Appropriate Assessment Screening and Natura Impact Statement

Port of Cork Ringaskiddy

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Chapter A – Appropriate Assessment Screening

[1] Introduction

[1.1] Project Background

Ayesa has been commissioned to undertake an Appropriate Assessment Screening report for the redevelopment proposals at Ringaskiddy. POCC undertook significant redevelopment works at Ringaskiddy under the previously permitted Strategic Infrastructure Development application (ref: PA0035, as modified by PM0010, 304437-19 and 310847-21)[1]. The proposed redevelopment is located on or immediately adjacent to existing port lands in the vicinity of the existing port facilities at Ringaskiddy.

A large portion of the permitted works have been completed and are now operational. There is no provision in legislation that provides for an extension of duration of the original permission, given the requirement for both an EIA and an AA. Accordingly, this application is seeking permission for the elements of the work previously permitted but which are yet to be completed.

The current application, therefore, occurs in the context of a pre-existing major port redevelopment project which is now operational. This redevelopment has expanded the capacity of the deep-water port at Ringaskiddy for the purposes of relocation which will ultimately contribute to enabling the Port of Cork to relocate operations entirely from the Upper Harbour by 2050. Stage 1a of the historic redevelopment (PA0035) is now complete and the construction of the Cork Container Terminal (CCT1) at Ringaskiddy East was concluded in 2022. The current approved infrastructure gives the port sufficient operational capacity up to 2029 however a planning condition limits throughput at the Ringaskiddy Port facility to 322,846 TEU until such time as the M28 and Road schemes are complete. CCT1 currently caters for 75-80% of Port of Cork's container traffic, however this is projected to increase progressively towards 2030.

To cater for the projected increase in container traffic and dry bulks and cargoes, a further berth (CCT2) and deepwater berth extension (Ringaskiddy West) as well as extension of the CCT yard are now required and proposed herein to be added to the redevelopment under the current application.

[1.2] Project Setting

Cork Harbour is a mid-sized water body approximately 28km^2 in area, and takes in the areas of Ringaskiddy, Monkstown, Cobh, Rostellan and Whitegate in County Cork. The Port of Cork Ringaskiddy is located adjacent to the village of Ringaskiddy. Ringaskiddy village has a population of 570 people. Large industry and existing Port of Cork activities have a dominate role within the village. The location of the proposed redevelopment lies within Cork Harbour coastal water body (IE_SW_060_000) in the South-Western River Basin District (SWRBD). The harbour is fed by Lough Mahon (IE_SW_060_0750), Owenboy Estuary (IE_SW_060_1200) and North Channel Great Island (IE_SW_060_0300) transitional water bodies before feeding into the Outer Cork Harbour coastal water body (IE_SW_050_000).

The site location can be seen below in Figure 1.1.

[1] Hereafter referred to as the PA0035 permission.

Figure 1-1. Map of Site Location.

[1.3] Proposed Works

The proposed redevelopment will be contained on the site of the existing Ringaskiddy Port, where there is an existing Deepwater Berth (DWB) and ferry service which operates during day and nighttime periods and the Cork Container Terminal (CCT1). There is anticipated to be a significant baseline level of noise from Port related activities in the vicinity of the proposed redevelopment. In addition to this, there are numerous existing industrial facilities located in the general study area which is located in a busy industrialised area. Road traffic noise is the dominant noise source in the vicinity of the majority of the nearest noise sensitive properties to the existing Port at Ringaskiddy.

The works to assessed as part of this application are as follows:

Ringaskiddy East (Container Berth 2)

- Construction of an additional 200m Container Berth 2;
- Dredging of the seabed to a level of -13.0 m Chart Datum (CD);
- Installation of link-span comprising a floating pontoon and access bridge;
- Installation of container handling cranes;
- Lighting and Fencing.

Ringaskiddy West (Deepwater Berth Extension):

- A new 182m extension to the existing Deepwater Berth (DWB) which will comprise a filled quay structure (of approximately 231m) extending no further seaward than the edge of the existing DWB;
- Dredging works to varying levels to facilitate navigational access to the new facilities;
- Lighting.

Road Improvements:

- Improvements to internal road network at Ringaskiddy East to facilitate future access to the N28;
- Lighting and fencing.

The configuration of the layout for the above Ringaskiddy Port Redevelopment is shown in Appendix A.

[1.3.1] Key Activities

The key activities to be undertaken as part of the construction of the proposed development are as follows;

- Dredging works with trailing hopper suction dredger/backhoe dredging to facilitate navigational access to Ringaskiddy West and Ringaskiddy East Berth 2.
- Importation of fill material as required.
- Temporary storage of construction materials, oils and fuels.
- Piling of combi quay wall with tubular steel piles.
- Casting of concrete *in-situ*.
- Stormwater management.

The key activites to be undertaken as part of the operation of the proposed development are as follows:

- Maintenance dredging of navigational area.
- Road drainage (management of stormwater).
- Discharge of waste and bilge from vessels.
- Movements of vehicles and gantry cranes.

[1.4] Preparation of Report

Table 1-1: Ayesa Team

Title	Name	Role	Qualifications	Years' experience
Consultant Ecologist	Meadhbh Stack	Report Preparation	BSc (Ecology and Environmental Biology) QCIEEM	1
Senior Ecologist	Joe Butler	Survey, Report Preparation	BSc (Zoology) MSc (Wildlife Conservation & Management) QCIEEM	6
Senior Ecologist	Jeff Hean	Report Review	Ph.D in Zoology IES Member	10
Technical Director	Barry Sheridan	Report Review and Sign-off	MSc Environmental Management. IES Chartership	20+

[2] Appropriate Assessment Process

[2.1] Process

The AA process is a sequential process consisting of four potential stages. If it is determined that there will be no significant effect on a European Site at the first stage in the process, the process is effectively completed. The four stages are as follows:

- Stage 1 – Screening of the proposed plan or project for AA (current stage).
- Stage 2 – An AA of the proposed plan or project.
- Stage 3 – Assessment of alternative solutions; and
- Stage 4 – Imperative Reasons of Overriding Public Interest (IROPI)/ Derogation.

Stage 1 relates to Regulation 42 of the Birds and Natural Habitats Regulations; and Stage 2 relates to Article 6(3) of the Habitats Directive; and Stages 3 and 4 to Article 6(4) of the Habitats Directive.

[2.1.1] Stage 1: Screening (current stage)

Stage1 of the AA process is to assess if the plan or project is directly connected with or necessary to the management of Natura 2000 Site(s); or based on best scientific knowledge, if the plan or project, individually or in combination with other plans or projects, is likely to have a significant effect on a Natura 2000 site. This is done by examining the proposed plan or project and any Sites' conservation objectives that might be affected. If screening determines that there are likely to be significant effects, or the significance of effects is uncertain or unknown, then it will be recommended that a project is brought forward to full AA.

[2.1.2] Stage 2: Appropriate Assessment

Stage 2 of the AA process aims to identify any adverse impacts the plan or project might have on the integrity of relevant Natura 2000 Sites. As part of the assessment, a key consideration is 'in combination' effects with other plans or projects. Where adverse impacts are identified, mitigation measures can be proposed to avoid, reduce, or remedy any such negative impacts. The plan or project should then be amended accordingly, thereby avoiding the need to progress to Stage 3.

[2.1.3] Stage 3: Assessment of Alternative Solutions

If it is not possible during Stage 2 to reduce impacts to acceptable, non-significant levels by avoidance and/or mitigation, stage 3 of the process must be undertaken to objectively assess whether alternative solutions exist by which the objectives of the plan or project can be achieved. Explicitly, this means alternative solutions that do not negatively impact the integrity of a Natura 2000 Site. It should also be noted that EU guidance on this stage of the process states that 'other assessment criteria, such as economic criteria, cannot be seen as overruling ecological criteria' (EC, 2001). In other words, if alternative solutions exist that do not negatively impact Natura 2000 Sites; they should be adopted regardless of economic considerations.

[2.1.4] Stage 4: Imperative Reasons of Overriding Public Interest (IROPI)/ Derogation

Stage 4 of the AA process is undertaken when it has been determined that negative impacts on the integrity of a Natura 2000 Site will result from a plan or project but that no alternatives exist. At this stage of the AA process, the characteristics of the plan or project itself will determine whether the competent authority can allow the plan or project to progress. This is the determination of 'over-riding public interest'. It is important to note that in the case of Natura 2000 Sites that include in their qualifying features' priority' habitats or species, as defined in Annex I and II of the Directive, the demonstration of 'overriding public interest' is not sufficient and it must be demonstrated that the plan or project is necessary for 'human health or safety considerations'. Where plans or projects meet these criteria, they can be allowed, provided adequate compensatory measures are proposed. Stage 4 of the process defines and describes these compensation measures.

[2.2] Stage 1: AA Screening

This AA screening report has been completed in the following logical order:

- Definition of the zone of influence for the proposed works.
- Identification of the Natura 2000 Sites that are situated (in their entirety or partially) within the zone of influence of the proposed works.
- Identification of the most up-to-date Qualifying Interests (QIs) for each Natura 2000 Site occurring either wholly or partially within the zone of influence.
- Identification of the environmental conditions that maintain the QIs at the desired target of Favourable Conservation Status.
- Identification of the threats/impacts – actual or potential that could negatively impact the environmental conditions of the QIs within the Natura 2000 Sites.
- Highlighting the activities of the proposed works that could give rise to significant negative impacts; and
- Identification of other plans or projects, for which In-combination impacts would likely have significant effects.

The following issues have been considered:

- The nature and quality of habitats within the site of the proposed development.
- Information relating to the ecology of the Natura 2000 site.
- The status of Qualifying Interests of the Natura 2000 site (Annex I habitats and Annex II species of the EU Habitats Directive) and the relevant conservation status and objectives for these species.
- The key structural and functional relationships maintaining the integrity of the Natura 2000 site.
- The status of other annexed habitats and species occurring in proximity to the site of the proposed development; and

- The scale and nature of the aspects of the project in relation to the Natura 2000 site.

[2.3] Legislative Background and Guidance Documents

[2.3.1] International Legislation

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as the "Habitats Directive", provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of community interest by establishing and conservating an EU-wide network of sites known as Natura 2000. These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/ECC) as codified by Directive 2009/147/EC.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to have a significant effect on or to adversely affect the integrity of European Sites (Annex 1.1). Article 6(3) establishes the requirement for AA screening.:

"Any plan or project not directly connected with or necessary to the management of the [European] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

Article 6(4) states:

"If, in spite of a negative assessment of the implications for the [European] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 sites is protected. It shall inform the Commission of the compensatory measures adopted."

[2.3.2] The Requirement for AA Screening

Section 42 (1) of S.I. No. 477 of 2011, the European Communities (Birds and Natural Habitats) Regulations 2011 states:

"A screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site."

Where the screening process cannot exclude the possibility that a plan or project, individually or in combination with other plans or projects, could have a significant effect on a European site, there is a requirement under Article 42 (9) of these Regulations for the preparation of a Natura Impact Statement to inform the Appropriate Assessment process.

[2.3.3] Screening Determination

In accordance with Regulation 42(7) of the Birds and Natural Habitats Regulations 2011 (S.I. No. 477/2011) as amended:

"The public authority shall determine that an Appropriate Assessment of a plan or project is not required where the plan or project is not directly connected with or necessary to the management of the site as a European Site and if it can be excluded on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site."

Further, under Regulation 42(8):

"(a)Where, in relation to a plan or project for which an application for consent has been received, a public authority decides that an Appropriate Assessment is required, the public authority shall give notice of the determination, including reasons for the determination of the public authority, to the following—

i. the applicant,

ii. if appropriate, any person who made submissions or observations in relation to the application to the public authority, or

iii. if appropriate, any party to an appeal or referral.

(b) Where a public authority has determined that an Appropriate Assessment is required in respect of a proposed development it may direct in the notice issued under subparagraph (a) that a Natura Impact Statement is required."

[2.3.4] National Legislation

The Habitats Directive has been transposed into Irish law by Part XAB of the Planning and Development Act, 2000 - 2015 and the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477/2011) as amended.

[2.3.5] Guidance Documents on Appropriate Assessment

Where an AA is necessary, the AA requirements of Article 6(3) of the Habitats Directive 92/43/EEC (European Communities 2001) follow a sequential approach as outlined in the following guidance documents:

- Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities. Department of Environment, Heritage, and Local Government, 2010 revision.
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 and PSSP 2/10.
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (European Commission Environment Directorate-General, 2002).
- Managing Natura 2000 Sites: The provisions of Article 6 of the Habitat's Directive 92/43/EEC Commission Notice (European Commission Environment Directorate-General, 2018).

- Guidelines for Good Practice Appropriate Assessment of Plans Under Article 6(3) Habitats Directive (International Workshop on Assessment of Plans under the Habitats Directive, 2011).
- The Department of the Environment, Heritage, and Local Government guidance *"Appropriate Assessment of Plans and Projects in Ireland – guidance for Planning Authorities, 2009"* and the European Commission (2001) guidelines *"Assessment of plans and projects significantly affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC".*
- Appropriate Assessment Screening for Development Management (OPR, March 2021)

[3] Methods

[3.1] Desktop Information Consulted for this Report

The desk study included review of the following sources of information:

- Article 17 Reports (NPWS, 2019)
- GIS spatial data for Article 17 Reports
- National Biodiversity Data Centre (NBDC) – 1km- and 2km-square species reports (accessed online on 13/09/2024)
- Botanical Society of the British Isles - www.bsbi.org.uk;
- Invasive Species Ireland - www.invasivespeciesireland.com;
- Bat Conservation Ireland - http://www.batconservationireland.org/;
- Chartered Institute of Ecology & Environmental Management (CIEEM) - www.cieem.net; and
- BirdWatch Ireland (BWI) - http://www.birdwatchireland.ie/.

[3.2] Cumulative and In-Combination Effects

Screening for Appropriate Assessment requires that the cumulative or in-combination effects of the proposed development, together with other plans or projects, are assessed. Cumulative impacts can be defined as a project/plan/programme likely to have a significant effect thereon, either individually or in combination with other plans or projects.

Per EC Article 6 Guidance Document (EC 2018), in order to ensure all impacts upon the site are identified, including those direct and indirect impacts that are a result of cumulative impacts, the following steps were completed:

- Identify all projects/ plans which might act in combination: Identify all possible sources of effects from the project or plan under consideration, together with all other sources in the existing environment and any other effects likely to arise from other proposed projects or plans.
- Impacts identification: Identify the types of impacts that are likely to affect aspects of the structure and functions of the site vulnerable to change.
- Define the boundaries for assessment: define boundaries for examination of cumulative effects that will differ for different types of impact and may include remote locations.
- Pathway identification: Identify potential cumulative pathways (e.g. via water, air etc.; accumulations of effects in time or space).
- Prediction: Prediction of magnitude/extent of identified likely cumulative effects.
- Assessment: Comment on whether or not the potential cumulative impacts are likely to be significant.

[3.3] Screening Assessment of European Sites

This chapter provides a Preliminary Screening Assessment to identify SACs and SPAs to be assessed fully in the Screening of Potential Impacts (Section 7).

As per the outcomes of the Judgement in Case C-721/21: Keegan Land Holdings vs. An Bord Pleanála, this screening assessment has been completed with consideration of "*Article 6(3) of Directive 92/43 must be interpreted as meaning that: in order to determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, **account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features**, inherent in such a plan or project, irrespective of any effect on the site".*

[3.3.1] Establishing a Zone of influence (ZoI)

"The 'zone of influence' for a project is defined as "the area over which ecological features may be affected by biophysical changes because of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries" (CIEEM, 2019). Subsequently, the zone of influence (ZoI) will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018).

Irish guidance (Department of Environment, Heritage and Local Government, 2010) states, "*for the zone of influence, a distance of 15 km is currently recommended in the case of plans derives from UK guidance* (Scott Wilson et al, 2006)". The guidance goes on to state that "***for projects, the distance could be much less than 15 km, and in some cases less than 100 m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects***.". Additionally, a practice note issued by the Office of the Planning Regulator (OPR, 2021) further states that "*The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established case-by-case using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km)".*

A distance of 15 km is currently recommended in the case of plans, as a potential zone of influence, however for projects, the distance could be much less than 15km, and in some cases less than 100m (DEHLG, 2009). National Parks and Wildlife Service (NPWS) guidance (NPWS, 2009) advises that this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects. Where there is hydrological links beyond the site boundaries, particularly in the marine environment, zones of influence can be extensive and lead to effects well beyond the construction site (CIEEM, 2018). This is particularly relevant in the case of sediment and nutrient transport in marine habitats.

