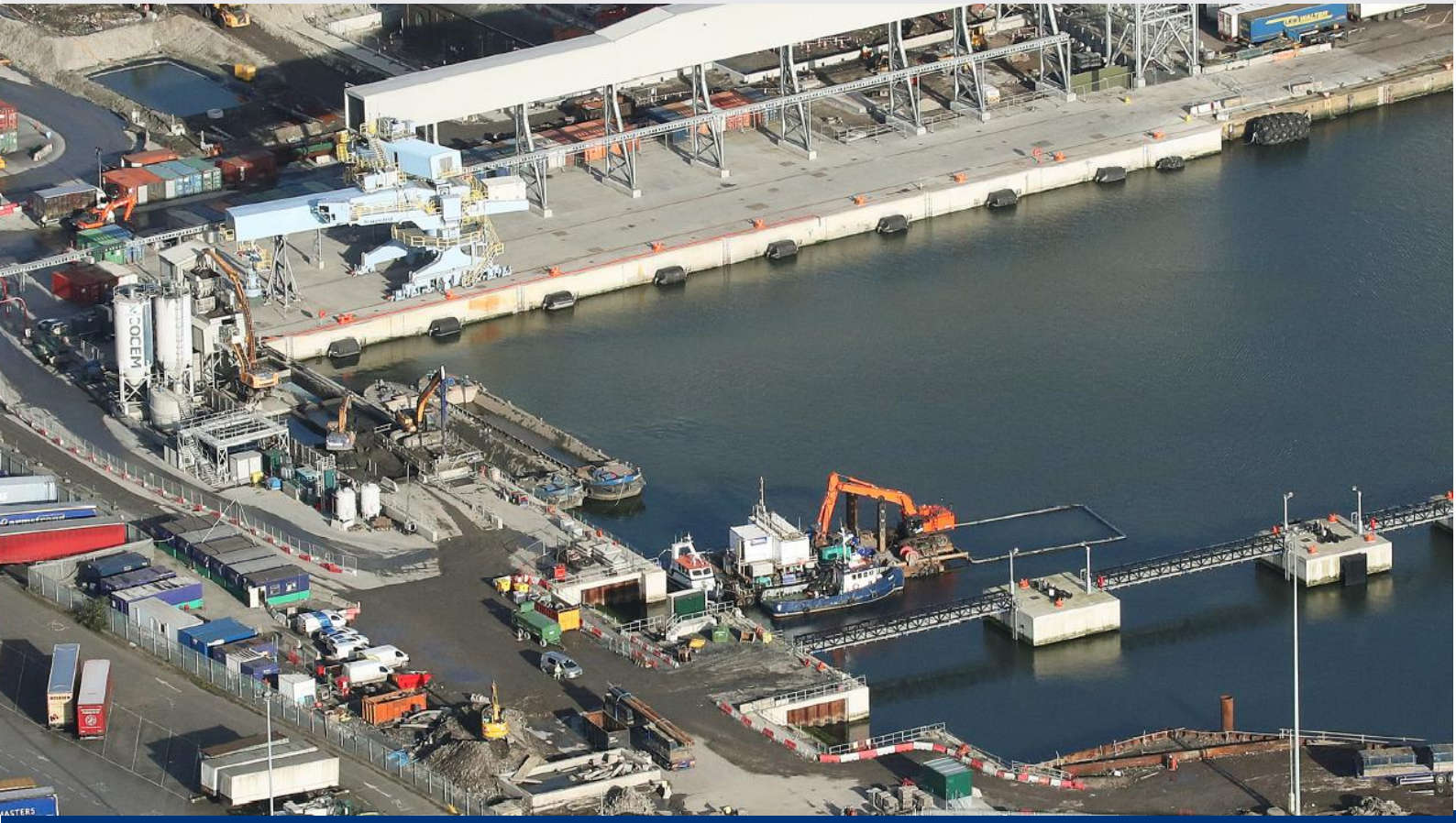
Dublin Port Company

ABR2 Project

Appropriate Assessment Screening Report & Natura Impact Statement



794-NI-WAE-02351

F01

05 October 2026

TETRA TECH

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1.0 Introduction

Tetra Tech was commissioned by Dublin Port Company (DPC) to prepare a composite report for submission to the competent authority to enable a Stage One Screening for Appropriate Assessment and, as required, Stage Two Appropriate Assessment of a project at Alexandra Basin West and Berth 52/53, Dublin Port, (the "ABR2 Project" or the "Project"). (See **Figure 3-1**).

The Natura 2000 network of sites comprises Special Areas of Conservation (SACs, including candidate SACs) and Special Protection Areas (SPAs, including candidate SPAs) designated under the Habitats Directive[1] and Birds Directive[2] (Council Directive 2009/147/EC on the conservation of wild birds) both designated under domestic legislation transposing the obligations under Directive 92/43/EEC into Irish law.

SACs are designated for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are designated for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is designated correspond to the qualifying interests of the sites; and from these the conservation objectives of the site are derived.

SACs and SPAs make up the pan-European network of Natura 2000 sites, or 'European sites', as defined in Irish national legislation.

1.1 Appropriate Assessment

1.1.1 The Habitats Directive

A key protection mechanism in the Habitats Directive is the requirement to subject plans and projects to Appropriate Assessment (AA) in line with the requirements of Article 6(3), which states that–

> *Any plan or project likely to have a significant effect thereon either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the 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.*

[1] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

Thus, Article 6(3) defines a two-step procedure for considering plans and projects:

- Stage One: preliminary 'screening' to determine whether, firstly, the plan or project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site; and
- Stage Two: the appropriate assessment and the decision of the competent national authorities.

1.1.2 Transposition into Irish Law

Screening

In relation to applications for permission under the Planning and Development Act 2000, section 177U of the 2000 Act requires, *inter alia*, that a screening for appropriate assessment of an application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that proposed development, individually or in combination with another plan or project is likely to have a significant effect on a European site.

Thus, section 177U give effect to the requirement to screen an application for development consent for appropriate assessment by assessing whether the proposed development is likely to have a significant effect on a European site by considering whether such a significant effect can or cannot be excluded.

Appropriate Assessment

In respect of applications for permission under the Planning and Development Act 2000, section 177V of that Act requires, *inter alia*, that an appropriate assessment carried out by the competent authority shall include a determination under Article 6(3) of the Habitats Directive as to whether or not a proposed development would adversely affect the integrity of a European site and an appropriate assessment shall be carried out by the competent authority where it has made a screening determination that an appropriate assessment is required, before consent is given for the proposed development.

1.1.3 The Appropriate Assessment Process

According to European Commission Notice C (2021) 6913 'Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC' (EC, 2021) Appropriate Assessment a step-wise procedure as illustrated in **Figure 1-1**[1].

As referenced above, the first part of this procedure consists of a 'screening' stage to determine whether, firstly, a plan or project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site.

The second part of the procedure relates to the appropriate assessment itself and the decision of the competent authority or authorities.

A third part of the procedure under Article 6(4), arises only in circumstances where, notwithstanding a negative assessment under Article 6(3), it is proposed to grant approval for a plan or project for imperative

reasons of overriding public interest (IROPI). This part of the appropriate assessment process does not arise in respect of the ABR2 Project.

1.2 Objective of the Report

The purpose of the Appropriate Assessment Screening Report comprised in Section 4, is to assist the competent authority to carry out a screening for appropriate assessment of the implications of the proposed ABR2 Project on European sites in view of their conservation objectives.

The purpose of the Natura Impact Statement (NIS), at section 5, is to provide an appraisal for appropriate assessment of implications of the proposed ABR2 Project on European sites in view of those sites' conservation objectives.

1.3 Necessary Scientific Competence

David Mulholland is the primary author of the report. David is an Ecologist with Tetra Tech and holds a BSc (Hons) Biological Sciences with Professional Studies and a MSc in Ecological Management & Conservation Biology. David is a qualifying member of CIEEM and has experience conducting Appropriate Assessment Screening and Natura Impact Statements for several coastal projects in Ireland such as Annagassan Embankment Repair Works, Kilpatrick Beach Coastal Defence Works, Sutton Golf Course Revetement Repair Works along with several small-scale land-use and redevelopment projects within the Dublin Port Complex.

This report has been reviewed and approved for issue by James McCrory, Technical Director of Ecology with Tetra Tech. James holds a BA (Hons) in Natural Sciences (Mod) Botany and a MSc in Habitat Creation and Management. James is a Chartered Environmentalist (CEnv), a Chartered Ecologist (CEcol), a Chartered Biologist (CBiol) and a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) and the Royal Society of Biology (MRSB). James is a former member of the CIEEM Irish Section Committee and CIEEM Policy Review Group in Ireland. He was formerly a member of the CIEEM technical working group updating the Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland, and he was recently a member of the CIEEM technical working group for Ecological Impact Assessment accreditation across the Institute's practitioner network.

James has over twenty years' experience of assessing the Likely Significant Effects of proposed development, alone and in combination with other plans and projects, in a coastal setting on European sites in estuarine and the marine environment. His experience includes assessment of potential effects of shoreside and marine activities, suspended sediments and pollution on Annex I habitats and disturbance and displacement of, and injury to of Annex II and Annex IV species and populations of Birds Directive Annex I species and spans a wide variety of development consent applications in Dublin Port Estate and for other Tier 1 Port Companies in Ireland. His experience includes:

- Planning Permissions granted by local planning authorities and SID permissions granted by An Coimisiún Pleanála;
- Foreshore Licences issued by the Department of Housing, Local Government and Heritage;

- Dumping at Sea Permits issued by the EPA;
- Maritime Usage Licences issued by MARA;
- Marine construction and dredging licences issued by DAERA; and
- Marine construction and dredging licences issued by Marine Directorate – Licensing Operations Team (MD-LOT) in Scotland.

Tetra Tech confirms that the professional judgement expressed herein is the true and bona fide opinion of the author. The information prepared and provided is accurate at the time of issue of this report and has been prepared and provided in accordance with the CIEEM Code of Professional Conduct (CIEEM 2025).

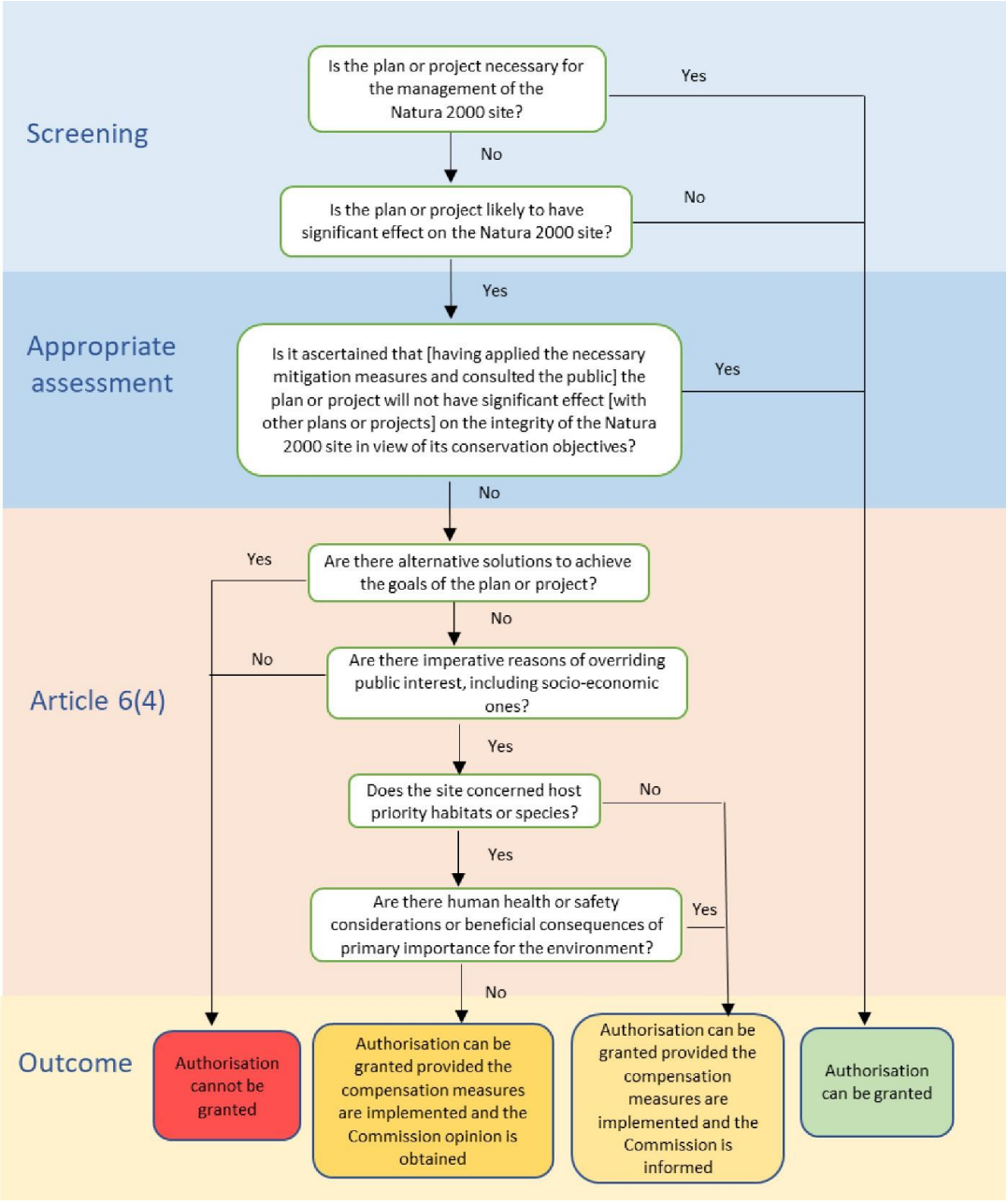


Figure 1-1: Step-wise procedure of Appropriate Assessment (from EC, 2021)

[1] The flowchart illustrated in **Figure 1-1** of this report is taken from Figure 1 of EC (2021). It is noted that while this flowchart states in the 'Appropriate Assessment' stage (the dark blue step) "*Is it ascertained that [having applied the necessary mitigation measures and consulted the public] the plan or project will not have* ***significant effect*** *[with other plans or projects] on the integrity of the Natura 2000 site in view of its conservation objectives?*" (emphasis added), the applicable test at the Appropriate Assessment stage, in accordance with Article 6(3) of the Habitats Directive and the Planning and Development Act 2000, is whether or not the plan or project will have an **adverse effect** the integrity of any European site (as referred to above).

1.4 Report Structure

1.4.1 Methodology and Guidance

Section 2 of the report sets out the methodology followed and guidance documents used in conducting a screening appraisal of the implications of the proposed development on European sites.

1.4.2 Stage 1 Screening Appraisal

Section 4 of the report contains a screening appraisal for appropriate assessment. It has been undertaken in view of the best available scientific knowledge, in light of the Conservation Objectives of the European sites concerned and considers the proposed development individually and in combination with other plans and projects.

In accordance with EC guidance and settled case law of the CJEU, measures intended to avoid or reduce the harmful effects of the proposed development on European sites, (i.e. "mitigation measures") or best practice measures have not been considered in the Stage 1 Screening appraisal.

The analysis involved in a screening appraisal for appropriate assessment is described in EC (2021) as comprising of four steps:

- Ascertaining whether the plan or project is directly connected with or necessary to the management of a Natura 2000 site;
- Identifying the relevant elements of the plan or project and their likely impacts;
- Identifying which (if any) Natura 2000 sites may be affected, considering the potential effects of the plan or project alone or in combination with other plans or projects; and
- Assessing whether Likely Significant Effects on the Natura 2000 site can be ruled out, in view of the site's conservation objectives.

1.4.3 Stage 2 Appraisal for Appropriate Assessment

Section 5 of this report contains further examination and analysis of the implications of the proposed development on the Conservation Objectives of those European sites where the possibility of Likely Significant Effects could not be excluded at the screening stage, whether alone or in combination, in the absence of further evaluation and analysis.

As part of a Stage 2 AA appraisal, it is permissible to consider mitigation measures proposed to avoid adverse effects of the proposed development. As such, the Natura Impact Statement contained in this document prescribes

the mitigation measures necessary to ensure that the ABR2 Project will not have an adverse effect on the integrity of any European site.

2.0 Methodology

2.1 Guidance on Appropriate Assessment

Guidelines on appropriate assessment for Planning Authorities have been published by the Department of the Environment Heritage and Local Government (DEHLG, 2010) and by the Office of the Planning Regulator (OPR, 2021). In addition to the advice available from the Department and the Planning Regulator, the European Commission has published a number of documents which provide a significant body of guidance on the requirements of Appropriate Assessment, most notably including Commission Notice C(2021) 6913 'Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2021), which sets out the principles as to approach decision-making during the appropriate assessment process. These principal national and European guidelines have been followed in the preparation this report. The following list identifies these and other pertinent guidance documents which have guided the preparation of this appraisal:

- Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg (EC, 2000);
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Brussels (EC, 2001);
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission; (EC, 2007);
- Estuaries and Coastal Zones within the Context of the Birds and Habitats Directives – Technical Supporting Document on their Dual Roles as Natura 2000 Sites and as Waterways and Locations for Ports. European Commission (EC, 2009);
- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin (DEHLG, 2010);
- Guidance document on the implementation of the birds and habitats directive in estuaries and coastal zones with particular attention to port development and dredging. European Commission (EC, 2011a);
- European Commission Staff Working Document 'Integrating biodiversity and nature protection into port development' (EC, 2011b);
- Marine Natura Impact Statements in Irish Special Areas of Conservation: A working document. National Parks and Wildlife Service, Dublin (NPWS, 2012);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013);
- European Commission Notice "Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC". Office for Official Publications of the European Communities, Luxembourg (EC, 2019);
- Institute of Air Quality Management 'A guide to the assessment of air quality impacts on designated nature conservation sites' (version 1.1). Institute of Air Quality Management, London (IAQM, 2020);

- Office of the Planning Regulator Practice Note (PN01) 'Appropriate Assessment Screening for Development Management' (OPR, 2021);
- European Commission Notice C(2021) 6913 'Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC', Office for Official Publications of the European Communities, Luxembourg (EC,2021); and
- European Commission Guidance document on Assessment of plans and projects in relation to Natura 2000 sites – A summary (EC, 2022).

2.1.1 Likely Significant Effects

The Commission's 2018 Notice (EC, 2019) states that the appropriate assessment procedure under Article 6(3) is triggered not by the certainty but by the likelihood of significant effects, arising from plans or projects regardless of their location inside or outside a protected site. Such likelihood exists if significant effects on the site cannot be excluded on the basis of objective information. The significance of effects should be determined in relation to the specific features and environmental conditions of the site concerned by the plan or project, taking particular account of the site's conservation objectives and ecological characteristics. Significance will vary depending on factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned. The Commission's guidance acknowledges that against this background, what may be significant in relation to one site may not be in relation to another.

The Court of Justice of the European Union (CJEU) has confirmed that a likely significant effect is triggered when:

- There is a probability or a risk of a plan or project having a significant effect on a European site;
- The plan is likely to undermine the site's conservation objectives; and
- A significant effect cannot be excluded on the basis of objective information.

EC (2021) defines a Likely Significant Effect as being "*any effect that may reasonably be predicted as a consequence of a plan or project that would negatively and significantly affect the conservation objectives established for the habitats and species significantly present on the Natura 2000 site. This can result from either on-site or off-site activities, or through combinations with other plans or projects*".

The requirement that the effect in question be 'significant' exists in order to lay down a *de minimis* or negligible threshold – thus, plans or projects that have no appreciable or imperceptible effects on the site are thereby excluded.

2.1.2 No Consideration of Mitigation Measures at Screening Stage

In determining whether or not Likely Significant Effects will occur or can be excluded in the Stage 1 appraisal, measures intended to avoid or reduce the harmful effects of the proposed development on European sites, (i.e. "mitigation measures") or best practice measures have not been considered in this screening stage appraisal. This approach is consistent with up-to-date EU guidance (EU,2019; EC,2021; EC, 2022) and the case law of the CJEU. In *Eco-Advocacy* (C-721/21), the CJEU found that this does not preclude features which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on a European site, where those features have been incorporated into that plan or project as standard features, and are inherent in such a plan or project, irrespective of any effect on the European site concerned.

This screening appraisal does not attempt to formulate any measures previously considered to be mitigation measures in light of the emerging case law from the CJEU by describing them as features that have been incorporated into the proposed ABR2 Project as 'standard features'. Rather, the AASR has been prepared on the basis that mitigation measures have not been considered.

2.1.3 Consideration of *ex-situ* effects

EC (2019) advises that Member States, both in their legislation and in their practice, should allow for Article 6(3) safeguards to be applied to any development pressures, including those which are external to European sites, but which are likely to have significant effects on any of them.

In that regard, consideration has been given in this AASR, as appropriate, to implications for habitats and species located both inside and outside of the European sites considered in the screening appraisal with reference to those sites' Conservation Objectives and where effects upon those habitats and/or species are liable to affect the conservation objectives of the sites concerned.

2.1.4 Conservation Objectives

The conservation objectives for each European site are to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the site has been selected. The favourable conservation status of a habitat is achieved when:

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

The favourable conservation status (or condition, at a site level) of a species is achieved when:

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

EC (2022) advises that an assessment should be completed for all of the designating features (species, habitat types) that are significantly present on the site (habitats and species with A, B or C, but not D, site assessment in the Standard Data Form for the site) in view of their conservation objectives. EC (2022) additionally notes that "*the lack of site-specific conservation objectives or the establishment of conservation objectives, which are not in line with the required standard, as specified in the Commission note on "Setting conservation objectives of Natura 2000 sites" (EC, 2012), jeopardises compliance with the requirements of Article 6(3)*".

2.1.5 Site-Specific Conservation Objectives

NPWS began preparing detailed Site-Specific Conservation Objectives (SSCOs) for European sites in Ireland in 2011. The European sites within Dublin Bay in closest proximity to the proposed development all have SSCOs. The published SSCO documents used in the appraisal are identified in **Section 4.1**.

The published SSCO documents note that an appropriate assessment based on the most up-to-date conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.

The most up-to-date Conservation Objectives for the European sites being considered, and details in relation to the Qualifying Interests and Special Conservation Interests of these European sites is based on publicly available data on these European Sites, sourced from the NPWS website in October 2026.

All European sites considered in this appraisal have published SSCOs, including the North-West Irish Sea candidate SPA (cSPA) (site code IE004236), which was notified to the public by the Department of Housing, Local Government and Heritage in July 2023, following selection by the Minister under the 2011 Regulations, as a site to be considered for consideration for classification as a SPA. As at the date of this AASR/NIS, it is understood that the site remains classified as a candidate SPA. However, as set out above, in the context of Irish law, the definition of "European site" includes a candidate SPA and, accordingly, the Article 6(3)/Section 177U screening assessment conducted by the competent authority should include the North-West Irish Sea candidate cSPA as if it is a designated SPA.

NPWS published detailed Site-Specific Conservation Objectives for the North-West Irish Sea cSPA in September 2023. Details of the site, including a Natura 2000 Standard Data Form, will be transmitted to the European Commission when the applicable statutory processes have been completed, which has not occurred as at the date of this AASR/NIS.

2.1.6 In-combination Effects

Article 6(3) of the Habitats Directive requires that in-combination effects with other plans or projects are also considered. As set out in the Commission's 2018 Notice (EC, 2019), significance will vary depending on factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned.

In that context, consideration has been given to plans or projects which are completed, approved but uncompleted, or proposed. EC (2019) specifically advises [on p43] that "*as regards other proposed plans or projects, on grounds of legal certainty it would seem appropriate to restrict the in-combination provision to those which have been actually proposed, i.e. for which an application for approval or consent has been introduced*".

This AASR has been prepared to assess the effects of other proposed projects for which an application for consent has been submitted but not determined.

EC (2021) additionally advises that:

- An in-combination assessment is often less detailed at the screening stage than in the appropriate assessment;
- There is still a need to identify all other plans or projects that could give rise to cumulative impacts with the plan or project in question; and
- If this analysis cannot reach definitive conclusions, it should at least identify any other relevant plans and projects that should be scrutinised in more detail during the appropriate assessment.

3.0 Project Description

3.1 ABR2 Project

The ABR2 Project will comprise the completion of redevelopment works in two areas of Dublin Port:

- Alexandra Basin West; and
- Berths 52/53.

The locations of these two work areas are illustrated in **Figure 3-1** below.

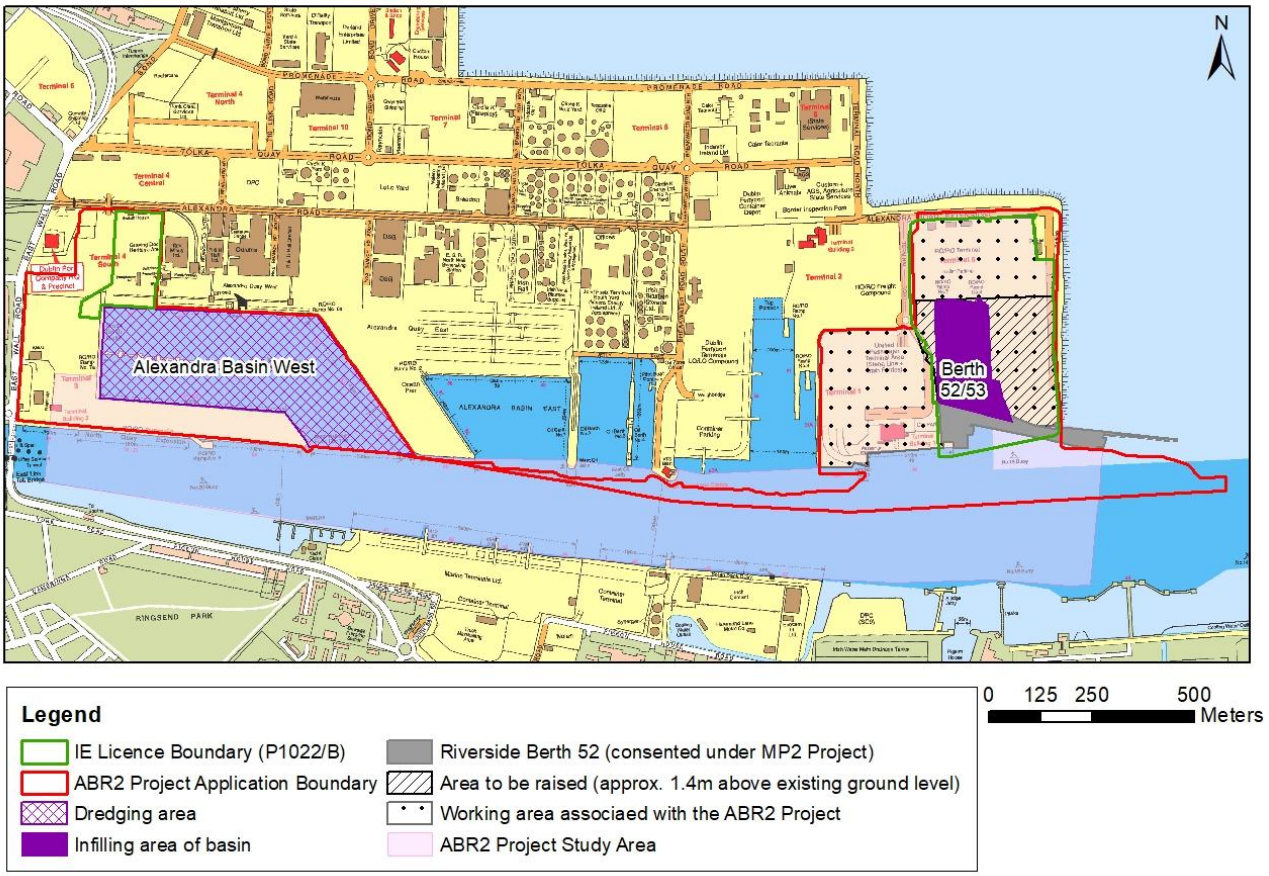


Figure 3-1: Location of Proposed Development in Dublin Port

The area enclosed by the planning application boundary is 72.6ha within the North Estate. It should be noted that the red line application boundary and the study area boundary of the ABR2 Project encompass slightly different areas, with the study area boundary reflecting the movement of barges of dredged/treated sediment material along the navigation channel.

Within Alexandra Basin West, capital dredging will be undertaken to achieve a standard depth of -10m CD at Alexandra Basin West to enable Alexandra Basin West to handle deeper draught ships. In addition, undertaking the works in Alexandra Basin West will allow a legacy contamination issue in the basin to be addressed and remediated, which restricts DPC's ability to carry out routine and essential maintenance dredging operations.

The berths in Alexandra Basin West will become increasingly busy in the future, and it is important (including, operationally) that DPC is able to include these berths within routine maintenance dredging campaigns.

Environmental sampling of sediment within Alexandra Basin West (above a depth of -10m CD) has demonstrated that the bed of the basin is contaminated with a range of heavy metals and organotins (Dibutyltin (DBT) and Tributyltin (TBT)) as a result of past ship building, maintenance, and repair activities, handling of ores, and other shipping activities. The levels of contamination in the existing materials within Alexandra Basin West result in this material being unsuitable for disposal at sea. The extent of contamination has been confirmed following recent site investigation surveys of the less contaminated sediments at the entrance of Alexandra Basin West, with the analysis demonstrating that no material required to be dredged and removed from Alexandra Basin West may be disposed of at sea (above a depth of -10m CD).

In the case of contaminated dredge material originating from Alexandra Basin West, the sediment (following treatment) was identified as being suitable for use to infill Graving Dock No. 2 and for the infilling of the existing basin at Berth 52/53 to provide increased capacity for Ro-Ro traffic in line with the Masterplan 2040 for the development of the Port. The use of treated dredge material replaces the need to use virgin materials that would otherwise be required for the development.

