rock and groundwater conditions necessary for the design of the proposed active travel scheme and associated structures. The works are temporary in nature and are intended solely to collect geotechnical and geological data to support the detailed design process.

The GI relates to a c. 3 km section of the proposed Fingal Coastal Way scheme and includes investigation works associated with a range of proposed infrastructure elements, including reinforced earth retaining structures, a railway overbridge, a reinforced seawall and a new bridge crossing of the Rogerstown Estuary.

The proposed investigation programme will comprise a combination of intrusive and non-intrusive survey techniques, including:

- 17 no. boreholes to depths of up to approximately 15 m below ground level;
- 8 no. machine excavated trial pits to depths of up to approximately 4.5 m below ground level;
- Geophysical surveys using electrical resistivity and seismic refraction techniques;
- Collection of soil, rock and groundwater samples for geotechnical and geo-environmental laboratory analysis;

- In-situ geotechnical testing, including Standard Penetration Testing (SPT), Dynamic Cone Penetrometer (DCP) testing and hand vane shear testing;
- Groundwater monitoring and installation of selected standpipes at designated locations; and
- Associated access, temporary working areas, surveying, environmental monitoring, reinstatement and reporting activities.

The boreholes and trial pits will be distributed along the proposed route corridor at locations selected to characterise ground conditions associated with the proposed structures and embankments. The investigations comprise works within the estuarine area of Rogerstown Estuary, works within Rogerstown Park which forms part of the Maritime Area for consenting purposes, and works within terrestrial lands located outside the Maritime Area. Following completion of the investigations, all boreholes and trial pits will be reinstated, with disturbed areas restored as close as practicable to their original condition.

The investigations are expected to be of relatively short duration and will provide baseline geotechnical and environmental information required to support the subsequent detailed design and consenting of the Rogerstown Estuary section of the Fingal Coastal Way.

Area of excavation and borehole diameters and estimated durations of works for each GI Work type are outlined in Table 1-1 below.

Table 1-1 - Area of Excavation, Borehole Diameters and Estimated Duration of Ground Investigation Works

GI works	Area of Excavation / Bore Diameter	Estimated Duration per Location
Trial Pit (TP)	Approximately 2.0 m x 1.5 m plan area; up to 4.5 m deep	1-2 hours
Cable Percussion Borehole (CP)	200 mm diameter	1-2 days
Cable Percussion Borehole with Rotary Core Follow-on (CP/RC)	200 mm diameter borehole with rotary coring to depth	2-3 days
Standpipe Installation	Installed within borehole footprint (200 mm diameter)	Included within borehole duration
Groundwater Monitoring	No additional excavation required	Approximately 30 minutes per monitoring event
Environmental Soil Sampling	Undertaken within borehole or trial pit footprint	Included within GI activity duration
Dynamic Cone Penetrometer (DCP) Testing	Negligible surface disturbance (<0.1 m^2)	Approximately 30 minutes
Hand Vane Shear Testing	No additional excavation required	Approximately 15-30 minutes
Electrical Resistivity Survey (ER)	No excavation required; temporary electrodes inserted into ground	Approximately 4-8 hours per survey line
Seismic Refraction Survey (SR)	No excavation required; temporary geophones placed on ground surface	Approximately 4-8 hours per survey line

1.3 Proposed Works Methodology

The ground investigation (GI) works will be undertaken during the spring and summer months, with activities in the estuarine environment scheduled to coincide with low tide conditions. Where works are required within the Maritime Area, they will be undertaken only when tidal levels are at their lowest to maximise access and minimise interaction with estuarine waters. The entire GI works programme is estimated to take approximately eight weeks, with works within the estuarine area expected to take three to four weeks, including mobilisation, tidal constraints, pontoon relocation and weather related delays.

Figures 1-2 to 1-4 illustrate the locations of all proposed GI works along this section of the scheme.

The proposed GI works comprise 17 no. boreholes and 8 no. trial pits. Of these, 10 no. boreholes and 6 no. trial pits are located within the proposed investigation area in the Maritime Area (Figure 1-6), including 6 no. boreholes within the estuarine area of Rogerstown Estuary and a further 4 no. boreholes and 6 no. trial pits within Rogerstown Park.

The remaining 7 no. boreholes and 2 no. trial pits are located outside the Maritime Area. The GI works have been designed to minimise disturbance to estuarine habitats through the use of existing access routes and, where practicable, by locating investigations within existing disturbed or modified ground.

1.3.1 GI Works in the Estuary Area of the Maritime Area

In the context of the Maritime Usage Licence (MUL) application, 6 no. borehole locations are proposed within the estuarine area associated with Rogerstown Estuary. Boreholes BH08, BH09 and BH10 are located along the existing railway causeway which extends across the estuary and comprises rock armour / engineered stone fill. A further 3 no. boreholes, BH11, BH12 and BH13, are located within the estuarine channel immediately west of the existing railway bridge. These investigations are required to inform the detailed design of the proposed Rogerstown Estuary bridge, which will accommodate the proposed pedestrian and cycle route running parallel to the existing railway infrastructure.

The borehole locations within the estuary have been specifically selected to be within areas of existing rock armour and stone boulder protection associated with the railway bridge and causeway structures. As a result, all drilling activities within the estuary will be undertaken only within existing engineered stone surfaces, and no drilling directly within intertidal mudflat or sandflat habitats will occur.

Access to the estuarine borehole locations will be facilitated via a temporary stone ramp (approximately 30 m in length) constructed from the south eastern side of Rogerstown Park adjacent to the north western side of the existing railway bridge (Figure 1-5). The ramp will be formed through the placement of clean imported stone on existing rock armour and ballast associated with the railway infrastructure. No excavation of the estuary bed will be required.

The temporary ramp will provide access for the launch of a floating pontoon and associated drilling equipment. Following launch, a pontoon mounted drilling rig will be manoeuvred between the required borehole locations within the estuarine channel. All drilling, sampling and associated GI activities within the estuarine area will be undertaken from the pontoon platform, thereby avoiding direct access by heavy plant within the estuary. Upon completion of each borehole, the borehole will be sealed and reinstated in accordance with the approved GI methodology and relevant industry guidance. Core samples recovered during drilling will be retained for geological logging and laboratory testing. Upon completion of the works, the temporary ramp, pontoon and all associated temporary works will be removed and the area reinstated.