The key activities to be undertaken as part of the construction of the proposed development site include the following; dredging works with trailing hopper suction dredger/backhoe dredging to facilitate navigational access to Ringaskiddy West and Ringaskiddy East Berth 2, importation of fill material, piling of combi quay wall with tubular steel piles, casting of concrete *in-situ,* and stormwater management. Operational activities such as maintenance dreging of navigational area, road drainage (management of stormwater), discharge of waste and bilge

from vessels, and the movement of vehicles and gantry cranes.Given the nature and location of the proposed development and works listed above, the Zone of Influence is defined as 15km.

[3.3.2] European Sites within the 15 km Zone of Influence

Within 15 km of the proposed development site (Table 3.1 and Figure 3.1) there is one Special Protection Area (SPA) and one Special Area of Conservation (SAC).

Table 3-1. Natura 2000 Sites within 15 km of the Ringaskiddy Port Redevelopment.

Type	Site Code	Site Name	County
SPA	004030	Cork Harbour SPA	Cork
SAC	001058	Great Island Channel	Cork

Figure 3-1. Natura 2000 Sites within 15 km of the Ringaskiddy Port Redevelopment.

Of the Natura 2000 sites within 15 km, connectivity via an aqueous pathways exist between the project scheme area and the Cork Harbour SPA and the Great Island Channel SAC.

[3.4] Source-Pathway-Receptor (SPR) Model

The likely effects of the proposed development on any European site have been assessed using a source-pathway-receptor model, where:

- A 'source' is defined as the individual element of the proposed works that has the potential for likely significant effects on a European site, its qualifying features and its conservation objectives.
- A 'pathway' is defined as the means or route by which a source can affect the ecological receptor.
- A 'receptor' is defined as the SCI of SPAs or QI of SACs for which conservation objectives have been set for the European sites being screened.

Further assessment is required when a source-pathway-receptor link between the proposed development and a European site exists, and a likely significant effect may exist. In accordance with EC Article 6 Guidance Document (EC, Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, 2018), in order to ensure that all significant effects upon the site are identified, including those direct and indirect significant effects that are a result of cumulative significant effects, the following steps were completed:

- Identify all projects/ plans which might act in combination: Identify all possible sources of effects from the project or plan under consideration, together with all other sources in the existing environment and any other effects likely to arise from other proposed projects or plans.
- Identification of likely significant effects: Identify the types of significant effects that are likely to affect aspects of the structure and functions of the site vulnerable to change.
- Define the boundaries for assessment: define boundaries for examination of cumulative effects which will be different for different types of significant effects and may include remote locations.
- Pathway identification: Identify potential cumulative pathways (e.g., via water, air etc.; accumulations of effects in time or space).
- Prediction: Prediction of magnitude/extent of identified likely cumulative effects.
- Assessment: Comment on whether or not the potential cumulative significant effects are likely to be significant.

[3.5] Development Site Habitat Assessment Methods

An Ayesa Ecologist conducted a general assessment of the site. The site assessment aligned with the Heritage Council's Best Practice Guidance for Habitat Survey and Mapping (Smith *et al.,* 2011) and habitats were classified to level 3 of the Fossitt (2000) classification system. To illustrate the general habitat quality, photographs were taken using a digital camera. Grid references were recorded using a GPS handset. Site evaluation is based on the guidelines of the Chartered Institute of Ecology and Environmental Management (CIEEM 2019).

The site and immediate surroundings were inspected for invasive species, as listed in the Third Schedule of the Birds and Natural Habitats Regulations (S.I. No. 477/2011). Regulation 49 (2) states that "*any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place any plant listed in the Third Schedule, shall be guilty of an offence*". The determination of the presence or absence of Annex I habitats was carried out in consultation with the habitat descriptions provided in the most recent Article 17 Reports (NPWS, The Status of EU Protected Habitats and Species In Ireland. Volume 1: Summary Overview., 2019). The Interpretation Manual of European Union Habitats (EUR 28, April 2013) was also consulted. In addition, the spatial

GIS data for the Article 17 Reports were examined to determine the distribution of these habitats (as known to the NPWS) within the study area[1]. Additionally, the existing watercourse was investigated for evidence of the presence of amphibians and otters.

All surveys were completed by qualified specialists and in accordance with relevant legislation, particularly the "Guidelines for Ecological Impact Assessment in the UK and Ireland" (CIEEM, 2018) through the additional recording of specific features indicating the presence, or likely presence, of protected species or other species of nature conservation significance.

[3.6] Assessment of Likelihood of Significant Effects

In assessing the likelihood of the occurrence of significant effects, the logic is as follows:

- The conditions necessary for a significant effect are considered.
- The likelihood of that effect is assessed, considering the process/emission magnitude, duration, timing and frequency, as well as the connectivity with the proposed project site and the sensitivity of the QI/SCI to the process/emission in question.

The below definitions are relevant at this Stage 1 Appropriate Assessment Screening stage:

- Likely Significant Effect - Where a plan or project is likely to undermine any of the site's conservation objectives.
- Possible Significant Effect - Where a plan or project has an indicated potential to undermine any of the site's conservation objectives but where doubt exists about the risk of a significant effect in the current context. Nevertheless, where doubt exists about the risk of a significant effect, use of the precautionary principle requires this effect to be considered appropriately within the Article 6 assessment process.

[4] Results

[4.1] Development Site Habitats

The following habitats were observed in / around the works site:

Habitats recorded in the study area are listed in Table 4.1 below. They are listed in the order that they appear in 'A Guide to Habitats in Ireland' (Fossitt, 2000) rather than in order of abundance.

Table 4.1. Habitats recorded within the study area.

Habitat Name	Habitat Code (as per Fossitt, 2000)
Spoil and bare ground	ED2
Recolonising bare ground	ED3
Buildings and artificial surfaces	BL3
Sea walls, piers, and jetties	CC1
Scrub	WS1
Treelines	WL2

[4.1.1] Fossitt, 2000 Habitats

[4.1.1.1] Spoil and bare ground (ED2)

Numerous areas of this habitat were identified along the boundary of the port. Areas of unpaved ground containing spoil/rubble that have not yet been colonised by plants fall into this category. The areas on which they were observed within the scheme area appeared to be heavily trampled on or driven over regularly. See Figure 4.1 below.

Figure 4-1. Spoil and bare ground (ED2) recorded onsite - 06/08/2024.

[4.1.1.2] Recolonising bare ground (ED3)

This classification was applied to any areas of bare ground; artificial surfaces of tarmac, concrete or hard core, that have been invaded or recolonised by herbaceous plants. The species assemblage comprised of the following; Gorse (*Ulex europaeus*), Spear thistle (*Cirsium vulgare*), Chamomile (*Chamaemelum nobile*), Pennyroyal (*Mentha pulegium*), Scarlet pimpernel (*Anagallis arvensis*), Broad-leaved dock (Rumex obtusifolius), Annual Meadow-grass (*Poa annua*), Yorkshire-fog (*Holcus lanatus*), Pineappleweed (*Matricaria discoidea*), and Horseweed (*Erigeron Canadensis*). See Figure 4.2 below.

Figure 4-2. Recolonising bare ground (ED3) recorded onsite - 06/08/2024.

[4.1.1.3] Buildings and artificial surfaces (BL3)

Given the largely urban nature of the development area, this habitat dominates the landscape. All roads, terminals, buildings, shipment containers, footpaths etc. fall into this category. See Figure 4.3 below.

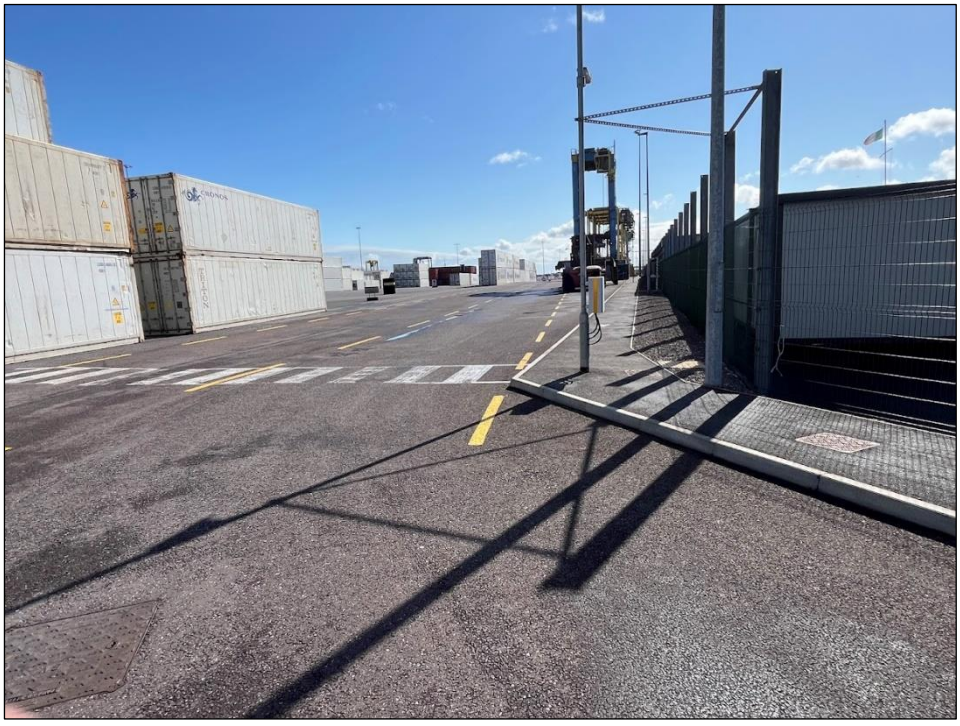

Figure 4-3. Buildings and artificial surfaces (BL3) recorded onsite - 06/08/2024.

[4.1.1.4] Sea walls, piers, and jetties (CC1)

This category is used for all coastal constructions that are partially or totally inundated by sea water at high tide, or subject to wetting by sea spray or wave splash. It includes sea walls, piers, jetties, slipways, causeways and other structures associated with ports and docks in urban or rural areas. Any other artificial structures that are exposed along the coast at low tide should also be included: coastal defences or groynes, wrecks, and pipes or pipelines (Fossitt, 2000). This classification was applied to areas of rock armour in the intertidal zone of the site boundary. See Figure 4.4 below.

Figure 4-4. Sea walls, piers, and jetties (CC1) recorded onsite - 06/08/2024.

[4.1.1.5] Scrub (WS1)

This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5 m, or 4 m in the case of wetland areas. Scrub frequently develops as a precursor to woodland and is often found in inaccessible locations, or on abandoned or marginal farmland (Fossitt, 2000). A limited area of Scrub habitat was recorded running adjacent to the rock armour on the boundary of the site. Species identified included but were not limited to Gorse (*Ulex europaeus*), Broom (*Cytisus scoparius*), Alder (*Alnus glutinosa*), Butterfly-bush (*Buddleja davidii*), Sycamore (*Acer pseudoplatanus*), and Grey willow (*Salix cinerea* subsp. *cinerea*). See Figure 4.5 below.

Figure 4-5. Scrub (WS1) recorded onsite - 06/08/2024.

[4.1.1.6] Treelines (WL1)

Considerable stretches of the development boundary fall under this habitat. The species assemblage of the Treelines on site comprised of Alder (*Alnus glutinosa*), Sycamore (*Acer pseudoplatanus*), the alien invasive species Butterfly-bush (*Buddleja davidii*) and Grey willow (*Salix cinerea* subsp. *cinerea*). See Figure 4.6 below.

Figure 4-6. Treelines (WL1) recorded onsite - 06/08/2024.

[4.1.2] Annex I Habitat

There were no listed Annex I habitats identified in the Ringaskiddy Port Redevelopment area.

[4.2] Alien Invasive Species

Under Section 49 (2) of S.I. No. 477 of 2011, the European Communities (Birds and Natural Habitats) Regulations 2011, it is an offence to allow or cause to disperse, any plant which is included in Part 1 of the Third Schedule of this S.I.

Butterfly-Bush (*Buddleja davidii*) was the only Alien Invasive Species recorded on Site. Winter Heliotrope is not listed as Third Schedule Species but is worth noting due to their highly invasive nature. Winter heliotrope can be seen below in Figure 4.7.

Figure 4-7. Butterfly-Bush (Buddleja davidii) individuals recorded on site - 06/08/2024.

[4.3] Hydrology

Figure 4.8 below shows all the hydrological pathways that surround the project site that flow into Cork Harbour.

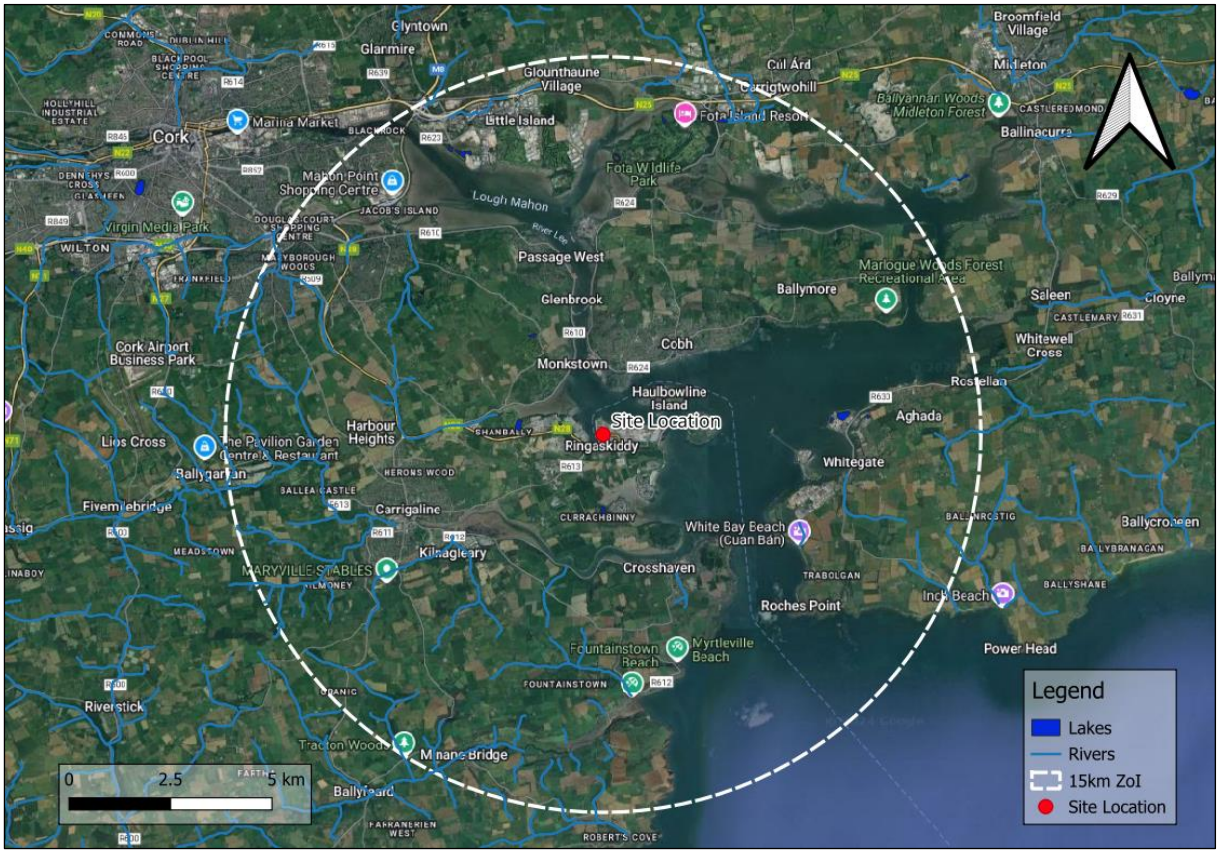

Figure 4-8. Hydrology of the development site and surrounding landscape

[5] Screening of likely impacts

[5.1] Sources of Likely Significant Effects

The following sections hereunder consider whether the construction phase of the proposed development works could cause 'likely significant effects' on the qualifying features of the Natura 2000 site(s), alone or in-combination with other plans/projects. The proposed development site does not overlap or encroach on the boundaries of any Natura 2000 sites or other protected habitats, but there is direct hydrological connectivity between the site and Natura 2000 sites nearby. It is therefore required to assess any potential negative impacts on habitats and/or SCI species for which the Natura 2000 sites are designated.

[5.1.1] Sources

[5.1.1.1] Transport of Water Bourne Contaminants

The distance travelled by water-borne contaminants is influenced by a number of factors, some of which are listed below:

- Magnitude of contaminant release;
- Particle size of sediment;
- Flow velocity;
- Morphology of the receiving waterbody – rocks, vegetation, meanders etc. provide opportunities for the attenuation of contaminants, and may also create localised areas of low flow, such that some sediment can fall out of suspension; and
- Solubility of contaminant.