Treatment of contaminant material can occur in several ways. One such method is S/S as a remediation technology that reduces the mobility of contaminants. Immobilisation is achieved by reaction of contaminants with reagents to promote sorption, precipitation, or incorporation into crystal lattices, and/or by physically encapsulating the contaminants. The method produces a high-strength monolith-like product that physically reduces the mobility and chemically binds contaminants to the produced matrix. The treated mass can then be recovered/recycled to serve as infill material or for other beneficial use.

In relation to sediments arising from Alexandra Basin West, paste stabilization has been shown to minimise contaminant movement from treated sediments. Paste stabilisation can be conceptualised as an ex-situ form of mass stabilisation, whereby mix designs are predicated on achieving water contents 3-5% above the liquid limit to enable self-weight compaction.

The stabilisation mix design additives utilised to date at Dublin Port are Cement (CEM1 52.5N) and Powder Activated Carbon (PAC) appropriate to the levels of contamination within the sediment. CEM1 is a cementitious binder, PAC acts as an organo-sorbent compound utilised predominantly to retain TBT within the stabilised mass. A test work programme was developed to assess optimal CEM1 binder and PAC application rates with respect to water content and TBT source term mass respectively. In Phase 1 of the project, undertaken between 2019 and 2021, a threshold of 425µg/kg was set to determine whether PAC was required to be included in the additives for treatment purposes.

Phase 1 of dredging in the ABR Project targeted the removal of the most heavily contaminated sediments to a depth of approximately -8.0m CD. Treatment was undertaken using S/S with the recovered sediments utilised for infilling of Graving Dock No. 2 and the remaining treated sediments stored within the bunded structure. Given the range of contamination in the remaining sediments to be dredged, other design additives, such as Ground Granulated Blast furnace Slag (GGBS), may present a suitable alternative cementitious binder as a full or partial replacement of CEM1 in future works to treat less heavily contaminated dredge sediments. Recovery and use

of dredged sediments treated by S/S is largely dependent on the monolith structure being retained to ensure contaminants remain immobilised and bound within the monolith. It is noted however that the potential for future uncontrolled disturbance of the placed and recovered monolith, for example through excavation and installation of services within the S/S sediments, potentially risks amending the internal structure of these treated sediments with associated potential risks for unintended mobilisation of contaminants and negative environmental and human health effects.

However, it is now considered that the use of sediments recovered by S/S is not guaranteed to be appropriately managed in all envisaged use scenarios for the ABR2 Project. Accordingly, it is proposed to utilise sediments recovered by S/S only within the existing unfilled basin of Berth 52/53 with an impermeable barrier layer and minimum 1.4m cover to avoid any future disturbance.

The raising of ground levels elsewhere, as presented in the previous planning application, is proposed to be undertaken using sediments recovered through alternative physico-chemical treatment techniques (for example soil washing) where the efficacy of the treatment is unaffected by any future potential disturbance. Analysis of sediments which have not yet been dredged from Alexandra Basin West shows generally lower levels of contamination, and in some zones of the basin, significantly lower levels of contamination. It is expected that the application rates of stabilisation mix design additives to dredge arisings may be lower than used in previous works phases, and for some sediment, it is likely to be demonstrable as sufficiently uncontaminated to require minimal treatment, other than screening and/or washing, to recover sediments for infilling.

The total volume of sediments which are yet to be dredged from Alexandra Basin West which may be successfully recovered (i.e. for which a suitable beneficial use can be identified, fulfils technical quality requirements, and the use of the material does not result in potential negative environmental or human health effects) is expected to be lower than had been envisaged in the ABR Project, as some material (treated by S/S) cannot be utilised as previously identified.

Continued use of Alexandra Basin West for port-related activities and natural processes operating within the River Liffey and Dublin Bay, has resulted in the movement of, and continued deposition of, sediment within the basin since the first phase of dredging operations was completed. Further geochemical analysis of cores of sediment previously sampled from Alexandra Basin West has also been undertaken. A review of all available test data has identified varying degrees of contamination within the sediments which were not removed from the basin during Phase 1 of dredging. All metal contaminants, TBT and DBT, were concentrated in the western side of the basin (to varying degrees). Identified concentrations of TBT are lower than those present before the previous dredging operations occurred of the ABR Project, as expected as dredging in Phase 1 was designed to focus on the removal of the most heavily contaminated sediments for treatment.

The removal of sediments affected by the above contaminants must be considered within dredging approaches to ensure that the material is managed to facilitate segregation at source or treated and infilled in controlled zones. Notwithstanding this, sediments with notably lower levels of contamination are present within Alexandra Basin West, which may be suitable for reduced levels of treatment to facilitate recovery for re-use. Studies are scheduled to determine the forms of alternative treatment which may be required for these sediments, with site investigations completed in Q2 2026 to recover samples for analysis and assessment. The results of these investigations will be available and analysed prior to treatment to confirm the volumes suitable for more limited

treatment, such as sediment washing and screening/grading. However, a precautionary approach has been taken within this assessment whereby the highest levels of contamination have been used in the calculation of volumes for treatment.

3.1.1 Project Design

An assessment has been undertaken regarding the expected sources of sediment (i) to be generated from the proposed Phase 2 of dredging within Alexandra Basin West in the ABR2 Project and (ii) from the volume of sediment dredged and treated during Phase 1 of the ABR Project (i.e., 84,300m^3), which is presently stored within the bunded structure, in respect of the capacity at the Berth 52/53 basin for infilling. A design for the usage of the treated sediment has been proposed based upon the available capacity of the Berth 52/53 basin for infilling. Consideration for Options for the Management of Materials

Consideration for Options for the Management of Materials

Volumetric changes are expected to arise on the treated sediment dredged in Phase 1 from bulking following excavation of the bunded structure, through the introduction of air to the treated sediment, however, it should be noted that, during the infilling process, with re-compaction of this sediment, it is estimated that c.95% of the introduced air will be removed with a negligible impact upon overall volumes. Volumetric changes are expected to arise on the sediment recovered from Alexandra Basin West during Phase 2 of dredging due to the addition of treatment additives or processing as appropriate. Recovery of sediments through solidification/stabilisation treatment during ABR Phase 1 resulted in increases in volume of dredged sediments following treatment of up to 42%. There is potential for variations in the quantities of the various materials to be used for infilling to arise from the proposed treatment and processing phases as outlined below.

It is expected that the Berth 52/53 basin will have capacity in the region of 459,680m^3 to receive recovered materials, with some surplus materials (up to 60,085m^3) expected to be required to be exported from the site for disposal in the event that bulking and processing of sediments results in increases in volume over and above that which were observed during ABR Phase 1 or settlement of the underlying basin is lower than expected following infilling. Accordingly, all the dredge arisings that are capable of being recovered are likely to be managed at Berth 52/53 basin, with only those dredge arisings that must be disposed of being exported offsite in the event that this is required. However, in the unlikely event that the Berth 52/53 basin does not have sufficient capacity to receive all recovered dredge arisings, then DPC has proposed the general management of any excess treated dredge material to be undertaken in line with the waste management hierarchy as follows (in order of preference):

- Where calculations indicate that the available void space of the Berth 52/53 basin cannot accommodate dredging Alexandra Basin West to a standard depth of -10m CD due to the production of excess material, dredging will be reviewed with a variable dredging depth used instead across Alexandra Basin West to minimise the generation of dredge sediments as far as practicable following qualification of dredging depths with the Harbour Master.

- Further identified excess dredge material which cannot be recovered at the Berth 52/53 basin will be recovered at a soil recovery or soil treatment facility in Ireland, subject to testing of the sediments in line with the selected facility's licence at the time of the works.
- In the very unlikely event that a soil recovery or soil treatment facility is not available in Ireland, the material will be recovered at a soil recovery or soil treatment facility in Europe, subject to the testing of the sediments in line with the selected facility's licence at the time of the works.
- Disposal at a licensed landfill facility in Ireland suitable to accept material which must be disposed.

At this stage, however, there remain several variables which could reduce any excess material requiring to be managed (primarily the degree of settlement which occurs following infilling with the basin at Berth 52/53 and volumetric increases in volumes arising from the addition of treatment compounds to the dredged sediment), but there remains the potential for additional material to be generated which cannot be managed within the confines of the site.

In ordinary course, the excess volume of material to be accommodated onsite may reduce as follows:

- The total volume of identified low-level contaminated silts and clays from dredging in Phase 2 of Alexandra Basin West may not require any treatment by S/S and the identified bulkage arising from such treatment may not be required, reducing the total volume of sediments to be infilled into the Berth 52/53 basin by 11,448m^3.
- Sands abstracted from the low-level contaminated sediment from dredging in Phase 2 of Alexandra Basin West may be proven to be suitable for use as capping material in the wider Berth 52/53 hardstanding areas and this could provide an alternative use onsite without utilising void available within the Berth 52/53 basin by up to 26,235m^3.
- The proportion of gravel and sands from dredging in Phase 2 of Alexandra Basin West may vary, feasibly increasing the volume of sediments which could be utilised as capping material on adjacent lands to the Berth 52/53 basin, albeit by an undetermined quantity and this could provide an alternative use onsite without utilising void available within the Berth 52/53 basin.
- Should treatment and placement of identified high-level contaminated dredge cause bulking of the treated sediments at similar levels to those observed in Phase 1 of the parent ABR Project the volume expected to be infilled in the Berth 52/53 basin could reduce by up to 17,143m^3.
- In the event that settlement and consolidation of sediments underlying the proposed infill increases by 400mm (over and above the assumed 600mm), the available void within the Berth 52/53 basin could increase by 14,926m^3.

It is possible that the volume of material generated through dredging of Alexandra Basin West and accounting for existing treated sediment, stored within the bunded structure, which would be available to infill the Berth 52/53 basin, may be less than the maximum void capacity of the Berth 52/53 basin and that no further actions will be required.

The following management of materials is proposed to be carried out, to the extent required:

- All identified sediments with historic contamination present undergoing treatment via S/S are considered as recovered and retained on-site for the infilling of the Berth 52/53 basin.

- The bunded stockpile of existing treated sediments (84,300m^3) from Phase 1 of the parent ABR Project, will be retained on-site for the infilling of the Berth 52/53 basin.
- All identified gravel extracted from dredged sediments during Phase 2 of dredging in Alexandra Basin West, following soil washing activities, will be retained on-site for reuse within capping layers in lands adjacent to the basin at Berth 52/53.
- Given the probable condition of sands (of low contamination) extracted from dredged sediments during Phase 2 of dredging in Alexandra Basin West, following soil washing activities, this volume of material will be considered for export to a recovery facility in Ireland (26,235m^3). Refer to Section 5.7.6 on import and export of materials.
- Further materials required to be removed from the site should be considered to consist of the remaining fractions of the dredged sediments from Phase 2 of dredging in Alexandra Basin West (i.e. in the region of 33,850m^3 of silts and clays), to be removed to a suitable soil recovery or soil treatment facility in Ireland, subject to testing of the sediments in line with the selected facility's licence at the time of the works. In the event that not all fractions of the dredged sediments from Phase 2 of dredging in Alexandra Basin West are capable of being recovered at a licensed facility in Ireland, the material will instead be recovered at a soil recovery or soil treatment facility in Europe, subject to testing of the sediments in line with the selected facility's licence at the time of the works. Refer to Section 5.7.6 on import and export of materials.

The envisaged management techniques, an indication of the sources and destination of primary materials, and processing expected to be required in the event that offsite recovery of fractions of the dredged sediments from Phase 2 of dredging in Alexandra Basin West is required, are detailed in following sections and summarised in **Figure 3-2**.

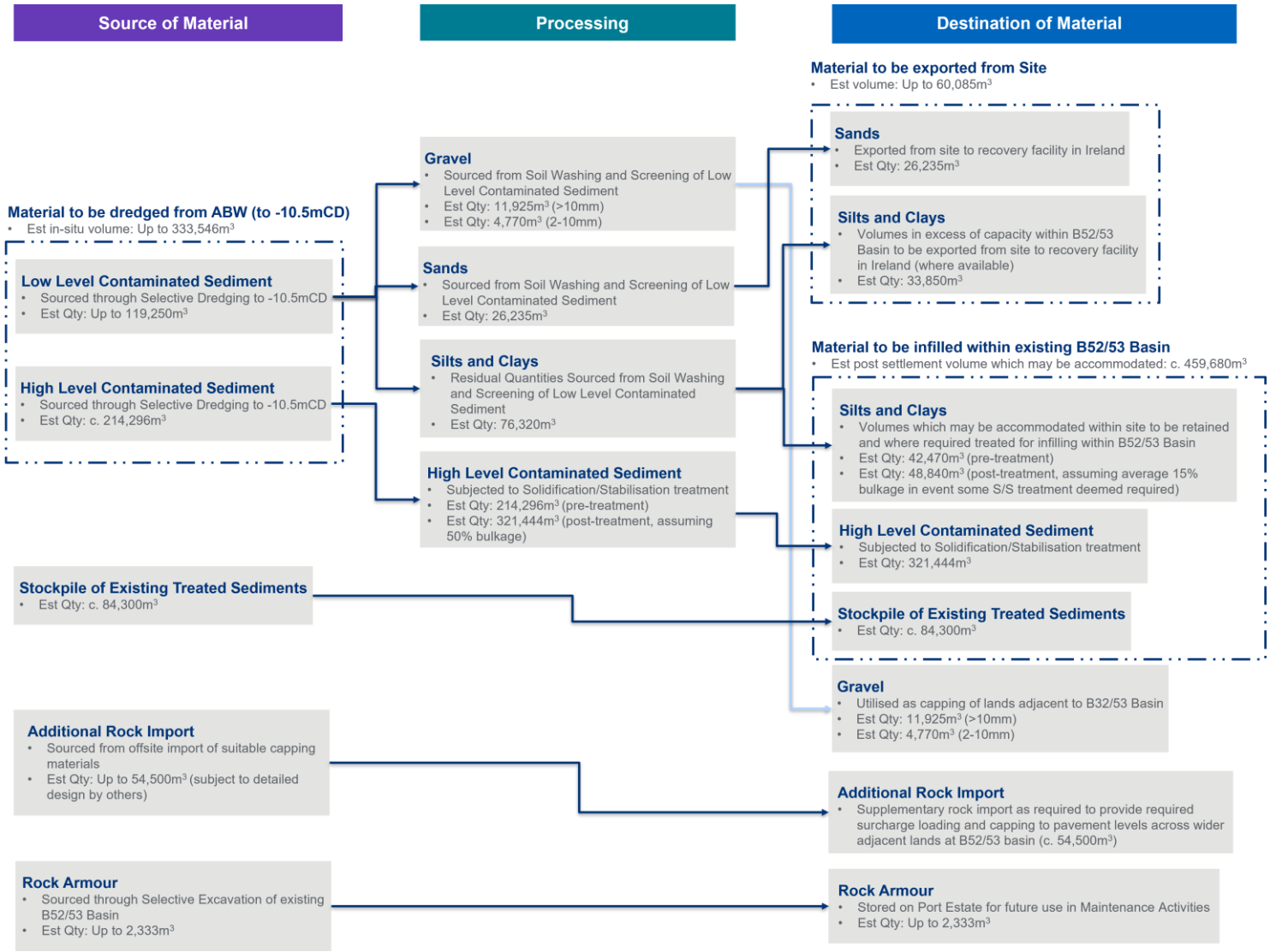


Figure 3-2: Schematic indicating the Material Management Routes from source, processing and destination for the ABR2 Project.

3.1.2 Construction Phases

The construction phases will involve the following:

- Closure of the existing basin at Berth 52/53 through the construction of the new Riverside Berth 52 and Berth 49 extension works (approved under Planning Ref ABP-304888-19 of the MP2 Project) to contain sediments arising from infilling activities.
- Demolition works proposed at the basin of Berth 52/53 involving the removal of existing marine infrastructure, prior to infilling, which includes the open pile jetty at Berth 52 (c. area of 500m^2) and Ro-Ro Ramp No. 7 to be decommissioned.
- Partial dewatering of the Berth 52/53 basin to facilitate infilling activities.
- Construction of temporary processing and treatment facility/facilities located at the North Wall Quay Extension, Berth 49 or Berth 52 West.
- Provision of temporary materials handling infrastructure (including pumping equipment and dewatering infrastructure) within vicinity of Berth 52/53 basin for infilling activities and at treatment works located at the North Wall Quay Extension, Berth 49 or Berth 52 West.
- Installation of a temporary wastewater treatment plant(s) for the duration of the treatment works which will be located at North Wall Quay Extension, Berth 49 or Berth 52 West as outlined in Drawings IBR1345/015C, IBR1345/016C and IBR1345/018B.
- Completion of capital dredging through Phase 2 of dredging Alexandra Basin West undertaken to a standard depth of -10m CD to recover sediments for treatment on the basis of bathymetric survey data completed in 2025.
- Receipt of dredged sediment by barge delivered from Alexandra Basin West at the North Wall Quay Extension, Berth 49 or Berth 52 West for:
    - Screening to remove oversized particles.
    - Progressive treatment and infilling within the Berth 52/53 basin.
    - Landside dewatering, potentially washing, and storage of sediments with sufficiently low levels of contamination to make them fit for reuse onsite.
- Treatment of:
    - Contaminated impounded water within the Berth 52/53 basin as infilling progresses.
    - Contaminated effluent from the waste treatment process and immediate material handling.
- Use of existing bunded stockpile containing treated dredge material as infill within the Berth 52/53 basin and infilling using treated dredge material from Phase 2.
- Installation of surcharge to infilled and treated sediments to achieve consolidation of the underlying sediments and minimise post-completion settlement and to provide sub-base in all areas to be repaved to provide the Unified Ferry Terminal.
- Raising of levels of the infilled existing Berth 52/53 basin, and the existing levels of the landside area to the immediate east, between this infilled basin and Terminal Road South, and the landside area to the west of this infilled basin, by 1.4m over an area of 95,000m^2.

- Potential temporary storage of treated dredge material landside of the North Wall Quay Extension, Berth 49, Berth 52 West or within the vicinity of the Berth 52/53 basin.
- Provision of ancillary support services and accommodation.
- Final Surfacing (approved under Planning Ref ABP-304888-19 of the MP2 Project).
- Provision of Environmental Monitoring, Critical Quality Attribute (CQA) Monitoring, and Construction Environmental Monitoring Plan (CEMP)-related environmental protection measures.
- Removal of marine infrastructure before infilling of the Berth 52/53 basin. No piles will be removed during demolition. Given that the basin will be infilled, the structures will be cut at the seabed and left in situ prior to infilling. The upper structures mainly comprise concrete/reinforced concrete which will be recycled. Approximately 100 tonnes of mixed construction material associated with the demolition works will be recycled via Material Recovery Facilities (MRF) or landfill.
- Demolition waste will be collected on-site for disposal by a licensed waste contractor. An Asbestos Management Survey was undertaken on the structures at Berths 52 and 53 to be demolished as part of the scheme. No suspected asbestos-containing materials were identified in the marine structures. Limited access was available to the underside of these structures, therefore, they will be subjected to a detailed asbestos survey before demolition.

Further information on the above construction phases is detailed below.

Dredging at Alexandra Basin West

Under the ABR Project permission, dredging of 470,000m^3 of contaminated material to a standard depth of -10m CD was permitted over an area of 194,000m^2 within the Alexandra Basin West. During the period of that grant of permission, an initial phase of dredging resulted in the removal of approximately 97,000m^3 of material. The material dredged was taken ashore, treated and used to infill Graving Dock No. 2. A portion of the treated material (84,300m^3) was stockpiled adjacent to the Berth 52/53 basin in accordance with the conditions associated with the temporary storage of waste on site under the IE licence granted by the EPA. As noted in **Chapter 2 Section 2.2.1 of the EIAR**, due to delays, DPC was unable to complete the entirety of the permitted dredging during the period of the grant of planning permission.

It should be noted, that due to the omission of the reconfiguration of the North Wall Quay Extension, as noted in **Chapter 2 Section 2.2.2 of the EIAR**, dredging in the immediate vicinity of the North Wall Quay Extension will no longer be implemented to ensure that the existing quay wall is not undermined. This will reduce the volume of material to be dredged below that originally envisaged under the parent ABR Project permission (470,000m^3) by approximately 39,000m^3. Dredging of the remainder of the basin to a standard depth of -10m CD will generate approximately 334,000m^3 of sediment, with the subsequent treatment of the material for use as infill for the Berth 52/53 basin.

As outlined previously, bed conditions in Alexandra Basin West are comprised of sandy, silty, clays, and extensive sampling and environmental testing has shown that this material is contaminated with metals such as Arsenic, Copper, Chromium, Cadmium, Nickel, Lead, Mercury and Zinc. Elevated levels of TBT and DBT have also been

recorded. Consultations with the Marine Institute have indicated that the contaminated material within Alexandra Basin West is not suitable for disposal at sea. Therefore, DPC proposes that this material be treated and re-used for reclamation within the Port as far as practicable, specifically as infill for Berth 52/53.

The methodology for dredging will be the same as that undertaken for Phase 1, which will comprise the use of a floating pontoon with an excavator mounted environmental bucket adapted for environmental dredging. The purpose of this is to minimise the disturbance and escape of material at the seabed and during removal through the water column. A silt curtain is utilised around the dredger whilst the dredging of contaminated material is ongoing. In addition to the mitigation measures proposed within the parent ABR Project Environmental Impact Statement (EIS) from 2014, the use of a contingency bubble curtain (stored on-site) which could be installed across the entrance to Alexandra Basin West was included in the CEMP, following submission. The bubble curtain is to be utilised in the unlikely event of a breach of the silt curtain around the dredger. Dredge plume assessments have demonstrated that dredging may be undertaken at a rate of up to 4,000m^3/day as noted within **Chapter 9 Water Quality and Flood Risk Assessment** and **Chapter 14 Coastal Processes of the EIAR**. It is anticipated however that maximum potential dredging rates will be achieved infrequently due to operational constraints associated with vessel movements within Alexandra Basin West.

Alexandra Basin West may be dredged on an area basis as indicated below in **Figure 3-3** with four potential areas identified within the basin**.** Areas 1 and 4 may be dredged on a 24/7 basis, however, due to the potential for propagation of noise across the River Liffey, Areas 2 and 3 can only be dredged between the hours of 07:00 and 23:00. A maximum of two dredgers may operate within Alexandra Basin West at the same time, with only one dredger per dredge area.

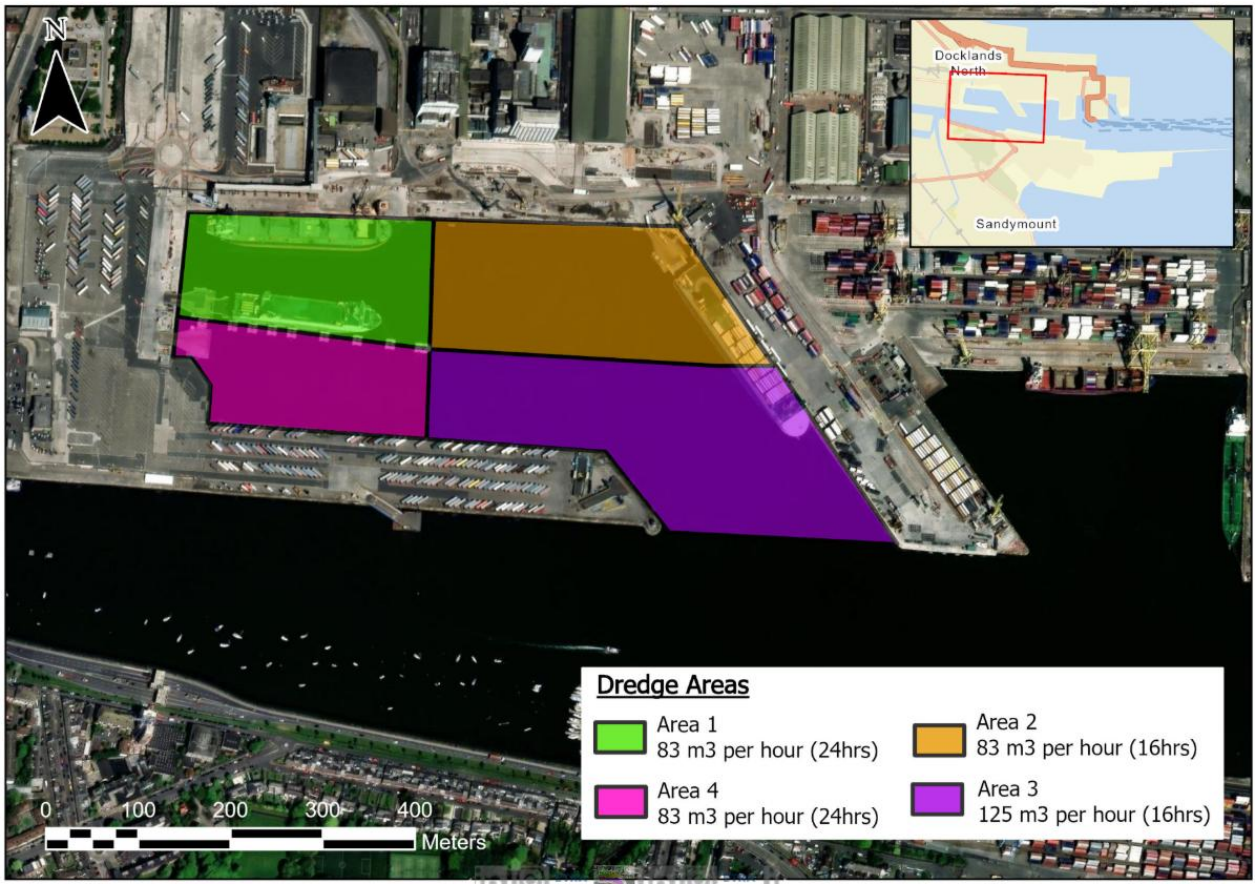


Figure 3-3: Alexandra Basin West proposed dredging areas

Dredged material will be transported to one of the proposed treatment facilities (located at North Wall Quay Extension, Berth 49 or Berth 52 West) by barge. No overtopping of barges will be permitted, and spill plates will be utilised to prevent spillage during offloading operations. To minimise the stockpiling of dredged material, the rate of dredging is determined by the rate of treatment of the dredged material and available stockpile capacity. The contaminated dredged material may be off-loaded on arrival or, alternatively, may be left on the barge overnight to allow for settlement (to remove as much free water from the dredged material as possible). Liquid arising from the solid material settling will be pumped out to an appropriately licensed mobile water treatment plant on-site (under the terms of the existing IE licence). The dredged material will be off-loaded by excavators to the respective treatment facility. Mechanically dredged sediments typically have a solid content comparable to that of in situ sediments.

The contaminated dredged material will be screened to remove extraneous material unsuitable for treatment (e.g. debris). This can be undertaken on the barge itself by raking or by feeding the material onto a screen. This limited volume of material will be disposed of at an appropriately licensed landfill site.

Separation techniques may be applied, should the material be suitable for this technique, to separate dredge material into fines, sand and gravel and to separate contaminated fine particles from uncontaminated sediments. Uncontaminated sediment may be used as fill material without the requirement for further treatment.

The need for dewatering will be determined by the water requirements of the treatment technology and the solids content of the sediments following removal, transport, and screening and separation pre-treatment. The separated

sand typically has a solid content around 80 – 85% leaving the process. For dredge material exhibiting greater levels of contamination, further treatment will take place as described below.

Treatment of Contaminated Dredge Materials from Alexandra Basin West

Consultations with the Marine Institute have indicated that material proposed to be dredged within Alexandra Basin West is not suitable for disposal at sea. Best practice industry techniques (utilising Best Available Technology (BAT)) will be used to treat the contaminated material arising from the dredging of Alexandra Basin West. Dredged material will be treated by means of soil washing and S/S and subsequently infilled into the basin at Berths 52/53.

It is proposed that selected sources of sediments arising from Alexandra Basin West will be subjected to soil washing techniques as appropriate to the source concentrations of contaminants. The treatment of sediment washing, by the intensive washing of the soil to be treated, removes the pollutants, transferring them to the finest particles (silts and clays), from the solid phase to the liquid phase and allows the recovery of the inert fraction with coarser particle size (sands and gravels) for reuse on site. It is expected that this form of treatment will be applied to c.120,000m^3 of dredge sediment arising from Alexandra Basin West.

Sediments which are deemed too contaminated for solely soil-washing techniques will be subject to the process of S/S treatment as outlined in **Section 3.1**. The treatment and recovery of dredged material on-site must take place in accordance with the conditions of the IE licence, or any subsequent amendments to the licence which may be required to accommodate the works as outlined in this Project Description. The following waste-related processes are:

- Storage of waste, including imported waste to be used in the waste treatment process;
- Treatment of waste (contaminated dredge material);
- Recovery of treated waste by infill within the installation; and
- Treatment of contaminated process water.

The maximum tonnage of material for recovery as per Schedule A.2 of the IE licence is 1,262,800 tonnes. This is based on 574,000m^3 of infill after S/S has occurred (470,000m^3 of dredge spoil) and an approximate density of 2.2 tonnes/m^3. During Phase 1 dredging under the parent ABR Project, the previous S/S process undertaken for dredged sediments required 38.3m^3 of water per 1,000m^3 of dredged material treated. It is proposed that treatment of sediments in Phase 2 will not exceed 2,500m^3/day, therefore 95.8m^3 of water will be required for treatment per day.