1.3.2 GI Works within Rogerstown Park (Maritime Area)

The Maritime Area also encompasses Rogerstown Park, which occupies lands reclaimed and subsequently restored following the historic Balleally Landfill operation. While these lands fall within the Maritime Area for consenting purposes, the park comprises a terrestrial environment and does not function as part of the estuarine habitat. The park is physically separated from the estuary by established park boundaries, fencing and, for all but one investigation location, the existing Dublin-Belfast railway line. Furthermore, although the site is located within an area historically influenced by tidal processes, the reclamation and restoration of the former landfill has altered the local position of the High Water Mark such that the proposed investigation locations within the park are not situated within estuarine habitat and have no direct hydrological connection to the estuary.

Within Rogerstown Park, 4 no. boreholes and 6 no. trial pits are proposed. These locations are situated on, or immediately adjacent to, existing surfaced park pathways and managed grassland areas. Access will be provided via the existing park access road and pathway network using small plant and equipment. Boreholes will be undertaken using a track mounted drilling rig, while trial pits will be excavated using a small excavator. Plant will travel directly to each investigation location via existing paths wherever practicable, thereby avoiding unnecessary disturbance to surrounding parkland vegetation.

Upon completion of the investigations, boreholes will be appropriately sealed and trial pits will be backfilled and reinstated. All equipment and materials will be removed from site following completion of the works.

1.3.3 GI Works Outside of the Maritime Area

A further 7 no. boreholes and 2 no. trial pits are proposed outside of the Maritime Area. These investigation locations are situated within lands north and south of Rogerstown Estuary, including the Beaverstown area, and are located landward of the High Water Mark.

Access to these locations will be obtained via existing roads, tracks, pathways and agricultural access points as appropriate. Borehole and trial pit investigations will be undertaken using standard GI plant and equipment. Upon completion of the works, all boreholes and excavations will be reinstated in accordance with the approved GI methodology and all equipment removed from site.

Figures 1-2 to 1-4 illustrate the locations of the proposed GI works. Figure 1-5 shows the location of the proposed temporary stone ramp, while Figure 1-6 illustrates the proposed GI works locations specifically within the Maritime Area.

1.3.4 Non-Intrusive GI Works

In addition to the intrusive GI works, a programme of non-intrusive geophysical surveys comprising electrical resistivity and seismic refraction investigations will be undertaken within the study area prior to the commencement of intrusive works. These surveys will be carried out using portable surface based equipment to characterise subsurface conditions and inform the final positioning of intrusive investigations. The surveys will not require excavation, drilling, ground penetration, vegetation clearance or habitat removal and, as such, will not result in any direct disturbance to soils, estuarine substrates, terrestrial habitats or designated ecological features.

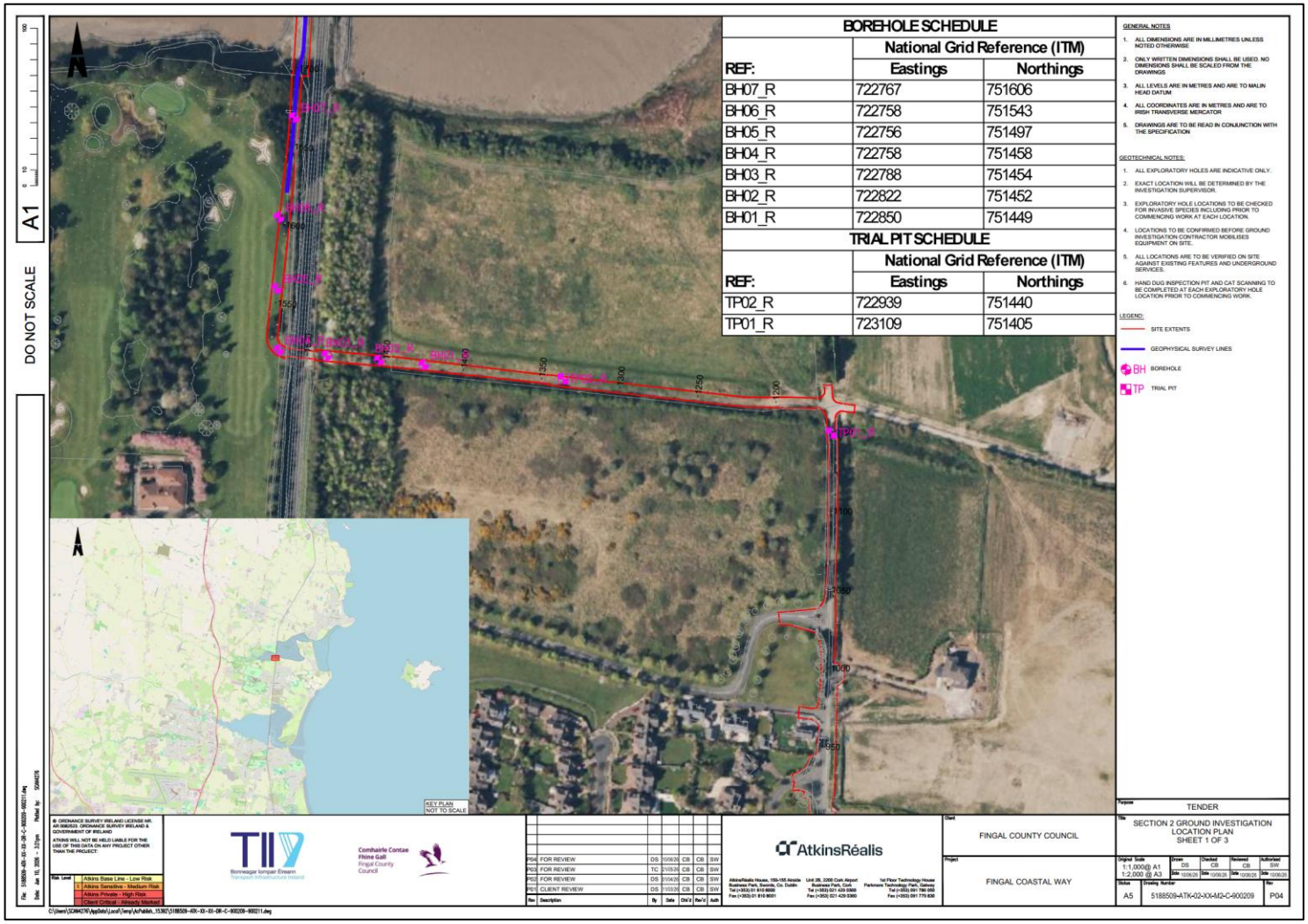


Figure 1-2 – GI Works areas in Beaverstown, south of the estuary, outside of the maritime area.