[5.1.1.2] Sediment

As previously shown in this report, the proposed works are located directly adjacent to Cork Harbour. During the construction phase of the project there is a possibility that sediment could be washed off the site via storm water run-off or direct sediment spills into the adjacent harbour waters. Given the tidal nature of Cork Harbour, this sediment could then be transported into upper areas of the harbour towards Great Island Channel SAC as well as other protected sections of Cork Harbour that are designated for protection under Cork Harbour SPA.

[5.1.1.3] Hydrocarbons & Toxic Contaminants

Unlike suspended sediment, which (depending on particle size) can drop out of solution in areas of reduced flow velocities, petroleum-range hydrocarbons are largely insoluble in water and will float on the surface, thereby allowing for greater potential for downstream transport. Hydrocarbons may sorb onto soil particles on the bankside or riverbed, which can lead to delayed leaching into the environment and localised effects on soil-dwelling organisms.

[5.1.1.4] Noise and Vibration

As heavy machinery will be required for the completion of works, there is potential for the production of harmful noise impacts. As previously mentioned, the project site is located directly adjacent to Cork Harbour, which contains various wintering and breeding bird species that are sensitive to noise impacts (particularly sudden loud noises which can cause birds to fledge from nesting or foraging grounds).

[5.2] Pathways

The proposed works site does not overlap any Natura 2000 sites. However, the works area is located directly adjacent to Cork Harbour, which contains several areas that are designated for protection under Cork Harbour SPA (Natura 2000 Site). The nearest of these designated areas is 50 metres west of the proposed works. There is a clear hydrological link between the project site and Cork Harbour SPA. This could potentially result in this Natura 2000 Site becoming negatively impacted on by the proposed project activities via sediment and/or hydrocarbon run-off.

Great Island Channel SAC is located approximately 5 km north of the proposed site near the inner sections of Cork Harbour. This Natura 2000 site is also hydrologically connected to the project site. Given the tidal nature of the harbour, Great Island Channel SAC could potentially be impacted on by any sediment and/or hydrocarbon run-off that may could occur from the proposed works.

Cork Harbour SPA also contains various different bird species, many of which are SCIs (Species of Conservation Interest) for this Natura 2000 Site. These birds may be susceptible to noise emissions from the proposed works. Noise emissions from the works could deter these birds away from typically foraging, roosting or nesting areas of the harbour where they typically thrive.

[5.3] Receptors

The potential and likelihood of impacts from the proposed development works to nearby Natura 2000 sites is assessed below. Habitats and species detailed in Natura 2000 sites identified as sites that are likely to receive impacts from the proposed development are provided in the sections hereunder. Additionally, any sensitive/protected species/habitats within the immediate vicinity of the proposed works have also been considered.

The aim of this AA Screening and NIS is to assess potential impacts on QIs and SCIs of Natura 2000 Sites from the proposed works that are located within the ZoI.

Any other sensitive/protected species and habitats within the immediate vicinity of the proposed works have been considered in the biodiversity chapters of the EIAR for this project.

[6] Screening of Likely Significant Effects to European Sites

[6.1.1] Special Protection Areas (SPA)

[6.1.1.1] Cork Harbour SPA 004030

The Site Synopsis and Conservation Objectives for the site are available on https://www.npws.ie/protected-sites/spa/004030. proposed development is shown in Figure 5-1. This SPA is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCI).

Significant effects to the below SCIs (Table 6.1) may include habitat loss, population decreases or significant decrease in the range, timing or intensity of habitat use by species, other than that occurring from natural patterns of variation.

Increased sediment load from the development site could alter the conditions of habitats at Cork Harbour SPA and therefore has potential to result in significant effects to the SCI species that utilise those habitats.

The contamination of aquatic habitats common in the SPA (e.g., estuaries and mudflats) with petrochemicals from construction and operational vehicles may lead to the accumulation of toxic compounds in prey items (e.g., fish, invertebrates, molluscs and aquatic plants) and thus bioaccumulation in the bird species of Special Conservation Interest at the SPA. Bioaccumulation of toxic compounds may cause morbidity or mortality of individuals.

A number of activities can result in disturbance, including visual and noise. This is more frequently associated with construction activities but could also be associated with some aspects of the operational phase (e.g. structure maintenance, public access). Disturbance can cause sensitive species, such as birds, to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

Table 6-1. Likelihood of significant effects to the SCIs of Cork Harbour SPA

Special Conservation Interests [004030]	Comments	Significant Effect Likely
Species		
Little Grebe (*Tachybaptus ruficollis*) [A004]	• Forages in sheltered coasts and estuaries for insects, larvae and small fish. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident in Ireland. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Great Crested Grebe (*Podiceps cristatus*) [A005]	• Occasionally forages in estuaries and on the shoreline for fish, but also small crustaceans, small frogs and newts. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals.	Possible

Special Conservation Interests [004030]	Comments	Significant Effect Likely
	• An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	
Cormorant (*Phalacrocorax carbo*) [A017]	• Often forages on rocky shores, coastal lagoons and estuaries for fish. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident in Ireland. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Grey Heron (*Ardea cinerea*) [A028]	• Forages in any watery habitat shallow enough for wading. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident in Ireland. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Shelduck (*Tadorna tadorna*) [A048]	• Commonly forages in coastal areas for invertebrates, small shellfish and aquatic snails. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident in Ireland. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Wigeon (*Anas penelope*) [A050]	• Typically forages aquatic plants, grasses, roots in wetland and marine habitats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Teal (*Anas crecca*) [A052]	• In winter, typically forages seeds and small invertebrates in brackish waters and even in sheltered inlets and lagoons along the seashore. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible

Special Conservation Interests [004030]	Comments	Significant Effect Likely
Pintail (*Anas acuta*) [A054]	• During winter, often forages in sheltered estuaries and coastal lagoons, primarily on plant material including seeds and rhizomes of aquatic plants. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Shoveler (*Anas clypeata*) [A056]	• Forages for small insects and plant matter in wetlands habitats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Red-breasted Merganser (*Mergus serrator*) [A069]	• Commonly forages for fish in coastal waters. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Oystercatcher (*Haematopus ostralegus)* [A130]	• Often forages for mussels and cockles in estuaries and rocky shores. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • Increased sedimentation could lead to reduced shellfish recruitment and thus reduced prey availability (Wilbur and Clarke 2001). • Non-breeding resident in Ireland. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Golden Plover (*Pluvialis apricaria*) [A140]	• During migration often forages in estuaries for worms, beetles and insects. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Grey Plover (*Pluvialis squatarola*) [A141]	• Often forages for shellfish and worms on beaches and tidal flats. Shellfish and worms. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in.	Possible

Special Conservation Interests [004030]	Comments	Significant Effect Likely
	• Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	
Lapwing (*Vanellus vanellus*) [A142]	• Often forage in wetlands and intertidal habitats for worms and insects. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Dunlin (*Calidris alpina*) [A149]	• Primarily forages in coastal habitats for molluscs, worms and crustaceans. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Black-tailed Godwit (*Limosa limosa)* [A156]	• Often forages in muddy estuaries in winter for invertebrates, but also aquatic plants. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Curlew (*Numenius arquata*) [A160]	• Typically forages for worms, shellfish and shrimps in estuaries, mudflats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Redshank (*Tringa totanus*) [A162]	• Forages for insects, earthworms, molluscs and crustaceans in mudflats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Black-headed Gull (*Chroicocephalus*	• Typically forages intertidal habitats for worms, insects, fish and carrion. Consumption of prey items contaminated with	Possible

Special Conservation Interests [004030]	Comments	Significant Effect Likely
ridibundus) [A179]	petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	
Common Gull (*Larus canus*) [A182]	• Typically forages intertidal habitats for worms, insects, fish and carrion. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident at Cork Harbour SPA. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Lesser Black-backed Gull (*Larus fuscus*) [A183]	• Opportunistic feeders who forage a variety of food (fish, insects, crustaceans, worms, starfish, molluscs, seeds, berries, small mammals, eggs, small birds, chicks, scraps, offal, and carrion) in marine and wetland habitats. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Non-breeding resident in Ireland. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Common Tern (*Sterna hirundo*) [A193]	• Typically feed far from nest sites in marine habitats however may sometimes forage large rivers or coastal areas for fish. Consumption of prey items contaminated with petrochemicals could lead to morbidity or mortality of individuals. • An influx of sediment could negatively alter the conditions of the habitats that this species thrives in. • Nationally important breeding population at Cork Harbour SPA. However, breeding primarily occurs on artificial structures, (e.g., mooring 'dolphins'), which are concentrated around the port at Ringaskiddy (RPS, 2014). Therefore, there is unlikely to be any disturbance to breeding sites from construction works. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible
Habitats		
Wetland and Waterbirds [A999]	• An influx of sediment or petrochemicals from the site could negatively alter the conditions of the wetland habitats within this site. • Noise emissions can cause birds to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.	Possible

Based on the above information, it is concluded that the proposed project has the potential, without mitigation, to cause significant effects to Cork Harbour SPA.

[6.1.2] Special Area of Conservation (SAC)

[6.1.2.1] Great Island Channel SAC 001058

The Site Synopsis and Conservation Objectives for the site are available at https://www.npws.ie/protected-sites/sac/001058. The location of this SAC in the vicinity of the proposed development is shown in Figure 3.1. This SAC is of high conservation value for the following QI habitats and/or Species of Conservation Interest (SCI).

Significant effects to the below QIs at Great Island Channel SAC (Table 6.2) may include habitat loss, disruption of the natural community composition/distribution, or alterations to the physical or vegetive structure.

Increased sediment load from the development site could negatively alter the conditions of mudflats, sandflats or Atlantic salt meadows. Petrochemical contamination from construction/operational vehicles may cause morbidity or mortality of species important to the community complex in these habitats (i.e., macroinvertebrates in mud/sandflats and aquatic plant species in Atlantic salt meadows). Thus, the community distribution in both habitats and the physical and vegetative structure of the Atlantic salt meadows may be negatively impacted by the development.

Table 6.2 comments on the likelihood of significant effects to QIs of the Great Island Channel SAC and gives a rationale for each case.

Table 6-2. Likelihood of significant effects to the QIs of Great Island Channel SAC

Special Conservation Interests [001058]	Comments	Significant Effect Likely
Habitats		
Mudflats and sandflats not covered by seawater at low tide [1140]	• An influx of sediment from the project site could negatively alter the condition of these mudflats and sandflats. • Contamination by petrochemicals or heavy sedimentation may cause morbidity or mortality of polychaete/oligochaete community complex, the sustenance of which is identified as a conservation objective of the SAC.	Possible
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	• Contamination by oils or petrochemicals may lead to plant morbidity or death and thus the vegetation structure and composition may be negatively affected. • Increased sediment deposition may lead to an increase in the area available for colonisation by saltmarsh vegetation.	Possible

Based on the above information, it is concluded that the proposed project has the potential, without mitigation, to cause significant effects to Great Island Channel SAC.

[6.2] Cumulative and In-Combination Significant Effects

It is a requirement of Appropriate Assessment that the cumulative or in-combination effects of the proposed development together with other plans or projects are assessed. Cumulative impacts can be defined as a project/plan/program likely to have a significant effect on a European Site, either individually or in combination with other plans or projects. Considering the information presented in section 6, any project/plan/program which may generate sediment, contaminants, or noise and vibration emissions that may have the potential to have cumulative impacts from the proposed works to cause significant effects to European sites are considered here.

The following sources were consulted in order to determine if there were any other plans or projects in the area which could result in cumulative impacts:

- Cork County Development Plan, 2022-2028 https://www.corkcoco.ie/en/cork-county-development-plan-2022-2028

  Volume 4 – South Cork
- Cork County Council - Planning Enquiry System https://corkcocoeur.maps.arcgis.com/apps/webappviewer/index.html?id=254568bc8931492eb72ab5446c411cb9
- DHPLG EIA Portal https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal

In order to take account of in-combination effects, plans, and projects that are completed, approved but uncompleted, or proposed (but not yet approved) should be considered in this context (EC, 2021a). A search of the National Planning Application Database (NPAD) (DoHPLG, February 2024) and general web searches for major infrastructure projects and plans within 2 km of the Proposed Development in the last three years has been undertaken to identify other plans and projects that may result in cumulative effects.

Table 6-3. Review of planning applications within 2 km of the development

Application Number	Description	Potential for In-Combination
N/A	Cork County Development Plan 2022-2028 A Natura Impact Report was prepared (Cork County Council, 2022) in support of the Cork County Development Plan 2022-2028. The report assessed potential impacts arising from the Cork County Development Plan 2022-2028. No impacts were identified on any of the European sites identified within the ZoI or the vicinity of the Proposed Development. As such, no incombination effects are anticipated between the Proposed Development and the Cork County Development Plan 2022-2028 or the supporting NIS	No potential for in-combination effects. The Plan was subject to Stage 1 and Stage 2 AA. It was concluded that, with the implementation of mitigation measures, the Plan is not foreseen to give rise to any significant effects on designated European sites, alone or in-combination with other plans or projects. Therefore, with the mitigation measures of the Plan implemented, and the absence of significant effects predicted from the Proposed Works, there is no potential for incombination effects between the Proposed Works and this Plan.
N/A	Port of Cork Masterplan Under the National Ports Policy, Irish ports are advised to produce port masterplans in line with international best practice	Any individual projects that emerge in the course of implementing the Masterplan will be assessed at the time of design and construction. In

	for all Irish ports. The purpose of the Port of Cork Masterplan 2050 ("Masterplan") is to provide a vision of how the PoCC can continue to adapt and grow. This masterplan builds upon the previous Strategic Development Plan adopted by the PoCC in 2010. It provides an integrated framework to strategically plan for the short, medium, and long-term; to coordinate port planning: to assist local authorities in the preparation of their own local and regional plans; to evaluate future development proposals and to facilitate the green energy sector.	relation to such projects, the PoCC will follow, and comply with, all the normative planning, marine, environmental, and consent requirements. If there are no projects arising from the plan that could be delivered within the same timeframe as the Proposed Development then there is no potential for in-combination effects.
318802 (Previously submitted as PA0045) An Bord Pleanála / Cork County Council	Indaver Ireland Limited Proposed development of a resource recovery centre (including waste-to-energy facility)	No potential for in-combination effects. The Natura Impact Statement for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites
217291 Cork County Council	The removal of 8 no. car parking spaces permitted under Cork County Council planning application 11/5487, and their replacement with the construction of an open-air outdoor enclosure comprising of a concrete base, timber panel security fence and access gateways, fixed to the existing in-situ concrete wall, and all associated development. The enclosure will house a test rig, consisting of pipe work,3 no. water tanks, and electronic equipment, mounted on a steel framed platform (a skid) to facilitate transport by road and ease of installation and allow for the removal of the rig once testing is complete after approximately 3 years.	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
224356 Cork County Council	A new vehicular entrance off the L2545, the temporary use of lands (for a period of 10 years) for open storage of port related cargo, and all ancillary works including road / kerbside re-alignment and security fencing	No potential for in-combination effects. The AA screening report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites
224577	Removal of external inclined conveyer system to warehouse as permitted under Cork County planning Ref. 06/13900 and replacement with vertical elevator and associated pit and a horizontal enclosed conveyor with supporting bridge structure and all associated site works.	No potential for in-combination effects. The AA screening report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.

235531	Removal of three car parking spaces and the erection of a research container unit.	No potential for in-combination effects. The planner's report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.
236365	Permission for the relocation and erection of a small micro generation research wind turbine at the north - eastern corner of the site. The wind turbine will be used to provide power to the Beaufort Building and for the educational purposes. The project involves: 1) construction of a concrete foundation for the turbine (measuring 12.25m2), 2) erection of the tower and turbine (metal lattice tower and turbine with tip height of 19.1m) and 3) associated site works, fencing and utility connections.	No potential for in-combination effects. The AA screening report for this development concluded it is unlikely to cause any significant negative effects on any Natura 2000 sites.

[7] Screening Statement

The Screening exercise was completed in compliance with the relevant EC and national legislation and associated guidance. Article 42 (7) of the European Communities (Birds and Natural Habitats) Regulations 2011 states that: *"The public authority shall determine that an Appropriate Assessment of a plan or project is not required […] if it can be excluded on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site."*

The Screening exercise was completed in compliance with the relevant European Commission and national guidelines. Article 42 (7) of the European Communities (Birds and Natural Habitats) Regulations 2011 states that: *"The public authority shall determine that an Appropriate Assessment of a plan or project is not required […] if it can be excluded on the basis of objective scientific information following screening under this Regulation, that the plan or project, individually or in combination with other plans or projects, will have a significant effect on a European site."*

The potential impacts from the construction and post-construction stages of the project site have been considered in the context of the European Sites potentially affected and their Qualifying Interests/Special Conservation Interests.