To promote the re-use of resources where possible, the treatment process of dredged material will be undertaken using industrial wastewater effluent, which is to be sourced from an on-site treatment plant within Dublin Port. Mains water supply within the Port cannot facilitate treatment works at Berth 49 or Berth 52 West due to the volume of water required during the treatment of the dredged sediment, therefore the use of industrial wastewater effluent is proposed to be supplemented from the water displaced from the proposed infilling area of the Berth 52/53 basin. This avoids the need for connection to the mains network and proposes the re-use of water which would have been otherwise discharged into the River Liffey. Where additional water supplies are required for treatment operations occurring at the North Wall Quay Extension alongside the industrial wastewater effluent, this

will be facilitated by connection to existing saltwater supplies which are operated by Dublin Port in the vicinity of the North Wall Quay Extension. This saltwater supply is also used in emergency circumstances for fire-fighting within the Port, should the need arise.

It is envisaged that conventional soil washing and in the case of S/S, conventional mixing techniques, will be utilised. The plant can be scaled according to the volume of material to be treated, which is anticipated not to exceed peak daily dredge rates generating material for treatment. Where daily dredging rates exceed treatment capacity on a given day, surplus sediments generated over and above the installed treatment capacity will be stockpiled locally to the relevant treatment plant for treatment on subsequent days where dredging rates do not exceed treatment capacity. A proposal for Specified Engineering Works will be submitted to the EPA for agreement in accordance with Condition 3.16 of the IE licence and will contain the following:

- Installation of waste handling and processing infrastructure;
- Installation of wastewater treatment plant;
- Relocation of plant and equipment as the phases of the licensable activity progress;
- Capping of infill areas; and
- Any other works notified in writing by the EPA.

No engineering works proposed under the planning application will be undertaken without the prior agreement of the EPA. Under the conditions of the IE Licence all waste handling and processing will be undertaken in designated, bunded areas designed and constructed in accordance with current EPA Guidance. Such areas will be rendered impervious to the materials to be handled and temporarily stored therein, and provided with segregated drainage to facilitate collection of potentially contaminated runoff for treatment and discharge in accordance with the IE licence. Typical processes for the treatment of dredge sediment envisioned to occur for the ABR2 Project are set out below.

Separation Process

As required, the contaminated dredged material will be screened to remove extraneous material unsuitable for treatment (e.g. debris). Dredged material will be screened potentially either within the barge or in a storage compound, if required following unloading as part of the pre-treatment process. This material will be disposed of at an appropriately licensed landfill in Ireland.

Separation (soil washing) techniques may be applied, should the material be suitable for this technique, to separate dredge material into fines, sand and gravel in order to separate contaminated fine particles from uncontaminated sediments. Uncontaminated sediment may be used as fill material without the requirement for further treatment. The need for dewatering will be determined by the water requirements of the treatment technology and the solids content of the sediments following removal, transport and screening and separation pre-treatment.

Dewatering Process

Reducing the moisture content reduces the volume to be treated and the volume of additives that may be required for the S/S process, or to make dredge material which is required to be removed from site fit for transport by HGV or shipping vessels. If deemed necessary to facilitate management and recovery for re-use onsite, further

dewatering methods may be applied to the separated fines to return the dredged sediments moisture content as a minimum to that of the in-situ material. Dewatering will reduce the dredged material's moisture content and consolidate it, which facilitates handling, thereby reducing the volume for the subsequent treatment process. Generally, mechanical dewatering technologies can remove free and interstitial water and increase the solids content up to 70% by weight. The dewatering process can be engineered around a large difference in moisture content and varies by material type (fines, sand and gravel) undergoing dewatering.

Wastewater Treatment Process

The proposed process for the treatment of wastewater will be designed to achieve the emission limit values of the IE licence.

During the construction phase of works, contaminated water arising from the sediment handling process will require to be managed. A wastewater treatment plant will comprise a single lane treatment process to remove suspended solids, product and contaminants (if present) from the wastewater produced from the dredging, dewatering and treatment processes. The volume of water to be treated will be determined by the amount of water to be removed prior to the treatment process.

Flocculants may be required as part of the dewatering and wastewater treatment processes. Water arising from the dewatering process will be removed by pumping and treated in a water treatment plant before being discharged via the designated discharge point to the River Liffey in accordance with the conditions of required consents.

Sampling points will be included within the pipe work system to allow for the collection of water samples from emission point as per the IE licence. The sampling and testing schedule will be in accordance with Schedule C of the IE licence. The wastewater processing and discharge activities will continue during the night with mitigation in place to reduce the noise generated at source, which is achieved through compliance with Best Practice British Standards Construction Guidelines.

Sediment Handling Process

The sediment handling process will be undertaken in a batching plant in the proposed treatment area(s), and as further detailed below. The soil washing and S/S treatment plants will be brought to the treatment area by road on low-loaders or by sea aboard barges and set up on site. Plant and equipment will be installed on concrete hardstanding areas. It is envisaged that conventional mixing techniques will be utilised in the Project. The plant can be scaled according to the volume to be treated.

3.1.3 Treatment Compounds and Working Areas

Due to the complex operations occurring within Dublin Port, the treatment and recovery operations for the dredged sediment from Alexandra Basin West under the ABR2 Project may take place at either the NWQE, Berth 49 or Berth 52 West. All material transported via barge will incorporate the use of spill plates. There is potential, due to operational activities occurring within the Port, that the various elements associated with the treatment works may occur at one, or two of the three of the proposed locations concurrently. Due to operational constraints within the Port, neither Berth 49 nor Berth 52 West may be used concurrently. This may result in several handling and

treatment scenarios occurring during the construction phase: either one of the possible three locations individually; or a combination of two alternative scenarios (excluding Berth 49 and Berth 52 West occurring concurrently) as outlined in Scenarios A to D below.

Scenario A

Under Scenario A, the following sediment handling and treatment process is proposed:

- Dredged sediment from Alexandra Basin West is transported via barge to Berth 49. The material may be stockpiled before undergoing treatment.
- All treatment (including soil washing and S/S) is undertaken at Berth 49 (with associated Wastewater Treatment Works).
- Material treated via S/S will be transported via pumped pipelines located under the access road network to the reception area to be directly infilled within the Berth 52/53 basin, or alternatively by road haulage within the Port.
- Material treated via soil washing may be temporarily stored within a stockpile at Berth 49 before being transported via pumped pipelines located under the access road network to the reception area, or alternatively by road haulage within the Port, to then be used for infilling activities.

Scenario B

Under Scenario B, the following sediment handling and treatment process is proposed:

- Dredged sediment from Alexandra Basin West is transported via barge to Berth 52 West. The material may be stockpiled before undergoing treatment.
- All treatment (including soil washing and S/S) is undertaken at Berth 52 West (with associated Wastewater Treatment Works).
- Material treated via S/S will be transported via pumped pipeline to the reception area to be directly infilled within the Berth 52/53 basin.
- Material treated via soil washing may be temporarily stored within a stockpile at Berth 52 West before being transported via pumped pipeline to the reception area to then be used for infilling activities.

Scenario C

Under Scenario C, the following sediment handling and treatment process is proposed:

- Dredged sediment from Alexandra Basin West is transported via barge to the North Wall Quay Extension.
- All treatment (including soil washing and S/S) is undertaken at the North Wall Quay Extension (with associated Wastewater Treatment Works).
- Treated sediments are transported via barge to either:
    - Berth 49 for subsequent temporary storage of soil washed materials within a stockpile (before being transported via a pumped pipeline, or alternatively via road haulage, to the reception area to then be used for infilling activities), with materials treated via S/S transported via a pumped

pipeline, or alternatively via road haulage, to the reception area to undergo infilling at the Berth 52/53 basin, or

- Berth 52 West with transport via a pumped pipeline, or alternatively via road haulage, for subsequent temporary storage of soil washed materials within a stockpile (before being used for infilling), with materials treated via S/S transported via pumped pipeline, or alternatively via road haulage, to the reception area to undergo infilling at the Berth 52/53 basin.

Scenario D

Under Scenario D, the following sediment handling and treatment process is proposed:

- Dredged sediment from Alexandra Basin West is selectively transported by barge (determined by source contamination levels) to either the North Wall Quay Extension and Berth 49 or to the North Wall Quay Extension and Berth 52 West.
- Soil washing occurs at the North Wall Quay Extension for sediments showing low-levels of contamination (note fine sediments produced from soil washing activities will be subsequently transferred by barge to either Berth 49 or Berth 52 West for S/S treatment).
- All other sediments are transported via barge for S/S treatment to either Berth 49 or Berth 52 West. A Wastewater Treatment Works will be required at both envisaged treatment compounds, i.e., the North Wall Quay Extension and Berth 49 or the North Wall Quay Extension and Berth 52 West. The material may be stockpiled before undergoing treatment. Should this material be stockpiled at Berth 52 West, this will be transported via pumped pipeline, or alternatively via road haulage, to the stockpiling area before being transported back to the S/S treatment plant located at Berth 52 West to then undergo treatment.
- Once soil washing activities are complete at North Wall Quay, the treated material will be transported via barge to either Berth 49 or Berth 52 West for subsequent temporary storage and/or infilling at the Berth 52/53 basin. In the event that this material proposed for stockpiling at Berth 52 West, this will be transported via pumped pipeline or internal road haulage to the stockpiling area.
- Sediments treated via S/S at either Berth 49 or Berth 52 West will be transferred to the basin of Berth 52/53 for infilling via pumped pipeline, or alternatively via internal road haulage, to the S/S reception area.

At the commencement of construction works, as outlined above, dependent upon operational constraints within Dublin Port, the site compound will be established as required within the scenarios outlined above. It should be noted that, during the treatment of dredged materials and infilling activities of the Berth 52/53 basin, the site compound and associated plant may need to be relocated between and within working areas of the North Wall Quay Extension, Berth 49, and Berth 52 West. Further details on the general areas proposed for these treatment compounds and working areas are given below. Whilst the use of saltwater is proposed for the treatment process of dredged material, the various site welfare facilities and offices required for the treatment compounds, will require the use of potable water, supplied by a temporary and it is expected that approximately 4.5m^3 of potable water will be required per day.

The North Wall Quay Extension Treatment Compound and Working Area

Figure 3-4 shows the general location of the treatment compound and working area located at the eastern area of the North Wall Quay Extension. The soil washing and S/S treatment process will occur in batching type plants within the proposed treatment area. The dredged sediment will be removed from the barges at the reception area before going for treatment, as required material may be stockpiled prior to treatment occurring. The site compound will also include site offices, welfare facilities, storage areas, a canteen and a laboratory. At the North Wall Quay Extension, temporary modular buildings will be used to provide accommodation. Vehicular parking will be located adjacent to the accommodation area. Existing lighting is expected to be utilised to provide general illumination of the compound and working areas. Temporary lighting on-site for task-specific working and circulation within the working area will be limited to avoid overspill and light nuisance.

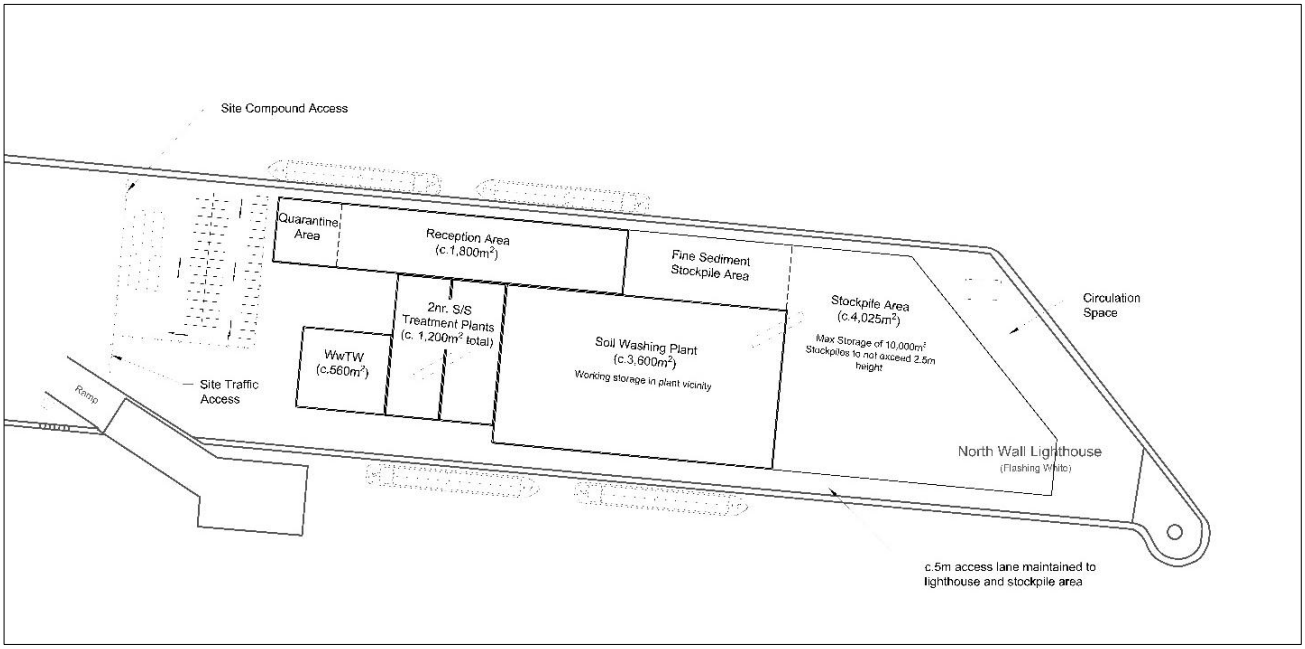


Figure 3-4: Indicative Treatment Compound and Working Area Layout at the North Wall Quay Extension

All works associated with the treatment compound and working area at North Wall Quay Extension are temporary in nature and shall be removed on completion. The works will include the following measures:

- All waste handling and processing will be undertaken in designated, bunded areas designed and constructed in accordance with current EPA Guidance. These bunds will be constructed on a separation liner (geotextile) laid over the existing surface to ensure separation and facilitate removal on decommissioning of the waste handling and processing equipment;
- Stockpile heights will be limited, so as not to exceed heights of the material being stored to ensure loading from materials onto the structure of North Wall Quay Extension remain below service loading (expected to be 50kPa);
- Spill plates will be utilised at quayside handling locations to avoid contamination of the surfaces forming the quay edge of the structure, arising from transfer of contaminated sediments from barges to North Wall Quay Extension treatment and handling infrastructure; and

- Temporary barriers will be provided to maintain separation of traffic associated with construction and treatment activities from the lighthouse located on the eastern edge of North Wall Quay Extension.

Berth 49 Treatment Compound and Working Area

Figure 3-5 shows the general areas associated with the treatment compound and working area located immediately north of Berth 49, in the vicinity of the existing ferry terminal building at Terminal 1. The soil washing and S/S treatment process will occur in batching type plants within the proposed treatment area. The dredged sediment will be removed from the barges at the reception area before treatment, as required material may be stockpiled prior to treatment occurring. Depending upon operational constraints, there is potential for the location of the stockpile and the treatment infrastructure to be swapped in location. Furthermore, should soil washing be unable to occur at the North Wall Quay Extension, the area indicated for stockpiling at Berth 49 may host a soil washing plant.

The site compound will also include site offices, welfare facilities, storage areas, a canteen and a laboratory. Vehicular parking will be located adjacent to the accommodation area. Existing lighting is expected to be utilised to provide general illumination of the compound and working areas. Temporary lighting on-site for task-specific working and circulation within the working area will be limited to avoid overspill and light nuisance.

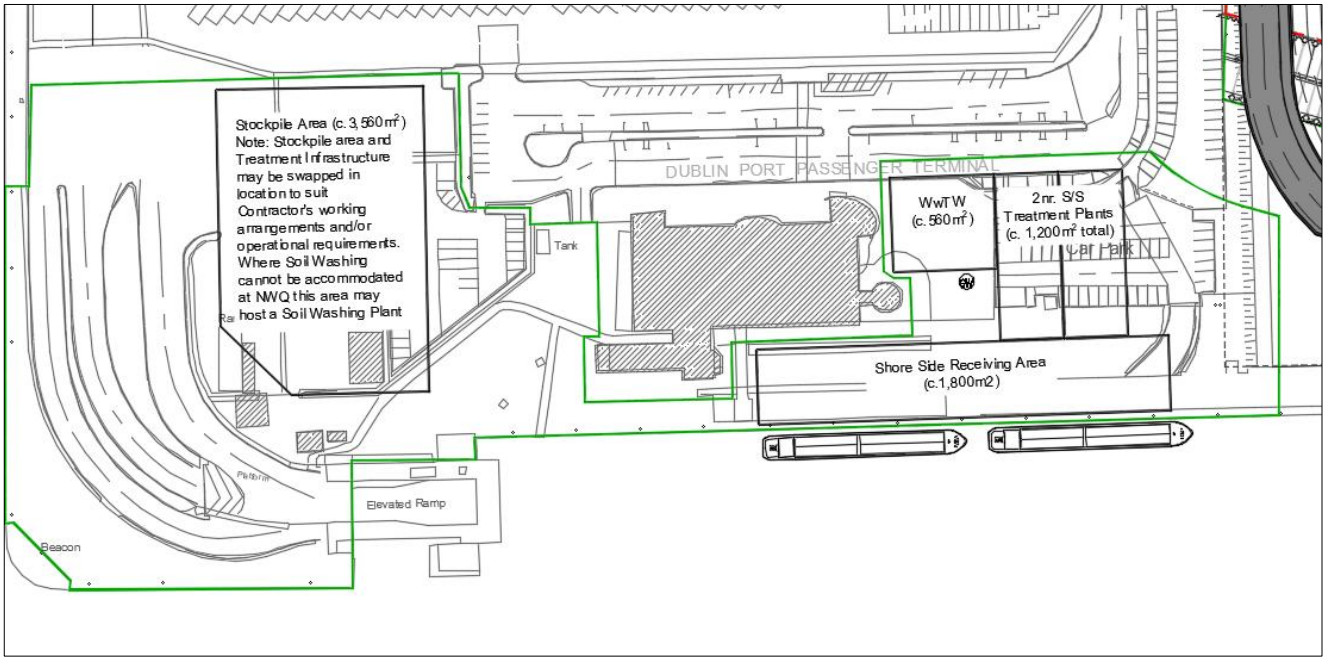


Figure 3-5: Indicative Treatment Compound and Working Area Layout Berth 49

Berth 52 West Treatment Compound and Working Area

Figure 3-6 shows the general areas associated with the treatment compound and working area located around the immediate area of the Berth 52/53 basin. The soil washing and S/S treatment process will occur in batching type plants within the proposed treatment area. The dredged sediment will be removed from the barges at the reception area before treatment, as required material may be stockpiled prior to treatment occurring. Should soil

washing be unable to occur at the North Wall Quay Extension, an area is available for soil washing beside the proposed stockpile area.

The site compound will also include site offices, welfare facilities, storage areas, a canteen and a laboratory. At Berth 52 West, temporary modular buildings will be used to provide accommodation. Vehicular parking will be located adjacent to the accommodation area. Existing lighting is expected to be utilised to provide general illumination of the compound and working areas. Temporary lighting on-site for task-specific working and circulation within the working area will be limited to avoid overspill and light nuisance.

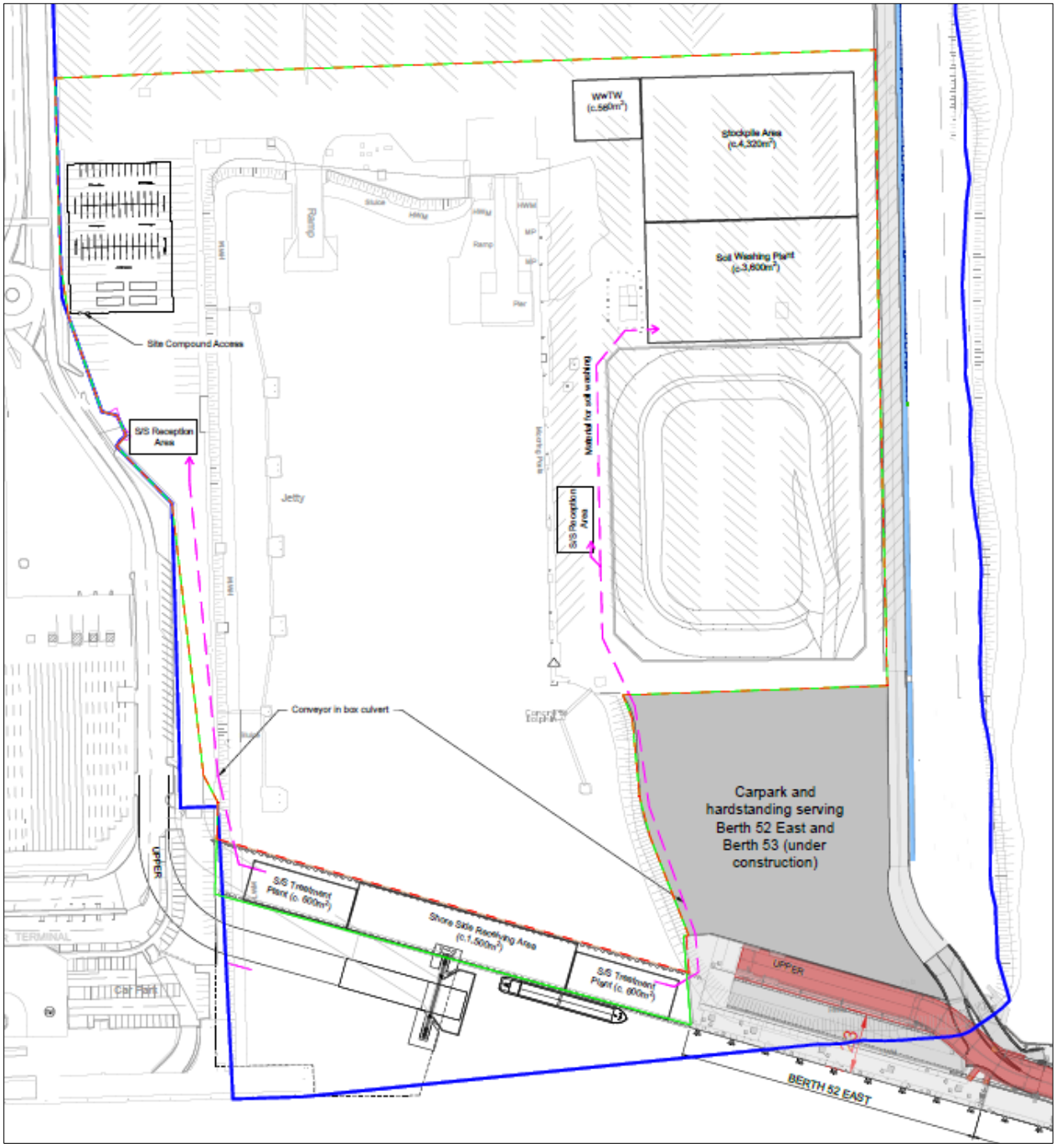


Figure 3-6: Indicative Treatment Compound and Working Area Layout at Berth 52 West

Material Stockpiling

As noted above, there is potential for stockpiling of material to occur in the locations indicated at either the North Wall Quay Extension, Berth 49 or Berth 52 West. At the North Wall Quay Extension, the stockpiles will not exceed heights imposing loads onto the structure of North Wall Quay Extension above acceptable service loading and, at Berth 49 and Berth 52 West, will not exceed the height of a stockpile placed at the natural angle of repose of the sediments within the footprints of the storage areas (nominally 4.5m in height).

As required, stockpiling may occur of both dredged sediment and sediment which has been treated by the soil washing process prior to this being used for infilling of the Berth 52/53 basin. If such stockpiling of dredged sediment occurs, it will only be on a short-term basis before the material undergoes S/S treatment for direct infilling within the Berth 52/53 basin. Stockpiling may also occur of coarse material which has been screened from the dredged sediments. Longer-term stockpiling will occur of the materials treated via soil washing as it is intended that this will be used for infilling after sediment treated via S/S has been placed within the Berth 52/53 basin.

3.1.4 Infilling Activities at Berth 52/53 Basin

The construction of Riverside Berth 52 permitted under the MP2 Project will provide closure between the Berth 52/53 basin and the navigation channel, so as to allow the infilling of the basin to occur and the raising of the levels of Terminal 5. The treated dredged material will be recovered for use as infill for the basin at Berth 52/53 as shown in **Figure 3-7**. Infilling will consist of sediments recovered from Phase 2 of dredging and treatment under the ABR2 Project and the treated material recovered during Phase 1 dredging undertaken as part of the ABR Project (c.84,300m^3) which is presently stored within the bunded structure to the east of the Berth 52/53 basin. These materials will be used to infill to the rim of the existing Berth 52/53 (c.3.2m OD). The existing storage bund will be decommissioned following the completion of infilling, this will include the demolition of the perimeter concrete containment walls with the area returned to hardstanding. Further minor infilling will occur within the basin to provide the final surface levels of the infilled material following settlement. This will create a temporary surface with surface gradient of up to 2.5% of which will be capped.

Capping and consolidation will take place as outlined in the following section (**Section 3.1.5**), this will facilitate drainage and shedding of incident rainfall and surface water from the infilled area without coming into contact with the infilled material. Briefly, this will involve a 1mm thick HDPE liner layer being used to cap the infill material which will be overlain by a needle punched geotextile layer to provide protection from overlying capping materials. Consolidation will involve surcharge material of imported stone fill of c.2m depth being used and this will remain in place for c.2 years and will be distributed across the infilled Berth 52/53 basin and adjacent land areas to the north-east and west to provide capping in advance of paving works occurring under the permitted MP2 Project.

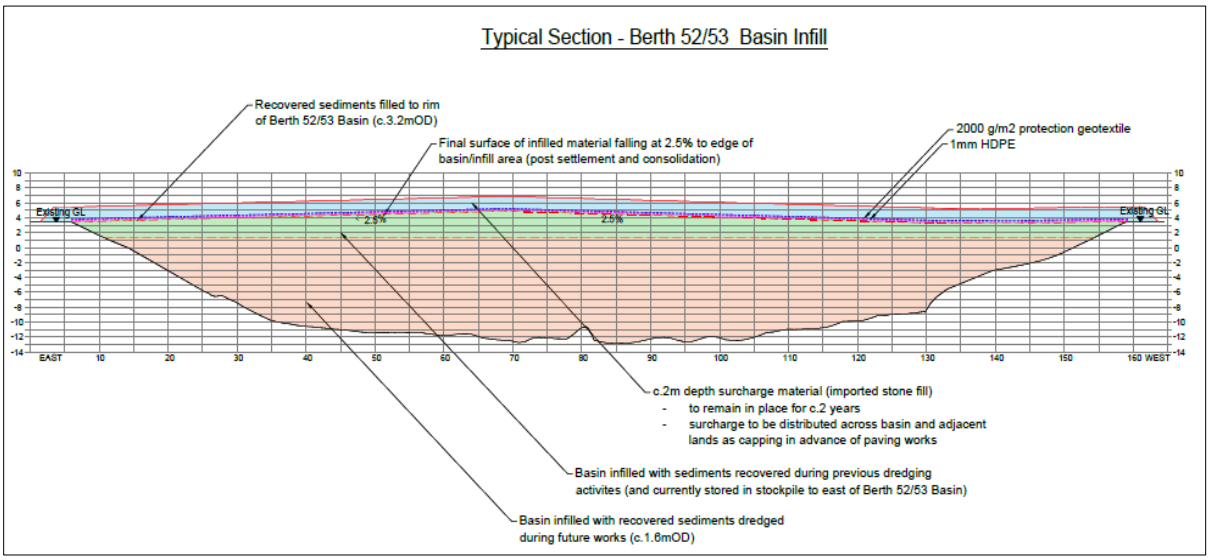


Figure 3-7: Schematic of Infilling Operations at berth 52/53 Basin

Prior to the filling of the Berth 52/53 basin, the replacement Berth 52 West quay wall will be constructed to close off the Berth 52/53 basin from the main navigation channel. This will eliminate direct surface water flows from the main estuary into the basin. If required, a controlled outlet at Berth 52/53 will be constructed to control water level and flow. A written record on the types and quantities of material recovered at the infill area will be maintained. Ongoing monitoring of the soil washing and S/S processes will also take place during construction and will consist of the following:

- Environmental testing to measure the leaching of contaminants from the treated material as per the IE licence requirements;
- An ongoing monitoring programme will be undertaken prior to, during, and post the sediment recovery operations as per the IE licence requirements of Schedule C Control and Monitoring; and
- A Quality Assurance/Quality Control (QA/QC) programme will be established.

As noted previously, a number of scenarios may be undertaken for the treatment, stockpiling and infilling of material into the Berth 52/53 basin, these are described below:

Scenario A

In the event that material is treated as outlined in Scenario A, then all treatment will take place at Berth 49. The dredged sediment will be transferred via barge to Berth 49 and will be off-loaded via excavators into the reception area before the sediment undergoes S/S treatment, the dredged material may be temporarily stored within a stockpile before being used for direct infilling into the Berth 52/53 basin following S/S treatment with transport via contained conveyance systems or trucks. Sediment which is treated via soil washing may be temporarily stored within a stockpile for a longer period of time before being used for direct infilling into the Berth 52/53 basin following S/S treatment with transport via contained conveyance systems or by trucks within the internal road network of the Port.