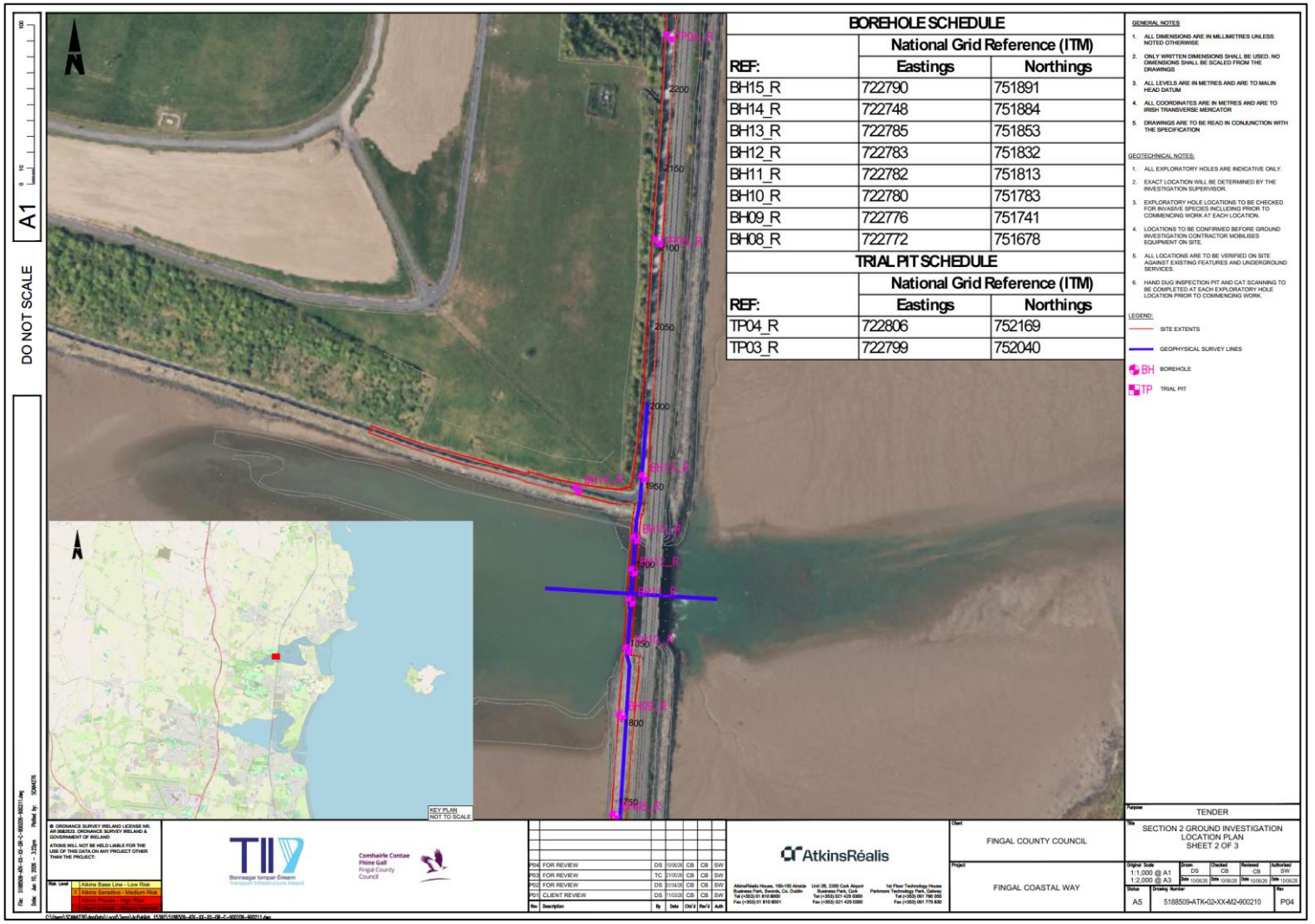


Figure 1-3 – GI Works areas within the estuarine area of the Maritime Area

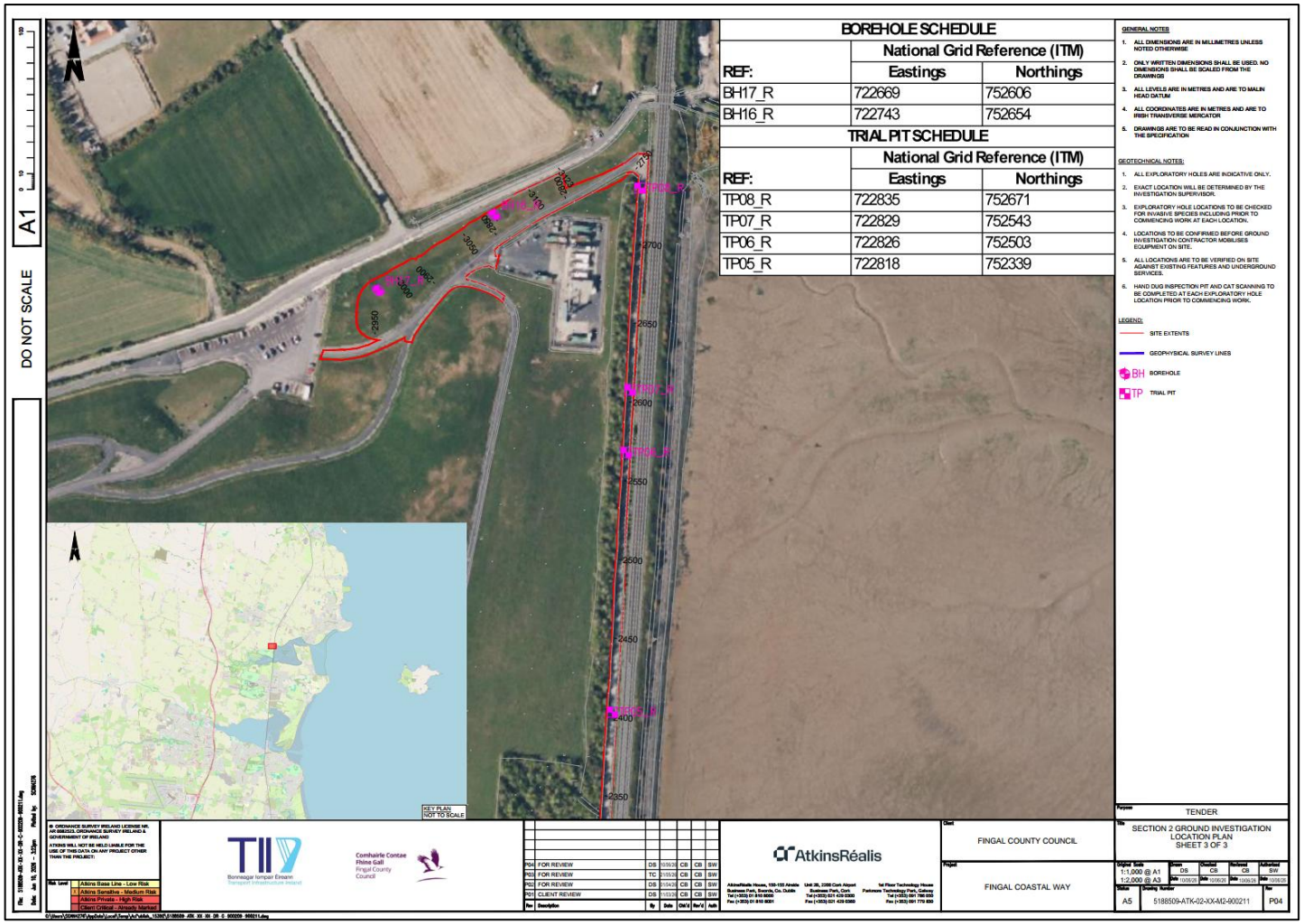


Figure 1-4 – GI Works areas within Rogerstown Park

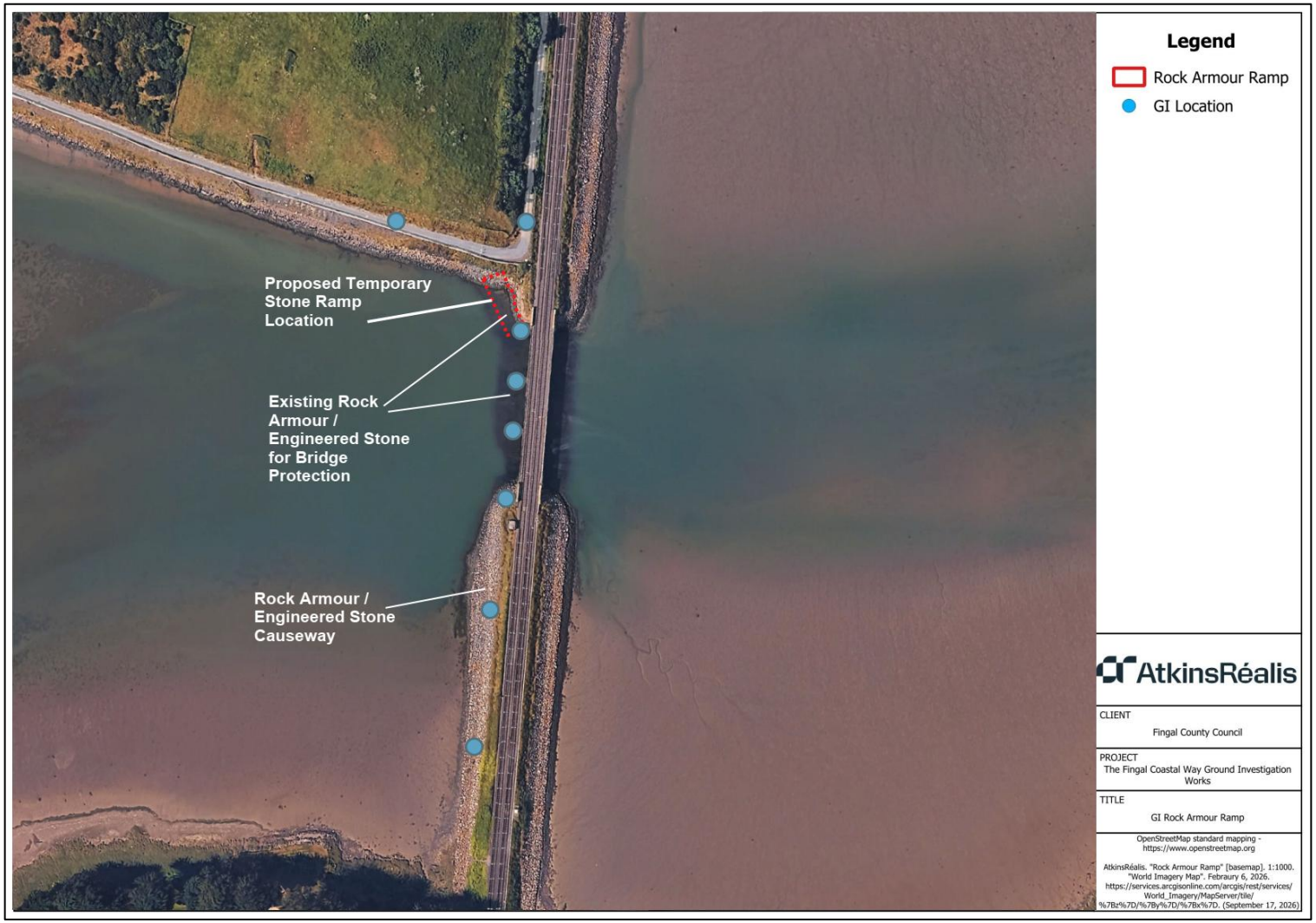


Figure 1-5 – Location of temporary stone ramp



Figure 1-6 – GI Works Locations in Maritime Area

2. Scope of Study

2.1 Legislative Context

2.1.1 Maritime Area Planning Legislation

In December 2021, the Government enacted the Maritime Area Planning (MAP) Act 2021, which provides the legislative framework for the regulation and management of Ireland's maritime area. The Act is implemented through the National Marine Planning Framework, Maritime Area Consents for activities requiring occupation of the maritime area over longer durations, and Maritime Usage Licences for activities of a shorter duration. The Maritime Area Regulatory Authority (MARA) was established under the Act and is responsible for the administration and enforcement of the maritime consenting regime, including the assessment of applications for consents and licences within the maritime area.

The proposed GI works are located within the maritime area and are being undertaken to inform the design and development of Section 2 of the Fingal Coastal Way. The proposed works fall within Schedule 7(3) of the MAP Act 2021, relating to:

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

In accordance with the requirements of the Act, the proposed GI works require a valid Maritime Usage Licence prior to commencement. This Annex IV Risk Assessment has been prepared to inform the licence application for the proposed works and in accordance with relevant MARA guidance relating to licence applications within the maritime area.

2.1.2 Annex IV Species Legislation

The Habitats Directive (92/43/EEC) is the principal European legislative instrument for the protection of natural habitats and wild fauna and flora. Article 12 of the Directive requires Member States to "*establish a system of strict protection for animal species listed on Annex IV(a) in their natural range*." This requirement has been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended ("the Habitats Regulations").

Regulation 51 of the Habitats Regulations provides strict protection for Annex IV animal species and prohibits deliberate capture, killing or disturbance, particularly during breeding, rearing, hibernation and migration periods. The Regulations also prohibit the deterioration or destruction of breeding sites or resting places, except where authorised under licence by the relevant Minister.