Cork Harbour SPA and Great Island Channel SAC are at risk of indirect negative impacts by way of surface water contamination and noise disturbance. Mitigation cannot be accounted for at the screening stage of Appropriate Assessment to avoid these impacts. It has been concluded that the potential for significant effects to Cork Harbour SPA and Great Island Channel SAC cannot be ruled out and thus a Natura Impact Statement must be completed to progress this application.

Chapter B – Natura Impact Assessment (NIS)

[8] Introduction

Chapter A of this Report detailed the Appropriate Assessment (AA) Screening review.

This chapter (Chapter B) reports the detailed methodology followed for the Appropriate Assessment process for addressing possible impacts of the proposed Ringaskiddy Port development to Cork Harbour SPA and Great Island Channel SAC.

[8.1] Methodology for Stage 2: Appropriate Assessment (NIS)

In addition to the methodology employed at Stage 1 of the AA Screening process, further information on current site conditions was consulted to assess the impacts of the proposed scheme on the QI's and SCIs of Cork Harbour SPA and Great Island Channel SAC respectively. See Section 2.1 for the Appropriate Assessment stage process.

[9] Appropriate Assessment for Great Island Channel SAC and Cork Harbour SPA

[9.1] Introduction

This chapter describes the qualifying habitats and species found within Great Island Channel SAC and Cork Harbour SPA, and their relationship with the proposed site and works.

A detailed description of the potential impacts associated with the works is provided. Where required, mitigation measures have been proposed (see Section 7). The potential impacts which could occur to habitats and species as a result of the proposed works include:

- Loss of qualifying habitat or species within the SPA or SAC due to the release of sediments into watercourses within the proposed development site during the works.
- Loss of qualifying habitat or species within the SPA or SAC due to the release of other pollutants, such as oils and petrochemicals, into watercourses within the proposed development site during the works.

[9.2] Description of Potential Impacts

[9.2.1] Construction Phase

As described in the screening report, the proposed works are located at the Port of Cork Ringaskiddy. Therefore there is a clear hydrological pathway between the works and Cork Harbour (Cork Harbour SPA) and Great Island Channel (SAC).

The most likely risks during the construction phase are associated with the non-containment of stormwater runoff from the construction site. Contaminated runoff has the potential to enter the nearby stream and discharge directly into the SAC and SPA. The following stormwater-contamination events are considered plausible in this context:

- Exposure of loose, excavated topsoil to rainwater. Runoff would potentially have a high sediment and nutrient load.
- Disturbance of sediment along the stream bank and within the stream
- Spillage of petroleum fuels or oils, which could be transported offsite by runoff.

The physiological effects of exposure to, and ingestion of significant concentrations of hydrocarbons on fish has been well-documented; these include delayed maturation, embryo malformation and suppressed gene expression (Holth, 2009). Reduction in fish numbers would reduce food availability for the Eurasian otter (*L. lutra*), but consumption of contaminated prey would of course also represent a risk of ill-health.

Hydrocarbons that come into contact with a plant would be expected to have a negative impact on that plant, potentially resulting in its death. Sedimentation would be expected to increase turbidity in the watercourse, reducing light availability to aquatic flora.

[9.2.2] Zone of Potential Impact

The aquatic zone of potentially highest impact is from the location of the proposed development to 5km downstream (Escauriaza et al., 2017). Nonetheless, potential impacts on protected

habitats and species in the entire Cork Harbour area are considered for this project. The Zone of potential impact in this case is considered to be the footprint of the project site itself, and a 15 km radius.

[9.3] Great Island Channel SAC

Table 9.1 below shows the connectivity between the project site and the QIs of Great Island Channel SAC:

Table 9-1. Connectivity between the Project Site and Great Island Channel SAC

SAC 001058 Qualifying Interest	Definitely or Probably Present and /or Direct connectivity to development site	Possibly Present and/or Indirect connectivity to development site	Not Present and/or no connectivity to development site
Habitats			
1140 Mudflats and sandflats not covered by seawater at low tide		X	
1330 Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*		X	

Potential impacts on the following habitats which are known to be present, or are possibly present within the zone of potential impact are considered in this appropriate assessment:

- 1140 Mudflats and sandflats not covered by seawater at low tide
- 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

The locations of the above QI habitats within Great Island Channel SAC are shown in the maps in Figure 9.1. Mudflats and Sandflats (1140) account for a substantial proportion of the area coverage of the SAC. Figure 9.2 shows saltmarsh distribution in relation to the project site. This information was gathered from the National Parks and Wildlife Service Article 17 data (NPWS, 2019).

[9.3.1] Mudflats and Sandflats not covered by seawater at low tide

Tidal mudflats and sandflats habitat is comprised of the intertidal section of the coastline where sands and muds dominate. They are dynamic ecosystems, dependent on the balance of natural accretion and erosion. The fundamental building block of this habitat is sediment ranging from around 1µm to 2mm. The finer silt and clay sediments are dominant in mudflats and the larger sand fractions are associated with areas exposed to significant wave energy. A range of physical pressures operate in these habitats including dynamic fluctuations in salinity, temperature, and immersion. The fine sediment of intertidal mudflats is usually deposited in estuaries. These sediments are often rich in nutrients but the depth of suitable habitat for fauna is limited by the access of oxygen-rich seawater to buried mud. Where conditions are suitable, the sediment can form into stable mixed sediment flats. In areas exposed to large waves with little riverine influence the habitat is mostly composed of larger sand grains. The most frequent biological community of mudflats and sandflats is the Mud to Fine sand community, which is characterised by molluscs (*Macomangulus tenuis, Peringia ulvae*), crustaceans (*Crangon crangon, Corophium volutator*), polychaetes (e.g. *Hediste diversicolor*) and oligochaetes (*Tubificoides benedii*). The next most prevalent community type is the Fine sand to sand community, characterised by molluscs (e.g. *Macomangulus tenuis*), crustaceans (*Bathyporeia*

pilosa, Pontocrates spp.) and polychaetes (e.g. *Nephtys cirrosa, Scolelepis spp.*). The largest proportion of the remainder is made up of the Muddy sands/sandy muds community. The Overall tatus of the habitat is Inadequate and deteriorating, the change in trend from improving to deteriorating due to a genuine decline in the habitat since 2013. This was caused partly by pollution from agricultural, forestry and wastewater sources, as well as impacts associated with marine aquaculture, particularly the Pacific oyster (*Magallana gigas*).

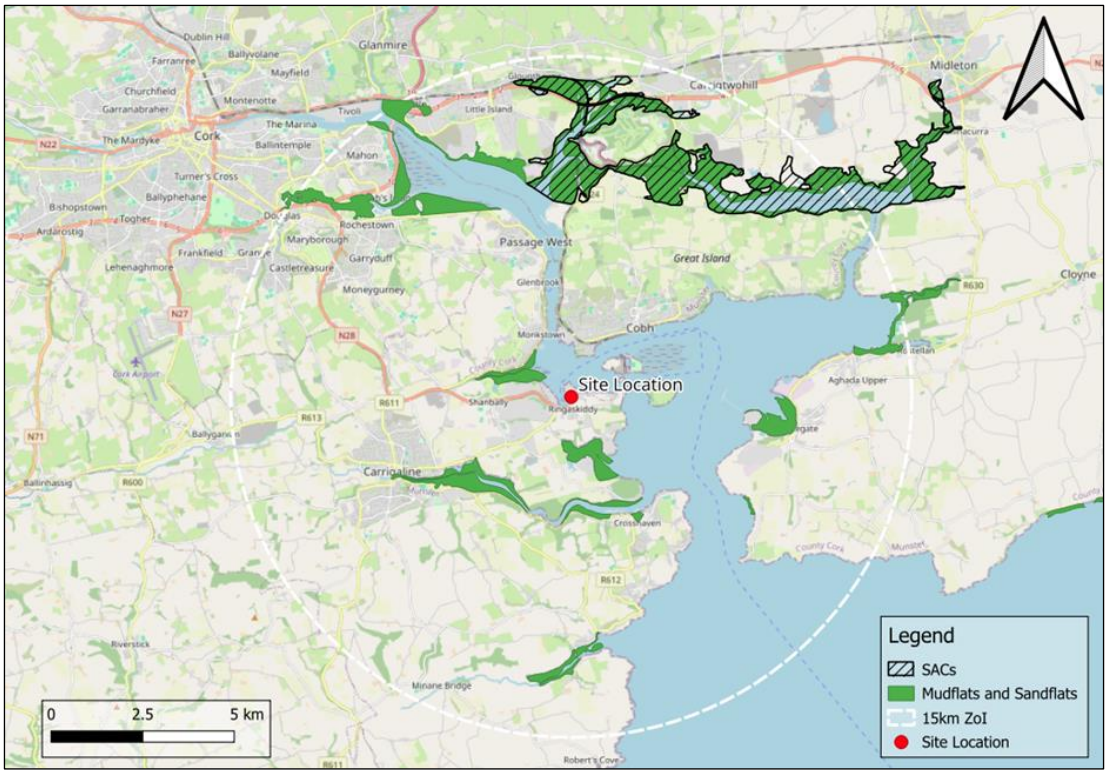

Figure 9-1. Distribution of mudflats and sandflats.

[9.3.2] Atlantic Salt Meadows

Atlantic salt meadows generally occupy the widest part of the saltmarsh gradient. They also contain a distinctive topography with an intricate network of creeks and salt pans occurring on medium and large-sized saltmarshes. Atlantic salt meadows contain several distinctive zones that are related to elevation and submergence frequency. The lowest part along the tidal zone is generally dominated by common saltmarsh-grass (*Puccinellia maritima*) with species like glassworts (*Salicornia spp.*), annual sea-blite (*Suaeda maritima*) and lax-flowered sea-lavender (*Limonium humile*) also important. The invasive common cord-grass (*Spartina anglica*) can be locally abundant in this habitat. The mid-marsh zones are generally characterised by thrift (*Armeria maritima*) and/or sea plantain (*Plantago maritima*). This zone is generally transitional to an upper saltmarsh herbaceous community with red fescue (*Festuca rubra*), saltmarsh rush (*Juncus gerardii*) and creeping bent (*Agrostis stolonifera*). This habitat is also important for other wildlife including wintering waders and wildfowl. Atlantic salt meadows are distributed around most of the coastline of Ireland. The intricate topography of the Irish coastline with many inlets has created an abundance of sites that are sheltered and allow muddy sediments to accumulate, leading to the development of saltmarsh. The Overall Status is assessed as Inadequate, due mainly to pressures from agriculture, including ecologically unsuitable grazing regimes and land reclamation, and the invasive non-native species common cord-grass (*Spartina anglica*). This assessment is unchanged since the 2013 AA Screening/NIS report for the Port Redevelopment. However, the overall deteriorating trend represents a genuine decline since 2013 due to losses in area (NPWS, 2019).

Figure 9-2. Distribution of Atlantic Salt Meadows

[9.3.3] Conservation Objectives

Table 9.1 provides a list of the conservation objectives for this site and provides comments as to the nature of any potential significant effects on them. The processes associated with the proposed development most likely to cause significant effects are the transport of sediment and other contaminants from the site via surface water run-off and noise emissions.

Table 9-2. Conservation Objectives – Great Island Channel SAC

Conservation Objectives - Attributes	Targets	Comments
1140 Mudflats and sandflats not covered by seawater at low tide		
Habitat Area	The permanent habitat area is stable or increasing, subject to natural processes.	The transport of sediment or contaminants is unlikely to negatively affect the area coverage of a mudflat/sandflat habitat. However, it could alter the conditions of this habitat.
Community Distribution	Conserve the following community type in a natural condition: Mixed sediment to sandy mud with polychaetes and oligochaetes community complex.	The transport of contaminants offsite may negatively affect the health of the fauna associated with this community complex.
1330 Atlantic salt meadows *(Glauco-Puccinellietalia maritimae)*		
Habitat Area	Area stable or increasing, subject to natural processes, including erosion and succession.	Increased sediment deposition may lead to an increase in the area available for colonisation. However, contamination by oils or petrochemicals may lead to plant morbidity or death. In saltmarshes, vegetation is most often exposed at low tide but submerged at high tide. A pathway, therefore, exists for these plants to come into direct contact with contaminated water.
Habitat Distribution	No decline or change in habitat distribution, subject to natural processes.	As above.
Physical Structure: Sediment Supply	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions.	Sediment loading from the proposed development would not be considered as 'natural' circulation.
Physical Structure: Creeks and Pans	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession.	As per 'Habitat Area' above – increased sedimentation may lead to physical alterations in habitat morphology. It is unclear whether this effect would be significantly negative.
Physical Structure: Flooding Regime	Maintain a natural tidal regime.	This target is tied to the physical morphology of the habitat. See above comment.
Vegetation Structure: Zonation	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession.	Contamination by oils or petrochemicals may lead to plant morbidity or death.
Vegetation Structure: Vegetation Height	Maintain structural variation within sward	As above

Conservation Objectives - Attributes	Targets	Comments
Vegetation Structure: Vegetation Cover	Maintain more than 90% area outside creeks vegetated	As above
Vegetation Composition: Typical Species and Subcommunities	Maintain range of subcommunities with typical species listed in SMP (McCorry and Ryle, 2009)	As above
Vegetation Structure: Negative Indicator Species - *Spartina anglica*	No significant expansion of common cordgrass (*Spartina anglica),* with an annual spread of less than 1% where it is known to occur.	Increased sedimentation may lead to increased opportunity for the spread of *Spartina.*

[9.4] Cork Harbour SPA

This SPA is of high conservation value for the SCI species and habitats listed in Table 9.3 below. The likely presence of each SCI habitat and species within or adjacent to the proposed site as well as the assessment of connectivity are summarised.

It should be noted that the proposed works are located adjacent to Cork Harbour, so much of the bird species listed below will be susceptible to potential impacts from the site.

Table 9-3. SCI Habitats and Species of Cork Harbour SPA and their Relationship with the Proposed Development Site

SPA 4030 Special Conservation Interest	Definitely or Probably Present and /or Direct connectivity to development site	Possibly Present and/or Indirect connectivity to development site	Not Present and/or no connectivity to development site
Species			
Little Grebe (*Tachybaptus ruficollis*) [A004]		X	
Great Crested Grebe (*Podiceps cristatus*) [A005]		X	
Cormorant (*Phalacrocorax carbo*) [A017]		X	
Grey Heron (*Ardea cinerea*) [A028]		X	
Shelduck (*Tadorna tadorna*) [A048]		X	
Wigeon (*Anas penelope*) [A050]		X	
Teal (*Anas crecca*) [A052]		X	
Pintail (*Anas acuta*) [A054]		X	
Shoveler (*Anas clypeata*) [A056]		X	
Red-breasted Merganser (*Mergus serrator*) [A069]		X	
Oystercatcher (*Haematopus ostralegus*) [A130]		X	
Golden Plover (*Pluvialis apricaria*) [A140]		X	
Grey Plover (*Pluvialis squatarola*) [A141]		X	
Lapwing (*Vanellus vanellus*) [A142]		X	
Dunlin (*Calidris alpina*) [A149]		X	
Black-tailed Godwit (*Limosa limosa*) [A156]		X	
Bar-tailed Godwit (*Limosa lapponica*) [A157]		X	
Curlew (*Numenius arquata*) [A160]		X	
Redshank (*Tringa totanus*) [A162]		X	
Black-headed Gull (*Chroicocephalus ridibundus*) [A179]		X	
Common Gull (*Larus canus*) [A182]		X	
Lesser Black-backed Gull (*Larus fuscus*) [A183]		X	
Common Tern (*Sterna hirundo*) [A193]		X	
Habitats			
Wetland and Waterbirds [A999]		X	

The Appropriate Assessment, therefore, needs to consider potential impacts to all of the above-listed SCIs in light of their Conservation Objectives.

[9.4.1] Conservation Objectives

The processes associated with the proposed development most likely to cause significant effects are the transport of sediment and other contaminants from the site via surface water run-off and noise emissions.

The mobilisation of sediment from the development site has the theoretical potential to alter the structural conditions of the supporting habitat of the SCI species. Increased sedimentation in Cork Harbour will negatively alter the conditions of SCI habitats which can cause significant effects on the SCI species. The release of contaminants (oils/petrochemicals) may lead to the accumulation of toxic compounds in prey items, which could lead to a reduction in prey availability. Contaminated prey items, if ingested, may cause morbidity or death of the SCI species.