Scenario B

In the event that material is treated as outlined in Scenario B, all treatment will take place at Berth 52 West. The dredged sediment will be transferred via barge to Berth 52 West and will be off-loaded via excavators into the reception area before the sediment undergoes S/S treatment, the dredged material may be temporarily stored within a stockpile (noting that transfer between stockpile and treatment areas will be required) before being used for direct infilling into the Berth 52/53 basin with transport via pumping systems or trucks. Sediment which is treated via soil washing may be temporarily stored within a stockpile for a longer period of time before being used for direct infilling into the Berth 52/53 basin following S/S treatment with transport via contained conveyance systems or by trucks within the internal road network of the Port.

Scenario C

In the event that material is treated as outlined in Scenario C, all treatment will take place at the North Wall Quay Extension. The treated material will be transferred via barge to either Berth 49 or Berth 52 West and will be off-loaded (dry dig) using excavators into a reception area. The material which has been treated via soil washing may be temporarily stored within stockpiles using excavators and/or pumping systems before undergoing infilling. Material which has been treated by S/S will go for direct infilling into the Berth 52/53 basin with transport via pumping systems or by trucks within the internal road network of the Port.

Scenario D

In the event that materials are treated as outlined in Scenario D, where a selective treatment process operates at the North Wall Quay Extension for less contaminated sediments with soil washing activities undertaken before subsequent transfer via barge for the washed sediments to either Berth 49 or Berth 52 West, the material will either be temporarily stored within stockpiles using excavators or pumping transfer or go for direct infilling into the Berth 52/53 Basin with transport via contained conveyance systems or trucks.

Under Scenario D, the remaining more-contaminated sediments are transported via barge to either Berth 49 or Berth 52 West. These will be off-loaded via excavators into the reception area. This material may be temporarily stockpiled (noting that transfer between stockpile and treatment areas will be required at Berth 52 West) before the sediment undergoes S/S treatment, with the treated material subsequently transferred to the infill area of the Berth 52/53 basin via pumping systems or by trucks within the internal road network of the Port.

The placement of the treated material is most likely to include the use of a hopper and tremie pipework to direct treated sediment to the base of the basin and minimise washout of treatment additives from the treated sediment.

When infilling into water, process stabilisation will minimise contaminant release from material infill as the stabilised mixture is made before it is deposited into the fill area, with contaminant release reducing as the mixture cures in-situ contaminants as the stabilised mixture is made prior to its deposition into the infill area of the Berth 52/53 basin.

Water quality will be measured during the filling operation to ensure that measured parameters are within agreed limits. A controlled outlet from the Berth 52/53 basin will be constructed to control water level/flow. A written record of the types and quantities of material recovered at the infill sites will be maintained. Ongoing monitoring of the soil washing and S/S process will also take place during construction and will consist of the following:

- Geotechnical tests e.g. permeability (hydraulic conductivity) and the compression strength of the stabilised materials after different strength development periods;
- Environmental testing e.g. batch leaching tests and diffusion testing to measure the leaching of contaminants from the treated dredge material as per the IE licence requirements;
- An ongoing monitoring programme will be undertaken prior to, during, and post the recovery operation (surface water quality in harbour, monitoring of pore water in the construction, sediment samples from the harbour, water levels and groundwater quality) as per the IE licence requirements; and
- A QA/QC programme will be established.

3.1.5 Capping and Consolidation

Following the relocation and compaction of the treated sediment recovered during Phase 1 of the parent ABR Project (currently stored at a bunded stockpile to the east of the Terminal 5 basin), the infill will be capped with a 1mm thick HDPE liner layer that will prevent water ingress into the infilled material. This impermeable isolation capping layer will be overlain by a 2,000g/m^2 needle punched geotextile protection layer to protect the HDPE from damage arising from the installation of the overlying capping materials.

To promote consolidation and settlement of the infill material and underlying soft basin sediments, surcharge materials will be imported (crushed rock and stone) and placed to a depth of c.2m. The consolidation process may be accelerated through the provision of vertical band drains into the underlying sediments to relieve pore water pressures generated from the loading imposed by the infill of recovered sediments. Porewater will be collected from the vertical band drains installed and surface water shed from the impermeable barrier/capping layer will be collected from the perimeter of the capped area for discharge via the Wastewater Treatment Works if required, subject to water quality.

The closure quay at Berth 52 West will be constructed in advance of these proposed works (under the separate planning consent of the MP2 Project) using a causeway constructed from imported rock. Following completion of construction activity for the Berth 52 West quay wall, this rock is proposed to be removed. Subject to the availability of storage during the works within the Port, quantities of that rock may be available for recovery and reuse as surcharge (to pre-compress soft material at the base of the basin for improved consolidation) and ultimately act as a source of material for the capping layer beneath final pavement levels. Where possible, DPC will endeavour to make lands available to store this material during the operations to infill the Berth 52/53 basin; however, for the purposes of the environmental assessment this been assumed to not be feasible, and all necessary surcharge (for consolidation of the basin) has been assumed to require importation.

Following consolidation settlement (expected to take up to two years), surcharge capping material will be relocated between the infilled Berth 52/53 basin to Terminal Road South to the west and to Alexandra Road Extension to the east to a depth of c.0.9m.

The infill area at Berth 52/53 and the raised area adjacent to the infill site will subsequently be surfaced using a combination of concrete slabs and bituminous surfacing or block paving for trafficked areas and trailer parking to

provide circulation spaces as outlined under the MP2 Project. Post-surfacing, the area of Berth 52/53 will be raised approximately 1.4m above existing ground levels.

Where the existing Terminal 5 substation has not yet been demolished in advance of infilling operations (as consented under the MP2 Project) existing surface levels will be retained around the substation to avoid any impact on the building or cables. A buffer zone will be provided around the perimeter of the building, and a slope will be formed around the extremities to meet the surrounding raised levels. An up-stand wall will be provided along the top of the slopes, and an access ramp will be provided to retain vehicular access to the substation.

3.1.6 Material Import and Export

Material Import

Importation of materials for use as surcharge (amounting to c.54,500m^3) is expected. Following consolidation and settlement of recovered dredge material within the Berth 52/53 basin, this material will be subsequently relocated to a depth of c.0.9m across the footprint of the development area as capping in advance of the installation of permanent paving, resulting in typical raising of existing ground levels by 1.4m.

Following closure of the existing Berth 52/53 basin, the existing rock armour in Berth 52/53 provided to protect the embankments from erosion and wave action becomes redundant. It is proposed that Class A rock armour which is visible between the rim of the basin (3.3m OD/5.81m CD) and to a depth of -0.12m OD/2.39m CD could be conceivably recovered for reuse within the Port complex (equivalent to c. 2,333m^3). This protection layer will be removed during demolition works to a location within the Port Complex (location presently to be determined) to facilitate reuse in maintenance activities within the Port.

Material Export

As noted in **Section 3.1.1**, there remains potential that not all of the sediment proposed to be dredged from Alexandra Basin West may be accommodated by infilling within the Berth 52/53 basin. In the unlikely event that surplus material is generated through the dredging and treatment (as a result of bulking), application of the various proposed treatment methodologies and settlement of the infill material the following mechanisms will be employed to manage any excess in line with the waste management hierarchy:

- Material to be dredged from Alexandra Basin West will be revised to implement a variable (reduced) dredging depth within Alexandra Basin West to minimise the generation of dredge sediments as far as practicable following qualification of dredging depths with the Harbour Master.
- Further identified excess dredge material which cannot be either eliminated from the dredging required to provide navigable depths in Alexandra Basin West or recovered at the Berth 52/53 basin will be recovered at a soil recovery or soil treatment facility in Ireland, subject to testing of the sediments in line with the selected facility's licence at the time of the works. This material will be exported to one of two potential licensed waste management facilities located <60km of the site by road for recovery as identified in Chapter 20. One site is located c.50km away, with travel via c.24km via Motorway (M50), c.15km National Road network (N7) with the remainder of the journey via local roads of c.11km. The other site is located

c.30km away with travel via c.25km Motorway (M50/M1) and c.5km local roads. This may amount to the export of up to 60,085m3 by Heavy Goods Vehicles (HGV).

- In the very unlikely event that a soil recovery or soil treatment facility is not available in Ireland, recovery of any excess material at a soil recovery or soil treatment facility in Europe is preferential to disposal, subject to the testing of the sediments in line with the selected facility's licence at the time of the works. As outlined in Chapter 20 a range of available facilities which are licensed to receive the dredge material have been identified in Belgium and the Netherlands for recovery and reuse using soil washing techniques. For the purposes of this EIAR, as a conservative assessment, transport of the maximum expected volume of excess dredged spoil to facilities in both Belgium and the Netherlands for recovery have been assessed. These assessments have been undertaken on the basis that:
    - These materials will be generated (i.e. all identified risks limiting the volume of dredge which can be recovered and reused within the Berth 52/53 basin occur and DPC are unable to reduce proposed dredging depths across the basin to minimise material generation).
    - Transport to facilities in Belgium and Netherlands is undertaken by sea following dewatering operations undertaken at Dublin Port, with the identified facilities having berthing for direct transfer of shipped material for recovery at the receiving facility
    - Transport is undertaken using typical transport vessels with nominal 5,500t cargo capacity, despite a number of these sites having berthing capacity for larger vessels, to minimise storage of materials at Dublin Port pending export.

The following facilities (as outlined in Chapter 20) have been assessed for export of dredged sediments for further recovery in the event that this is required:

- Transport by road (HGV) from Dublin Port to Enva, Blackhall Walshestown Naas, Co. Kildare W91 CF30
- Transport by road (HGV) from Dublin Port to IMS Hollywood, Great Nag's Head, Naul, Co. Dublin A41 YE92
- Transport by sea from Dublin Port to RC Antwerpen, Scheldedijk 30-Haven 1025 (poort 4), 9120 Beveren-Kruibeke-Zwijndrecht, Belgium, requiring 21 round trips of vessels carrying 5,500t of cargo (1,260 nautical miles per round trip)
- Transport by sea from Dublin Port to Innovarec B.V. (Westdorpe) Autrichehavenweg 1, 4554 MB Westdorpe, Netherlands, requiring 21 round trips of vessels carrying 5,500t of cargo (1,214 nautical miles per round trip)
- Transport by sea from Dublin Port to 2. BMR Schiedam (Boskalis) Nieuwe Waterwegstraat 52, 3115 HE Schiedam, Netherlands, requiring 21 round trips of vessels carrying 5,500t of cargo (1,274 nautical miles per round trip)

3.1.7 Demolition Works

Marine infrastructure will be removed prior to infilling of the Berth 52/53 basin, including Ramp No. 7, and the existing Berth 52 before the basin is closed off from the navigation channel.

Demolition waste will be collected onsite for disposal by a licenced waste contractor. An Asbestos Management Survey was undertaken on the structures at Berth 52 and 53 to be demolished as part of the proposed works. Whilst no suspected asbestos containing materials were identified in these marine structures, limited access was available to the underside of these structures, therefore, they will be subject to a detailed asbestos survey prior to demolition.

Rock armour proposed to be recovered for reuse in maintenance activities within the Port (as outlined in **Section 3.1.4**) will be removed following closure of the Berth 52/53 basin.

Following the completion of infilling as outlined in **Section 3.1.4** with the excavation of the bunded structure of the treated material dredged during Phase 1 of the parent ABR Project, the existing storage bund will be decommissioned, this will include the demolition of the perimeter concrete containment walls with the area returned to hardstanding.

3.1.8 Plant Associated with Construction Process

Sediment Washing Plant

Soil and sediment washing is a technique used for the recovery/reuse of polluted and contaminated sediments. Soil washing is a flexible and proven process technology and is considered as the BAT for different contaminants including heavy metals and hydrocarbons. It is proposed that selected sources of sediments arising from dredging at Alexandra Basin West will be subjected to soil washing techniques appropriate to the source concentrations of contaminants. The treatment of soil and sediment by the intensive washing removes the pollutants, transferring them to the finest particles (silts and clays), from the solid phase to the liquid phase and allows the recovery of the inert fraction with coarser particle size (sands and gravels) for reuse on-site.

In the liquid phase, contaminants tend to bind to the finer inert fraction (silts and clays). This produces a wastewater flow containing suspended solids and pollutants which is sent to treatment of purification and clarification. The clarified water is reused in the washing process by a closed cycle loop, while the residual fine soil content, containing the pollutants, is proposed to be subjected to S/S treatment as required by the residual contamination within this fraction.

The process waters used to wash the sediment materials are subject to appropriate physical and chemical clarification and reused in a closed circuit, without any dispersion to the surrounding environment.

Soil washing mobile plant consists of modular units as required to provide operational and process flexibility to treat different types of soils, sediments and matrices, and manage a wide range of contaminants with variable concentrations. Capacity of modular plants are dependent on the process requirements being undertaken, and in the case of mid-capacity plants throughput can be of the order of 50-100m^3/hr, occupying a footprint of up to 40m x 80m. An exemplar of a modular soil washing treatment plant is outlined in **Figure 3-8** below.

The soil washing treatment plant will be brought to the treatment area by road on low-loaders or by sea and set up on site. Plant and equipment will be installed on concrete hardstanding areas.



Figure 3-8: Exemplar of a Modular Soil Washing Plant

Stabilisation/Solidification Treatment Plant

Some of the specialty S/S contractors have developed or modified a variety of mixing equipment to meet specific project requirements. Conventional mixing techniques, including the use of spaders and screening/mixing buckets are used in the ex-situ application. The plant will be designed and scaled according to the volume to be treated and mitigation measures will be implemented in the design of the plant, so as to minimise the impact on the surrounding environment. Assessments undertaken as part of the EIAR relate to the maximum anticipated plant sizes and material throughputs.

The dredged material will be fed to the S/S treatment process from the reception area by a grab and transferred by conveyor/chutes to the reaction vessel where mixing will take place.

The S/S treatment process will be performed within a controlled reaction vessel with a sufficient degree of process control to ensure the correct ratios of untreated sediment and reagent/binder enter the process and that sufficient mixing (and residence time) is achieved. The process will be automated to ensure that loading, charging and the mixing device(s) can be monitored and controlled. With the data acquisition and control system, the operator will control all the functions of the process and the stabilisation equipment, including accurately setting the amount of the binder to be fed into the dredged sediments. Binders will be fed dry or wet as required to the stabilisation equipment. **Figure 3-9** indicates the typical S/S treatment process which will be undertaken.

Stop/start sequences will be programmed to minimise emissions. A stop procedure will also be developed to minimise emissions to the environment during malfunctions, breakdowns and momentary stoppages. Bulk transfer of dry reagent/binder will be undertaken by screw feeders, gravity or pneumatic means. Where possible, dry reagent/binder will be stored by enclosed storage e.g. silos, bunkers, hoppers and containers.

The S/S treatment plant will be brought to the treatment area by road on low-loaders or by sea and set up on site. Plant and equipment will be installed on concrete hardstanding areas.

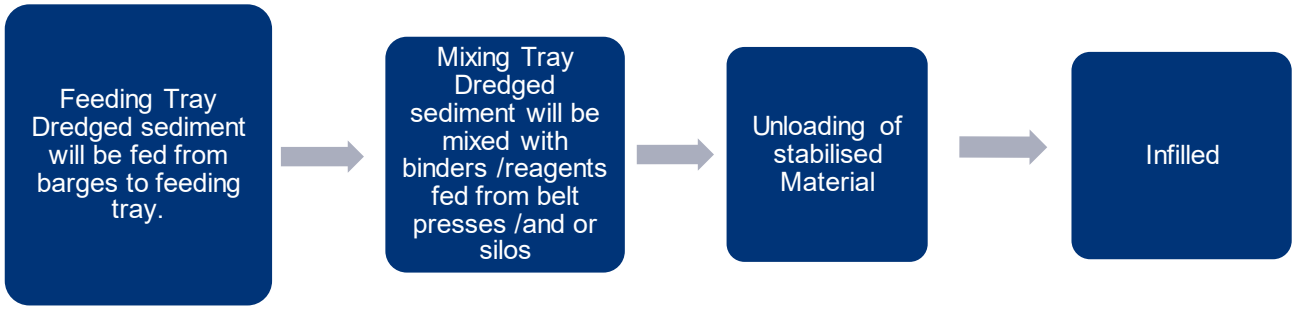


Figure 3-9: S/S Treatment Process

A single S/S plant as utilised in Phase 1 of the parent ABR Project (shown below in **Figure 3-10**) had a potential nominal treatment capacity of c. 1,000m^3/day. As the plant will be designed and scaled according to the volume to be treated it has been assumed that 2 Nr equivalent plants will be provided in Phase 2 of the ABR2 Project, occupying a nominal total footprint of 30m x 40m, with peak capacity to manage treatment of sediments generated by peak daily dredge rates.

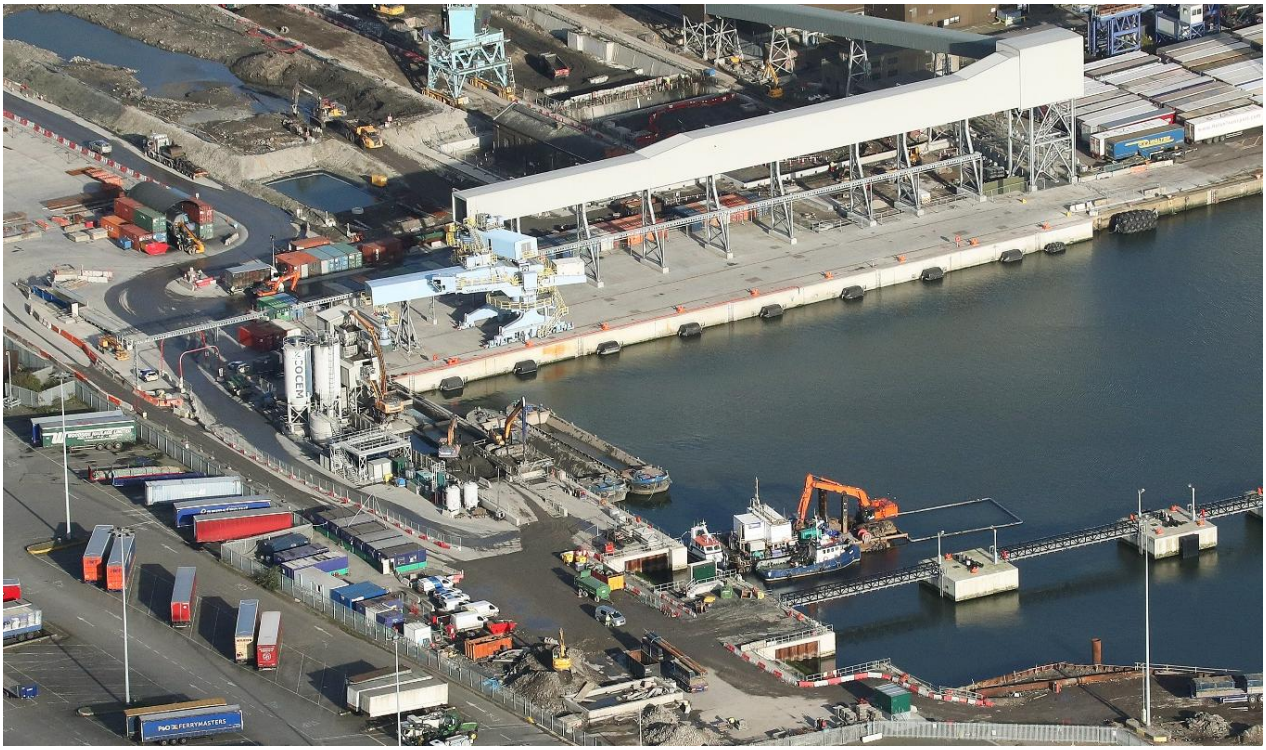


Figure 3-10: S/S Treatment Plant utilised in Phase 1 of the parent ABR Project

Wastewater Treatment Plant

Through appropriate site layout and design of surface water collection systems, uncontaminated water will be kept separate from contaminated water, and good housekeeping measures will be utilised to minimise the potential for cross-contamination.

The existing IE licence accounts for the provision of two Wastewater Treatment Works within the licensed boundary. For the purposes of the assessment, it is assumed that the combined discharge from these treatment works does not exceed either:

- The prescribed limits outlined in Schedule B2 of the IE licence (6.9l/s at Emission Limit Values (ELVs) outlined in the licence); or
- Combined discharge at a rate of up to 69l/s with a corresponding reduction in contaminant concentrations to retain the equivalent mass balance (subject to a review of the IE licence)

Assessments undertaken as part of the EIAR relate to the maximum anticipated plant sizes and material throughputs. During the construction phase of the works, any contaminated water arising from the sediment handling process will be required to be managed, should dewatering be required. A water treatment plant will comprise a single lane treatment process to remove suspended solids, product and contaminants (if present) from the wastewater produced from dewatering and treatment processes. The volume of water to be treated will be determined by the amount of water to be removed prior to the treatment process and the wastewater treatment plant will be sized accordingly.

The wastewater will be pumped from the treatment area into a settlement holding tank/lagoon. From the tank/lagoon, water will be directed through a separator (Class 1 Full Retention) to prevent suspended solids and oil from entering the treatment process. From the separator, the remaining water will be directed through a sand filter to remove further suspended solids, and an activated carbon vessel to remove any organic contaminants before discharge via a designated discharge point to Alexandra Basin West or the Berth 52/53 basin as applicable. Sampling points will be included within the pipe work system to allow for the collection of water samples. The proposed sampling and testing schedule will be based on flow and effluent quality prior to discharge. The sand filter and activated carbon will be replaced as required. These will be disposed of to a licensed facility. **Figure 3-11** below indicates the typical wastewater treatment plant process which will be undertaken.

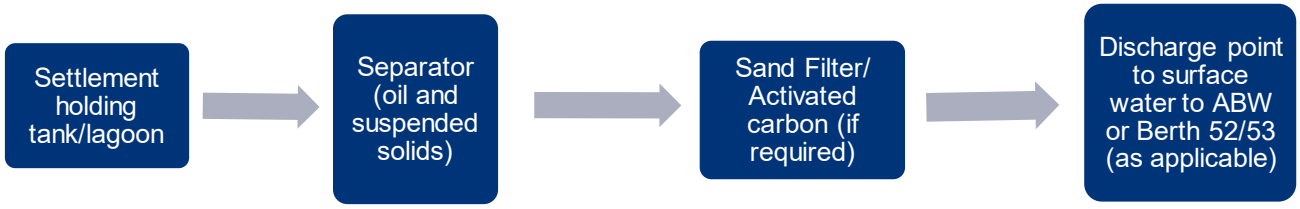


Figure 3-11: Wastewater Treatment Plant Process

Construction Plant

The levels of construction plant (excavators, trucks etc) at various stages of the construction process will be dependent on the rate at which material dredged from Alexandra Basin West will be received on to land, which may be expected to occasionally peak at up to 4,000m^3/day. The associated dredge treatment plants will be scaled according to the volume of material to be treated. Where daily dredging rates exceed treatment capacity on a given day, surplus sediments generated over and above the installed treatment capacity will be stockpiled locally to the relevant treatment plant for treatment on subsequent days where dredging rates do not exceed treatment capacity.

Ancillary Plant

Wheel Wash

The contractor will be required to ensure that the internal Port road network, and all local roads, including the access road to the site, are maintained and kept clean as far as is reasonably practicable. This shall be achieved by providing a self-contained wheel wash and sufficient hard standing area for parked vehicles within the site working areas.

In addition to this, road sweepers will be used to ensure local roads are kept clean and free of debris which may have originated from the site and associated construction activities.

Laboratory Facilities

Laboratory facilities may also be required onsite for certain testing requirements or, alternatively, testing will be undertaken at accredited external laboratories. It is proposed that necessary samples shall be taken and adequate facilities will be put in place to facilitate the preparation and storage of samples for the duration of the treatment phase of the dredged materials recovered from Alexandra Basin West. Other samples will be sent to an accredited laboratory for independent analysis where required.

It will be necessary as part of the quality control of the treatment processes to undertake analysis on the treated dredge material including leachability tests using the standardised CEN (European Committee for Standardisation) leaching procedures and compressive strength. All samples will be required to be kept for a specified length of time for analysis to take into account the curing time and time taken to achieve full stability in the case of materials subjected to S/S treatment. This will provide assurances that the necessary process input controls are in place and that treated dredge material are in compliance with the project specification.

The frequency of sampling for the project will be in line with requirements outlined in the IE licence.

Design and Location of Fuel Storage Areas

Fuel required for mechanical excavators and generators on-site shall be contained in a designated fuel location to ensure that surface water and ground water is protected from potential adverse impacts.

Quarantine Area

Where laboratory analysis has shown a non-conformity to the project specification, the rejection procedure shall be implemented. Measures to remove and dispose/recover such materials will be undertaken in accordance with

the CEMP. Such measures will include the provision of a waste quarantine area where the material will be placed pending removal if deemed necessary. These quarantine areas are indicated for each of the treatment scenarios within the working area in **Figure 3-4** of the North Wall Quay Extension; for working areas within Berth 49 and Berth 52 West, any quarantine requirements would be accommodated as required within the stockpile areas indicated in **Figure 3-5** and **Figure 3-6** respectively.

Sediment Handling

It is proposed to treat the sediment through soil washing and a S/S treatment process as applicable. In the case of S/S process, stabilisation equipment can be an efficient and well-functioning technique for the treatment of contaminated sediments. The stabilisation and the immobilisation of the fine particles start immediately after mixing. The process allows accurate proportioning of additives with the sediments.

The additives, water and contaminated sediments will be loaded into the stationary mixing drum in the correct proportions, where it is blended into a mortar consistency and then discharged into a ready-mix truck or the hopper of a concrete pump for transport to the recovery area. The binder/additives will be transported to site via sea or in tank lorries and stored in silos or in stacks under cover at the treatment area.

Any transfer of materials from Alexandra Basin West and the North Wall Quay Extension to the Berth 52/53 basin will be undertaken by barge. Removal of materials from the North Wall Quay Extension to external recovery facilities will be undertaken by HGV and road transport.

Material received or treated at Berth 49 or Berth 52 West may be transferred to the infill area at the Berth 52/53 basin by contained conveyance system, or alternatively by road haulage within the Port Estate. Removal of materials from Berth 49 or Berth 52 West to external recovery facilities will be undertaken by HGV and road transport.

3.1.9 Decommissioning of Treatment Infrastructure

Decommissioning of treatment infrastructure associated with soil washing, S/S treatment plants and Wastewater Treatment Works will be undertaken as part of the construction phase of the ABR2 Project in accordance with an Environmental Management Programme incorporating plans submitted to, and agreed with, the EPA in line with the IE licence for these activities. This includes a Closure, Restoration and Aftercare Management Plan (CRAMP) outlining measures to decommission, render safe or remove for disposal/recovery any soil, subsoil, buildings, plant or equipment, or any waste, materials or substances that may result in environmental pollution.

Decommissioning works on completion of treatment activities will therefore include:

- Full decontamination and decommissioning of all soil washing, S/S process treatment equipment and Wastewater Treatment Works using standard procedures and authorised contractors, this will include any associated temporary building and equipment off-site;
- Recovery on-site of all treated contaminated dredged material;
- All excess raw materials removed from site;
- All storage areas fully emptied and stored material transported or disposed of;

- All waste disposed of or recovered in a manner that complies with regulatory requirements;
- All site services fully decontaminated, decommissioned and verified;
- All relevant records relating to waste and materials movement, transfer or disposal will be managed and retained throughout the closure process; and
- Independent verification and certification of clean closure status.

3.1.10 Construction Sequence Summary

Phasing

The phasing and sequencing of the construction activities for the proposed works of the ABR2 Project is outlined below (however, the dates indicated may change, depending upon factors including the date upon which consents may be granted):

- Demolition works of marine infrastructure within the Berth 52/53 basin (anticipated Q4 2028);
- Phase 2 of capital dredging to be undertaken within Alexandra Basin West (Q1 2029 – Q4 2030);
- Remediation of dredged materials at the North Wall Quay Extension and/or Berth 49, and/or Berth 52 West (subject to operational constraints and land availability) (Q1 2029 – Q4 2030);
- Infilling of the Berth 52/53 basin using remediated dredged sediments recovered during Phase 2 of capital dredging (Q1 2029 – Q4 2030);
- Infilling of the Berth 52/53 basin with the existing stockpile of remediated dredged sediments recovered during Phase 1 of the parent ABR Project (Q4 2030 – Q1 2031);
- Provision of impermeable capping to infilled sediments within the Berth 52/53 basin (Q4 2030 – Q1 2031);
- Installation of band drains into underlying sediments (if required) with the import and placement of c. 2m depth surcharge materials to accelerate consolidation of infilled materials and underlying existing strata of the Berth 52/53 basin (Q4 2030 – Q2 2031);
- Following completion of consolidation and settlement of the infilled material, excavation and relocation of the surcharge materials will occur to raise ground levels (capping) within the wider Terminal 5 area, between the infilled Berth 52/53 basin to Terminal Road South to the west and to Alexandra Road Extension to the east (anticipated throughout 2033); and
- Provision of final surfacing (as consented under the MP2 Project planning permission).

Site Compounds and Working Areas

Security

Throughout the construction period, the site will be made secure from trespassers for the duration of the construction works.

Site Compounds and Working Areas

As outlined above in **Section 3.1.3,** there are a number of potential site compounds and working areas which may be utilised during the construction period dependent upon operational constraints within the Port. At the commencement of construction, site compounds will be established as required (indicated in **Figure 3-4 – Figure 3-6**). It is anticipated that approximately 30 construction personnel may be located on-site at any one time. Accommodation and site facilities will be provided to accommodate these numbers, including site offices, welfare facilities, storage areas, canteen facilities and a laboratory. These facilities will be provided through the use of temporary modular buildings as required.

Working Hours

The current IE licence facilitates operation of the treatment infrastructure between the hours of:

- 08:00 and 18:00 on Monday to Friday.
- 08:00 and 13:00 on Saturday.