Annex IV animal species recorded in Ireland include bats, otter (*Lutra lutra*), cetaceans (whales, dolphins and porpoises), sea turtles, natterjack toad (*Epidalea calamita*) and Kerry slug (*Geomalacus maculosus*).

This Annex IV Risk Assessment has been prepared to support the Maritime Usage Licence application for the proposed Ground Investigation works and to assess the potential for impacts on Annex IV species in accordance with the requirements of the Habitats Directive, the Habitats Regulations and relevant MARA guidance.

3. Methodology

3.1 Guidance Documents

This Annex IV Risk Assessment has been prepared with reference to the following guidance documents:

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive);
- European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011), as amended;
- Maritime Area Regulatory Authority (MARA) Applicant Technical Guidance for Maritime Usage Licence Applications;
- European Commission (2021) *Guidance Document on the Strict Protection of Animal Species of Community Interest under the Habitats Directive;*
- CIEEM (2024) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (Version 1.3)*;
- National Parks and Wildlife Service (NPWS) (2021) *Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland;*
- Department of Arts, Heritage and the Gaeltacht (DAHG) (2014) *Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters;*
- Department of the Environment, Heritage and Local Government (DEHLG) (2007) *Code of Practice for the Protection of Marine Mammals during Acoustic Seafloor Surveys in Irish Waters*.

3.2 Desk Study

A desk study was undertaken to establish the baseline ecological conditions within the Zone of Influence (ZoI) and to identify Annex IV fauna with the potential to occur within, or be affected by, the proposed Ground Investigation (GI) Works.

Records of Annex IV fauna were obtained from relevant data sources, including the National Biodiversity Data Centre (NBDC) Biodiversity Maps, the Irish Whale and Dolphin Group (IWDG) Sightings Database, Marine Institute Ireland's Marine Atlas and relevant National Parks and Wildlife Service (NPWS) datasets. These sources were reviewed to identify recent and historical records of Annex IV fauna within the study area and to establish the known distribution of relevant species.