The conservation objectives for all bird species listed as SCIs of Cork Harbour SPA include:

- Population Trend: Long term population stable or increasing
- Distribution: No significant decrease in the range, timing or intensity of use of areas by little grebe, other than that occurring from natural patterns of variation
- Breeding population abundance: No significant decline
- Prey biomass available: No significant decline
- Barriers to connectivity: No significant decline
- Habitat Area: The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,587 hectares, other than that occurring from natural patterns of variation.

[10] Potential Impacts

This section examines the potential sources of impact that could potentially result in adverse effects on the biodiversity and protected habitats and species that occur within the zone of influence of the proposed scheme. These potential sources of impact could arise during both the construction and operational phases but require complete source > pathway > receptor changes for adverse impacts to arise.

[10.1] Physical Damage

Physical damage includes degradation to, and modification of, protected habitats. It can occur in working areas and along access routes where construction works are undertaken, and it may be temporary or permanent. The construction works have the potential to encroach on several different habitats such as areas of scrub and treelines and well as embankments which could facilitate otter activity.

[10.2] Disturbance (noise/visual)

A number of activities can result in disturbance, including visual and noise. This is more frequently associated with construction activities but could also be associated with some aspects of the operational phase (e.g. structure maintenance, public access). Disturbance can cause sensitive species, such as birds, to deviate from their normal, preferred behaviour, resulting in stress, increased energy expenditure and, in some cases, species mortality.

[10.3] Changes in Water Quality

A number of activities can impact upon water quality, in particular nutrient status and turbidity levels. For example, inundation of contaminated/nutrient enriched land and sediment mobilisation can all impact on water quality. This can adversely impact on habitats and also species, for example by impacting upon macroinvertebrate communities.

[10.4] Pollution

Certain activities, in particular construction works, may lead to the release of pollutants into water, air or the ground. This can impact upon habitats directly and also the species they support.

[10.5] Invasive Species

Invasive species have legal implications if left untreated. They can spread rapidly over suitable habitat including wetlands across Cork Harbour.

[11] Predicted Impacts

[11.1]Construction Phase Impacts

The key construction phase impacts assessed are:

- Habitat loss/disturbance;
- Species loss (Flora);
- Disturbance to faunal species; and
- Reduction in water quality.

Potential direct and indirect impacts are discussed in detail below. Where potentially significant adverse impacts are identified, avoidance and mitigation measures are proposed to offset these impacts.

[11.2] Description of Potential Impacts (Unmitigated)

[11.2.1] Effects on Natura 2000 Sites

The proposed development is hydrologically connected to two Natura 2000 sites. This could aid the transport of any sediment and/or hydrocarbons that may be washed off the project site in the direction of these Natura 2000 Sites. The proposed site is also connected to these Natura 2000 Sites through air pathways which can transmit noise emissions from the site. If left unmitigated the health and condition of some qualifying habitats and species of these sites could be detrimentally impacted on.

[11.3] General Impacts on Key Ecological Receptors

[11.3.1] Habitat Loss

The proposed development will inevitably lead to some habitat loss in order to facilitate the construction of flood defences. However, it should be noted that most of this habitat consists of bare ground/recolonising bare ground. Although there is some risk to surrounding areas of scrub and treelines, these are small in scale and the majority of these woody habitats are not located in the direct footprint for proposed development.

[11.3.2] Habitat Fragmentation

Any loss of linear woodland (areas of treelines and/or scrub) will result in habitat fragmentation which could lead to the displacement of wildlife from the area and the fracture of an ecological corridor which will inhibit the movement of species through the area and into more natural refuges along the corridor.

[11.3.3] Habitat Degradation

The construction and operation of the proposed development could lead to habitat degradation. The potential impacts include the pollution of Cork Harbour, and the conversion of wooded habitat (treelines & scrub) to built land.

Water quality impacts arising from both the construction and the operation of the proposed development have the potential to affect habitats and species directly and indirectly. Accidental pollution events could result in sediment and pollutants entering Cork Harbour. Increased storm water overflow incidences could also result in increased pollutants entering Cork Harbour.

[11.3.4] Disturbance

Construction of the proposed development will result in temporary noise, vibration, lighting and visual disturbance and will affect species both within and outside the construction footprint.

[11.3.5] Direct Mortality

Direct mortality is possible as a result of site clearance, tree felling and vegetation removal. Birds are particularly vulnerable during the nesting season (March-August inclusive) when works could lead to the loss of nests.

[11.3.6] Indirect Mortality

The physiological effects of exposure to, and ingestion of significant concentrations of hydrocarbons on fish has been well-documented; these include delayed maturation, embryo malformation and suppressed gene expression (Holth, 2009). Many bird species that are SCIs of Cork Harbour SPA have diets consisting of fish. Consumption of contaminated prey can represent a risk of ill-health and could potentially result in mortality.

[12] Mitigation Measures

[12.1]Construction Phase

[12.2] Design Mitigation

This section describes the mitigation measures that have been incorporated at the design stage. A number of measures which follow generic best practice are proposed to mitigate the impacts of the proposed works on the ecological environment at the Site:

[12.2.1] General

- All Site construction will be undertaken in accordance with the CIRIA (2015) Environmental Good Practice on Site (Charles and Edwards 2015);
- Mitigation described in this report will be followed during site construction and operation phases;
- There shall be no water abstraction from or discharges to Shannon River or Abbey River from the construction activities on the site;
- A site-specific CEMP) will be written by the contractor prior to site works commencing. This CEMP will incorporate the mitigation measures listed here.

[12.2.2] Site Compound

The site compound shall be located within the site boundary.

- The compound will be sited as far from any water course (>50m) as possible in order to minimise any potential impacts.
- Only plant and materials necessary for the construction of the works will be permitted to be stored at the compound location.

[12.3] Specific Mitigation

[12.3.1] Surface Water Protection

Temporal impacts due to increased levels of turbidity/sedimentation and accidental spillages cannot be ruled out. Mitigation measures will be required to manage the potential impacts:

- Monitoring of the water quality during the operational phases must take place.
    - The monitoring must be in accordance with an EPA issued licence needed to undertake the proposed works.

  - The monitoring must include sampling and testing of the waters to show compliance with the EPA licence.
  - The licence must not be surrendered until the EPA are satisfied there is no environmental liability with the proposed project.

- To minimise exacerbated adverse effects, the prevailing weather conditions and time of year is to be taken into account when the site development manager is planning the removal of vegetation, soil, existing concrete, and/or general construction works.
- Fuels, lubricants and hydraulic fluids for equipment used on the construction site, as well as any solvents and oils, will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, provided with spill containment and stored >10m from watercourses;
- Fuelling and lubrication of equipment will not be carried out within 10m of watercourses where this is possible, and shall only be undertaken in designated bunded areas;
- Any spillage of fuels, lubricants or hydraulic oils must be immediately contained, and the contaminated soil removed from the site and dispatched to a suitably authorised waste facility.
- Refuelling must be carried out using 110% capacity double bunded mobile bowsers. The refuelling bowser must be operated by trained personnel. The bowser must have spill containment equipment which the operators must be fully trained in using.
- Plant nappies or absorbent mats to be place under refuelling point during all refuelling to absorb drips.
- Mobile bowsers, tanks and drums should be stored in secure, impermeable storage area, away from drains and open water.
- To reduce the potential for oil leaks, only vehicles and machinery will be allowed onto the site that are mechanically sound. An up-to-date service record must be required from the main contractor.
- Should there be an oil leak or spill, the leak or spill must be contained immediately using oil spill kits; the nearby dirty water drain outlet must be blocked with an oil absorbent boom until the fuel/oil spill has been cleaned up and all oil and any contaminated material removed from the area. This contaminated material must be properly disposed of in a licensed facility.
- The site Environmental representative must be immediately informed of the oil leak/spill and must assess the cause and the management of the clean-up of the leak or spill. They must inspect nearby drains for the presence of oil and initiate the cleanup if necessary.
- Immediate action must be facilitated by easy access to oil spill kits. An oil spill kit that includes absorbing pads and socks must be kept at the site compound and also in site vehicles and machinery.
- Correct action in the event of a leak or spill must be facilitated by training all vehicle/machinery operators in the use of the spill kits and the correct containment and

It is considered that, with the implementation of the proposed mitigation measures outlined above, there will be no significant risk to any nearby SACs or SPAs. With appropriate measures in place to address the risks arising from silt/turbidity or accidental spills, potential impacts to nearby European Sites can be avoided entirely.

[12.3.2] Noise and Vibration

The following mitigation measures are recommended as standard practice and should be adhered to for the duration of the construction works:

- During the works, best practice noise reduction measures described in British Standard 5228-12009+A1:2009, Code of Practice for Noise and Vibration Control on Construction and Open Sites must be incorporated into the Construction and Environmental Management Plan.
- For mobile plant items such as cranes, HGV's, excavators and loaders, maintaining enclosure panels closed during operation can reduce noise levels over normal operation.
- Mobile plant will be switched off when not in use and not left idling.
- For steady continuous noise, such as that generated by diesel engines, noise reduction can be achieved by fitting a more effective exhaust silencer system.
- Acoustic screens are required to be erected in certain locations for the duration of the redevelopment works. These screens shall be carefully positioned to be as effective as possible. In general, the barrier shall have no gaps or openings in the joins of the barrier material. The barrier material shall have a minimum mass per unit area of 7 kg/m2 and minimum recommended height of 2.4m.
- No machinery should be left running outside of the agreed operation hours, which must limit any noise emissions from the site in the late evenings and early mornings when mammal (i.e., otter) activity is at a higher level.

[12.3.3] Birds

[12.3.3.1] Avoidance of the Bird Breeding Season

To limit the potential impact of construction on breeding birds, removal of woody vegetation should be restricted to the non-breeding season (September to February, inclusive). Where the construction programme does not allow this, an ecologist should undertake a breeding bird check immediately prior to vegetation clearance. Where no breeding birds are present, clearance may proceed without requiring a derogation licence from the NPWS. However, given that breeding birds and the nests of all bird species are protected under the Wildlife Acts, a licence would be required from the NPWS to permit the destruction of nest sites and disturbance to breeding birds during the breeding season (1st of March to the 31st of August).

If the applicant intends to carry out clearance works during the bird breeding season, guidance should be sought from the NPWS with regard to compliance with Section 40 (1) and Section 40 (2) (e) of the Wildlife Acts (see below):

40. *(1) (a) It shall be an offence for a person to cut, grub, burn or otherwise destroy, during the period beginning on the 1st day of March and ending on*

the 31st day of August in any year, any vegetation growing on any land not then cultivated.

(1) (b) It shall be an offence for a person to cut, grub, burn or otherwise destroy any vegetation growing in any hedge or ditch during the period mentioned in paragraph (a) of this subsection.

***40.** (2) Subsection (1) of this section shall not apply in relation to—*

(e) the clearance of vegetation in the course of road or other construction works or in the development or preparation of sites on which any building or other structure is intended to be provided.

[12.3.3.2] General Site Management During Construction to Avoid Contamination of Receiving Waters

Surface water protective measures outlined in Section 16.11.1.2.1 of the specific mitigation measures will be adhered to for the protection of watercourses used by waterbirds. This will help avoid the contamination of mudflats, sandflats, and water bodies where birds forage in the harbour.

[12.3.3.3] Noise Control

The piling phase of the construction process will lead to sudden loud noises which can be startling to surrounding bird species. However when piling is not being undertaken, sudden loud noises (or impulsive noises) should be avoided where practicable when construction activity is underway. This will help limit the potential for nearby birds to become startled and displaced from their habitat, especially species of birds that are resident to Ireland and are located in the country all year round, not just during the breeding season.

Noise emission measures outlined in Section 16.11.1.2.2 of the specific mitigation measures will be adhered to for the protection of surrounding waterbirds. This will help avoid significant negative impacts to surrounding bird species from potential noise emissions from the site.

[12.3.3.4] Minimising Impacts on Potential Bird Nesting Habitat

Treelines and areas of scrub offer birds suitable nesting habitat locations. These areas should be protected and remain untouched during construction. The proposed works will be carried out with the aim of avoiding as much damage to this potential bird nesting habitat as possible.

Any trees or scrub in the way of the development layout are to be removed in such a manner not to cause damage to those trees to be retained. Root protection areas will be marked out around the trees to be retained. No machinery will enter these areas.

[12.3.4] Alien Invasive Species

To avoid the spread of Invasive Plant Species to and from the redevelopment the following mitigations must be implemented:

- Construction machinery is to be visually inspected and power-washed prior to arrival at the site in order to avoid importation of invasive species;

- All excavation/access areas are to be pre-checked for invasive species and no machinery is to enter these fenced-off locations, unless instructed by the Client or its Representatives and appropriate management measures are put in place.

Throughout the period of the works, in order to comply with national legislation that prohibits any 'polluting matter' to enter 'waters', *e.g.* Fisheries (Consolidation) Act 1959, Environmental Protection Agency Acts 1992 and 2003, and Local Government (Water Pollution) Acts 1977 and 1990, standard operational procedures, both published and unpublished, will be implemented and adhered to. The adherence to these environmental protection measures would be implemented on-site irrespective of the presence of a designated European Site.

[12.3.5] Operation Phase

The project site will be typical of ongoing Port operations during the operational phase. As part of the Port of Cork Environmental Management System (EMS), they are required to monitor surface water, ground water, noise and dust emissions from the site to ensure that they meet EPA (Environmental Protection Agency) standards. This will continue during the operational phase and will ensure that surrounding receptors will not be negatively impacted on.

[12.4] Monitoring

[12.4.1] Construction and pre-construction Phase

[12.4.1.1] Ecological Clerks of Work (ECoW)

A species protection plan should be designed by a professional ecologist to ensure that works related to this proposal take into account any protected bird species present on site and the nearby surroundings. An Ecological Clerk of Works (ECoW) should be employed to monitor the works under license, and to inform the team through Ecological Toolbox Talks during the proposed works and tree felling activities.

A pre-construction survey of the scheme will be undertaken by an experienced Ecological Clerk of Works (ECoW), who shall walk the entire length of the scheme alongside the Site Manager / Site Engineer in order to highlight locations where environmental mitigation (as described below) is required prior to construction works commencing on the site. A minimum of 1 no. ECoW visit shall be conducted per week during the course of the construction works at this site during the construction phase. The ECoW shall be present on-site during commencement of works. As such the following points must be adhered to for this scheme:

- An Ecological Clerk of Works (ECoW) will be involved as required during the construction period for this scheme, in order to ensure that the required mitigation is implemented.

- Once planning permission has been secured, pre-construction ecology surveys will be carried out within the proposed scheme area well in advance (ideally 3-4 months prior to construction works) in order to ensure that sufficient updated information is available to inform derogation licence applications as required.

- The ECoW and the Appointed Contractor will walk the proposed scheme together prior to work commencing on the site, in order to discuss the ecological constraints, to highlight all required mitigation and to demarcate exclusion zones appropriately.

[12.4.2] Operation Phase

[12.4.2.1] Post-Construction Monitoring

Depending on the type of contract, post-construction monitoring requirements should be stipulated in the Employer's Requirements or Maintenance Requirements for the local authorities.

Upon completion of construction, monitoring should be carried out to determine the success of the measures employed. Monitoring should be continued for at least one year after construction work ceases. Any remedial works must be undertaken by qualified Ecologist.

[13] Conclusion

This Appropriate Assessment Natura Impact Statement has been completed in compliance with the relevant European and national guidelines. The potential impacts during the proposed works have been considered in the context of the European Sites potentially affected, their Qualifying Interests, Special Conservation Interests and Conservation Objectives.

Robust and effective mitigation measures have been proposed for the avoidance of any impacts surrounding water quality, noise emissions and invasive species.

Considering the mitigation measures proposed, and based on the best scientific knowledge available, it is concluded that there will be no significant adverse impacts on the integrity of Cork Harbour SPA or Great Island Channel SAC as a result of the proposed development.