The current IE licence additionally states that there will be no activity on Sundays or Bank Holidays. Amendments to these restricted operational hours may be otherwise agreed with the EPA, subject to operational hours consented by planning.

In the case of dredging activities, where construction activity takes place for the development in the vicinity of residential properties, the activities operate between the hours of 07:00 and 19:00 Monday to Friday and between 08:00 and 13:00 on Saturday. There will be no activity on Sundays or Bank Holidays, unless a derogation to permit these works is provided by DCC.

Due to operational constraints in the Port, it is proposed that dredging activities will be undertaken on a 24-hour basis, 7 days per week within specific areas of Alexandra Basin West, where possible, as noted above in **Section 3.1.2**. For the treatment of sediment and infilling activities, these may occur between the hours of 07:00 to 23:00, dependent upon the location of possible treatment activities, as noted above in **Section 3.1.3** denotes the proposed limits of working hours applicable to the various potential activity locations, based on the known local sensitivities.

Table 3-1: ABR2 Working Hours by Location

Activity	Working Hours		
	Daytime (07:00-19:00)	**Evening (19:00-23:00)**	**Nighttime (23:00-07:00)**
Dredge Area 1	Yes	Yes	Yes
Dredge Area 2	Yes	Yes	No
Dredge Area 3	Yes	Yes	No
Dredge Area 4	Yes	Yes	Yes

Activity	Working Hours		
	Daytime (07:00-19:00)	Evening (19:00-23:00)	Nighttime (23:00-07:00)
Barge Transportation of Dredged Material	Yes	Yes	Yes
Dredged Material Offloading at the North Wall Quay Extension	Yes	No	No
Dredged Material Offloading at Berth 49 or Berth 52/53	Yes	Yes	No
Mechanical treatment, separation and washing of dredged material at the North Wall Quay Extension	Yes	No	No
All treatment activity types at Berth 49 or Berth 52/53	Yes	Yes	No
Infilling activity at the Berth 52/53 basin	Yes	Yes	No
Wastewater processing and discharge at the North Wall Quay Extension	Yes	Yes	Yes
Wastewater processing and discharge at Berth 49 or Berth 52/53	Yes	Yes	Yes

The wastewater processing and discharge activities will continue during the night with mitigation in place to reduce the noise generated at source to ensure compliance with Best Practice British Standards Construction Guidelines.

Construction Traffic

Construction traffic will arrive at and depart from the Port via the national road network. All HGV movements will comply with the DCC HGV Management Strategy. Within the Dublin Port Estate, traffic will be routed through the existing road network to reach the proposed ABR2 Project site.

Regarding the importation and exportation of material from the site, it has been estimated that this will generate five arrivals to the site of vehicles per working hour (on assumption of a 10-hour working day) and five departures from the site per working hour.

Construction Environmental Protection Measures

A series of ABR2 Project construction environmental protection measures have been developed through the preparation of this EIAR and details of the proposed mitigation are set out in individual chapters dealing with the various relevant environmental factors, and an ABR2 Project-specific CEMP has been prepared to ensure effective implementation of required mitigation and best practice measures.

The preparation of the environmental appraisals was guided by the requirements of EU Directives and Irish law regarding Environmental Impact Assessment. The following legal provisions and guidelines, amongst others, were followed:

- The requirements of EU Directives (Directive 2011/92/EU as amended by 2014/52/EU) and Irish law regarding Environmental Impact Assessment (including the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, as amended);
- European Commission Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by Directive 2014/52/EU) (European Commission, 2017);
- The Planning and Development Act 2000 (as amended); and
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022).

Detailed project consultation and scoping is described in **Chapter 3** of the EIAR. Scoping was undertaken in respect of the ABR2 Project in accordance with the European Commission's 2017 "Environmental Impact Assessment of Projects Guidance on Scoping", the EPA's 2022 "Guidelines on the information to be contained in Environmental Impact Assessment Reports", and greatly benefitted from the environmental monitoring programme which is currently in place for the construction of the parent ABR Project and the MP2 Project. The site-specific scientific data collected to date has been used to support the preparation of the EIAR and NIS for the ABR2 Project and facilitates an in-depth understanding of the environment in and around Dublin Port, including the inner Liffey channel, Alexandra Basin West and the Berth 52/53 basin. The scope of the ABR2 Project was further considered in the context of the extensive environmental datasets collated during the preparation of the Strategic Environmental Assessment (SEA) which complemented the review of the Dublin Port Masterplan during 2017 and 2018. Above all, the extensive consultation process undertaken during both the review of the Dublin Port Masterplan and specifically for the ABR2 Project provided a sound basis for confirming the key issues to be addressed, the extent of the environmental appraisals required, and the level to which these issues needed to be addressed.

Following the scoping process, all environmental topics required by the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) have been comprehensively addressed within the EIAR.

Once the key issues were identified, baseline studies/surveys were carried out. The studies enabled the prediction of the likely environmental impacts arising from the ABR2 Project. These impacts have been evaluated in terms of their significance, nature and magnitude with mitigation measures proposed to address these impacts as far as possible.

Mitigation by avoidance has also been used, where possible. Following an examination, analysis and evaluation of the direct and indirect significant effects of the project in relation to the receiving environment, additional mitigation measures and monitoring programmes have been recommended which will be effectively implemented during the construction phase of the ABR2 Project. These include a range of noise, dust and construction traffic mitigation measures to minimise nuisance to neighbouring communities during construction. Precautionary measures will be undertaken to minimise the risk of injury or disturbance to marine mammals in the area of

operations in line with National Parks and Wildlife Service (NPWS) Guidelines (2014). Notably a trained and experienced Marine Mammal Observer (MMO) will be put in place during dredging and demolition operations. The MMO will scan the surrounding area to ensure no marine mammals are in a predetermined exclusion zone in the 30-minute period prior to operations. The NPWS exclusion zone is 500m for dredging and demolition works. **Chapter 21** of the EIAR sets out all of the mitigation measures and monitoring programmes which will be implemented during the construction phase of the ABR2 Project.

Construction Environmental Management

The ABR2 Project construction works will be undertaken in compliance with a finalised CEMP which will include all measures identified in the CEMP submitted with the planning application, as well as any additional measures required pursuant to development consent. A CEMP has been prepared to enable comprehensive assessment of the construction phase of the ABR2 Project and forms part of the application for permission (under separate cover).

3.2 Operation, Maintenance and Decommissioning Phases

The works proposed to be undertaken as part of the proposed ABR2 Project are required to complete elements of work previously permitted under the parent ABR Project. These are, in effect, accommodation works required to facilitate the development of the separately consented MP2 Project. It is not proposed or envisaged that any of the works proposed under the ABR2 Project will be decommissioned in the future, aside from the temporary treatment plants established for the recovery of dredged sediments as outlined in **Section 3.1.3**.

The ABR2 Project dredging and sediment treatment process aims to address legacy contamination within Alexandra Basin West. Following completion of dredging, some siltation of the basin may occur, however, the water depth is such that this is unlikely to cause any significant problem in the short term. Any maintenance dredging which may be required in the longer term will likely be carried out as part of DPC's regular maintenance dredging programme. The material generated would likely be disposed of at sea at a licensed disposal site, subject to further chemical testing demonstrating the suitability of the dredged material for disposal at sea and to be agreed in accordance with DPC's maintenance dredging licence. This has been standard practice for DPC for decades.

Following completion of infilling activities north of the new Riverside Berth 52, the Unified Ferry Terminal, as consented under the MP2 Project, would be complete.

The operation and maintenance of the remaining MP2 Project development works which have not yet been completed will be as outlined in the documents supporting the planning consent for the MP2 Project. Summaries of the services and operation of the area around the basin at Berth 52/53 following completion of the ABR2 Project accommodation works are summarised below.

3.2.1 Stormwater Drainage

The previously consented drainage proposals in the parent ABR Project outlined the extensions of existing outfalls within the existing basin to relocated outfalls at the new Berth 52.

3.2.2 Wastewater Drainage

There are no envisaged additional wastewater discharges to public sewers as a result of the ABR2 Project.

3.2.3 Lighting

It is proposed to utilise the existing High Mast Lighting and Street Lighting (already consented under the MP2 Project) where required to provide required luminance and uniformity.

3.3.3 Navigation

The proposed development will require updating of the appropriate navigation charts for the area. This will be completed through consultation with the UK Hydrographic Office. Global Positioning System navigation charts will be updated based on updates to Navigation Charts. The development will not impact on other aspects of navigation in the Port. The navigation speed limit enforceable within the harbour will apply to all new facilities. Impacts on radar, or Very High Frequency (VHF) radio and other communication systems are not envisaged. Marine Notices will be issued to alert the port users and the general public to the proposed changes to the Port.

3.3 Description of the Risk of Major Accident Hazards

DPC is responsible for the safe management, control, operation and development of the Port, and is committed to ensuring the safety of its employees and other persons affected by its activities. The potential risk of major accident hazards can arise during both the construction and operational phases of the ABR2 Project. There are no substances or technologies being proposed that are not considered ‘normal’ either by the construction industry or by Port operations. Risk of accident is managed by strict adherence to DPC’s Health and Safety Policy and supporting accredited documentation.

The proposed development is within the vicinity of several establishments that fall within the scope of the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, 2015 (the COMAH Regulations) including the NORA fuel storage establishments that are notified to the Health and Safety Authority as an Upper Tier Seveso site. In light of the nature of the activities that will take place at the ABR2 Project site, and the nature of the surrounding environment, the most significant risks of major accidents and disasters are associated with the COMAH establishments.

The assessment of the risk of major accidents and disasters is presented in **Chapter 6** of the EIAR which concludes that, from a COMAH perspective, the potential direct and indirect risks arising from the ABR2 Project satisfy the Health and Safety Authority’s COMAH land use planning guidance. It also concludes that other, non-COMAH direct and indirect major accident and disaster risks arising from the ABR2 Project are not significantly different from the current risks.

DPC has developed a comprehensive Emergency Management Plan that caters for the range of accident and emergency events that may occur within its estate (or that may occur outside the estate and that have a direct, knock-on effect), and this plan is provided to the other relevant stakeholders, including An Garda Síochána, DCC, Transport Infrastructure Ireland, and the Principal Response Agencies. In the event of an incident at a COMAH establishment that could impact on people at other facilities in the Port, or on road traffic entering or exiting the Port, DPC will activate its Emergency Management Plan, in which case people would be directed away from the source of the hazard.

3.4 Decommissioning

Following completion of the construction phase of the works, all temporary works required to facilitate project construction will be removed from site.

It is not planned or envisaged that the permanent marine elements of the ABR2 Project will be decommissioned given the nature of port development which can be considered as ‘permanent works’, with a 100-year design life.

The landside elements of the ABR2 Project have been designed as far as possible to allow for maximum flexibility to ensure sufficient space is available for future port activities including the delivery of the Unified Ferry Terminal as consented under the MP2 Project. To provide this flexibility, the proposed landside structures have been kept to a minimum, with building locations guided by existing services and minimising disruption to the overall flow of the Port.

4.0 Stage 1 Screening Appraisal

4.1 Directly Connected with or Necessary to the Management of the Site

There are two primary work areas within the ABR2 Project Area, which are required to be completed to facilitate delivery of the Unified Ferry Terminal permitted under the MP2 Project:

- At Alexandra Basin West, dredging of 470,000 m^3 of contaminated material to a depth of -10.0 m CD (chart datum) over an area of 194,000 m^2 within the redeveloped Alexandra Basin West and its subsequent remediation.
- At Berths 52/53, infilling of the Terminal 5 Ro-Ro basin (45,650 m^2), and raising of existing levels by 1.4 m over an area of 95,000 m^2.

Further information on the Proposed Development can be found in **Section 3**.

The Proposed Development is not directly connected with or necessary to the management of any site as a European Site. A screening exercise must be undertaken by the competent authority to determine whether, firstly, the Project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site.

In addition, screening for appropriate assessment of a project, in the context of considering an application for consent for proposed development, shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

4.1.1 Zone of Influence

The Zone of Influence (ZoI) for a project is the area over which ecological features may be affected by biophysical changes as a result of a proposed project and its associated activities.

The Project is in immediate proximity to South Dublin Bay & River Tolka Estuary SPA and hydrologically connected to North Bull Island SPA, North-West Irish Sea SPA, Howth Head SAC, North Dublin Bay SAC, Rockabill to Dalkey Island SAC, Lambay Island SAC, Codling Fault Zone SAC and South Dublin Bay SAC.

The European sites within the ZoI of the project and their qualifying interest features are listed below in **Table 4-1**. The location of the proposed project in relation to these European sites is illustrated in **Figure 4-1**.

Establishing an Impact Pathway

The likelihood of significant effects is considered in this report using the source-pathway-receptor model.

- '**Source'** is defined as the individual elements of the proposed works that have the potential to affect the identified ecological receptor.
- '**Pathway'** is defined as the means or route by which a source can affect the ecological receptor.
- '**Ecological receptor**' is defined as the Special Conservations Interests (for SPAs) or Qualifying Interests (of SACs) for which conservation objectives have been set for the European sites under consideration (refer to **Table 4-1**).

Each element can exist independently however an effect can potentially be created when there is a linkage between the source, pathway and receptor. Possible effects are discussed under four themes:

- Habitat Loss;
- Diminution of Water Quality and Habitat Deterioration;
- Underwater Noise and Disturbance; and
- Aerial Noise and Dust Disturbance.

Table 4-1: European Sites & their Qualifying Interest Features

Site Code	Site Name	Straight Line Distance from Site	Qualifying Interest Features	Progress to Screening	Likely Significant Effect Reason
IE0004024	South Dublin Bay & River Tolka Estuary SPA	0.0km NE (Partially within) & 0.55km SE	Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets • Light-bellied Brent Goose (Branta bernicla hrota) [A046] • Oystercatcher (Haematopus ostralegus) [A130] • Ringed Plover (Charadrius hiaticula) [A137] • Grey Plover (Pluvialis squatarola) [A141] • Knot (Calidris canutus) [A143] • Sanderling (Calidris alba) [A144] • Dunlin (Calidris alpina) [A149] • Bar-tailed Godwit (Limosa lapponica) [A157] • Redshank (Tringa totanus) [A162] • Black-headed Gull (Chroicocephalus ridibundus) [A179] • Roseate Tern (Sterna dougallii) [A192] • Common Tern (Sterna hirundo) [A193] • Arctic Tern (Sterna paradisaea) [A194] • Wetland and Waterbirds [A999]	**YES**	Hydrologically Connected with the ABR2 Project.
IE0004006	North Bull Island SPA	1.3km NE	Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets • Light-bellied Brent Goose (Branta bernicla hrota) [A046] • Shelduck (Tadorna tadorna) [A048] • Teal (Anas crecca) [A052] • Pintail (Anas acuta) [A054] • Oystercatcher (Haematopus ostralegus) [A130] • Golden Plover (Pluvialis apricaria) [A140] • Grey Plover (Pluvialis squatarola) [A141] • Knot (Calidris canutus) [A143] • Sanderling (Calidris alba) [A144] • Dunlin (Calidris alpina) [A149] • Black-tailed Godwit (Limosa limosa) [A156] • Bar-tailed Godwit (Limosa lapponica) [A157]	**YES**	Hydrologically Connected with the ABR2 Project

Site Code	Site Name	Straight Line Distance from Site	Qualifying Interest Features	Progress to Screening	Likely Significant Effect Reason
			• Curlew (Numenius arquata) [A160] • Redshank (Tringa totanus) [A162] • Turnstone (Arenaria interpres) [A169] • Black-headed Gull (Chroicocephalus ridibundus) [A179] • Shoveler (Spatula clypeata) [A857] • Wetland and Waterbirds [A999]		
IE0004236	North-West Irish Sea SPA	2.6km E	Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets • Red-throated Diver (Gavia stellata) [A001] • Great Northern Diver (Gavia immer) [A003] • Fulmar (Fulmarus glacialis) [A009] • Manx Shearwater (Puffinus puffinus) [A013] • Cormorant (Phalacrocorax carbo) [A017] • Shag (Phalacrocorax aristotelis) [A018] • Common Scoter (Melanitta nigra) [A065] • Black-headed Gull (Chroicocephalus ridibundus) [A179] • Common Gull (Larus canus) [A182] • Lesser Black-backed Gull (Larus fuscus) [A183] • Herring Gull (Larus argentatus) [A184] • Great Black-backed Gull (Larus marinus) [A187] • Kittiwake (Rissa tridactyla) [A188] • Roseate Tern (Sterna dougallii) [A192] • Common Tern (Sterna hirundo) [A193] • Arctic Tern (Sterna paradisaea) [A194] • Guillemot (Uria aalge) [A199] • Razorbill (Alca torda) [A200] • Puffin (Fratercula arctica) [A204] • Little Gull (Hydrocoloeus minutus) [A862] • Little Tern (Sternula albifrons) [A885]	**YES**	Hydrologically Connected with the ABR2 Project .

Site Code	Site Name	Straight Line Distance from Site	Qualifying Interest Features	Progress to Screening	Likely Significant Effect Reason
IE0000206	North Dublin Bay SAC	1.35km N	Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] • Mediterranean salt meadows (Juncetalia maritimi) [1410] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] • Humid dune slacks [2190] • Petalophyllum ralfsii (Petalwort) [1395]	**YES**	Hydrologically Connected with the ABR2 Project.
IE0000210	South Dublin Bay SAC	0.55km SE	Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets. • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Embryonic shifting dunes [2110]	**YES**	Hydrologically Connected with the ABR2 Project.
IE0003000	Rockabill to Dalkey Island SAC	6.58km E	Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets • Reefs [1170] • Phocoena phocoena (Harbour Porpoise) [1351]	**YES**	Hydrologically Connected with the ABR2 Project. Underwater Noise & Disturbance on QI Harbour Porpoise

Site Code	Site Name	Straight Line Distance from Site	Qualifying Interest Features	Progress to Screening	Likely Significant Effect Reason
IE0000202	Howth Head SAC	7.0km NE	Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • European dry heaths [4030]	**YES**	Hydrologically Connected with the ABR2 Project.
IE0000204	Lambay Island SAC	20.5km NE	Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets Reefs [1170] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • Phocoena phocoena (Harbour Porpoise) [1351] • Halichoerus grypus (Grey Seal) [1364] • Phoca vitulina (Harbour Seal) [1365]	**YES**	Hydrologically Connected with the ABR2 Project.
IE0003015	Codling Fault Zone SAC	33.4km E	Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets • Submarine structures made by leaking gases [1180] • Phocoena phocoena (Harbour Porpoise) [1351]	**YES**	Hydrologically Connected with the ABR2 Project.

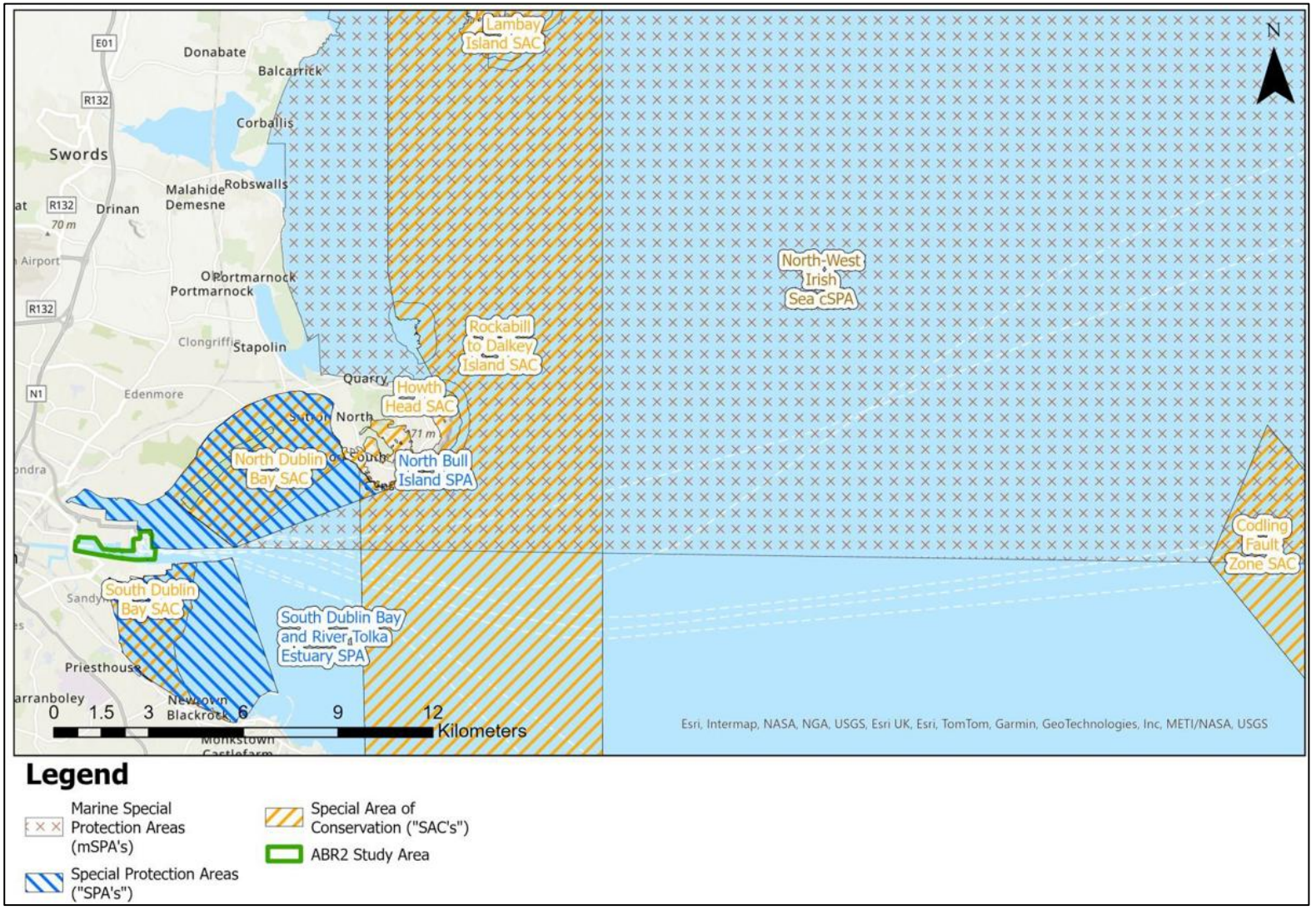


Figure 4-1: European Sites Assessed during Screening

4.2 Consideration of Likely Significant Effects

4.2.1 Habitat Loss

Construction Phase

No elements of the Project will be developed, or encroach, into any European sites, including the most proximate sites, i.e., South Dublin Bay & River Tolka Estuary SPA (adjacent) or South Dublin Bay SAC's (0.55km SE). Accordingly, there will not be any direct impact on qualifying interests of those European sites.

Spatially distant European Sites such as Codling Fault Zone SAC, Lambay Island SAC, Rockabill to Dalkey Island SAC, Howth Head SAC, North Dublin Bay SAC, North-West Irish Sea SPA and North Bull Island SPA will experience no direct habitat loss or encroachment on their qualifying habitat interests due to the ABR2 Project.

Accordingly, it can be excluded, on the basis of objective information, that the Project will have a significant effect in relation to direct habitat loss on any European site during the Construction Phase.

Operational Phase

Maintenance of the proposed development and its operational activities will be in-line with existing Dublin Port activity levels and will not involve an increase in development footprint or destruction of any European Site's qualifying habitat interests.

Therefore, it can be excluded, on the basis of objective information, that the Project will have a significant effect in relation to direct habitat loss on any European site during the Operational Phase.

Habitat Loss Conclusions

It can be excluded, on the basis of objective information, that the Project will have a significant effect in relation to direct habitat loss on any European site during either the Construction or Operational Phase.

4.2.2 Diminution of Water Quality and Habitat Deterioration

Due to the hydrological connectivity between the ABR2 Project and a number of European sites (i.e., South Dublin Bay & River Tolka Estuary SPA, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Lambay Island SAC, Codling Fault Zone SAC, Howth Head SAC, North Dublin Bay SAC, North-West Irish Sea SPA and North Bull Island SPA), there is a pathway for potential Likely Significant Effects in relation diminution of water quality and associated deterioration of wetland and estuarine or marine habitats to occur.

Further analysis as to whether the ABR2 Project could result in Likely Significant Effects on the qualifying features of these European Sites is set out below.

Construction Phase

The proposed development is hydrologically linked via Dublin Bay and the wider Irish Sea to South Dublin Bay & River Tolka Estuary SPA, South Dublin Bay SAC, Lambay Island SAC, Codling Fault Zone SAC, Rockabill to

Dalkey Island SAC, Howth Head SAC, North Dublin Bay SAC, North-West Irish Sea SPA and North Bull Island SPA as outlined in **Table 4.1**.

Temporary effects as a result of diminution of water quality and habitat deterioration may potentially occur during the construction phase of the works on the above European site's qualifying habitats and species. Mobilised suspended sediments and cement/hydrocarbon release through construction activities are the principal potential sources of water quality impact.

During the construction phase, increased suspended sediment levels could occur due to the accidental release of sediment to the water column via:

- Increased suspended sediment levels due to the accidental release of sediment to the water column during the infilling of the Berth 52/53 basin;
- Site Clearance Works, along with associated sand and soil disturbance caused by construction of Construction of Replacement Berths 52 and 53 and construction of Berth 52 West;
- Capital dredging at Alexandra Basin West & remediation of dredged material;
- Relocation of surcharge material from above infilled sediments to provide subbase in all areas to be repaved to provide the Unified Ferry Terminal (UFT);
- General water quality impacts associated with works machinery, infrastructure and on-land operations including the temporary storage of construction materials, oils, fuels and chemicals; and
- Accidental release of highly alkaline contaminants from concrete and cement during demolition works proposed at Berth 52/53 involve the removal of existing marine infrastructure, prior to the infilling of the Berth 52/53 basin.

Howth Head SAC is located 7.0 km NE of the ABR2 Project and is designated for Vegetated Sea cliffs of the Atlantic and Baltic Coasts [1230] and European Dry Heaths [4030]. The hydrological pathway for these habitat types extends only to the possibility of storm, spray and/or breaking wave conditions and associated sea mist causing sea spray to come in contact with the habitats. Dublin Bay possesses a large drainage catchment area of 1,616 km² (EPA, 2021). This large catchment area covers an extremely large volume of water, meaning any temporary pollutants released into the water column arising from construction would be diluted to such an extent as to have an imperceptible effect on the qualifying interests of these European sites as if they were to reach them at all, they would be occurring at concentrations not even measurable in the field.

Howth Head SAC has therefore been screened out of further assessment as no pathway for Likely Significant Effects on its qualifying interest features exists.

Rockabill to Dalkey Island SAC is located 6.58 km E of the ABR2 Project and is hydrologically connected by Dublin Bay and the Irish Sea. It is designated for Reefs and *Phocoena phocoena* (Harbour Porpoise). Lambay Island SAC is located 20.5 Km NE of the ABR2 Project and is hydrologically connected by Dublin Bay and the Irish Sea. It is designated for Reefs, Vegetated Sea Cliffs of Atlantic and Baltic Coasts, Harbour Seal, Grey Seal and Harbour Porpoise.

Codling Fault Zone SAC is located 33.4 Km E of the ABR2 Project and is Hydrologically connected by Dublin Bay and the Irish Sea. It is designated for Submarine structures made by leaking gases and Harbour Porpoise

Dublin Bay possesses a large drainage catchment area of 1,616 km² (EPA, 2021), any temporary pollutants accidentally released into the water column arising from construction are not capable of being released into the water column and retained in concentration as they migrate across the distances required to reach the qualifying interest features of Rockabill to Dalkey Island SAC, Codling Fault Zone SAC and Lambay Island SAC. These potential suspended sediments and pollutants would be diluted by the forces of wind, wave and tidal mixing conditions to such an extent as to have an imperceptible effect on the Reef habitats of Rockabill to Dalkey Island SAC, Codling Fault Zone SAC and Lambay Island SAC.

Data collection efforts (IWDG, 2025) for the area indicate that the ABR2 Project study area experiences extremely few occurrences of marine mammals (such as QI Harbour Porpoise, Grey Seal and Harbour Seal), with disruption expected to be short term in nature, limited to the immediate area around construction works and reversible once construction ceases. The marine area of Alexandra Basin is not an important feeding area for marine mammals. The prey species of harbour porpoise, harbour seal and grey seal will not be affected at all within the boundary of Rockabill to Dalkey Island SAC and Lambay Island SAC for the reasons set out above in relation to the inability of suspended sediments and pollutants to stay in high enough concentration throughout their seaward migration to the European site.

Rockabill to Dalkey Island SAC, Codling Fault Zone SAC and Lambay Island SAC have been screened out of further assessment as there is no possibility of Likely Significant Effects on marine mammals or qualifying habitat in relation to diminution of water quality due to sedimentation and pollution arising from construction of the ABR2 Project.

South Dublin Bay & River Tolka Estuary SPA, South Dublin Bay SAC, North Dublin Bay SAC, North-West Irish Sea SPA and North Bull Island SPA are hydrologically linked to the area where it is proposed to construct and operate ABR2 Project. These European Sites are in such close proximity to the ABR2 Project that it cannot be excluded, on the basis of the 'dilution over distance' principle, that accidental release of sediments or pollutants into the water column would not result in a likely significant effect on these marine habitats or their qualifying interest and special conservation interest species.