Records of cetaceans were obtained from the Irish Whale and Dolphin Group (IWDG) Sightings Database and reviewed to identify known occurrences of Annex IV marine mammals within the wider coastal waters surrounding Rogerstown Estuary. The database was used to establish the presence of relevant species within the broader receiving marine environment rather than within the estuary itself.

A search of National Biodiversity Data Centre (NBDC) records was undertaken on 11/09/2026 encompassing the estuarine works area and a 1 km search radius surrounding the railway causeway and associated estuarine habitats. The search was undertaken to identify records of Annex IV species within the project area and its immediate surroundings and to inform an assessment of habitat suitability and potential ecological connectivity.

Supporting environmental information, including aerial imagery, mapping and available habitat data, was also reviewed to assess habitat suitability for Annex IV species within the ZoI and to identify potential ecological features

that could support such species. Particular consideration was given to estuarine, coastal, intertidal, marine and riparian habitats that may provide suitable habitat for species such as otter and cetaceans.

Available information on waterbodies, hydrological connectivity and marine receiving environments was reviewed to determine potential pathways through which the proposed GI works could result in effects on Annex IV fauna. The nature, scale and location of the works, together with the ecological requirements of the species concerned, were used to assess the likelihood of a source-pathway-receptor linkage.

Species were screened for relevance to the assessment based on their known distribution, habitat requirements, likelihood of occurrence within the ZoI and the potential for impacts arising from the proposed Works. Only those species for which a credible impact pathway could not be discounted were taken forward for further assessment.

Information from the above sources was last accessed in September 2026.

3.3 Assessment Approach

The assessment considers whether the proposed GI works have the potential to result in:

- Deliberate disturbance of Annex IV species;
- Injury or mortality of Annex IV species;
- Deterioration or destruction of breeding sites or resting places; or
- Other significant effects that may undermine the strict protection afforded to Annex IV species under Article 12 of the Habitats Directive and Regulation 51 of the Habitats Regulations.

The assessment has been undertaken with regard to the nature and scale of the proposed works, the ecological requirements of the species concerned and the presence of any source-pathway-receptor linkage.