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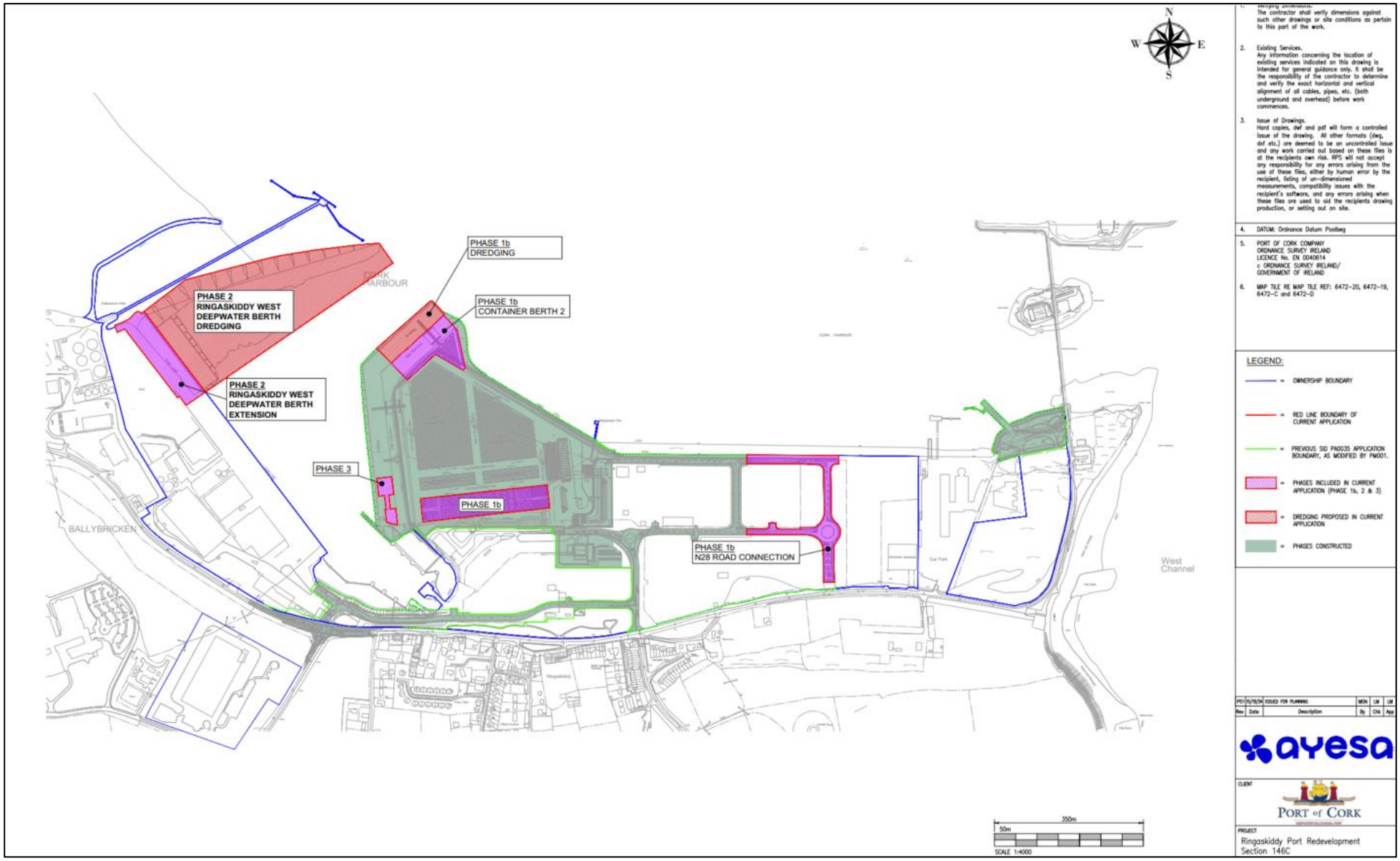
Appendix A – Proposed Works Ringaskiddy Port



Appendix B – Bird Survey 2024 – Cork Harbour SPA

FLYNN FURNEY
ENVIRONMENTAL CONSULTANTS

Port of Cork Bird Surveys 2023/2024

Ringaskiddy Wintering & Breeding Wetland Bird Survey Report.

Document Details

Client: Port of Cork Company
Scheme Name: Port of Cork Bird Surveys
Document Title: 2023/2024 Ringaskiddy Wintering and Breeding Wetland Bird Survey Report
Prepared by: Jack Coffey

Flynn Furney Environmental Consultants

Rev	Status	Date	Author(s)	Approved by
01	DRAFT	01/10/2024	JC	

Contents

1. INTRODUCTION

This report presents the findings of a wetland bird survey conducted by Ronan Ó' Driscoll during the 2023/24 wintering season. The objectives of the study were as follows:

1. To examine the usage of the marine, intertidal and terrestrial areas adjacent to the Ringaskiddy Port Redevelopment footprint, by waterbirds during the 2023/24 overwintering season;
2. To identify locations of key importance to foraging and roosting waterbirds during the 2023/24 wintering season; and
3. To provide sufficient information to assess the potential impact of the proposed development on the wintering Special Conservation Interests (SCIs) of Cork Harbour Special Protection Area (SPA) and to inform a forthcoming Environmental Impact Assessment (EIA) and Appropriate Assessment (AA).

1.1 Cork Harbour SPA

Cork Harbour SPA (Site Code: IE0004030) qualifies for designation under The Birds Directive (Directive 2009/147/EC) by regularly supporting over 20,000 waterbirds.

The Birds Directive pays particular attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are in their own right a Special Conservation Interest (SCI) - Wetlands & Waterbirds [A999].

Table 1: Cork Harbour SPA [IE0004030] SCIs

Cork Harbour SPA SCIs.		**Season**	**Qualifying Population**[1]
A004	Little Grebe (*Tachybaptus ruficollis*)	Wintering	68 individuals
A005	Great Crested Grebe (*Podiceps cristatus*)	Wintering	218 individuals
A017	Cormorant (*Phalacrocorax carbo*)	Wintering	620 individuals
A028	Grey Heron (*Ardea cinerea*)	Wintering	47 individuals
A048	Shelduck (*Tadorna tadorna*)	Wintering	1426 individuals
A050	Wigeon (*Anas Penelope*)	Wintering	1,750 individuals
A052	Teal (*Anas crecca*)	Wintering	807 individuals
A056	Pintail (*Anas acuta*)	Wintering	84 individuals
A065	Shoveler (*Anas cylpeata*)	Wintering	135 individuals

A069	Red-breasted Merganser (*Mergus serrator*)	Wintering	90 individuals
A130	Oystercatcher (*Haematopus ostralegus*)	Wintering	791 individuals
A140*	Golden Plover (*Pluvialis apricaria*)	Wintering	805 individuals
A141	Grey Plover (*Pluvialis squatarola*)	Wintering	66 individuals
A142	Lapwing (*Vanellus vanellusi)*	Wintering	3,614 individuals
A149*	Dunlin (*Calidris alpina*)	Wintering	4,936 individuals
A156	Black-tailed Godwit (*Limosa limosa*)	Wintering	412 individuals
A157*	Bar-tailed Godwit (*Limosa lapponica*)	Wintering	45 individuals
[A160	Curlew (*Numenius arquata*)	Wintering	1,345 individuals
A162	Redshank (*Tringa tetanus*)	Wintering	1,614 individuals
A179	Black-headed Gull (*Larus ridibundus*)	Wintering	948 individuals
A182	Common Gull (*Larus canus*)	Wintering	2,630 individuals
A183	Lesser Black-backed Gull (*Larus fuscus*)	Wintering	Wintering 261 individuals
A193*	Common Tern (*Sterna hirundo*)	Breeding	69 pairs
A999	Wetlands & Waterbirds	N/A	N/A

Key to Table
[1]As obtained from Standard Natura Data Form.
*Species listed on Annex I of The Birds Directive.

Numerous species present supported by the Cork Harbour SPA are considered **nationally important** wintering populations, including the following:
Little Grebe (*Tachybaptus ruficollis*), Great Crested Grebe (*Podiceps cristatus*), Cormorant (*Phalacrocorax carbo*), Grey Heron (*Ardea cinerea*), Shelduck (*Tadorna tadorna*), Wigeon (*Anas penelops*), Teal (*Anas crecca*), Pintail (*Anas acuta*), Shoveler (*Anas clypeata*), Red-breasted Merganser (*Mergus serrator*), Oystercatcher (*Haematopus*), Golden Plover (*Pluvialis apricaria*), Grey Plover (*Pluvialis squatarola*), Lapwing (*Vanellus vanellus*), Dunlin (*Calidris alpina*), Bar-tailed Godwit (*Limosa laponica*), Curlew (*Numenius Arquata*), Black-headed Gull (*Larus ridibundus*), Common Gull (*Larus canus*) and Lesser Black-backed Gull (*Larus fuscus*). The site also qualifies for designation by regularly supporting a **nationally important** breeding population of Common Tern (*Sterna hirundo*).

2. METHODOLOGY

The survey methodology was based on that used by the British Trust for Ornithology's (BTO) Wetland Bird Survey (WeBS) and the Irish Wetland Bird Survey (I-WeBS).

These surveys were conducted from three vantage points: Monkstown, Ringaskiddy and Rocky Island. See **Figure 1, Appendix 1**.

The Wintering Bird Survey was conducted monthly from October 2023 to March 2024.
The Breeding Bird Surveys were conducted monthly May 2024 to August 2024.

All surveys were performed by Ronan O'Driscoll.

1. High Tide Waterbird Counts were undertaken within two hours either side of high tide, to record the distribution, numbers and behaviours of waterbirds the survey area during high tide conditions; and

2. Low Tide Waterbird Counts were undertaken within two hours either side of low tide, to record the distribution, numbers and behaviours of waterbirds within the survey area during low tide conditions.

3. In May 2024, a further count area (Count Area 4) was added at Rocky Island, facing east towards Spike Island.

4. Within each count area, all waterbirds seen were recorded and dominant behaviours noted as either feeding (F) or engaged in other activity such as roosting, resting, washing or preening (R). Birds moving through the area only are indicated with (M). Note, gulls were not recorded in the Breeding Bird Survey (May-August).

5. Birds flying over were ignored unless they subsequently went onto land within the survey area.

6. Equipment used: 20-60 zoom scope, 7X42 binoculars, tripod.

Note: "Waterbirds" are defined here as all swans and geese, ducks, divers, grebes, herons and rails, waders, gulls and terns.

2.1 Survey Timeline

Table 2: Survey dates, tide times and count areas included for each survey.

Survey	Date	Tide Time	Count Areas Surveyed
Wintering	26/10/2023	High 16:25	1,2,3
Wintering	27/10/2023	Low 11:20	1,2,3
Wintering	28/10/2023	Low 12:04	1,2,3
Wintering	29/10/2023	High 17:30	1,2,3
Wintering	30/10/2023	High 18:16	1,2,3
Wintering	21/11/2023	High11:38	1,2,3
Wintering	25/11/2023	Low 9:55	1,2,3
Wintering	15/12/2023	Low 13:12	1,2,3
Wintering	22/12/2023	High 13:23	1,2,3
Wintering	13/01/2024	Low 13:06	1,2,3
Wintering	22/01/2024	High 15:00	1,2,3
Wintering	07/02/2024	High 15:27	1,2,3
Wintering	09/02/2024	Low 11:24	1,2,3
Wintering	26/03/2024	Low 12:28	1,2,3
Wintering	27/03/2024	High 18:49	1,2,3
Wintering	28/05/2024	High 9:26	1,2,3
Wintering	28/05/2024	Low15:58	1,2,3
Breeding	24/06/2024	Low 14:18	1,2,3,4
Breeding	26/06/2024	High 9:21	1,2,3,4
Breeding	19/07/2024	Low 10:59	1,2,3,4
Breeding	19/07/2024	High 16:53	1,2,3,4
Breeding	20/08/2024	High 19:12	1,2,3,4
Breeding	22/08/2024	Low 14:43	1,2,3,4

3. RESULTS

Species	October 2023 - Wintering					
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						
Black Guillemot						
Black-headed Gull	72 R	39 R	37 R	16 R		46 R
Black-tailed Godwit					41 R	
Brent Goose						
Common Gull	4 R	5 R	5 R	2 R		3 R
Common Tern						
Cormorant	43 R	29 R	12 R	7 R	334 R	65 R
Curlew		2 F		4 R	1 F	31 F
Dunlin				25 F		
Great Black-backed Gull	8 R	4 R	1 R	5 R	1 R	1 R
Great Crested Grebe					1R	
Greenshank	1 R	1 F		3 F	9 R	3 F
Grey Heron	2 R	7 F	2 R	5 F	17 R	30 R
Herring Gull	13 R	28 R	3 R	11 R	5 R	3 R
Lapwing						
Lesser Black-backed Gull	1 R	8 R			5 R	3 R
Little Egret	1 F	2 F	1 F	1 F	6 R	4 F
Mallard	4 R	28 R			17 R	5 R
Mediterranean Gull						1 R
Mute Swan	1 R	7 R		1 R	1 R	
Oystercatcher		8 F	1 F	19 F	7R	7 F
Red-breasted Merganser						
Redshank	2 F	2 F		3 F	5 F	68 F
Sandwich Tern						
Shag	2 R	2 R	6 R	8 R		
Shelduck						
Snipe						
Teal					23 R	53 R
Turnstone	3 F			4 F	2 F	
Whimbrel						
Other						
Common Sandpiper	1 R	1 F	1 F			
Ringed Plover				20 F		

Species	November 2023 - Wintering					
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						
Black Guillemot			1 F			
Black-headed Gull	92 R	126 R	8 R	19 F	28 R	41 F
Black-tailed Godwit					5 R	33 F
Brent Goose						
Common Gull		2 R		3 F	2 R	
Common Tern						
Cormorant	85 R	19 R	1 F	6 F	91 R	15 R
Curlew	1 R	2 F		3 F	12 R	21 F
Dunlin	9 R					97 F
Great Black-backed Gull	5 R	1 R	2 R	3 F	2 R	
Great Crested Grebe					1 F	1 F
Greenshank	2 R	1 R		2 F	2 F	4 F
Grey Heron	2 F	7 R	1 R	6 F	5 R	9 F
Herring Gull	1 R	8 F		9 F	3 R	
Lapwing						5 R
Lesser Black-backed Gull	1 R	2 R			2 R	1 R
Little Egret	1 R					3 F
Mallard	8 R	46 R			67 R	5 R
Mediterranean Gull						
Mute Swan	7 R	6 R	2 R			
Oystercatcher		7 F		29 F	14 R	12 F
Red-breasted Merganser				2 R		
Redshank	17 R	4 F		5 F	3 F	57 F
Sandwich Tern						
Shag		1 R	6 R	2 R	2 R	
Shelduck	1 R				7 R	15 F
Snipe	8 R			2 F		5 F
Teal					56 R	78 R
Turnstone					11 F	
Whimbrel						
Common Sandpiper	1 R	1 R	1 R	2 F		
Ringed Plover				1 F		
Great Northern Diver					1 F	

Wigeon					1 F	

Species	December 2023 - Wintering					
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						2 F
Black Guillemot						
Black-headed Gull	193 R	258 F	1 R	2 R	17 R	119 F
Black-tailed Godwit		20 F			58 R	38 F
Brent Goose		19 F		9 F	5 F	
Common Gull					1 R	3 F
Common Tern						
Cormorant	2 R	62 R	2 F	3 F	169 R	31 R
Curlew		2 F		1 F	8 F	13 F
Dunlin						56 F
Great Black-backed Gull	5 R	2 R	2 R	2 R	1 R	3 R
Great Crested Grebe						
Greenshank		1 F	1 F	1 R	4 F	2 F
Grey Heron		5 F	1 R	4 R	21 R	7 F
Herring Gull	36 R	26 F		15 R	4 R	6 F
Lapwing						
Lesser Black-backed Gull	2 R	2 R		1 R	2 R	3 F
Little Egret			1 R	1 F	1 F	
Mallard	3 R	67 R			79 R	23 R
Mediterranean Gull						
Mute Swan	6 R	5 R	2 F	2 R		
Oystercatcher		7 F	1 F	3 F	2 F	8 R
Red-breasted Merganser					3 F	1 R
Redshank		2 F			2 F	64 F
Sandwich Tern						
Shag	1 F	1 R	1 F	5 R	6 R	
Shelduck	3 R	3 F			17 R	15 F
Snipe						
Teal		1 R			91 R	63 F
Turnstone					7 F	
Whimbrel						
Other						

Species	January 2024 - Wintering					
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						
Black Guillemot			3 F		2 F	
Black-headed Gull	197 R	322 R	1 R	36 R	67 R	24 F
Black-tailed Godwit		35 F				112 F
Brent Goose						
Common Gull		28 R	1 R	67 F		26 R
Common Tern						
Cormorant	5 F	29 F	2 F	2 F	426 R	37 R
Curlew		3 F		4 F	6 F	13 F
Dunlin						23 F
Great Black-backed Gull	3 R	5 R	2 R	4 R	2 R	2 R
Great Crested Grebe						
Greenshank	3 R	2 F	1 F	2 F	3 F	2 F
Grey Heron	2 R	5 F		5 F	11 R	17 R
Herring Gull	41 R	53 R	4 R	24 F	2 R	9 F
Lapwing						
Lesser Black-backed Gull	4 R	6 R		2 R	3 F	4 R
Little Egret		2 F			1 F	1 F
Mallard	2 R	87 R			29 F	6 F
Mediterranean Gull		2 R				
Mute Swan		4 R				
Oystercatcher		7 F		29 F		3 F
Red-breasted Merganser						
Redshank	1 R	3 F		2 F	7 F	62 F
Sandwich Tern						
Shag			2 F	2 F		
Shelduck		10 F			26 F	27 F
Snipe						
Teal					53 F	109 F
Turnstone					6 F	5 F
Whimbrel						
Other						
Great Northern Diver			1 F			
Common Sandpiper				1 F		