South Dublin Bay & River Tolka Estuary SPA, South Dublin Bay SAC, North Dublin Bay SAC, North-West Irish Sea SPA and North Bull Island SPA have, therefore, been **screened in** for further assessment in relation to potential diminution of water quality and habitat deterioration due to sedimentation and pollution arising from construction of the ABR2 Project. The possibility of likely significant construction phase effects on these European sites cannot be excluded at the screening stage.

Operational Phase

Maintenance dredging of Alexandra Basin West will continue as part of Dublin Port's already permitted maintenance dredging campaign approved under a Dumping at Sea Permit by the EPA. The Maintenance Dredging program has been further assessed in **Section 4.2.5.**

The operation of Berth 52 West and Alexandra Basin will involve a low level of landside maintenance that will be located within the existing baseline level of operational port maintenance activities already present within Dublin Port Estate.

No likely significant operational phase effects are expected to occur on any European site and all sites have been screened out of further assessment regarding operational effects, on the basis that, it can be excluded, on the basis of objective information, that the operational phase of the Project will have a significant effect on any European site.

Diminution of Water Quality and Habitat Deterioration Conclusions

As stated above, construction-phase Likely Significant Effects in relation to diminution of water quality and habitat deterioration cannot be excluded and have been screened in for South Dublin Bay & River Tolka Estuary SPA, North Bull Island SPA, South Dublin Bay SAC and North-west Irish Sea SPA and their qualifying interests.

Construction-phase Likely Significant Effects in relation to diminution of water quality and habitat deterioration have been screened out for Howth Head SAC, Rockabill to Dalkey Island SAC, Codling Fault Zone SAC and Lambay Island SAC.

Operational-phase Likely Significant Effects in relation to diminution of water quality and habitat deterioration have been screened out on South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA, North Bull Island SPA, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Codling Fault Zone SAC, Lambay Island SAC and Howth Head SAC.

4.2.3 Underwater Noise & Disturbance

Construction Phase

Marine species living and feeding in the water column can be vulnerable to underwater noise and its associated disturbance. Rockabill to Dalkey Island SAC is designated for *Phocoena phocoena* (Harbour Porpoise). Lambay Island is designated for Grey Seal, Harbour Seal and Harbour Porpoise. Codling Fault Zone SAC is designated for Harbour Porpoise.

As described in **Section 3**, some aspects of the proposed development will require activities in the marine environment and new marine infrastructure to be constructed and operated. Marine engineering construction includes many activities producing underwater noise, including:

- Capital dredging at Alexandra Basin West & remediation of dredged material;
- Demolition proposed at Berth 52/53 involves the removal of existing marine infrastructure and Open pile jetty at Berth 52 (approx. area 500 m2), prior to the infilling of the Berth 52/53 basin; and
- Site Clearance Works, along with associated sand and soil disturbance caused by demolition works proposed at Berth 52/53 involving the removal of existing marine infrastructure & subsequent infilling.

These activities carry an inherent risk of noise induced effects upon some marine species as a result of underwater acoustic energy being released into the marine environment. Underwater noise is not a persistent effect, and once the noise source ceases noise levels drop very quickly to pre-existing levels.

The natural underwater soundscape of Dublin Port and Dublin Bay is not silent - biological sounds from fish and marine mammals are mixed with sounds from waves and surface noise; current flow and turbulence; rain

and wind/storm noise; and noise from shipping and leisure craft activities. The ambient noise levels in coastal and inshore water, bays and harbours are subject to huge variation.

South Dublin Bay SAC and Howth Head SAC are designated for only habitat features. These qualifying interests are not susceptible to the effects of underwater noise and likely significant construction phase effects due to underwater noise and disturbance can be screened out on South Dublin Bay SAC and Howth Head SAC.

South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA and North Bull Island SPA are designated for several coastal bird species, along with their associated wetland habitats and wintering/breeding populations. These qualifying interests are not susceptible to the effects of underwater noise and likely significant construction phase effects due to underwater noise and disturbance can be screened out on South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA, North Bull Island SPA.

Rockabill to Dalkey Island SAC is located 6.58 km E of the ABR2 Project and is hydrologically connected to the ABR2 Project by Dublin Bay and the Irish Sea. It is designated for Reefs and Phocoena phocoena (Harbour Porpoise). QI Reefs are not susceptible to the effects of underwater noise and Construction-phase Likely Significant Effects on respect of QI reefs due to underwater noise and disturbance can be screened out.

Lambay Island SAC is located 20.5km NE of the ABR2 Project and is hydrologically connected to the ABR2 Project by Dublin Bay and the Irish Sea. It is designated for Reefs, Vegetated Sea cliffs of the Atlantic and Baltic coasts, Harbour Porpoise, Grey Seal Halichoerus grypus and Harbour Seal Phoca vitulina. Likely Significant Effects to QI Reefs and Vegetated Sea cliffs of the Atlantic and Baltic coasts due to underwater noise and disturbance can be screened out.

Codling Fault Zone SAC is located 33.4km E of the ABR2 Project and is hydrologically connected to the ABR2 Project by Dublin Bay and the Irish Sea. It is designated for Submarine Structures made by leaking gas and Harbour Porpoise. Likely Significant Effects on QI Submarine structures made by leaking gases due to underwater noise and disturbance can be screened out.

Data collection efforts (IWDG, 2025) for the area indicate that the ABR2 Project experiences extremely few occurrences of marine mammals. However, Harbour porpoise, Grey Seal and Harbour Seal are susceptible to the effects of elevated levels of underwater noise. Dredging, piling and demolition works associated with the ABR2 project will give rise to elevated underwater noise levels that many causes adverse effects on ranging Harbour Porpoise, Grey Seal and Harbour Seal within Dublin Port.

Rockabill to Dalkey Island SAC, Codling Fault Zone SAC and Lambay Island SAC have been scoped in for further assessment as there may be likely significant construction phase effects on Harbour Porpoise, Grey Seal and Harbour Seal due to underwater noise and disturbance arising from construction of the ABR2 Project.

Operational Phase

Operational marine vessel manoeuvres and activities will be similar in scope and scale to the ongoing high level of activity within Dublin Port at its basins and berths. Any marine mammals utilising the port area are habituated to the existing level of noise disturbance and marine traffic occurring in Dublin Harbour.

As the operational marine activity is expected to be in-line with currently ongoing activity, operational phase Likely Significant Effects in relation to underwater noise and disturbance have been screened out on Rockabill to Dalkey Island SAC, Coding Fault Zone SAC and Lambay Island SAC QI marine mammals in the absence of mitigation measures.

Operational-phase Likely Significant Effects in relation to underwater noise and disturbance have also been screened out on South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA, North Bull Island SPA, South Dublin Bay SAC and Howth Head SAC.

Underwater Noise & Disturbance Conclusions

Rockabill to Dalkey Island SAC, Lambay Island SAC and Codling Fault Zone SAC has been scoped in for further assessment as there may be adverse likely significant Construction-phase effects on QI marine mammals due to underwater noise and disturbance arising from construction of the ABR2 Project.

Construction-phase Likely Significant Effects due to underwater noise and disturbance can be screened out on South Dublin Bay SAC, Howth Head SAC, South Dublin Bay & River Tolka Estuary SPA and North Bull Island SPA, as it can be excluded, on the basis of objective information, that the underwater noise and disturbance caused by the Project will have a significant effect on any of these European site.

Operational-phase Likely Significant Effects in relation to underwater noise and disturbance have been screened out on South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA, North Bull Island SPA, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Lambay Island SAC, Codling Fault Zone SAC and Howth Head SAC, as it can be excluded, on the basis of objective information, that the operational phase of the Project will have a significant effect on these European sites.

4.2.4 Aerial Noise & Disturbance

Construction Phase

The Project will give rise to dust and traffic movements temporarily during construction phase. Emissions from traffic generated by the construction of the proposed development are not predicted to be at a level to give rise to any significant increases to the deposition of Ammonia (NH_3), Nitrogen Oxides (NO_X), Sulphur Dioxide (SO_2) or nutrient nitrogen, within any of the assessed European Sites.

Aerial noise levels are predicted to be in line with existing port activities, with any qualifying bird species within South Dublin Bay & River Tolka SPA and North Bull Island SPA habituated to the ongoing elevated noise levels associated with marine traffic and activities associated with the operational port.

All other sites designated for bird species such as the North-west Irish Sea SPA are spatially separated from the ABR2 Project and any noise impacts are expected to attenuate over distance to a negligible level.

No construction phase impacts on European Sites associated with air quality and associated nutrient deposition or aerial noise are predicted due to the proposed development.

Operational Phase

Operational vehicle activities will be similar in scope and scale to the ongoing high level of activity within Dublin Port and the wider urban area. As the operational dust and traffic impacts are expected to be in-line with currently ongoing activity.

No Likely Significant Effect as a result of aerial noise and dust impacts are expected; therefore, they have been screened out for all relevant European sites, in the absence of mitigation measures.

4.2.5 In Combination with Other Plans & Projects

Article 6(3) of the Habitats Directive and implementing legislation requires that the likely significant effects of a Project are assessed alone, and also in combination with other plans and projects. The significance of any identified combined effects of the proposed development and other past, present or reasonably foreseeable future plans or projects must also be evaluated. On this basis, a range of other plans and projects were considered in terms of their potential to have in-combination effects with the proposed development, as listed in **Table 4-2.**

Table 4-2: Other Plans and Projects Considered

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
National Biodiversity Action Plan 2023-2030	Ireland's 4th National Biodiversity Action Plan (NBAP) sets the national biodiversity agenda for the period 2023-2030 and aims to deliver the transformative changes required to the ways in which we value and protect nature. The 4th NBAP has been developed with the support, advice and input of the interdepartmental Biodiversity Working Group and the independent Biodiversity Forum. The 4th NBAP outlines the following key objectives: • Objective 1 Adopt a Whole-of-Government, Whole-of-Society Approach to Biodiversity • Objective 2 Meet Urgent Conservation and Restoration Needs • Objective 3 Secure Nature's Contribution to People • Objective 4 Enhance the Evidence Base for Action on Biodiversity Objective 5 Strengthen Ireland's Contribution to International Biodiversity Initiatives	Screened out of further assessment. The National Biodiversity Action Plan does not outline any environmental measures or proposed development schemes that may have an in-combination effect with the ABR2 Project. Funding has been allocated for a Dublin City otter habitat survey; this survey has been completed and there is no expected pathway for in-combination disturbance effects to occur in tandem with the surveys commissioned as part of the ABR2 development.
National Planning Framework 1st Revision (Project Ireland 2040)	The National Planning Framework (NPF), is the long-term, 20-year strategy for strategic planning and sustainable development of our urban and rural areas to 2040, with the core objectives of securing balanced regional development and a sustainable 'compact growth' approach to the form and pattern of future development. The NPF, together with the National Development Plan 2021 (NDP), combine to form Project Ireland 2040, the overarching planning and investment framework for the social, economic and cultural development of Ireland.	The NPF (Project Ireland 2040) outlines a need to: *"Facilitating the growth of Dublin Port through greater efficiency, including improved rail freight transfer options, automation and technology updates, limited expansion into Dublin Harbour and improved road access, particularly to/from the southern port area;"* No adverse effects are expected and only a high-level overview of a need for development is outlined. The projects this goal applies to have been assessed below (ABR2, 3FM, MP2, dredging programs, etc) have been

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
		screened in and assessed fully for in-combination effects, with all adverse effects scoped out. Therefore the NPF has been scoped out of further assessment as there are no pathways for adverse effects to occur over.
Dublin City Development Plan 2022-2028	The Dublin City Development Plan (2022–2028) sets out an integrated, coherent spatial framework to ensure our city is developed in an inclusive way which improves the quality of life for its citizens and ensures that it is an attractive place to live, work and visit. The plan guides future growth and development and provides the overall strategy to achieve proper planning and sustainable development, through a range of policies and objectives.	A Strategic Environmental Assessment and Appropriate Assessment Screening Report & Natura Impact Statement Follow was prepared to support the Development Plan. It identified several adverse effects (in the absence of mitigation) on habitats, protected species and designated sites in the Dublin Bay area. Therefore, due to this overlapping zone of interest the development plan has been screened in for further assessment.
3FM – ABP Reg. Ref.PA29N.320250	Proposed '3FM Project' consisting of a Southern Port Access Route and road network improvements, construction of a Lo-Lo container terminal, Ro-Ro freight terminal and other works.	Screened in for further assessment. Partially overlapping development footprint and similar scope of works. Both the ABR2 Project and 3FM Project are hydrologically linked to Dublin Bay.
MP2 Reg. Ref. ABP304888-19	15-year permission for development at Oil Berth 3 and Oil Berth 4, Eastern Oil Jetty and at Berths 50A, 50N, 50S, 51, 51A, 49, 52, 53 and associated terminal yards to provide for various elements including new Ro-Ro jetty and consolidation of passenger terminal buildings.	Screened in for further assessment. Partially overlapping development footprint and similar scope of works. Both the ABR2 Project and MP2 Project are hydrologically linked to Dublin Bay.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
The Liffey-Tolka Project-1.4km pedestrian walkway and a 2-way cycle lane – Reg. Ref. 3220/21 & 312692	Protected Structure: Construction of a pedestrian walkway and a cycle lane along East Wall Road and Bond Road from the River Liffey to the Tolka Estuary with all associated site development works. This application is accompanied by a Natura Impact Statement.	Screened out of further assessment. Development is of smaller scale in nature and, as construction phase will have been completed before construction phase of ABR2 Project will commence, likely significant in-combination effects with the ABR2 Project can be excluded. Accidental loss of otter holts occurred during construction phase of this project, but there are no effects of the proposed ABR2 Project alone on otter holts. As such, there will be no likely significant cumulative effects of this project along with ABR2 Project on otter holts.
T10 Link Road – Reg. Ref. 4894/22	Part of the proposed 3FM project.	Screened out of further assessment. Development is of smaller scale in nature and, as construction phase will have been completed before construction phase of ABR2 Project will commence, Likely significant in-combination effects with the ABR2 Project can be excluded.
Dublin Harbour Capital Dredging Project – Reg. Ref.	The works proposed in the Dublin Harbour Capital Dredging Project comprise several elements:	Screened in for further assessment.
Foreshore Application FS007164/DAS Application S0033-01	Deepening the navigation channel between North Wall Quay Extension and the Western Oil Jetty, including riverside Berth 35; Deepening of Alexandra Basin East and deepening/widening of berths; Deepening of the Oil Basin and widening of berths; Deepening of the Ferryport Basin; Deepening of riverside Berth 52; Widening the South Port (Berths 42 - 47) berths; and Removal of ridge between the navigation channel and the Poolbeg Oil Jetty (Berth 48).	Partially overlapping development footprint and similar scope of works. Both the ABR2 Project and Dublin Harbour Capital Dredging both involve dredging works on Alexandra Basin and Dublin Harbor, but the dredging campaigns will not occur at the same time. Screened out of further assessment.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Dublin Port Maintenance Dredging Programme 20222029 – Reg. Ref. FS007132 / DAS Permit S0004-03	It is proposed that quantities of material will be dredged from the Inner Liffey Channel (Dublin Harbour) and Dublin Bay during the 2022 to 2029 maintenance dredging campaigns. Based on previous maintenance dredging campaigns undertaken within Dublin Port, it is estimated that the proposed 2022-2029 programme will result in the dredging of approximately 300,000 cubic metres of material per annum. This material consists mostly of silt and sand with elements of clay, gravel and cobbles.	Screened in for further assessment. Partially overlapping development footprint and similar scope of works. Both the ABR2 Project and Dublin Harbour Dublin Port Maintenance Dredging Programme both involve dredging works on Alexandra Basin and Dublin harbour, but capital and maintenance dredging campaigns are permitted by the EPA to be undertaken during different seasons. The dredging campaigns will not occur at the same time.
Open Cycle Gas Turbine (OCGT) and a generating plant. – Reg. Ref. PWSDZ3074/23 – done Q26	The proposed development will consist of the following elements: 1. Demolition of two storage buildings and demolition of four oil tanks within the bunded area of the NORA Ringsend oil farm 2. Construction/installation of an Open Cycle Gas Turbine (OCGT) generating unit and associated plant and equipment, 3. Construction of bund wall between the proposed OCGT and NORA oil farm 4. Connection to the existing gas Above Ground Installation (AGI) 5. All associated works to facilitate the development	Screened out of further assessment. Development is much smaller in nature and likely significant in-combination effects on any nearby European Site with the ABR2 Project can be excluded as the application is entirely for landward works spatially separated from the proposed ABR2 project. It lacks any significant pathways for in-combination effects to occur over.
Underground Cable Programme is set to replace and upgrade five 220kV circuits – EirGrid Capital	Underground cable routes that involve the digging of trenches and watercourse crossings.	Screened out of further assessment. The proposed development is small scale in nature and entirely landward. Any habitat loss or potential pollutant effects will be extremely small scale and temporary as to be imperceptible.
Projects ref: CP114 6 CP121 6 CP110 0		

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Construction of a new 220kV gas insulated switchgear (GIS) Switchboard building – Reg. Ref. 4057/23	The development will consist of construction of a new gas insulated switchgear (GIS) switchboard building; construction of new shunt reactor units and a new series reactor unit, associated connections to the GIS switchboard building and decommissioning and removal of existing shunt reactors; an extension of the existing internal access road around the new GIS switchgear building and car parking spaces; all ancillary and associated works to facilitate the development.	Screened out of further assessment. The proposed development is small scale in nature and entirely landward. Any habitat loss or potential pollutant effects will be small scale and temporary as to be imperceptible.
Continuation of use of existing concrete batching plant and associated facilities. Reg. Ref. PWSDZ3469/22	Permission for development at South Bank Road Irishtown, Dublin 4, D04 H998. The development consists of: the continuation of use of an existing concrete batching plant and associated facilities.	Screened out of further assessment. S The proposed development is for the continuing use of a concrete batching plant. No new development is proposed and no significant change from the existing baseline is expected to arise from this development. There are no pathways for in-combination effects to occur.
Development at the Ringsend Wastewater Treatment Plan. Reg. Ref. 5319/22	10-year permission for development of the Ringsend wastewater treatment plant upgrade project including a regional biosolids storage facility	Screened in for further assessment. Potential effects on European Sites shared within the zone of interest of the ABR2 Project have been screened in for this project, relating to potential water pollutant effects. Therefore, it has been assessed further below.
Upgrade of the Ringsend Wastewater Treatment Plant (WwTP). Reg. Ref. PL29S.301798	10-year permission for development of the Ringsend wastewater treatment plant upgrade project including a regional biosolids storage facility	Screened in for further assessment. Potential effects on European Site with a shared zone of interest with the ABR2 Project have been screened in for this project, relating to potential water pollutant effects. Therefore, it has been assessed further below.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
North Lotts & Grand Canal Dock Planning Scheme 2014-BP Ref. PL29N.ZD2011	This application is for an amendment to the North Lotts & Grand Canal SDZ Planning Scheme approved in 2014 and is made by Dublin City Council as the Development Agency for the North Lotts and Grand Canal Dock SDZ under Section 170A of the Planning and Development Acts 2000 to 2015. The proposed amendment, if approved, will allow for the relocation of a pedestrian/cycle bridge from the Forbes Street location shown in the adopted Planning Scheme, to a new location nearby to the east, linking Blood Stoney Road and New Wapping Street.	Screened out of further assessment. The development is small scale in nature, involving the movement of an existing bridge to another location. Any disturbance or pollutant effects would be extremely short term in nature and are unlikely to give rise to any likely significant in-combination effects with the ABR2 project or any other plan/project.
Point Bridge and Dodder Bridge Reg. Ref. ZE29N.ZE0006	Amendments to the North Lotts and Grand Canal Dock strategic Development Zone in relation to revised pedestrian/ cycle bridge locations across the River Liffey.	Screened out of further assessment. Development is much smaller scale in nature and is entirely landward in nature. It lacks any pathways for significant water pollution or disturbance effects that could give rise to likely significant in-combination effects on any nearby European Site with the ABR2 Project or any other plan/project.
The Howth Yacht Club (HYC) Marina Extension – Reg. Ref. DAS Permit Reg. No. S0010-01	Application for a permit to dump dredged material at sea.	Screened out of further assessment. The ABR2 Project will not involve any dumping at sea. Howth Head Yatcht Club is spatially separated from the proposed development, in-combination pollutant effects would be reduced to a negligible level. Accordingly, likely significant in-combination effects on any nearby European Site with the ABR2 Project can be excluded.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Dublin Array Wind Farm – Reg. Ref. FS007188	Foreshore Licence to undertake geotechnical and geophysical site investigations and ecological, wind, wave and current monitoring to provide further data to refine wind farm design, cable routing, landfall design and associated installation methodologies for the proposed Dublin Array offshore wind farm.	Screened out of further assessment. The ABR2 Project will not involve any dumping at sea & is spatially separated from the proposed development, any in-combination pollutant effects would be reduced to a imperceptible level. Accordingly, likely significant in-combination effects on any nearby European Site with the ABR2 Project can be excluded.
Codling Wind Park – Reg. Ref. FS007045	Codling Wind Park - Site Investigation Licence Application to inform the design of a possible windfarm at this site	Screened out of further assessment. The ABR2 Project will not involve any dumping at sea & is spatially separated from the proposed development, any in-combination pollutant effects would be reduced to a imperceptible level. Accordingly, likely significant in-combination effects on any nearby European Site with the ABR2 Project can be excluded.
North Irish Sea Array – Reg. Ref. FS007031	Site Investigations for possible Offshore Renewable Energy project	Screened out of further assessment. The ABR2 Project will not involve any dumping at sea & is spatially separated from the proposed development, any in-combination pollutant effects would be reduced to a imperceptible level. Accordingly, likely significant in-combination effects on any nearby European Site with the ABR2 Project can be excluded.
Mac Lir Offshore Wind, Benthic Ecology Survey within Export Cable Corridor - FS007472	Mac Lir Offshore Wind Limited is seeking to undertake benthic ecology surveys within a potential offshore export cable corridor area. The proposed surveys will be conducted on the shoreline and in the marine area and are routine in establishing the baseline benthic ecology conditions for areas for a number of purposes including conservation, environmental status and in this particular case to support the Environmental Impact Assessment Report for the proposed Mac Lir Offshore Wind Farm.	Screened out of further assessment. The ABR2 Project will not involve any dumping at sea & is spatially separated from the proposed development, any in-combination pollutant effects would be reduced to a imperceptible level. Accordingly, likely significant in-combination effects on any nearby European Site with the ABR2 Project can be excluded.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Electricity Supply Board (ESB) - MAC240013	Proposed Activity - Replacement of high voltage underground cables at 27 Fitzwilliam Street Lower, Dublin, D02KT92, Ireland	Screened out of further assessment. Development is much smaller scale in nature, entirely landward in nature and construction will only last for a short period. In-combination adverse effects will therefore be negligible in nature. Therefore, there are no pathways for likely significant in-combination effects on any nearby European Site with the ABR2 Project or any other plans/projects.
Dublin City Council - MAC240014	Proposed Activity - Construction of a pedestrian and cyclist bridge (Point Bridge) to the west of Tom Clarke Bridge, widening of Tom Clarke Bridge, dismantling of existing and construction of a new control room building, dismantling of existing vessel compound.	Screened out of further assessment. Development is much smaller scale in nature and lacks any pathways for likely significant in-combination effects on any nearby European Site with the ABR2 Project or any other plan/project.
Microsoft Ireland Operations Ltd - LIC230016	Geophysical survey and site investigations for a proposed subsea fibre optic cable having a landfall in Dublin Port, County Dublin and to evaluate options for the route traversing Dublin Bay, across the Irish Sea to Anglesey, Wales.	Screened out of further assessment. Development is extremely small scale in nature and is highly temporary. Any disturbance arising from this application would be imperceptible. Therefore, no likely significant in-combination effects on any nearby European Site with the ABR2 Project or any other nearby plans/projects.
Dublin City Council - LIC230007	Environmental survey and ground investigation works in order to inform the design of proposed Point Bridge and Tom Clarke Widening Project	Screened out of further assessment. Development is extremely small scale in nature and is highly temporary. Any disturbance arising from this application would be imperceptible. Therefore, no likely significant in-combination effects on any nearby European Site with the ABR2 Project or any other nearby plans/projects.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Codling Wind Park Limited (CWPL) - **MUL230034**	CWPL intends to undertake survey mobilisations at the proposed Licence Area to inform the location and detailed design of the proposed CWP OWF, export cable route, potential operations and maintenance base, potential land reclamation area	Screened out of further assessment. Development is extremely small scale in nature and is highly temporary. Any disturbance arising from this application would be imperceptible. Therefore, no likely significant in-combination effects on any nearby European Site with the ABR2 Project or any other nearby plans/projects.
Terminal 4 North Lands, Dublin Port, Dublin 1, bounded by Bond Road, Tolka Quay Road & Promenade Road - 306648	Demolition of 10 buildings and removal of temporary structures, for use of the site as a multi-functional storage yard and facilitate wider infrastructural upgrades to provide additional capacity within the Port.	Screened out of further assessment. This development is smaller scale than the ABR2. Any disturbance would be limited to demolition and the site location lacks a direct hydrological connection with Dublin Bay and the Tolka/Liffey Estuaries. Therefore there is no pathway for in-combination effects to occur due to the ABR2 project or any other plans/projects.
Site bounded by Alexandra Road, Branch Road No. 1 and railway, Branch Road No. 3 and Alexandra Basin, Dublin Port, Dublin 1 - Case reference: PL29N.319742	PROTECTED STRUCTURE: Demolition of quayside infrastructure. Construction of bulk product intake/outtake, storage, and transport infrastructure with all associated site works. NIS submitted.	Screened in for further assessment. Potential effects on European Sites shared with the ABR2 Project have been screened in for this project. Therefore, it has been assessed further below.
Bond Drive, Dublin Port, Dublin 1 to Dublin Airport, Co. Dublin. - Case reference: PL29N.245738	Aviation fuel pipeline. Inlet Station at Team CV Ltd, EIAR & NIS submitted.	Screened in for further assessment. Potential effects on European Sites shared with the ABR2 Project have been screened in for this project. Therefore, it has been assessed further Below

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
The former electricity substation building (a Protected Structure) at Alexandra Road And East Wall Road, Dublin Port, Dublin 1 – Application Number 2681/20	PROTECTED STRUCTURE: The proposed development will consist of the change of use, renovation and extension of the existing two-storey protected structure to provide a new distributed museum, exhibition and multi-functional space to be operated by Dublin Port.	Screened out of further assessment. Development is small scale in nature and only involves additions to an existing structure. Works are expected to be short duration in nature, and they lack any pathways for adverse effects on any nearby European sites in combination or alone with the ABR2 project or any other plans/projects.
A site located north of Berth 50, Alexandra Road, Dublin Port, Dublin 1 – Application Number 3174/24	The development will consist of : partial demolition of an electrical substation building to include an ESB room the north-east of the overall existing building which contains an electrical substation (10kV) together with the removal of associated raise	Screened out of further assessment This development is extremely small scale in nature. Works are entirely landward and lack a clear pathway for adverse effects (pollutant or disturbance effects) on any nearby European site. Therefore, no likely significant effects are expected in combination or alone with ABR2.
Adjacent to Berth 49, Ferryport Terminal 1, Dublin Port, Dublin 1 – Application Number **3176/19**	The development will consist of: a c.189m long, c.10m wide approachway and ramp; 1 no. office and staff facilities building (c.193 sq.m and 7.7m in height); 1 no. control kiosk (c.6 sq.m and 2.3m in height); 1 no. control cabin (c.20 sq.m and 2.3m in height); new lighting (including 18 no. lighting columns 10m high); demolition of 5 no. existing staff facilities buildings with a combined area of c.329 sq.m; building 1 has an area of c.198 sq.m, building 2 has an area of c.10.7 sq.m, building 3 has an area of c.35.5 sq.m, building 4 has an area of c.42.4 sq.m, building 5 has an area of c.42.4 sq.m; and associated site works to include 15 no. tug parking spaces, drainage, utility services, fencing 2.4m in height and pedestrian gate 2.4m in height on a site of approx. 1.3 hectares. A Natura Impact Statement (NIS) will be submitted to the Planning Authority with the planning application.	Screened in for further assessment. Potential effects on European Sites shared with the ABR2 Project have been screened in for this project. Therefore, it has been assessed further below