3.4 Statement of Authority

This Annex IV Risk Assessment report was prepared by Niamh Kelly and Colin Wilson, Daniel Blake provided peer review.

Niamh Kelly (AtkinsRéalis Dublin) has a BSc (Hons) in Environmental Science with Ecology from Atlantic Technological University Sligo. Niamh conducts research and site surveys including habitat classification (Fossitt classification) and terrestrial mammal activity. She also assists in bat emergence/activity surveys. She is responsible for aiding the preparation of Appropriate Assessment Screening Reports, Natura Impact Statements, Environmental Impact Assessment – Biodiversity Chapters, Constraints Assessment, Feasibility Studies and Multi-Criteria Assessments for large-scale infrastructure projects. Niamh collated background information for this assessment and developed this report.

Colin Wilson (AtkinsRéalis Dublin) has a BSc (Hons) in Environmental Science and is a Full Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM). He has over 16 years working in the fields of ecology and environmental management. He is an Associate Ecologist with experience in ecological surveying, environmental assessment, on-site ecological supervision and mitigation. He has experience on multiple infrastructure projects regarding all elements of surface and groundwater management, monitoring, sampling and associated reporting. Colin also has a broad range of experience in invasive species management, biosecurity and control. Colin has prepared AA screening reports, Natura Impact Statements and has also been involved in the development of Environmental Operating Plans and Construction Environmental Management Plans for a number of national infrastructure projects. Colin is the author of this report.

Daniel Blake (AtkinsRéalis Dublin) has a degree in Wildlife Biology and has been working in the environmental consultancy sector since 2017. He has worked in both large scale government infrastructure projects as well as domestic projects across the UK and Ireland conducting both environmental and ecological roles. Primarily conducting protected species surveys such as bats, badgers, birds, reptiles, small mammals and amphibians as well as invasive species surveys. He has also earned a Natural England licence for the survey of Great crested newt. He has been involved in habitat surveying and assisted in the writing of Appropriate Assessments, Preliminary ecological appraisals and protected species reports. Throughout his career he has acted as an ECoW for numerous sites to ensure environmental laws and practices are met. Daniel undertook peer review of this assessment.

4. Protected Species Records Review

A review of available protected species records was undertaken to identify whether Annex IV species have been recorded within the estuarine works area or its immediate surroundings. Records were obtained from the National Biodiversity Data Centre (NBDC) for the estuarine area and a 1 km search radius surrounding the railway causeway and associated estuarine habitats. Cetacean records within the wider coastal environment were also reviewed using the Irish Whale and Dolphin Group (IWDG) Sightings Database.

Otter

The NBDC search identified a single record of otter (*Lutra lutra*) within the search area. This record dates from 2013 and is located approximately 1 km west of the railway causeway along the main estuarine channel. No otter records were identified within the footprint of the proposed works, including the estuarine borehole locations, Rogerstown Park investigation locations or the immediate vicinity of the railway causeway.

In addition to the records review, the habitat characteristics of the project area were considered to determine whether features potentially used by otter are present. The railway causeway is lined by extensive areas of rock armour and engineered stone installed for coastal protection and structural stability. While such habitats may occasionally be traversed by otter moving through the wider estuarine environment, the rock armour does not provide the sheltered, stable and vegetated conditions typically associated with otter holts, couches or other resting places. The structure is largely exposed to tidal influence and lacks the secure cavities, dry chambers and cover generally favoured by otter for breeding or resting purposes. Furthermore, the causeway is an operational railway corridor and is subject to regular train movements, associated vibration and noise, resulting in a relatively high level of existing disturbance.

Bats

The records search did not identify any records of bat species within the project area or the surrounding 1 km search radius. While several bat species are known to occur throughout the wider Fingal area, no records were returned from the immediate environs of the railway causeway. The principal structure within the project area is the railway bridge crossing the estuary. This bridge is of modern concrete construction and does not possess the features commonly associated with bat roost suitability. Unlike older masonry or stone arch bridges, it does not contain open mortar joints, crevices, cavities, voids or other sheltered features that typically provide access to roosting opportunities for bats. The bridge is also subject to frequent train movements, vibration and associated disturbance.

Marine Mammals

A review of available protected species records was undertaken to determine whether marine mammal Annex IV species have been recorded within the proposed works area or its immediate surroundings. The NBDC records search did not identify any records of harbour porpoise (*Phocoena phocoena*), harbour seal (*Phoca vitulina*), grey seal (*Halichoerus grypus*) or other marine mammal Annex IV species within Rogerstown Estuary or the defined search area surrounding the proposed works. No records of cetaceans were identified within the estuary itself.

Records of a range of cetacean Annex IV species are known from Irish coastal and offshore waters, including dolphins, porpoises and whales. However, no records were identified within Rogerstown Estuary and the shallow, highly tidal estuarine environment does not provide suitable habitat for cetacean species, which are generally associated with deeper coastal or offshore waters.

Although Rogerstown Estuary is hydrologically connected to the Irish Sea, it comprises a shallow estuarine system characterised by extensive intertidal mudflat and sandflat habitats. Estuarine waters largely drain at low tide, leaving

only a narrow tidal channel wetted. Consequently, the estuary differs substantially from the deeper coastal, pelagic and offshore environments typically utilised by cetaceans for feeding, movement and other ecological functions.

The estuary also offers limited suitability for seal species. No known seal haul-out sites, breeding sites or regularly used resting locations occur within the estuary. The shallow water depths, extensive intertidal habitats and dynamic tidal regime provide limited opportunities for prolonged occupation by harbour seal or grey seal.

The available records and habitat characteristics therefore indicate that Rogerstown Estuary is unlikely to support regular use by marine mammal Annex IV species.

Other Annex IV Species

No records were identified for other Annex IV species within the search area. In particular, no records were returned for species including Kerry slug (*Geomalacus maculosus*), marsh fritillary (*Euphydryas aurinia*), natterjack toad (*Epidalea calamita*), sea turtles or any other Annex IV species known to occur in Ireland.