Species	February 2024 - Wintering					
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						4 F
Black Guillemot						
Black-headed Gull	243 R	82 R	9 R	5 R	49 R	139 R
Black-tailed Godwit					27 R	127 F
Brent Goose		34 F				
Common Gull	61 R	29 R	2 R	13 R	1 R	102 R
Common Tern						
Cormorant	109 R	86 R	4 F	3 F	407 R	11 R
Curlew		4 F		2 F	8 R	16 F
Dunlin						
Great Black-backed Gull	4 R	3 R	3 R	1 R	5 R	
Great Crested Grebe						
Greenshank		1 F	1 F		3 F	5 F
Grey Heron	2 R	4 R			23 R	8 R
Herring Gull	51 R	23 R	3 R	11 R	39 R	9 R
Lapwing				12 R		
Lesser Black-backed Gull	18 R	5 R	1 R		2 R	5 F
Little Egret						
Mallard	3 R	19 R			38 R	6 F
Mediterranean Gull	1 R				1 R	
Mute Swan	2 F	3 F				1 F
Oystercatcher		2 F	3 R	3 F		2 F
Red-breasted Merganser						
Redshank		1 F	5 F		3 F	64 F
Sandwich Tern						
Shag	1 R		1 R	4 R		
Shelduck					12 R	12 F
Snipe						
Teal					98 R	144 F
Turnstone						2 F
Whimbrel	1 F					
Other						
Common Sandpiper	1 R			1 R		
Ringed Plover						

Species	March 2024 - Wintering					
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek	
	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit						
Black Guillemot						
Black-headed Gull	1 R	1 F				7 F
Black-tailed Godwit		26 F			97 R	550+ F
Brent Goose	2 R				2 F	
Common Gull	41 R	7 F				19 F
Common Tern						
Cormorant	2 F	3 F	1 F		69 R	13 R
Curlew		2 F				8 F
Dunlin						
Great Black-backed Gull	3 R		2 R			2 R
Great Crested Grebe						
Greenshank					1 R	5 F
Grey Heron	2 R	3 F	1 R		6 R	8 R
Herring Gull	5 R	12 F			2 R	
Lapwing						
Lesser Black-backed Gull		1 F				1 R
Little Egret					2 R	
Mallard	19 R	13 R			7 R	
Mediterranean Gull						
Mute Swan						
Oystercatcher		5 F				6 F
Red-breasted Merganser						
Redshank						31 F
Sandwich Tern						
Shag	2 R		1 R			
Shelduck		1 F			5 R	2 R
Snipe						
Teal					13 R	9 R
Turnstone						
Whimbrel						
Other						
Common Sandpiper	1 R	1 R				
Sandwich Tern	1 R					

Species	May 2024 - Breeding							
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek		4. Spike Island	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit								
Black Guillemot							2 F	
Black-headed Gull								
Black-tailed Godwit								
Brent Goose								
Common Gull								
Common Tern	16 R	19 R	4 F	5 F	5 F	12 F	5 F	3 F
Cormorant	10 R	3 R	2 F	1 F	2 F	9 R	2 F	
Curlew								
Dunlin								
Great Black-backed Gull								
Great Crested Grebe								
Greenshank								
Grey Heron	1 R	5 F	1 R	2 F	1 R	3 F	1 R	1 R
Herring Gull								
Lapwing								
Lesser Black-backed Gull								
Little Egret						1 F		
Mallard	4 R	29 R	2 F	2 F	11 R	2 R		3 F
Mediterranean Gull								
Mute Swan		1 R						
Oystercatcher		2 F	4 M			8 F	4 R	4 R
Red-breasted Merganser								
Redshank								
Sandwich Tern								
Shag				1 R	1 R	2 R	1 F	
Shelduck					2 R	5 F		
Snipe								
Teal								
Turnstone								
Whimbrel								
Other								
Ringed Plover				2 F			3 F	

Species	June 2024 - Breeding							
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek		4. Spike Island	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit								
Black Guillemot								
Black-headed Gull								
Black-tailed Godwit								
Brent Goose								
Common Gull								
Common Tern	15 F	13 F	3 F	8 F	6 F	11 F	2 F	5 F
Cormorant	5 R	9 R	1 F	2 F	7 R	13 R	10 R	6 R
Curlew					5 F	12 F	2 M	1 F
Dunlin								
Great Black-backed Gull								
Great Crested Grebe								
Greenshank						4 F	1 R	
Grey Heron	2 R	2 F	1 R	2 F	11 R	9 F		2 F
Herring Gull								
Lapwing								
Lesser Black-backed Gull								
Little Egret					1 F	1 F		
Mallard		1 R			9 R			
Mediterranean Gull								
Mute Swan	3 F	1 R	6 R		2 F			
Oystercatcher		3 F		4 F		7 F	7 R	2 F
Red-breasted Merganser								
Redshank								
Sandwich Tern								
Shag			2 R	3 R			1 R	
Shelduck					7 R	7 F	2 R	
Snipe								
Teal								
Turnstone				2 F				
Whimbrel								
Other								
Ringed Plover				2 F				
Sandwich Tern						1 R		

Species	July 2024 - Breeding							
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek		4. Spike Island	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit								
Black Guillemot								
Black-headed Gull								
Black-tailed Godwit						1 F		
Brent Goose								
Common Gull								
Common Tern	26 R	21 R	4 F	12	6 F	8 F		2 M
Cormorant	23 R	15 R	1 R		36 R	12 R	1 F	7 R
Curlew		1 F		2		8 F		2 F
Dunlin								
Great Black-backed Gull								
Great Crested Grebe								
Greenshank		1 F				1 F		
Grey Heron	2 R	6 F		3	11 R	11 R		1 F
Herring Gull								
Lapwing								
Lesser Black-backed Gull								
Little Egret		1 F			5 R	3 R		1 F
Mallard	28 R	11 F			2 F	1 F		
Mediterranean Gull								
Mute Swan		2 R				1 F		
Oystercatcher		9 F		3	17 R	9 F	2 R	6 F
Red-breasted Merganser								
Redshank					1 F			
Sandwich Tern								
Shag	1 R			1	2 R			
Shelduck								
Snipe								
Teal								
Turnstone								
Whimbrel								
Other								
Common Sandpiper		2 R		1				
Ringed Plover				2				

Species	August 2024 - Breeding							
	1. Ringskiddy Port		2. Rocky Island		3. Monkstown Creek		4. Spike Island	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
Bar tailed Godwit								
Black Guillemot								
Black-headed Gull								
Black-tailed Godwit				8 F		4 F		
Brent Goose								
Common Gull								
Common Tern						6 F	1 F	
Cormorant	2 F	16 R	3 F	3 F	148 R	43 R	2 R	17 R
Curlew	1 R	1 F		6 F		7 F		5 F
Dunlin								
Great Black-backed Gull								
Great Crested Grebe								
Greenshank	4 R					7 F	1 F	
Grey Heron	1 R	6 F	1 R	5 F	2 R	5 R		3 F
Herring Gull								
Lapwing								
Lesser Black-backed Gull								
Little Egret	1 R			1 F	7 R			
Mallard	14 R	2 F			19 R	4 F		
Mediterranean Gull								
Mute Swan								
Oystercatcher	25 R	29 F		42 F	2 R	4 F	1 M	27 F
Red-breasted Merganser								
Redshank						51 F		
Sandwich Tern		1 M				2 F	3 F	
Shag	1 F	2 F		2 R		3 R	4 R	3 F
Shelduck								
Snipe								
Teal								
Turnstone								
Whimbrel							1 F	
Other								
Gannet			1 M					
Ringed Plover				33 F				

4. ANALYSIS OF RESULTS BY SPECIES

4.1 Cormorant

In October 2023 Cormorants were present at all counting sites, and a large number, 334, were recorded at Monkstown Creek. High numbers of cormorants were recorded in November, December and January, with 426 individuals recorded at Monkstown creek in January. By February 2024, Cormorants were still recorded at every site, with 407 present at Monkstown Creek.

By March 2024 Cormorant numbers began to drop, with only 1 individual and Rocky Island at high tide and none at low tide. 69 cormorants were recorded at Monkstown at high tide.

Numbers from May to August 2024 were low; they highest recording in May 2024 was 10 individuals counted at Ringaskiddy Port at high tide.

August saw an increase in cormorants recorded with a high of 148 at Monkstown Creek at high tide.

Cormorants utilised trees in Raffeen Golf Course and the trees to the east at Ballintaggart Cormorants were also observed to use the jetty and stonewall for roosting before dark.

4.2 Grey Heron

30 grey herons were recorded roosting at low tide at Monkstown in October 2023.

One month later, in November 2023, only 7 feeding grey herons were recorded.

However, in December 2023, a high of 21 roosting grey herons was recorded at Monkstown at high tide.

By January 2024, 17 individuals were found roosting at Monkstown Creek at Monkstown at low tide.

In February 2024, numbers of grey herons were recorded at 23 roosting individuals.

By March 2024, grey heron numbers dropped off to a high of only 23 roosting at Monkstown at low tide.

Numbers of grey herons throughout the breeding season (May-August) remained low, with only a few instances of recording above 10 at any site.

4.3 Shelduck

No recordings of shelduck were made during October 2023.

November 2023 featured a high of 15 shelduck feeding at Monkstown at low tide. None were recorded at Rocky Island and only one individual was recorded at Ringaskiddy Port at high tide.

In December 2023, 17 and 15 shelduck were counted at Monkstown Creek, at high and low tide respectively. Yet again, none were recorded at Rocky Island and only 3 individuals at Ringaskiddy and both high and low tide.

Numbers increased to a peak of 27 feeding shelduck at Monkstown at low tide. None were recorded at Rocky Island.

In February 2024, 12 shelduck were recorded feeding at both high and low tide at Monkstown Creek. No other shelduck were recorded at either Rocky Island or Ringaskiddy Port.

Numbers dropped to a high of only 5 individuals in March 2024 feeding at high tide at Monkstown Creek.

Shelduck numbers stayed consistent in May and June.

Shelduck recordings decreased to 0 in July and August 2024.

4.4 Lapwing

No lapwing recordings were made in October 2023. 5 individuals were counted roosting at Monkstown Creek at low tide in November.

No lapwings were recorded in December or January.

In February at Rocky Island, a peak of 12 lapwing were counted roosting at low tide.

No lapwing were recorded in March 2024.

No lapwing were recorded during the breeding season May-August.

4.5 Dunlin

In October 25 feeding dunlin recorded at Rocky Island low tide.

in November, numbers increased to 97 feeding at Monkstown low tide.

In December, recordings of Dunlin dropped to 56 feeding at Monkstown low tide.

By January, a decrease to 23 feeding at Monkstown low tide.

A further decrease to 0 recordings in February and March.

0 recordings were made in the breeding season May-August.

4.6 Black-tailed Godwit

October, a high of 41 roosting Black-tailed godwits were recorded at Monkstown Creek during high tide.

In November, 33 were counted feeding at low tide at Monkstown creek.

By December, total records had increased. 20 feeding at Ringaskiddy Port, low tide. 58 roosting at Monkstown Creek high tide, 38 feeding at Monkstown Creek low tide.

January, 35 feeding Ringaskiddy Port low tide.112 recorded feeding Monkstown low tide.

February, 127 feeding at Monkstown low tide.

In March, 27 were counted roosting at Monkstown Creek at high tide. A peak of 550+ feeding black-tailed godwits were recorded at Monkstown Creek low tide.

For the breeding season, May-August, black-tailed godwits were mostly absent.

4.7 Curlew

October, 31 feeding curlew at Monkstown Creek at low tide.

November, a high count of 21 feeding at Monkstown low tide was made.

By December, a there was a decrease to a high of 13 feeding Monkstown low tide.

In January, records were similar;13 feeding at Monkstown Creek, low tide.

In February, counts were quite consistent, with 16 feeding at Monkstown Creek, low tide.

By March, counts has decreased to a high of 8 feeding at Monkstown Creek low tide, almost completely absent elsewhere.

May – No sightings of curlew.

June, a modest increase to a high of 12 feeding at Monkstown Creek low tide.

July – high of 8 feeding at Monkstown Creek low tide.

Aug – a modest increase to 7 feeding at Monkstown low tide, 6 feeding at Rocky Island low tide and 5 feeding at Spike Island, low tide.

4.8 Redshank

In October, a high of 68 redshank were recorded feeding at Monkstown Creek at low tide.

November, high of 57 feeding at Monkstown Creek low tide. 17 recorded roosting at Ringaskiddy Port, high tide.

December, 64 redshank feeding at Monkstown Creek low tide. Mostly absent elsewhere.

January, 62 feeding at Monkstown Creek low tide.

February, counts remain consistent with 64 recorded feeding at Monkstown Creek low tide.

March, a decrease to 31 feeding at Monkstown creek low tide. Completely absent elsewhere.

May, a large decrease to 0 recordings.

June, 0 recordings

July, 1 curlew feeding at Monkstown creek high.

August, a large increase to 51 feeding at Monkstown low tide.

4.9 Oystercatcher

October, 19 oystercatchers feeding at Rocky Island low tide. 7 to 8 individuals at other locations.

November 29 feeding at Rocky Island low tide. 14 roosting at Monkstown Creek high tide. 12 feeding at Monkstown Creek low tide.

December, a decrease in numbers recorded. 7 feeding at Ringaskiddy low tide. 8 roosting at Monkstown Creek low tide.

January, 29 oystercatchers recorded feeding at Rocky Island low tide.

February, a decrease, low numbers recorded of 2-3 individuals.

March 5 feeding at Ringaskiddy Port, low tide. 6 feeding at Monkstown Creek low tide. Absent elsewhere.

May, a high count of 8 feeding at Monkstown Creek low tide.

June, 7 recorded feeding at Monkstown Creek low tide. 7 roosting at Spike Island high tide.

July, slight increase to 17 roosting at Monkstown Creek high tide. 2 to 9 individuals recorded at other sites.

August, increase to 25 roosting high tide, 29 feeding low tide at Ringaskiddy Port. 42 feeding at Rocky Island low tide. 27 feeding at Spike Island low tide.

4.10 Teal

October, 23 roosting at Monkstown Creek high tide. 53 roosting at Monkstown Creek low tide.

November, slight increase to 56 roosting Monkstown high tide. 78 roosting Monkstown low tide.

December, further slight increase to 91 roosting at Monkstown high tide. 63 feeding Monkstown low tide.

January, numbers almost consistent at 53 feeding at Monkstown high tide. 109 feeding at Monkstown low tide.

February, further slight increase to 98 roosting at Monkstown high tide. 144 feeding Monkstown low tide.

March, large decrease to 13 roosting at Monkstown high tide. 9 roosting at Monkstown low tide.

Further decrease to no recordings in May, June, July or August.

4.11 Mallard

October, a high of 28 mallard roosting at Ringskiddy Port, low tide. 17 roosting at Monkstown high tide.

November, increase to 46 roosting at Ringaskiddy Port low tide. 67 roosting at Monkstown Creek high tide.

December, slight increase to 91 roosting at Monkstown high tide. 63 feeding at Monkstown low tide. Absent elsewhere.

January, slight decrease to 87 roosting at Ringaskiddy Port low tide. Absent from Rocky Island. 29 feeding at Monkstown high tide.

February, decrease to 19 roosting at Ringaskiddy Port low tide. Absent from Rocky Island. 38 roosting at Monkstown Creek high tide.

March, further decrease to 19 roosting at Ringaskiddy Port high tide. 13 roosting at Ringaskiddy Port low tide. 0 recorded at Monkstown Creek at high tide, 6 feeding at Monkstown Creek low tide.

May 29 roosting at Ringaskiddy Port low tide. 11 roosting at Monkstown high tide.

June 9 roosting at Monkstown Creek high tide. Absent elsewhere.

July 28 roosting at Ringaskiddy Port high tide. 11 feeding at Ringaskiddy Port low tide. Mostly absent elsewhere.

August 14 roosting at Ringaskiddy Port high tide. 19 roosting at Monkstown Creek high tide.

4.12 Brent Goose

October, no recordings.

November, no recordings,

December increase to 19 brent goose recorded feeding at Ringaskiddy low tide. 9 feeding at Rocky Island low tide. 5 feeding at Monkstown Creek high tide.

Jan, decrease to 0 recordings.