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Dublin Port lands at Breakwater Road South, Dublin Port, Dublin 1 – Application Number 3314/18	The development will comprise of works to the existing Breakwater Road North and Breakwater Road South to upgrade access to the Dublin Port Operations Centre and the Dublin Ferryport Terminals (DFT), to consist of: re-alignment of traffic lanes and modification of Alexandra Road and Tolka Quay Road junctions to include pedestrian crossings, signage, traffic signals, flexible bollards, barriers, relocation of gate and removal of existing traffic island; provision of Optical Character Recognition system to include traffic lights, camera, barriers and gantry; 2.4m high palisade security fence along the western boundary of the DFT entrance; DFT check points with associated barriers, kiosks and traffic signals and; associated site works including underground drainage and electricity infrastructure. The proposed development will modify lane alignment on Breakwater Road North and Breakwater South, layout of the Breakwater Road North / Tolka Quay Road and the Breakwater Road South / Alexandra Road junctions, remove a bus stop from Breakwater Road North and relocate a gantry to the north on Breakwater Road North. (As permitted under Reg. Ref. 3084/16) All development shall take place on a total area of c.1.1ha.	Screened out of further assessment. Development is small scale in nature and involves landward works to local infrastructure around Breakwater Rd North. Due to the small scale nature of works and the landward nature of works, there are no pathways for adverse disturbance or pollutant effects on any nearby European Sites, either in-combination with the ABR2 project or any other plans/projects.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Former Calor Yard and Ferry Terminals 1 and 2, Dublin Port, Dublin 1 – Application Number **3638/18**	The development will consist of a unified State services facility including: 2 no. Inspection Sheds (each 207sq.m and 7.5m in height), 2 no. single storey State Service office blocks (each 266sq.m and 3.5m in height), 5 no. Immigration Control Booths with a total floor area of 66sq.m and including canopy (293sq.m and 7.7m in height) and 4 no. gateways, control point comprising canopy (216sq.m and 7.7m in height) and 4 no. gateways, 24 no. staff car parking spaces, 20 no. car parking spaces, 18 no. HGV parking spaces, new 20m vehicular access onto Tolka Quay Road, 4 no. CCTV poles (18m high), new lighting (including 3 no. lighting columns 30m high and 8 no. lighting columns 12m high), 2.4m palisade fencing along sections of the northern and eastern site boundary and Alexandra Road, demolition of existing boundary wall along Tolka Quay Road and boundary fencing along Alexandra Road and, all associated site works. The development also includes modifications to check-in facilities and internal roads and circulation which will consist of: Demolition of existing freight office (612sq.m and 9.8m in height) and 3 no. check in booths with a total floor area of 32sq.m and associated site works and resurfacing to tie in with adjacent stacking areas, removal of Terminal Road West including associated fencing and resurfacing to tie in with adjacent stacking areas, realignment and lane alteration of Terminal Road South at junction with Terminal Road West; provision of signage gantry on Terminal Road South, extension of HGV check-in area including 6 no. booths with a total area of 60sq.m, 6 no. weighbridges and canopy (416sq.m and 7.8m in height). Associated site works including drainage, utility services, fencing, gates and bollards. All development is to take place on a site of approx. 7.8 hectares.	Screened out of further assessment. Development is small scale in nature and primarily involves minor changes to local roadways and infrastructure. Due to the small-scale nature of works and the landward nature of works, there are no significant pathways for adverse disturbance or pollutant effects on any nearby European Sites, either in-combination with the ABR2 project or any other plans/projects.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Circle K, Terminal 1, Alexandra Road, Dublin Port, Dublin 1 – Application Number 3773/20	Planning permission for the proposed development consists of dismantling a portion of the Terminal 1 site incl. the loading gantry, office buildings, workshops and control tower. Existing equipment, including pumps, will be moved to facilitate transfer of fuel to other terminals and Bill of Landing facilities will be moved as part of the works and the existing warehouse will be modified to store spare parts. The modifications also include relocating the Jet Fuel loading gantry and installing a new internal entrance gate and fence which is subject of an exempted development application (see application 0184/20). The Major Accidents Directive is applicable to the site and as such a significant modification assessment has been completed.	Screened out of further assessment. Development is much smaller scale in nature than the ABR2 project and demolition will be short term in nature. Any adverse effects would be expected to be imperceptible and therefore there is no pathway for likely significant in-combination effects with the ABR2 project or any other plans/projects.
Ocean Pier and Alexandra Quay East, Alexandra Road and No. 3 Branch Road South, Dublin Port, Dublin 1 – Application Number 3859/19	The development will consist of: demolition of redundant warehouse building known as 'Stack R Warehouse')c. 6,600sqm); demolition of redundant ESB pumphouse and adjacent switchroom (c. 285sqm) at Berth 31/32 (Ocean Pier); installation of 25 no. new reefer access gantries (5.0m high) at Stack R and McCairn's yard; installation of a new substation (c. 92sqm) adjacent to Stack R; extension of the existing Alexandra Quay East (AQE) Rubber Tyre Gantry (RTG) stack area by 17,500sqm to the west (3 no. bays, 18.2m high); installation of 3 no. new reefer access gantries (7 no. rows, 14.65m high) in the proposed AQE RTG stack extensions; demolition of Dublin Stevedores substation (c. 30 sqm) and installation of new substation (c. 98sqm); re-routing of existing, and installation of new, electrical infrastructure; construction of 1.5m high retaining wall and 4m high security fencing along part of western boundary; provision of 3 no. 30m high mast lighting towers including integrated CCTV cameras; provision of 1 no. 10m high lighting column on the western boundary of McCairn's Yard; provision of ancillary associated lighting and lighting upgrades; installation of new pavement and associated drainage and services; general site clearance; and all associated	Screened out of further assessment. Development is much smaller scale in nature than the ABR2 project and demolition will be short term in nature. Any adverse effects would be expected to be imperceptible and therefore there is no pathway for likely significant in-combination effects with the ABR2 project or any other plans/projects.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
	works on site of c. 75,750sqm (c.7,575ha).	

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Port Centre, Alexandra Road, Dublin Port, Dublin 1 D01H4C6 - Application Number 4144/24	Permission for development will consist of refurbishment, renovation and retrofitting works to an existing building (Dublin Port Centre and associated ancillary works, comprising: Reglazing and insulation upgrades to all building facades to include installation of louvres (brise soleil type); Revisions at roof level to include replacement of existing roof slab, construction of enclosed viewing gallery (c. 36sq.m) and open-air external accessible deck, reconfiguration of existing plant areas and antennae and provision for plant relocated from fifth floor level, all resulting in a revised total building height (excluding antennae) of c. 36.25m (increased from 34.15m) and a reduction of 39sq.m in gross floor area (GFA) to 60sq.m total; Removal of existing signs (2 no. signs of 9.2sq m each) on the northern and southern façades and provision for 3 no. illuminated corporate signs (combined C. 42.5sq.m) at roof level on the northern, southern and western facades; Internal layout modifications to provide for improved floorplates to include Lower Ground Floor GFA to be reduced by c. 11sq.m to c. 1407sq.m, Ground Floor GFA to be reduced by c. 45sq.m to c. 509sq.m and to include an extended mezzanine over ground floor level of C. 233sq.m (an increase of C. 82sq.m); Increase of GFA at fifth floor level from C. 440sq.m to C. 685sq.m (an increase of C. 245sq.m), facilitated by existing plant removal and relocation. Other associated works to include existing car park layout modifications resulting in a reduction of parking spaces (from 90 no. permitted spaces to 83 no. spaces), installation of electric vehicle charging units at 19 no. existing vehicle parking	Screened out of further assessment. The development is of a much smaller scale than the ABR2 project and will only involve landward changes to an existing building. No pathways are present for likely significant pollutant or disturbance effects in-combination with the ABR2 project or any other plans/projects.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
	spaces (of which 2 no. are accessible spaces), provision of photovoltaic (PV) canopies (c. 700sq.m, 4.46m high) over car parking spaces; construction of a new ESB substation (c. 37sq.m, 3m high) and bicycle storage shed (c. 28.5sq.m, 3m high) and all other site works to include site clearance, landscaping, revised utilities and drainage arrangements.	
Tolka Quay Road, Dublin Port, Dublin 1 – Application Number **4250/18**	The development will consist of; the demolition of existing ESB Substation (approx. 25sq.m and 3.2m heigh), general site clearance, and construction of new ESB Substation building (approx. 40sq.m and 3.1m heigh) to include access ramps, handrails, replacement fencing, and pedestrian access gate adjacent to proposed substation; and development also includes dropped kerb access off Tolka Quay Road. All development to take place on a site approximately 0.66 hectares. The application is for a 10-year planning Permission.	Screened out of further assessment. The development is of a much smaller scale and shorter duration than the ABR2 project and will only involve landward demolition and site clearance. No pathways are present for likely significant pollutant or disturbance effects in-combination with the ABR2 project or any other plans/projects.
Tolka Quay Road, Dublin Port, Dublin 1 – Application Number 4353/22	The development will consist of the continuance of use of a 100m long 6.5m wide single lane bridge with access ramps over the M50 and a storage area for imported cars and vans and all associated site development and service works as permitted under planning reg. ref. 2495/17 and reg. ref. 3788/11.	Screened out of further assessment. This application is for the continued use of an existing site. No further works are proposed that could give rise to likely significant adverse effects in-combination with the ABR2 project or any other plans/projects.
Terminal 4 North Lands, Dublin Port, Dublin 1, bounded by Bond Road, Tolka Quay Road & Promenade	The proposed development will consist of the demolition of 10 no. redundant buildings (c. 6830sqm) and removal of temporary structures including portacabins and general site clearance (an existing substation and pump house will remain in situ) to optimise the use of the site as a multi-functional storage yard (primarily for heavy goods vehicles) and facilitate wider infrastructural upgrades to	Screened in for further assessment. Potential effects on European Sites shared with the ABR2 Project have been screened in for this project. Therefore, it has been assessed further below

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Road – Application Number 4483/19	provide additional capacity within the Port. The proposed development will also include: construction of vehicular check-in booths (c. 30sqm); an open-air blockwork electrical enclosure; amendments to boundary treatments including provision of 4m high security fencing (including 1.5m high retaining walls) on the northern, eastern and southern boundaries; 4m high security fencing fixed to the existing masonry wall along the western boundary with Bond Road; 3 no. new 12m wide automatic vehicular sliding gates and re-building of 1 no. existing 9m wide automatic vehicular sliding gate; provision of 14 no. high mast lighting columns (30m high) and 54 no. perimeter lighting columns (12m high); installation of 9 no. CCTV columns (18m high); installation of new pavement, underground drainage, attenuation, interceptors, water services and electrical infrastructure; installation of new wash bay and fuel spill areas; installation of pedestrian barriers; and all associated site and development works on a site of c. 9.52ha.	
Alexandra Road, Dublin Port, Dublin 1- Application Number 4521/18	The development will consist of: a 150m long, 13m wide two-lane vehicular bridge with access ramps over Alexandra Road connecting the CDL yard and Terminal 4, associated lighting columns of up to 8m in height and all associated site development works.	Screened out of further assessment. Development is much smaller scale in nature and construction will last a short duration compared to the ABR2 Project. Therefore, any potential pollution or disturbance effects would be imperceptible and therefore, there are no pathways for likely significant in-combination effects to occur due to the ABR2 project or any other plans/projects.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
A site generally bounded by Alexandra Road to the north, Branch Road No.1 and rail line to the west, Branch Road No.3 to the east and Alexandra Basin to the south, at Dublin Port, Dublin 1, which includes R&H Hall Silo Building (a protected structure,) – Application Number 4585/23	PROTECTED STRUCTURE: PERMISSION:The development will consist of: A. Demolition and removal of existing quayside overhead bulk material conveyor system (2no. North/South and 1no. East/West), 2no. associated elevator/weighing towers, redundant transformer building and weighbridge and associated infrastructure to include site clearance of redundant walls, plinths and fences; B. Reinstatement of window opening to the R&H Hall Silo Building, a protected structure, following removal of the elevated conveyor system (within its curtilage) together with internal and external repair works to the remainder of the building; C. Relocation of existing rail line northwards to a safe zone set further back from the quayside, existing crane rails along the quayside and existing 30m high mast lighting (HML) tower; D. Relocation of existing reefer gantries and 30m HML towers located at McCairn's Yard and provision of 2no. new reefer gantries; E. Quayside and yard pavement upgrades and reinforcement works and installation of new 30m HML towers; F. Construction of a new bulk product silo facility at McCairn's Yard, to include intake/outtake of bulk product from vessels to quayside storage and onward transport. The facility will consist of 6no. bulk product storage silo bins c.30.0m in height (c.1,701sq.m), below ground conveyor system from intake pit to silo bins (c.-7.5m), above ground conveyor system up to c.32.8m in height, bulk material out-loading building c.9.1m in height (c.234sq.m), weighbridge control office c.4.0m in height (c.59sq.m), motor control centre and switch room c.5.080m in height (c.70sq.m), intake elevator tower and weighting tower c.41.11m in height (c.97sq.m), bulk material intake building c.11.66m in height (c.2,326sq.m), administration office and welfare building c.6.8m in height (c.164sq.m), workshop and covered external area c.6.9m in height (c.592sq.m), weighbridges, associated infrastructure, skip area, chemical storage area, diesel tank bunded	Screened in for further assessment. This project is in close proximity to the ABR2 project and involves works adjacent to Dublin Harbour. These projects Potential effects on European Sites shared with the ABR2 Project have been screened in for this project. Therefore, it has been assessed further below

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
	area, ancillary lighting, and automated gate entry; G. Provision of a new substation c.2.97m in height (c.196sq.m); and; H. New access and egress onto Alexandra Road, provision of International Ship and Port Security (ISPS) fencing and gates to matching existing fencing, internal roads, ancillary car and bicycle parking, ancillary lighting, waste management facilities and all associated site development works including revised utilities/drainage arrangements and construction compound. A Natura Impact Statement (NIS) will be submitted to the Planning Authority with the planning application.	

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Site which extends from Promenade Road to Alexandra Road, Dublin Port, Dublin 3 – Application Number4894/22	PERMISSION & RETENTION: Development at this site which extends from Promenade Road to Alexandra Road and includes the western part of Circle K Fuel Terminal1, part of Promenade Road at its junction with Terminal 10 Link Road (T10 Link Road), T10 Link Road, part of Tolka Quay Road, No. 1 Branch Road North and part of Alexandra Road. It also incorporates land comprising parts of Terminal 4 and Terminal 4 North, all at Dublin Port, Dublin 1. Retention permission is sought for development of part of a link road known as T10 Link Road connecting Promenade Road with Tolka Quay Road to the west of the Terminal 10 State Services yard. The road and associated infrastructure comprise of: An approximately 125 metre long and 14.4 m wide two-way road (two northbound lanes and one southbound land), with 2 no. 3m wide footpaths. A T-junction with Promenade Road; A pedestrian zebra crossing at the northern end of the link road; and A vehicular entrance to the Terminal 10 state services yard; Revisions to fenceline previously permitted under Reg.Ref. 4483/19 at northeast corner of Terminal 4 North boundary; and All associated ancillary works including site clearance, demolitions, earthworks, pavement construction, drainage services, diversion and installation of utility services, installation of road markings and signs, lighting, CCTV and associated boundary fencing. Permission is sought for development, which will consist of a new road from north of Tolka Quay Road to Alexandra Road. The new link road and associated infrastructure will comprise of: An approximately 250m long two-way road (two north bound and two south bound lanes) with 3 m wide footpaths on either side of the road and two-way segregated cycleway on eastern side of road; New roundabout, connecting proposed new link road with Tolka Quay Road; New link road will incorporate a swept bend to integrate continuously with Alexandra Road to the west, a T-junction from	Screened out of further assessment. The proposed development involves smaller-scale amendments to landward road infrastructure within Dublin Port. Works will be short-term in nature and do not involve any marine works, dredging or other changes to the ship berths. Therefore, a shared pathway for adverse effects is not present, due to the significantly smaller scope of Application 4894/22, lack of marine works and lack of waterside works.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
	Alexandra Road to the east to the proposed new link road, and closure of access to No. 2 Branch Road South; Closure and removal of No. 1 Branch Road North along with boundary walls to east and west, accommodating an extension of Terminal 4 including new yard surface into area of current Circle K Terminal 1; Realigned port cycle network along Alexandra Road; Upgrade of road and footpath connections on Tolka Quay Road and a zebra crossing on Tolka Quay Road to the east of the proposed roundabout; and Revisions to fenceline previously permitted under Reg. Ref. 4483/19 at southeast corner of Terminal 4 North boundary. Permission is also sought for development comprising: Relocation of 5 no. parking spaces within and provision of new 2.4 m western boundary wall to the Circle K Terminal 1; Revisions to access from Circle K Terminal 1 to Alexandra Road as previously permitted under Reg. Ref. 3773/20 to now omit previous access arrangements and provide for two vehicular entrances and gateways to Alexandra Road and one vehicular entrances and gateways to T10 Link Road; The demolition/ breaking out of:-Existing T10 Link Road junction on Tolka Quay Road;-Section of Circle K Terminal 1 perimeter fence; and All associated ancillary works, including site clearance, demolitions, earthworks, pavement construction, drainage services, diversion and installation of utility services, installation of road markings and signs, lighting, CCTV and associated boundary fencing. Part of the site comprises of an establishment to which the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I.209 of 2015) applies.	
Alexandra Quay East and Ocean Pier, off Branch Road South No. 3, Dublin Port,	Permission for amendments to planning permission granted under Reg. Ref. 3859/19. The development will consist of permission for;	Screened out of further assessment.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
Dublin 1 - Application Number 4919/23	demolition of the two-storey office building (c.190 sqm); and construction of 2 no. 30m high mast light (HML). The permission for amendments to permission granted at the site under Reg. Ref. 3859/19 will consist of; relocation and replacement of permitted substation (c. 98 sqm) and associated electrical infrastructure with a substation (c. 182 sqm, 4.17m in height) and associated electrical infrastructure; relocation, modification and replacement of 3 no. permitted reefer access gantries (7 no. rows, 14.65m in height) with 4 no. reefer access gantries (7 no. rows, 12.06m in height); and relocation of permitted 30m HML. The proposed development and proposed amendments include all associated ancillary works, encompassing general site clearance, removal of HML, earthworks, pavement reinstatements and construction and drainage services.	The proposed development involves the construction of a 2-story office building and a 182sqm substation building. These works are of a much smaller scale in nature than the ABR2 development. Works will be short-term in nature and do not involve any marine works, dredging or other changes to the ship berths. Therefore, a shared pathway for adverse effects is not present, due to the significantly smaller scope of Application 4919/23, lack of marine works and lack of waterside works.
Berths 29, 30 and 31, Alexandra Quay West, Dublin Port, Dublin 1 – Application Number WEB1054/26	Permission for the provision of a Ship-to-Shore (STS) Crane and all associated site development works.	Screened out of further assessment. The development is much smaller scale in nature than the ABR2 project and consists of minor landward works. Works will also be short term in nature, and any disturbance/pollution effects are expected to be imperceptible. Therefore, there are no likely significant effects expected to occur in combination with the ABR2 project or any other plans/projects.
Port Centre, Alexandra Road, Dublin Port, Dublin 1 D01H4C6- Application Number 4144/24Sub02	The development shall comply with the following requirements of the Transportation Planning Division: c) Prior to commencement of development, and on appointment of a main contractor, a Construction Management Plan shall be submitted to the planning authority for written agreement. This plan shall provide details of	Screened out of further assessment. Screened out of further assessment. The development is much smaller scale in nature than the ABR2 project and consists of minor landward works. Works will also be short term in nature, and any

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
	intended construction practice for the development, including traffic management, hours of working, noise and dust management measures and off-site disposal of construction/demolition waste.	disturbance/pollution effects are expected to be imperceptible. Therefore, there no likely significant effects are expected to occur in combination with the ABR2 project or any other plans/projects.
Seastacks Wind Farm - Reg. Ref. FS007134	ESB Wind Development Limited have applied for a Licence to carry out site investigations relating to a possible wind farm on a site named "Sea Stacks Offshore Wind", situated off the coasts of Dublin and Wicklow.	Screened out of further assessment. The ABR2 Project will not involve any dumping at sea & is spatially separated from the proposed development, any in-combination pollutant effects would be reduced to a negligible level. Accordingly, likely significant in-combination effects on any nearby European Site with the ABR2 Project can be excluded.
Kish and Bray Banks **Case reference: OA06D.321992**	The proposed Dublin Array Offshore Wind Farm (Dublin Array) is located on the Kish and Bray Banks, approximately 10 km off the east coast of Ireland. The project will include between 39 and 50 wind turbines, which will generate electricity from the wind. These turbines will be connected by subsea cables (called inter-array cables) to an offshore substation on a platform at sea.	Screened in for further assessment. Potential effects on European Sites shared with the ABR2 Project have been screened in for this project. Therefore, it has been assessed further below.
Realt na Mara – Reg. Ref FS007330	This Foreshore Licence Application is for site investigation works to determine the suitability for cable routing, and positioning of turbines and other electrical infrastructure associated with the development of an OWF. The results of these surveys will also provide baseline data for Environmental Impact Assessment (EIA) and a subsequent Environmental Impact Assessment Report (EIAR) should the development be taken forward to the planning/consenting stage. Located off counties Wicklow and Dublin.	Screened out of further assessment. The ABR2 Project will not involve any dumping at sea & is spatially separated from the proposed development, any in-combination pollutant effects would be reduced to a negligible level. Accordingly, likely significant in-combination effects on any nearby European Site with the ABR2 Project can be excluded.

Existing, Approved or Under Consideration Projects	Project Description	Screened In/Out & Reasoning
		The application for these site investigation works has been withdrawn (as at 12th June 2025).
FS007283 Banba Wind Ltd., Site Investigations for proposed Offshore Wind Farm, off Counties Wicklow and Dublin	Foreshore licence application for site investigation activities to undertake a variety of marine surveys at the Foreshore Licence Application Area in order to inform the specific location, design and layout of the proposed offshore wind farm and export cable route to shore. The surveys will include geophysical, geotechnical, environmental, metocean campaigns. The objectives of the site investigations and marine surveys is to determine detailed site conditions including seafloor geology, metocean conditions and	Screened out of further assessment. The ABR2 Project will not involve any dumping at sea & is spatially separated from the proposed development, any in-combination pollutant effects would be reduced to a negligible level. Accordingly, likely significant in-combination effects on any nearby European Site with the ABR2 Project can be excluded. In any event, the application for these site investigation works has been withdrawn (as at 12th June 2025).

Dublin City Development Plan 2022-2028

The Appropriate Assessment Screening report and Natura Impact Report concluded the following:

"Implementation of the policies and objectives and proposed zonings could result in a number of potential impacts on the conservation objectives of those European site(s) including:

- Habitat Loss
- Habitat Degradation
- Disturbance and Displacement of Species."

"Thus in the assessment undertaken in the NIR, there are a total of 23 no. European sites located within the ZoI of the Plan for which a source pathway receptor linkage is identified. Four of these sites are located in the administrative boundary of DCC and in Dublin Bay: North Dublin Bay SAC, South Dublin Bay SAC, North Bull Island SPA and South Dublin Bay and River Tolka SPA.

All of these European sites are hydrologically connected to the Plan area via the following watercourses: Mayne River, Santry River, Naniken River, River Tolka, River Liffey, Royal Canal, Liffey Estuary Upper, Liffey Estuary Lower, Grand Canal, River Dodder, River Camac, River Poddle and the Brewery Stream. The remaining 19 sites (8 Special Areas of Conservation (SACs) and 11 Special Protection Areas (SPAs)) (Including the additional sites of Poulaphouca Reservoir SPA and The Murrough SPA, brought into consideration as part of the evolving NIR evaluation) are outside the DCC administrative boundary, but within the potential ZoI by virtue of:

- "Hydrological pathways; and use of ex-situ inland feeding sites by SCI winter bird species from European sites across the wider Dublin Area."

3FM – ABP Reg. Ref.PA29N.320250

The 3FM project has six key elements:

1) A new public road and bridge called the Southern Port Access Route (SPAR) to link the north and south port areas.
2) A new Lift-on Lift-off (Lo-Lo) container terminal with an annual throughput capacity of 550,000 Twenty-foot Equivalent Units (TEU) or 5.34 million tonnes. The Lo-Lo container terminal will consist of two main components:
3) Replacement of the existing Lo-Lo container terminal, currently operated by Marine Terminals Limited (MTL), with a new Roll-On Roll-Off (Ro-Ro) freight terminal with an annual throughput capacity of 360,000 Ro-Ro units or 8.69 million tonnes.
4) Provision of a 325 m diameter ship turning circle in the river channel north of Pigeon House Harbour, dredged to a depth of -10.0 m CD. The ship turning circle will enable safe navigation and efficient manoeuvring of vessels up to 240 m in length.
5) Development of a new Maritime Village at Pigeon House Road and Berth 41.
6) Community Gain - Integrating Dublin Port with Dublin City and its people is a core objective of the

Masterplan for Dublin Port.

An AASR was produced to support the 3FM application and impacts in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise & Disturbance were screened in for further assessment in the Stage 2 Natura Impact Statement. Following the implementation of mitigation in the Natura Impact Statement, all Likely Significant Effects were reduced to a negligible level and accordingly, it was concluded that there would not be any adverse effects on the integrity of the conservation objectives of any European sites due to the 3FM project.

The ABR2 Project has potential to cause Likely Significant Effects in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise and Disturbance. In circumstances where these particular impact pathways were screened in for 3FM, in the absence of consideration of the mitigation measures outlined in the 3FM projects, there is a potential pathway for likely significant effects to occur, in combination with the ABR2 Project.

MP2 Reg. Ref. ABP304888-19

The MP2 Project includes the following elements:

- Construction of a new Ro-Ro jetty (Berth 53) for ferries up to 240m in length
- A reorientation of the already consented Berth 52
- A lengthening of an existing river berth (50A) to provide the Container Freight Terminal with additional capacity to handle larger container ships.
- As part of the infilling of Oil Berth 4, it is proposed to redevelop Oil Berth 3 as a future deep-water container berth (standard depth of -13.0m CD) for the Container Freight Terminal.
- Dredging at the proposed Berth 53 and channel widening to a standard depth of -10.0m CD which is a proposed amendment to the channel dredging as permitted under the ABR Project
- Consolidation of passenger terminal buildings, demolition of redundant structures and buildings, and removal of connecting roads
- A heritage zone adjacent to Berth 53 and the Unified Ferry Terminal set down area

An AASR was produced to support the MP2 application and impacts in relation to Diminution of Water Quality and Habitat Deterioration, Aerial Noise & Visual Disturbance and Underwater Noise & Disturbance were scoped in for further assessment and mitigation in the Stage 2 Natura Impact Statement.

The Natura Impact Statement concluded that, following the implementation of mitigation measures, and:

> "*Having considered the further investigation and analysis, which is set out in the NIS, the competent authorities may conclude that there will be no adverse effects upon the integrity of any European site with the application of mitigation measures. Accordingly, the competent authorities may conclude, beyond reasonable scientific doubt, that the construction and operation of the MP2 Project will not adversely affect the integrity of any European site*"

The ABR2 Project has potential to cause Likely Significant Effects in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise and Disturbance. The measures mitigation proposed in respect of the MP2 projects cannot be considered at the screening stage, and as such there is a potential pathway for effects to occur, in combination with the ABR2 Project.

Dublin Harbour Capital Dredging Project – Reg. Ref. Foreshore Application FS007164/DAS Application S0033-01

The works proposed in the Dublin Harbour Capital Dredging Project comprise a number of elements: Deepening the navigation channel between North Wall Quay Extension and the Western Oil Jetty, including riverside Berth 35;

- Deepening of Alexandra Basin East and deepening/widening of berths;
- Deepening of the Oil Basin and widening of berths;
- Deepening of the Ferryport Basin;
- Deepening of riverside Berth 52;
- Widening the South Port (Berths 42 - 47) berths, and
- Removal of ridge between the navigation channel and the Poolbeg Oil Jetty (Berth 48

Stage 1 screening concluded that there may be Likely Significant Effects in relation to Water Quality & Habitat Deterioration and Underwater Noise & Disturbance. The Stage 2 Natura Impact Statement concluded the following:

> *"Having conducted further investigation and analysis and applied mitigation measures where necessary there will be no adverse effects upon the integrity of any European site and no scientific doubt remains as to the absence of such effects."*

The ABR2 Project has potential to cause Likely Significant Effects in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise and Disturbance. The measures outlined in Dublin Harbour Capital Dredging Project's NIS cannot be considered at the screening stage, and as such there is a potential pathway for effects to occur, in combination with the ABR2 Project.

Dublin Port Maintenance Dredging Programme 20222029 – Reg. Ref. FS007132 / DAS Permit S0004-03

Dublin Port Maintenance Dredging Programme proposed maintenance dredging in their navigation channel, basins and berths between 2022 and 2029.

Stage One Appropriate Assessment Screening concluded:

i) *"The possibility of likely significant Underwater Noise and Disturbance effects cannot be excluded for Lambay Island SAC or Rockabill to Dalkey Island SAC.*
ii) *The possibility of likely significant Water Quality and Habitat Deterioration effects on the intertidal areas of the Tolka Estuary cannot be excluded as a resource for the regularly occurring breeding and migratory waterbirds of South Dublin Bay & River Tolka Estuary SPA and migratory waterbirds of North Bull Island SPA that utilise it."*

The Stage 2 Natura Impact Statement concluded as follows:

> *"Having conducted further investigation and analysis, taken account of the scoping response to consultation from DCHG (Ref: G Pre00072/2020) and applied mitigation measures where*

necessary there will be no adverse effects upon the integrity of any European site and no scientific doubt remains as to the absence of such effects."

The ABR2 Project has potential to cause adverse Likely Significant Effects in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise and Disturbance. The measures outlined in Dublin Port Maintenance Dredging Programme's Stage 2 NIS cannot be considered at the screening stage, and as such there is a potential pathway for effects to occur, in combination with the ABR2 Project.

Development at the Ringsend Wastewater Treatment Plan. Reg. Ref. 5319/22 & Upgrade of the Ringsend Wastewater Treatment Plant (WwTP). Reg. Ref. PL29S.301798

Reg. Ref. 5319/22 is for a 10-year permission for development of the Ringsend wastewater treatment plant upgrade project including a regional biosolids storage facility.

Reg. Ref. PL29S.301798 seeks permission for works required to facilitate the use of Aerobic Granular Sludge (AGS) technology, to omit the previously permitted long sea outfall tunnel and to upgrade the sludge treatment facilities.