Furthermore, the estuarine works area comprises engineered stone, rock armour, tidal channel habitat and intertidal sediments, none of which provide suitable habitat for these species. Consequently, these species were screened out from further consideration in the assessment.



Figure 4-1 – Extent of Annex IV species records search area reviewed for the NBDC records search (September 2026)

5. Annex IV Risk Assessment

5.1 Zone of Influence

The Zone of Influence (ZoI) is the spatial extent over which a project may give rise to ecological effects. The ZoI should be determined on a project specific basis through application of the Source-Pathway-Receptor model. Significant effects can only arise where a source of impact is connected to a sensitive receptor via an identifiable pathway. Where no such linkage exists, the potential for ecological effects may be excluded. The extent of the ZoI is informed by:

- The nature and scale of the proposed works,
- The characteristics of potential impact pathways,
- The sensitivities of ecological receptors, and
- The potential for cumulative or in-combination effects.

In the marine environment, the ZoI can extend beyond the project footprint owing to the dynamic nature of coastal and marine systems. Hydrodynamic processes may facilitate the movement of materials and the propagation of effects over considerable distances, while mobile ecological receptors may be affected outside the immediate works area (CIEEM, 2024).

To assess the potential for impacts on Annex IV species, a ZoI was established based on the nature and scale of the proposed GI works. The ZoI includes:

- The proposed works area and its immediate surroundings, and
- Rogerstown Estuary

All areas within which project-related effects could reasonably occur.

The extent of the estuary was considered sufficient to capture any potential hydrological pathways associated with the proposed works.

A review of available records of Annex IV species within the ZoI was undertaken to inform the assessment.

5.2 Identification of Relevant Annex IV Fauna

As part of the desk study, records of Annex IV fauna occurring within the ZoI were obtained from the Irish Whale and Dolphin Group (IWDG), the National Biodiversity Data Centre (NBDC), Ireland's Marine Atlas and relevant National Parks and Wildlife Service (NPWS) datasets.

Species were reviewed for relevance based on recorded sightings, habitat suitability within the ZoI, the nature of the proposed works and the presence of a potential source-pathway-receptor linkage. Annex IV plant species, terrestrial invertebrates and amphibians were not considered further due to the absence of suitable habitat and the lack of a credible source-pathway-receptor linkage within the ZoI.

Records of a number of cetacean species were identified within the wider marine environment during the desk study. However, no records of cetaceans were identified within Rogerstown Estuary itself. Furthermore, the estuary comprises a shallow, highly tidal environment characterised by extensive mudflat and sandflat habitats and does not provide suitable habitat for species typically associated with deeper coastal and offshore waters, including Bottlenose

Dolphin (*Tursiops truncatus*), Common Dolphin (*Delphinus delphis*), Risso's Dolphin (*Grampus griseus*), Minke Whale (*Balaenoptera acutorostrata*), Fin Whale (*Balaenoptera physalus*), Humpback Whale (*Megaptera novaeangliae*) and Killer Whale (*Orcinus orca*).. No credible source-pathway-receptor linkage was identified between the proposed works and these species and they were not considered further in the assessment.

Similarly, no records of harbour seal or grey seal were identified within the estuary or surrounding search area. The absence of known haul-out sites or breeding locations, combined with the limited suitability of the estuary for regular occupation by seals, indicates that a credible source-pathway-receptor linkage is absent. These species were therefore not considered further in the assessment.

Bat species were not considered further in the assessment. No records of bats were identified within the search area and the modern railway bridge crossing the estuary lacks features capable of supporting bat roosts. The structure does not contain crevices, cavities, expansion joints or other sheltered features typically used by roosting bats and is subject to regular disturbance from rail traffic. In addition, the proposed GI works are confined to existing pathways, managed grassland, restored landfill lands and areas of engineered railway infrastructure within the estuary and Rogerstown Park. The works will not result in the removal of trees, hedgerows, structures or other features capable of supporting bat roosts, nor will they affect established commuting routes or significant foraging habitat. No credible source-pathway-receptor linkage has been identified and further assessment of bats is not required.

Based on the review of species records, habitat suitability and the presence of potential impact pathways, otter and harbour porpoise were identified as the only Annex IV species requiring further consideration within the assessment. These species are presented in Table 4-1 below.

Table 5-1 - Annex IV fauna relevant to the assessment of the proposed GI works

Common Name	Scientific Name
Semi-aquatic Mammals	
Otter	*Lutra lutra*
Cetaceans	
Harbour Porpoise	*Phocoena phocoena*

These species were taken forward for assessment on the basis of their known occurrence within the wider area, the presence of suitable habitat within or adjacent to the ZoI, and the existence of potential impact pathways associated with the proposed works. Accordingly, otter and harbour porpoise represented the only Annex IV species for which a precautionary assessment was considered necessary.

5.3 Assessment of Impacts

This section assesses the potential for the proposed GI works to result in disturbance, injury, mortality or the deterioration of breeding sites or resting places of the Annex IV fauna identified in Section 5.2.

5.3.1 Semi-aquatic Mammals

5.3.1.1 Otter

A single NBDC record of otter, dating from 2013, was identified within the wider Rogerstown Estuary area approximately 1 km west of the railway causeway. While individual otters may occasionally utilise the estuary for commuting or foraging purposes, no records were identified within the project footprint and no evidence of breeding

sites or resting places is known from the project area. The railway causeway and associated rock armour comprise engineered stone subject to regular tidal inundation and disturbance from rail operations and trains and do not provide conditions typically associated with otter holts, couches or other protected resting places.

The proposed GI works within the estuarine area comprise six boreholes undertaken from a pontoon platform. Borehole locations have been specifically selected within areas of existing rock armour and engineered stone protection associated with the existing railway bridge and causeway structures. No drilling is proposed within intertidal mudflat or sandflat habitats and no vegetation clearance, habitat removal or alteration of watercourses is required. In addition to the estuarine investigations, four boreholes and six trial pits are proposed within Rogerstown Park. These works are located within existing parkland, managed grassland and pathway habitats associated with the restored former Balleally Landfill. The park is physically separated from the estuarine habitats by existing fencing, park boundaries and, in most locations, the existing railway corridor and does not comprise habitat typically associated with otter breeding sites or resting places. The proposed works will not require vegetation clearance, alteration of watercourses or disturbance of features capable of supporting otter holts or couches.