February, increase to 34 feeding Ringaskiddy low tide. Absent elsewhere.

March, decrease to 2 roosting at Ringaskiddy Port. 2 feeding at Monkstown.

May to August, decrease to zero recordings.

Brent goose utilised the jetty and stonewall to roost during the day, Monkstown Creek woods for roosting at night.

4.13 Common Tern

October – March, zero recordings.

May, increase to 16 roosting at Ringaskiddy Port high tide. 19 roosting Ringaskiddy Port low tide. 12 feeding at Monkstown Creek low tide. 3-5 individuals recorded elsewhere.

June, recordings steady; 15 feeding at Ringaskiddy Port high tide. 13 feeding at Ringaskiddy Port low tide. 11 feeding at Monktown Creek low tide. 2-8 individuals elsewhere.

July, steady; 26 roosting at Ringaskiddy Port high tide. 21 roosting at Ringaskiddy Port low tide. 12 feeding at Rocky Island. 8 feeding at Monkstown Creek low tide.

August, decrease to just 6 feeding at Monkstown Creek low tide, absent elsewhere.

4. ANALYSIS OF RESULTS IN THE CONTEXT OF CORK HARBOUR AS A WHOLE

This section examines the relative importance of the study area and of specific count areas in the context of Cork Harbour as a whole. As a major wetland Cork Harbour covered by the Irish Wetland Bird Survey (I-WeBS), a joint survey scheme between BirdWatch Ireland (BWI) and the National Parks and Wildlife Service (NPWS), which aims to monitor wintering waterbirds in Ireland. The survey runs from September to March each winter, with over 800 wetland sites surveyed including estuaries, coastlines, bays, rivers, turloughs, lakes, streams and flooded fields. A request was therefore made to BWI to obtain the most recent 5-year peak mean waterbird counts obtained from Cork Harbour, **Appendix 1, table 4.**

Table 3 presents the combined peak counts of species recorded during the survey against the most recent 5-year peak mean for each species within Cork Harbour.

Table 3.

Species	IWeBS 5-year mean (2016-21) Cork Harbour	Max. Count for Study Area	Peak Count in Study Area as percentage of Cork Harbour 5-year mean
Bar tailed Godwit	297	4	1.35%
Black Guillemot	N/A	3	N/A
Black-headed Gull	3711	322	8.68%
Black-tailed Godwit	2782	550+	19.78% +
Brent Goose	62	34	54.84%
Common Gull	218	102	46.79%
Common Tern	3	26	866%
Cormorant	256	426	166.4%
Curlew	942	31	3.3%
Dunlin	2738	97	3.54%
Great Black-backed Gull	131	8	6.1%
Great Crested Grebe	129	1	0.78%
Greenshank	97	9	9.28%
Grey Heron	101	30	29.7
Herring Gull	171	53	30.99%
Lapwing	1114	12	1.08%
Lesser Black-backed Gull	164	18	10.98%
Little Egret	120	7	5.83%
Mallard	341	87	25.51%
Mediterranean Gull	130	2	1.54%
Mute Swan	48	7	14.58%
Oystercatcher	1136	42	3.7%
Red-breasted Merganser	58	3	5.17%

Redshank	1517	68	4.48%
Sandwich Tern	71	3	4.23%
Shag	8	8	100%
Shelduck	773	27	3.49%
Snipe	69	8	11.59%
Teal	1384	144	10.4%
Turnstone	95	11	11.58%
Whimbrel	4	1	25%
Other			
Gannet	0	1	N/A
Ringed Plover	38	33	86.84%
Common Sandpiper	2	2	100%
Great Northern Diver	9	1	11.11%
Wigeon	1342	1	0.075%

APPENDIX

Most Recent 5-year I-WeBS Data - Cork Harbour.

Table 4.

Species	1% national	1% international	2016 /2017	2017 /2018	2018 /2019	2019 /2020	2020 /2021	Mean	Peak Months
Unidentified duck						1*		0	Jan, Feb, Dec
Unidentified tern								0	Sep
Hybrid shelduck			1					0	Nov
Mute Swan	90	100	55	55	44	47	40	48	Dec
Whooper Swan	150	340			2			0	Oct
Pink-footed Goose					1	1		0	Mar
Canada Goose			7*	5	4	6		4	Nov
Barnacle Goose	160	810						0	Jan, Feb, Dec
Light-bellied Brent Goose	350	400	102*	35	16	151	4	62	Jan
Shelduck	100	2500	715*	953	924*	670	601	773	Feb
Wigeon	560	14000	1498	1848	1242*	1141	980	1342	Jan
Gadwall	20	1200	11*	13	12	9*	1*	9	Jan, Feb
Teal	360	5000	1142*	1340	1791	1316	1329	1384	Jan
Mallard	280	53000	338	305	386*	425*	253*	341	Sep
Pintail	20	600	36*	1	51*	20	26	27	Dec
Shoveler	20	650	23*	29	20	12	4*	18	Jan, Feb
Pochard	110	2000						0	Jan
Tufted Duck	270	8900	13*	14*	43*	36*	15	24	Feb, Mar
Scaup	25	3100						0	Oct, Nov
Long-tailed Duck			1			1		0	Jan
Eider	55	9800						0	Feb, Nov
Common Scoter	110	7500		1	2	4		1	Nov
Goldeneye	40	11400	1*	3	4	5		3	Feb

Red-breasted Merganser	25	860	68*	77	62	60	24	58	Dec
Red-throated Diver	20	3000			1	1		0	Jan, Nov
Black-throated Diver					1*			0	Mar
Great Northern Diver	20	50	2*	18	11	12		9	Jan
Little Grebe	20	4700	89	86	78*	116	6	75	Nov, Dec
Great Crested Grebe	30	6300	159	174	62	249		129	Jan
Slavonian Grebe					1	1*		0	Nov
Cormorant	110	1200	427*	300	189*	337	26	256	Sep, Nov
Shag			8	12	12	5	3	8	Dec
Little Egret	20	1100	147*	61*	120*	125*	145*	120	Sep
Grey Heron	25	5000	92*	115	99*	96*	102	101	Sep
Water Rail			3*	2*	2*	2	1	2	Feb
Moorhen			29*	13*	16*	22*	15*	19	Sep
Coot	190	15500	4*	3*	1*	4*		2	Mar, Sep
Oystercatcher	610	8200	1397	1074	1239*	956*	1014*	1136	Sep
Ringed Plover	120	540	43	31*	27*	28*	62*	38	Sep
Golden Plover	920	9300	144*	1450	2650*	27*	36*	861	Nov
Grey Plover	30	2000	7*	10	22	10	9	12	Jan
Lapwing	850	72300	919	1350	1384	1058	857	1114	Dec
Knot	160	5300	24	83	78*	67*	26	56	Feb
Little Stint			1*					0	Sep, Nov
Curlew Sandpiper			2*					0	Oct
Dunlin	460	13300	763	3166	3965	4248	1550	2738	Dec
Ruff								0	Nov
Snipe			62*	98	133	23	31	69	Dec
Black-tailed Godwit	200	1100	2146*	3074	2559*	3153*	2976*	2782	Sep
Bar-tailed Godwit	170	1500	172*	241	430*	490	154	297	Jan
Whimbrel			6*	1*	5*	5*	2	4	Sep
Curlew	350	7600	993	849*	1142*	1078*	650*	942	Sep
Spotted Redshank			2*	2	1	1*		1	Feb, Mar, Nov

Redshank	240	2400	1521*	1653	1493	1528*	1392	1517	Oct
Greenshank	20	3300	125*	87	103	100*	72*	97	Oct
Green Sandpiper			2	1*		1*		1	Sep, Dec
Common Sandpiper			2	2	2*	2*		2	Sep
Turnstone	95	1400	80	84	85	124*	100	95	Nov
Kingfisher			1*	2*	1*	2*	1*	1	Sep
Black-headed Gull			3586*	3011*	3955*	3649*	4356*	3711	Sep
Common Gull			283	203	252*	243	111	218	Nov
Lesser Black-backed Gull			106*	217*	220	122	153*	164	Sep, Nov
Herring Gull			152*	149	127*	176*	249*	171	Sep
Great Black-backed Gull			154*	92*	179*	134*	94*	131	Sep
Mediterranean Gull			114*	91	152	56*	237*	130	Sep
Sandwich Tern			3*	40*	199*	110*	5*	71	Sep
Common Tern					15*			3	Sep
Arctic Tern								0	Apr
Ruddy Shelduck			1					0	Jan
American Wigeon								0	Dec
Green-winged Teal								0	Mar
Surf Scoter								0	Nov
Black-necked Grebe							1	0	Feb, Dec
Wilson's Phalarope								0	Sep
Kittiwake			1*					0	Sep
Little Gull								0	Oct
Ring-billed Gull			3*		2	1*		1	Mar
Glaucous Gull			1*					0	Mar
Yellow-legged Gull				1*	1*	3*	1*	1	Sep
Glossy Ibis								0	Feb
Cattle Egret			9*		4	2*		3	Mar, Oct, Dec
Great White Pelican					2*		2*	1	Oct

Figure 1: Count Areas Used in the Study

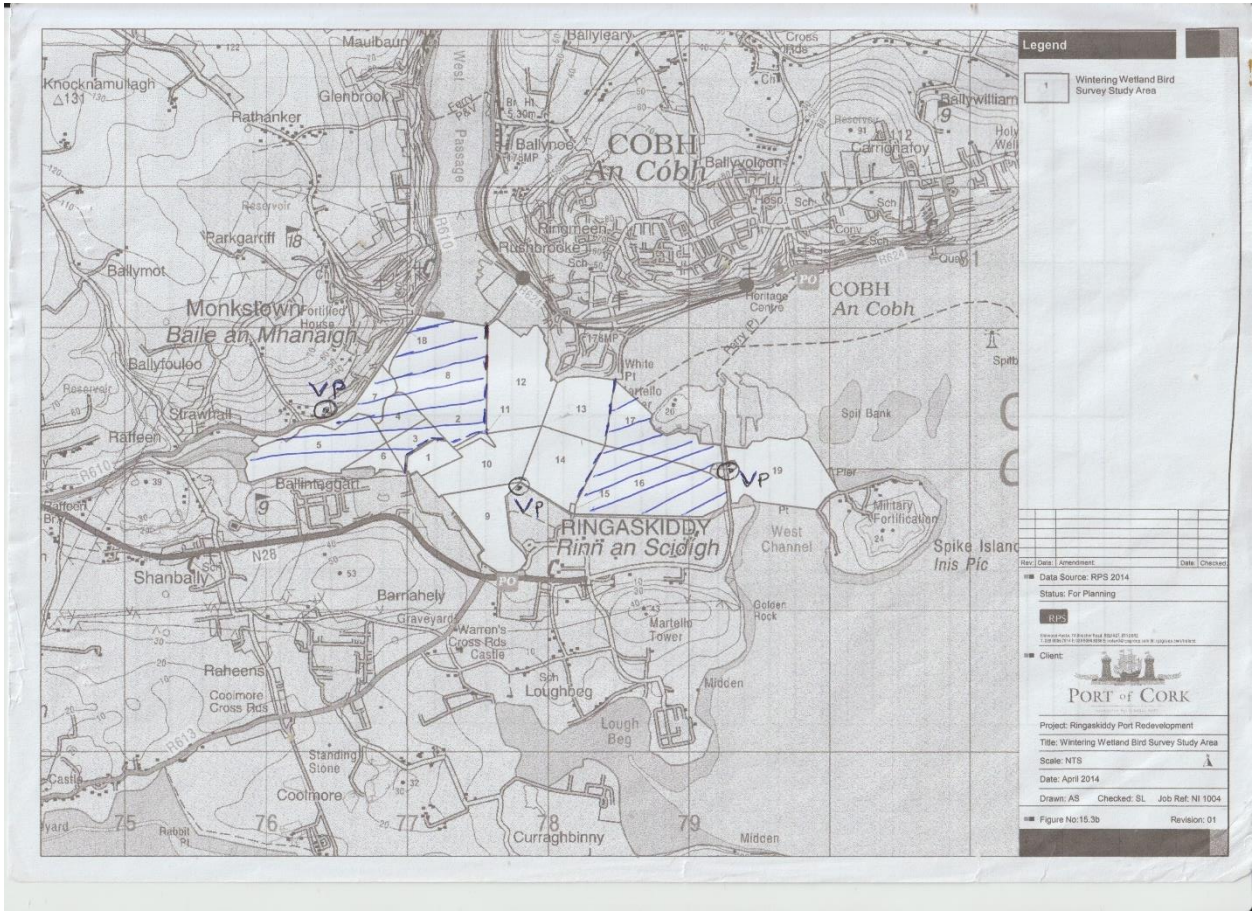


Figure 1: Viewing points marked on a map of west Cork Harbour. From left to right: Monktown, Ringaskiddy and Rocky Island.

Note, Rocky Island vantage point was used to survey an additional count area facing east towards Spike Island from May-August. (Count Area 4).

Figure 2: Stone Breakwater and ADM Jetty

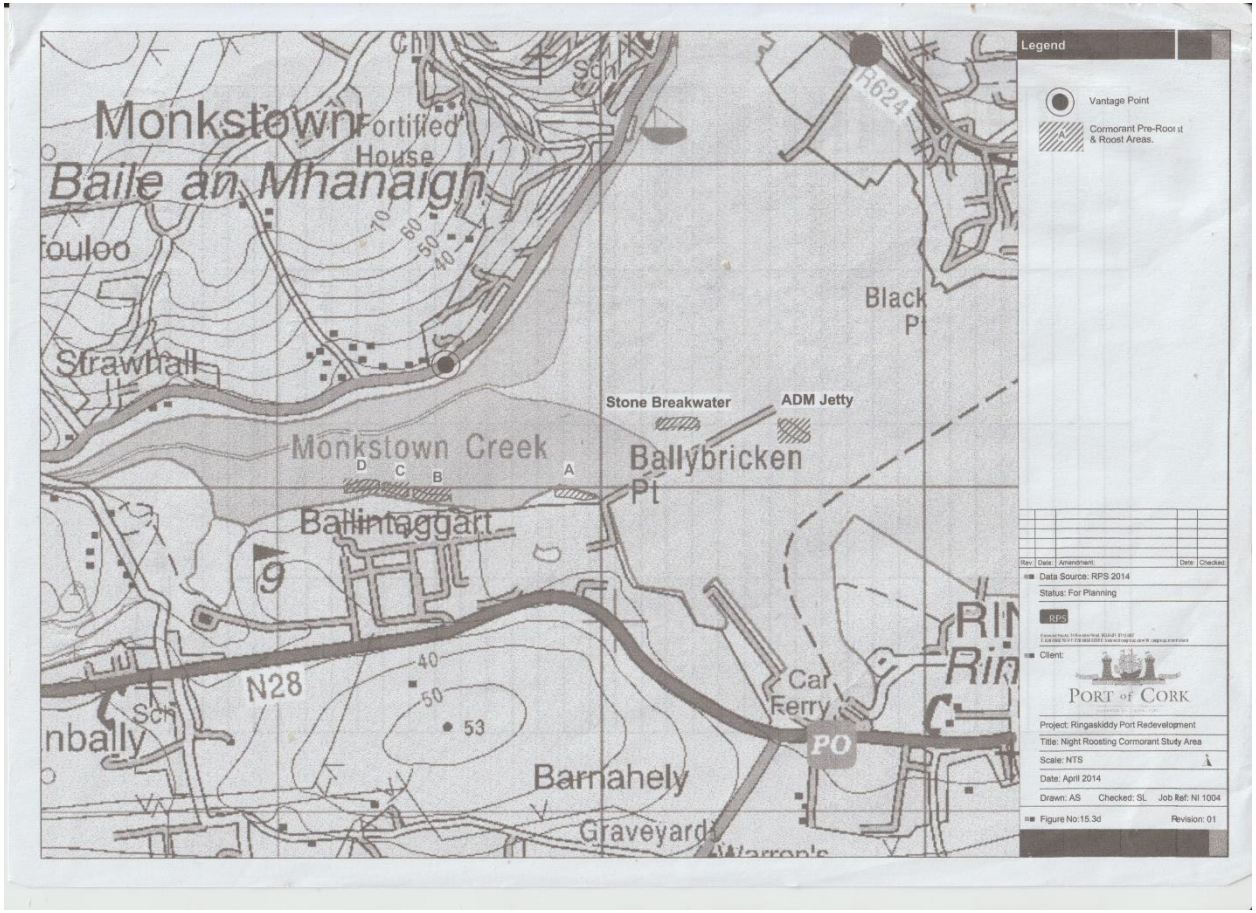


Figure 2: The stone breakwater and ADM jetty indicated just east of Monkstown Creek.