While individual otters may utilise habitats within the wider estuary, the proposed works are temporary, localised and of short duration. The temporary stone access ramp will be constructed on existing rock armour and ballast and will be removed following completion of the investigation works, with the area reinstated to its pre-construction condition. Extensive suitable habitat for foraging and commuting is available throughout Rogerstown Estuary and the surrounding area.

The proposed works will not result in the loss, deterioration or fragmentation of otter habitat and no impacts on breeding sites or resting places are anticipated. Any disturbance arising from the works would be temporary, localised and reversible, and would cease upon completion of the works. In addition, no works are proposed that would directly affect habitats typically used by otter for breeding or resting purposes. As such, no credible pathway has been identified by which the proposed GI works could result in significant disturbance, injury, mortality, or impacts on the breeding sites or resting places of otter. Significant effects on otter can therefore be excluded.

5.3.2 Cetaceans

5.3.2.1 Harbour Porpoise

No records of harbour porpoise were identified within Rogerstown Estuary or the defined NBDC search area. However, records of harbour porpoise are known from the wider coastal waters of the Irish Sea adjacent to the estuary. Although no records were identified within Rogerstown Estuary and suitable habitat is largely absent, harbour porpoise was carried forward for assessment as a precautionary measure due to the hydrological connectivity between the estuary and the wider Irish Sea. The remaining investigations within Rogerstown Park and terrestrial areas outside the Maritime Area have no source-pathway-receptor linkage to harbour porpoise and are therefore not considered further in this assessment.

Harbour porpoise is generally associated with deeper coastal and marine waters. Rogerstown Estuary comprises a shallow estuarine environment that drains almost entirely at low tide, exposing extensive areas of mudflat and sandflat and leaving only a narrow tidal channel containing water. As a result, the estuary lacks the depth, habitat availability and hydrological conditions required to support regular use by harbour porpoise. Marine mammal habitat is largely absent within the estuary, which is shallow even at high tide and lacks the deeper, permanently inundated waters typically utilised by harbour porpoise.

The proposed GI works within the estuarine area are highly localised, temporary and of limited scale, comprising six boreholes undertaken from a pontoon mounted drilling rig. Borehole locations have been selected within areas of existing rock armour and engineered stone protection associated with the existing railway bridge and causeway structures, and no drilling within intertidal mudflat or sandflat habitats is proposed. Works will be undertaken during

low tide conditions, when the estuary has largely drained and extensive areas of intertidal habitat are exposed, leaving only a narrow residual tidal channel. Consequently, there is very limited water available through which underwater noise or vibration could propagate. Any disturbance generated by the works would be localised, short term and temporary in nature and would be confined to the immediate vicinity of the works area, dissipating rapidly within the shallow estuarine environment.

The deeper coastal waters typically utilised by harbour porpoise occur beyond Rogerstown Estuary, approximately 3.5 km from the proposed works area. Furthermore, the Burrow Peninsula forms a substantial natural barrier between the inner estuary and the Irish Sea, while the narrow tidal inlet between the Burrow Peninsula and Rush provides only a highly constrained connection between the estuary and adjacent coastal waters. These physical and geographical characteristics significantly restrict the transmission of underwater noise or vibration beyond the inner estuary. Collectively, the shallow and highly tidal nature of the estuary, the limited scale and duration of the proposed works, the substantial separation distance to suitable marine habitat and the natural barriers between the estuary and coastal waters ensure that any disturbance arising from the proposed works would be fully attenuated within the estuary.

Accordingly, no credible pathway has been identified by which the proposed GI works could result in significant disturbance, injury or mortality of harbour porpoise. Significant effects on harbour porpoise can therefore be excluded.

6. Conclusion

This Annex IV Risk Assessment has considered the potential for the proposed Ground Investigation (GI) works associated with Section 2 of the Fingal Coastal Way to result in impacts on Annex IV species through pathways including temporary disturbance, underwater noise and vibration, habitat disturbance and localised water quality effects.

A review of available records identified a single historical record of otter (*Lutra lutra*) within the wider Rogerstown Estuary area, located approximately 1 km west of the proposed works. No records of bats, harbour porpoise (*Phocoena phocoena*), harbour seal (*Phoca vitulina*), grey seal (*Halichoerus grypus*) or other marine mammal Annex IV species were identified within the estuary or the defined search area. While records of harbour porpoise and other cetacean species have been documented within the wider Irish Sea and coastal waters, the available evidence indicates that Rogerstown Estuary provides very limited suitability for regular use by these species owing to its shallow water depths, extensive intertidal habitats and highly tidal nature, with the estuary draining almost completely at low tide.

Having regard to the available records, habitat suitability, the nature of the proposed works and the presence of potential source-pathway-receptor linkages, otter and harbour porpoise were identified as the only Annex IV species requiring further consideration within the assessment.

The proposed GI works are temporary, localised and of limited scale, comprising six boreholes within the estuarine area together with associated temporary access and pontoon based drilling operations, four boreholes and six trial pits within Rogerstown Park, and a limited number of additional investigations located outside the Maritime Area. The estuarine boreholes are confined to existing engineered railway infrastructure and do not overlap with habitats supporting Annex IV species, while the Rogerstown Park investigations are located within managed parkland, existing pathways and restored landfill habitats that do not provide suitable breeding sites, resting places or important habitat for the Annex IV species considered in this assessment. Borehole locations within the estuarine area have been selected within existing areas of engineered stone and rock armour associated with the railway bridge and causeway, with no drilling proposed within intertidal mudflat or sandflat habitats. Following completion of the investigations, all temporary works will be removed and affected areas reinstated.

The assessment has determined that the proposed GI works will not result in injury, mortality, significant disturbance, or the deterioration or destruction of breeding sites or resting places of Annex IV species. Accordingly, no offence under Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) is predicted to arise as a result of the proposed works.

On this basis, the proposed GI works are considered compliant with the strict protection requirements afforded to Annex IV species under Article 12 of the Habitats Directive and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). A derogation licence is therefore not considered necessary.

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