Key elements of the Ringsend Wastewater Treatment Plan include:

1 Provision of additional secondary treatment capacity with advanced nutrient reduction; (400,000 population equivalent)
2 Advanced Nutrient Removal (AGS Technology)
   - Installation and retrofit of Aerobic Granular Sludge (AGS) technology across new and existing tanks allows for high performance treatment in a compact footprint.
3 Phosphorus Recovery Facility
   - A new facility recovers phosphorus, producing struvite, a valuable EU recognised fertiliser. This supports circular economy objectives and is a key step in enabling Ringsend Wastewater Treatment Plant to achieve compliance with the Urban Wastewater Treatment Directive.
4 Expanded Sludge Treatment Facilities
   - Upgraded infrastructure increases energy generation on site, with 40–50% of the plant's energy now produced internally.

Works have completed on this project as at March 2026 and no ongoing construction is occurring.

The Stage 1 Appropriate Assessment Screening concluded that Likely Significant Effects could occur on:

- South Dublin Bay and River Tolka Estuary SPA
- South Dublin Bay SAC
- North Bull Island SPA
- North Dublin Bay SAC
- Howth Head Coast SPA
- Dalkey Islands SPA
- Rockabill to Dalkey Island SAC

The Stage 2 Natura Impact Statement concluded following the implementation of mitigation that:

- *"Water quality in Inner Dublin Bay will be enhanced because of a reduction in nutrient load once the proposed development is operational.*
- *it is unlikely that the food resource of waterbirds in the Tolka Estuary will be negatively affected*
- *reductions in nutrients in the receiving waters resulting from the proposed development will not have any impacts on fish populations in Dublin Bay*
- *disturbance and displacement of certain qualifying SPA feature species during construction may occur*
- *accidental spillage of hazardous substances resulting in water quality deterioration of the Liffey Channel and hydrologically connected areas during construction may occur*
- *significant dust deposition on the grasslands to the south of the site that form part of the South Dublin Bay and River Tolka Estuary SPA may occur"*

The ABR2 Project has potential to cause Likely Significant Effects in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise and Disturbance. However, construction of the Ringsend Road Wastewater Treatment Plan & Upgrade has concluded and any Diminution of Water Quality and Habitat Deterioration arising from construction has ceased. The ABR2 Project's operation and maintenance will be in line with existing port activities and does not offer any new pathways for operational water pollution to occur.

Therefore, there are no pathways for effects to occur, in-combination with the ABR2 Project or any other plans or projects.

Accordingly, likely significant effects from the ABR2 Project in combination with the Ringsend Road Wastewater Treatment Plan & Upgrade, on any European site, can be excluded.

Alexandra Basin & R&H Hall Silo Building Application Number 4585/23

The works proposed as part of Application 4585/23 include the following (summarised):

- Demolition and removal of existing quayside overhead bulk material conveyor system (2no. North/South and 1no. East/West), 2no. associated elevator/weighing towers, redundant transformer building and weighbridge and associated infrastructure to include site clearance of redundant walls, plinths and fences;
- Reinstatement of window opening to the R&H Hall Silo Building, a protected structure, following
- removal of the elevated conveyor system
- Relocation of existing rail line northwards to a safe zone set further back from the quayside
- Relocation of existing reefer gantries and 30m HML towers located at McCairn's Yard and provision of 2no. new reefer gantries;
- Quayside and yard pavement upgrades and reinforcement works and installation of new 30m HML towers;
- Construction of a new bulk product silo facility at McCairn's Yard, to include intake/outtake of bulk product from vessels to quayside storage and onward transport.
- Provision of a new substation c.2.97m in height (c.196sq.m); and;
- New access and egress onto Alexandra Road, provision of International Ship and Port Security (ISPS) fencing and gates to matching existing fencing

Stage 1 Appropriate Assessment screening concluded that there may be localized adverse effects in relation to Diminution of Water Quality and Wetland Habitat Deterioration arising from construction of the application.

The ABR2 Project has potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration.

Branch Road No. 1 Case reference: PL29N.319742

Application PL29N.319742 includes the following works: demolition of quayside infrastructure. Construction of bulk product intake/outtake, storage, and transport infrastructure with all associated site works.

The proposed works are currently ongoing and are located adjacent to the ABR2 Project. There is a risk of localised diminution of water quality arising from construction sediment or hydrocarbon pollution due to PL29N.319742 in the absence of mitigation measures.

The ABR2 Project has potential to cause adverse Likely Significant Effects in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise and Disturbance. The measures outlined in Dublin Port Maintenance Dredging Programme's Stage 2 Assessment designed to reduce these impact pathways to a negligible level cannot be considered at the screening stage, and as such there is a potential pathway for effects to occur, in combination with the ABR2 Project

Aviation Fuel Pipeline Case reference: PL29N.245738

Application PL29N.245738 (2552/15) includes for the following works:

Permission for development of an aviation fuel pipeline from Dublin Port, Dublin 1 to Dublin Airport, Co Dublin. The route of the pipeline is from proposed inlet station at Team CV Ltd, Bond Drive, Dublin Port, Dublin 1 and via Bond Drive, Tolka Quay Road, East Wall Road, under the Tolka River, Alfie Byrne Road, Clontarf Road, Howth

Road, Copeland Avenue, Malahide Road (R107) and R139 (formerly N32). (It then enters Fingal Co. Council administrative area at Clonshaugh Rd. and routes via AUL/FAI sports ground, under the M1 motorway via the DAA Long Term Red Carpark, adjacent to Eastlands Car Hire Compound, ALSAA complex, under the Swords Road R132 and via Corballis Road to a reception station at Dublin Airport, Co Dublin.

The development will consist of:

(a) single-storey Control Building, pumps and ancillary pipework in a fenced compound at Bond Drive, Dublin Port, Dublin 1.

(b) a 200mm diameter continuously welded steel pipeline, laid generally in the public road at a depth of circa 1.2m below surface level except where it will pass under the Tolka and Santry Rivers and culverted streams. The length of the pipeline in Dublin City Council administrative area will be circa 11.4 km (total length will be circa 14.4 km.)

(c) 2no. above-ground control boxes associated with emergency shut-down valves on the pipeline, at the junction of the Malahide Road R107 and Donnycarney Road and on the R139 (formerly N32) east of the junction with Clonshaugh Road South.

Construction of Application PL29N.245738 has been completed, therefore there are no pathways for in-combination construction related effects to occur either alone or in combination with any other plan/project. The pipeline possesses a robust operational phase leak detection and shutoff system, capable of preventing significant hydrocarbon release in the event of damage/leaks/other failure.

The ABR2 Project has potential to cause adverse Likely Significant Effects in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise and Disturbance. The measures outlined in Dublin Port Maintenance Dredging Programme's Stage 2 NIS cannot be considered at the screening stage, and as such there is a potential pathway for effects to occur, in combination with the ABR2 Project.

Terminal 4 North Land Application Number 4483/19

Application 4483/19 includes the following proposed works:

- Demolition of 10 no. redundant buildings (c. 6830sqm) and removal of temporary structures including portacabins and general site clearance (an existing substation and pump house will remain in situ) to optimise the use of the site as a multi-functional storage yard (primarily for heavy goods vehicles) and facilitate wider infrastructural upgrades to provide additional capacity within the Port.
- The proposed development will also include construction of vehicle check-in booths (c. 30sqm); an open-air blockwork electrical enclosure; amendments to boundary treatments including provision of 4m high security fencing (including 1.5m high retaining walls) on the northern, eastern and southern boundaries;
- 4m high security fencing fixed to the existing masonry wall along the western boundary with Bond Road; 3 no. new 12m wide automatic vehicular sliding gates and re-building of 1 no. existing 9m wide automatic vehicular sliding gate.

Appropriate Assessment Screening concluded that there was risk of diminution of water quality and habitat deterioration arising from sediment and hydrocarbon release during the construction & demolition works associated with application 4483/19. However, construction of the development authorised under application 4483/19 has completed and no further pathways for significant adverse impacts on nearby habitats are present.

Berth 49 Ramp & Approachway Application Number 3176/19

Application 3176/19 includes the following components:

- 189m long, c.10m wide approachway and ramp; 1 no. office and staff facilities building (c.193 sq.m and 7.7m in height); 1 no. control kiosk (c.6 sq.m and 2.3m in height); 1 no. control cabin (c.20 sq.m and 2.3m in height); new lighting (including 18 no. lighting columns 10m high); demolition of 5 no. existing staff facilities buildings with a combined area of c.329 sq.m; building 1 has an area of c.198 sq.m, building 2 has an area of c.10.7 sq.m, building 3 has an area of c.35.5 sq.m, building 4 has an area of c.42.4 sq.m, building 5 has an area of c.42.4 sq.m;
- 15 no. tug parking spaces, drainage, utility services, fencing 2.4m in height and pedestrian gate 2.4m in height on a site of approx. 1.3 hectares.
- Installation of new pavement, underground drainage, attenuation, interceptors, water services and electrical infrastructure; installation of new wash bay and fuel spill areas; installation of pedestrian barriers; and all associated site and development works on a site of c. 9.52ha.

A Stage 2 Natura Impact Statement concluded the following:

- *"A subsequent Stage Two appraisal (a NIS) of the implications of the proposed Quarter Deck Ramp project on the wetland habitat of the Tolka estuary used by breeding and non-breeding waterbird special conservation interest species of South Dublin Bay and River Tolka Estuary SPA, and non-breeding waterbird special conservation interest species of North Bull Island SPA European sites was undertaken to determine if the proposed development would adversely affect the integrity of the European sites concerned.*
- *Having conducted further investigation and analysis, there will be no adverse effects upon the integrity of any European site with the application of mitigation measures. The construction and operation of the proposed Quarter Deck Ramp will not adversely affect the integrity of any European site with the application of measures prescribed in Section 5.2 intended to avoid or reduce certain harmful effects of the proposed development on the European sites concerned. No reasonable scientific doubt remains as to the absence of such effects".*

The ABR2 Project has potential to cause adverse Likely Significant Effects in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise and Disturbance. The measures outlined in the projects Stage 2 Assessment designed to reduce these impact pathways to a negligible level cannot be considered at the screening stage, and as such there is a potential pathway for effects to occur, in combination with the ABR2 Project.

Kish and Bray Banks Case reference: OA06D.321992

Kish and Bray Banks Case reference: OA06D.321992 includes the following components:

- "*The proposed Dublin Array Offshore Wind Farm (Dublin Array) is located on the Kish and Bray Banks, approximately 10 km off the east coast of Ireland. The Kish and Bray Banks are located off the coast of counties Dublin and Wicklow. The project will include between 39 and 50 wind turbines, which will*

generate electricity from the wind. These turbines will be connected by subsea cables (called inter-array cables) to an offshore substation on a platform at sea.

- *The electricity from the offshore substation platform is brought to shore in two subsea electricity cables. Where the two subsea electricity cables come ashore is called the Landfall. The Landfall will be located at Shanganagh Cliffs, County Dublin. From the Landfall two underground electricity cable installations will bring the electricity to a new proposed substation at Carrickmines, Dublin 18.*
- *The electricity from this substation will be connected into the existing national electricity grid. The onshore transmission infrastructure works include a Landfall site at Shanganagh and an underground cable route leading to an Onshore Substation at Carrickmines. Additionally, there will be a centre for operations and maintenance at Dún Laoghaire Harbour, supporting both construction and long-term maintenance. The location of the proposed wind farm and its connection to the existing national electricity transmission grid at Carrickmines is shown in Figure 1 with a project overview shown in Figure 2. Further details on the project description are included in section 5."*

An Environmental Impact Assessment (EIA) was prepared to support the application. The following text has been taken from the Non Technical Summary document regarding marine mammals and water pollution:

a. "[..]mitigation measures such as a noise abatement system, pre-survey watches and controlled use of deterrent devices will reduce these risks; these measures have been detailed in a Marine Megafauna Mitigation Plan included in the EIAR."
b. "During operation, noise from wind turbines is predicted to be low and unlikely to disturb marine mammals."
c. "Short-term increases in suspended sediment were also expected, but these effects were predicted to be localised and temporary."
d. "Overall, it concluded that with the proposed mitigation measures, Dublin Array is unlikely to have significant long-term effects on marine mammals."

The ABR2 Project has potential to cause adverse Likely Significant Effects in relation to Diminution of Water Quality and Habitat Deterioration and Underwater Noise and Disturbance. The measures outlined in the Kish and Bray Banks Stage 2 Assessment designed to reduce these impact pathways to a negligible level cannot be considered at the screening stage, and as such there is a potential pathway for effects to occur, in combination with the ABR2 Project.

4.3 Screening Conclusion

The assessment at Stage One Screening has concluded that Likely Significant Effects on these European sites in relation to **Diminution of Water Quality and Habitat deterioration** and **Underwater Noise and Vibrational disturbance** in the absence of mitigation measures cannot be excluded at the screening stage, alone or in combination with other plans and projects, and therefore the Project must be subject to Stage Two Appropriate Assessment in relation to the following European sites:

- South Dublin Bay & River Tolka Estuary SPA,
- North-west Irish Sea SPA,
- North Bull Island SPA,
- South Dublin Bay SAC,

- Rockabill to Dalkey Island SAC,
- Howth Head SAC,
- Lambay Island SAC, and
- Codling Fault Zone SAC.

5.0 Stage Two: Natura Impact Statement

5.1 Introduction

Stage 2 Appropriate Assessment considers the impact of the Project (either alone or combination with other projects or plans) on the integrity of a European site with respect to the conservation objectives of the site and to its structure and function. Integrity of the site is defined as '*the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is… classified*' (EC 2000).

5.2 European Sites Conservation Objectives

Stage One Screening concluded Likely Significant Effects may occur on:

- South Dublin Bay & River Tolka Estuary SPA,
- North-west Irish Sea SPA,
- North Bull Island SPA,
- South Dublin Bay SAC,
- Rockabill to Dalkey Island SAC,
- Lambay Island SAC, and
- Codling Fault Zone SAC.

The potential effects of the Project on the site-specific conservation objectives of the seven no. European sites "screened in" for Appropriate Assessment are set out below.

South Dublin Bay & River Tolka Estuary SPA

Attribute	Measurements	Targets	Comments
To maintain the favourable conservation condition of the following bird species in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets: • **A046 Light Bellied Brent Goose *Branta bernicla hrota*** • **A130 Oystercatcher H*aematopus ostralegus*** • **A137 Ringed Plover *Charadrius hiaticula*** • **A143 Knot *Calidris canutus*** • **A144 Sanderling *Calidris alba*** • **A149 Dunlin Calidris alpina alpina** • **A157 Bar-tailed *Godwit Limosa lapponica*** • **A162 Redshank *Tringa totanus*** • **A179 Black-headed Gull *Chroicocephalus ridibundus***			
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends for this European site are presented in Part 4 of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by light-bellied brent goose, other than that occurring from natural patterns of variation	Waterbird distribution for this particular European site is considered in Part 5 of the conservation objectives supporting document

Attribute	Measurements	Targets	Comments
To maintain the favourable conservation condition of the following species in South Dublin Bay and River Tolka Estuary SPA, which is defined by the following list of attributes and targets: • **A192 Roseate Tern *Sterna dougallii*** • **A193 Common Tern *Sterna hirundo*** • **A194 Arctic Tern *Sterna paradisaea***			
Passage population: individuals	Number	No Significant Decline	Evening surveys of roosting terns in South Dublin Bay and River Tolka Estuary SPA confirm the conservation importance of the south Dublin Bay area during the post-breeding/pre-migration period. Up to 11,700, 9,025 and 8,020 terns were recorded in 2006, 2007 and 2010 respectively. Given the counting conditions (i.e. low light levels and long distance recording) it was rarely possible to identify the terns to species level but the majority of the birds appear to have been common terns (Sterna hirundo), with smaller numbers of Arctic and roseate terns (S. paradisaea, S. dougallii) (sandwich, little and black terns (S. sandvicensis, S. albifrons, Chlidonias niger) were also recorded) (Merne et al., 2008; Merne 2010). At least 645 roseate tern have been recorded here during the aforementioned survey years. This estimate does not factor in turnover rates and therefore the total number of roseate tern using this SPA may be significantly higher
Distribution: roosting areas	Number; location; area (hectares)	No significant decline	Merne et al. (2008) describe the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Terns have been occasionally recorded outside of this area on adjacent sandflats extending to Irishtown/South Bull Wall and to Blackrock but these birds eventually join the birds roosting in the main area (Merne et al., 2008)
Prey biomass available	Kilogrammes	No significant decline	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season, roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small, schooling marine fish, very rarely small crustaceans. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater

Attribute	Measurements	Targets	Comments
Barriers to connectivity	Number; location; shape; area (hectares)	No significant decline	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of roseate tern among the post-breeding aggregation of terns	Merne et al. (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al., 2008; Merne, 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing
Prey biomass available	Kilogrammes	No significant decline	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area, but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season, roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key prey items: Small, schooling marine fish, very rarely small crustaceans. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater

Attribute	Measurements	Targets	Comments
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	Terns associated with the roost are thought to feed during the day in the wider Dublin Bay area but direct survey evidence is incomplete. Evening observations of terns arriving to the roosting area indicated that most flew in from an easterly and southeasterly direction leading the authors to suggest they were feeding in the shallow waters of the Kish/Bray and Burford Banks (Merne et al., 2008). During the breeding season roseate terns can make extensive use of marine waters adjacent to their breeding colonies. Key habitats: roseate tern forage in/over shallow and upwelling areas, including tide rips and shoals and over sandy bottoms. Foraging range: max. 30km, mean max. 18.28km, mean 12.3km (Birdlife International, 2014). As these foraging range estimates relate to birds during the breeding season, the distances between post-breeding roost sites and feeding areas may be greater
Disturbance at roosting site	Level of impact	Human activities should occur at levels that do not adversely affect the numbers of roseate tern among the post-breeding aggregation of terns	Merne et al. (2008) describes the main roosting area as the exposed sand banks in south Dublin Bay primarily between the Martello Towers at Sandymount (319524, 232021) and Williamstown (320796, 229979). Although principally used as a night roost, birds begin to roost at least one hour before sunset during the period July - September with peak activity occurring between mid-August and mid-September (Merne et al., 2008; Merne, 2010). Merne (2010) recorded significant disturbance events to the roosting terns caused by people with dogs off the leash and kite surfing
To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it. This is defined by the following attribute and targets: • **A999 Wetland**			
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,192 hectares, other than that occurring from natural patterns of variation. See map 3.	The wetland habitat area for this particular European site was estimated as 2,192ha using OSI data and relevant orthophotographs. For further information see Part 3 of the conservation objectives supporting document

North-west Irish Sea SPA

Attribute	Measurements	Targets	Comments
To maintain the favourable conservation condition of the following species at North-west Irish Sea SPA, which is defined by the following list of attributes and targets • **Red-throated Diver *Gavia stellata [A001]*** • **Great Northern Diver *Gavia immer [A003]***			
Non-breeding population size	Number	No significant decline	• **Red-throated Diver *Gavia stellata* [A001]** North-west Irish Sea SPA provides essential resources for adjacent seabird colonies. Red throated diver is a Special Conservation Interest (SCI) for this site. During the non-breeding period divers (primarily great northern and red-throated divers) in the western Irish Sea are known to concentrate in the shallower coastal areas, with a clear preference for waters of 5-20m (Jessopp et al., 2018). One series of surveys focused on waters off Gormanstown, which overlaps with this SPA, found that the numbers of red-throated diver peaked in the February survey and estimated the population to be 2,140 (±95% confidence interval of 1,429 – 2,957) individuals (HiDef, 2019); the North-west Irish Sea SPA overlaps with this area. A population of 827 individuals was estimated based on December 29th 2019 HiDef data (NPWS unpublished data analysis). Red-throated diver can be quite mobile and it is likely that there is interchange between the designated (e.g. Dundalk Bay SPA) and undesignated waters. • **Great Northern Diver *Gavia immer* [A003]** During the non-breeding period divers (primarily great northern diver and red-throated diver (Gavia stellata)) in the western Irish Sea are known to concentrate in the shallower coastal areas, with a clear preference for waters of 5-20m (Jessopp et al., 2018). One series of surveys focused on waters off Gormanstown, which overlaps with this SPA, found that the numbers of great northern diver peaked in the March survey and estimated the population to be 1,279 (±95% confidence interval of 676 – 2,084) individuals (HiDef, 2019); the North-west Irish Sea SPA overlaps with this area. A population of 176 individuals was estimated based on December 29th 2019 HiDef data (NPWS unpublished data analysis). Great northern diver can be quite mobile and it is likely that there is interchange between the designated (e.g. Dundalk Bay SPA) and undesignated waters

Attribute	Measurements	Targets	Comments
Spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population	Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas may vary throughout the season. This will affect the spatio temporal patterns of use of the habitats by the non breeding population
Forage spatial distribution, extent and abundance	Location and hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	• **Red-throated Diver *Gavia stellata* [A001]** The diet of this piscivorous diver is poorly known outside of the breeding season but one study from the German Bight indicates that red-throated diver is a generalist opportunistic feeder but pelagic schooling fish that have a high energetic value might be favoured (Kleinschmidt et al., 2019) • **Great Northern Diver *Gavia immer* [A003]** Largely piscivorous, foraging over the benthos as well as throughout the water column, but will also frequently eat marine invertebrates
Disturbance across the site	Intensity, frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution	The impact of any significant disturbance (direct or indirect) to the non-breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of over-winter mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution

Attribute	Measurements	Targets	Comments
Barriers to connectivity and site use	Number; location; shape;area (hectares)	The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA	Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the non-breeding population, and it may require access to other SPAs or undesignated sites for certain activities, such as additional foraging when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors
To restore the favourable conservation condition of fulmar in North-west Irish Sea SPA, which is defined by the following list of attributes and targets: **Fulmar *Fulmarus glacialis* [A009]**			
Population Size	Number	Long term SPA population trend is stable or increasing	Fulmar is present within the SPA throughout the year. Breeding fulmar is a SCI of Lambay Island SPA (004069), which declined by 36% over the period 1999-2015 to 375 pairs (Mitchell et al., 2000; and Cummins et al., 2019). These birds exploit the marine waters of the North-west Irish Sea SPA during the breeding season. As fulmar can range large distances from their nest sites during the breeding season it is likely that the North-west Irish Sea SPA does not contain all relevant foraging resources for the Lambay Island SPA breeding population (Power et al., 2021). Fulmar breeding at other colonies and non-breeding individuals may also use the North-west Irish Sea SPA during the breeding period. Fulmar winter at sea and Jessopp et al. (2018) showed a broad distribution in the winter survey. Based on Jessopp et al. (2018) data for summer, autumn and winter surveys of the western Irish Sea an estimated 214, 11,260 and 506 individuals occurred in the SPA respectively

Attribute	Measurements	Targets	Comments
Spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population	Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary through time. This will affect the spatio-temporal patterns of use of the habitats by fulmar. Jessopp et al. (2018) recorded fulmar throughout the western Irish Sea survey area showing a clear preference for deeper waters; a high aggregation was noted in the eastern half of the North-west Irish Sea SPA during the autumn survey. Based on several studies, Woodward et al. (2019) estimates (i.e. overall mean; mean of maximum distances across all studies; and maximum distance recorded) of fulmar foraging ranges from the nest site during the breeding season, which are 135; 542; and 2,736km respectively (see Power et al., 2021)
Forage spatial distribution, extent, abundance and availability	Location and hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	The colonisation of Ireland and Britain by fulmar over the last two centuries has been largely attributed to their close association with fisheries, but contemporary dietary studies indicate they also feed on a wide variety of prey including sandeels, crustaceans and squid (Philips et al., 1999)
Disturbance across the site	Intensity,frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution	The impact of any significant disturbance (direct or indirect) to the population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non site-specific maintenance behaviours as defined in McSorley et al. (2003). Studies in the UK found the highest densities of fulmar performing these behaviours occurred within 2km of the breeding colony (McSorley et al., 2005)

Attribute	Measurements	Targets	Comments
Barriers to connectivity	Number; location; shape; area (hectares)	The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA	Fulmar require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors

To maintain the favourable conservation condition of the following species in North-west Irish Sea SPA, which is defined by the following list of attributes and targets

- **Manx Shearwater *Puffinus puffinus* [A013]**
- **Cormorant *Phalacrocorax carbo* [A017]**
- **Shag *Phalacrocorax aristotelis* [A018]**
- **Common Scoter *Melanitta nigra* [A065]**
- **Black-headed Gull *Chroicocephalus ridibundus* [A179]**
- **Common Gull *Larus canus* [A182]**
- **Lesser Black-backed Gull *Larus fuscus* [A183]**
- **Herring Gull *Larus argentatus* [A184]**
- **Great Black-backed Gull *Larus marinus* [A187]**
- **Kittiwake *Rissa tridactyla* [A188]**
- **Roseate Tern *Sterna dougallii* [A192]**
- **Common Tern *Sterna hirundo* [A193]**
- **Arctic Tern *Sterna paradisaea* [A194]**
- **Little Tern *Sterna albifrons* [A195]**
- **Guillemot *Uria aalge* [A199]**
- **Razorbill *Alca torda* [A200]**

Attribute	Measurements	Targets	Comments
Puffin *Fratercula arctica* [A204] **Little Gull *Hydrocoloeus minutus* [A862]**			
Breeding population size	Number	No significant decline • **Manx Shearwater *Puffinus puffinus* [A013]** • **Common Scoter *Melanitta nigra* [A065]** • **Common Gull *Larus canus* [A182]** • **Lesser Black-backed Gull Larus fuscus [A183]** • **Herring Gull Larus argentatus [A184]** • **Great Black-backed Gull Larus** • **marinus [A187]** • **Common Tern Sterna hirundo [A193]** • **Little Tern Sterna albifrons [A195]** • **Arctic Tern Sterna paradisaea [A194]** • **Guillemot Uria aalge [A199]** • **Razorbill Alca torda [A200]** • **Little Gull**	• **Manx Shearwater *Puffinus puffinus* [A013]** Dean et al. (2015) identifies an area of marine waters near the Irish Sea front and the stratified waters of the western Irish Sea as being an important foraging resource for manx shearwater breeding in several colonies located around the periphery of the Irish Sea; the North-west Irish Sea SPA overlaps with this area. One summer aerial survey, conducted in 2016, estimated 13,010 individual manx shearwater within the SPA (Jessopp et al., 2018, NPWS unpublished data analysis). A follow up survey in September 2016 provides an estimate of 457 individuals occurring in the SPA • **Cormorant Phalacrocorax carbo [A017]** Breeding cormorant is a SCI of Lambay Island SPA (004069), Ireland's Eye SPA (004117) and Skerries Islands SPA (004122). These breeding populations exploit the North-west Irish Sea SPA to varying degrees. Trend analysis over the period 1999-2015 show that the estimated population of Lambay Island decreased by 58% to 282 and the Ireland's Eye population is estimated to have increased by 39% to 424. Limited recent data exists for the Skerries Island SPA population but a minimum count of 125 in 2022 indicated that the population has decreased by 78% since 1999 (NPWS unpublished data). As cormorant can range some distance from their nest sites during the breeding season it is likely that the North-west Irish Sea SPA does not contain all relevant foraging resources for the populations of the aforementioned SPAs (Power et al., 2021). Conversely, cormorant breeding at other colonies and non-breeding individuals may also use the North-west Irish Sea SPA during the breeding period • **Shag Phalacrocorax aristotelis [A018]** Breeding shag is a SCI of Lambay Island SPA (004069) and Skerries Islands SPA (004122). These breeding populations exploit, to varying degrees, the adjacent marine waters of this SPA. 2015 survey results show that the estimated population of Lambay Island decreased by 58% to 469 pairs since 1999 (Cummins et al., 2019). Limited recent data exists for the Skerries Island SPA population but it is estimated that only a small number (((<5 pairs) may persist from an estimated population of 100 pairs in 1999 (Mitchell et al., 2000; Cummins et al., 2019). As shag can range some distances from their nest sites during the breeding season it is likely that the North-west Irish Sea does not contain all relevant foraging resources for the populations of the aforementioned SPAs (Baer and Newton, 2012; Moss et al., 2016;

Attribute	Measurements	Targets	Comments
		Hydrocoloeus minutus [A862] Long term population trend within the SPA is stable or increasing • **Cormorant Phalacrocorax carbo [A017]** • **Shag Phalacrocorax aristotelis [A018]** • **Kittiwake Rissa tridactyla [A188]** • **Puffin Fratercula arctica [A204]**	Woodward et al., 2019). Conversely shag, breeding at other colonies and non-breeding individuals will use the North-west Irish Sea SPA during the breeding period. • **A065 Common Scoter Melanitta nigra** Common scoter utilise the shallow nearshore coastal waters of the wider North-west Irish sea region across the non-breeding period (Jessopp et al., 2018). One series of surveys focused on waters off Gormanstown, which overlaps with this SPA, found that the numbers of common scoter peaked in the second part of December and estimated the population to be 14,612 (±95% confidence interval of 1,038 – 39,694) individuals (HiDef, 2019); the North-west Irish Sea SPA overlaps with this area. A population of 14,567 individuals was estimated based on December 29th 2019 HiDef data (NPWS unpublished data analysis). Common scoter flocks can be quite mobile and it is likely that there is interchange between the designated (e.g. Dundalk Bay SPA (004026)) and undesignated waters • **Black-headed Gull Chroicocephalus ridibundus [A179]** Jessopp et al. (2018) undertook surveys across the western Irish Sea during summer, autumn and winter with black-headed gull occurring in all three seasons. Jessopp et al. (2018) noted that there was no association between black-headed gull and ocean depth profile. Based on Jessopp et al. (2018) it is estimated that 508 individuals occurred in the SPA in winter (NPWS unpublished data analysis). Non breeding black-headed gull are a SCI for Dundalk Bay SPA (004026) and North Bull Island SPA (004006) • **Common Gull Larus canus [A182]** Jessopp et al. (2018) undertook aerial surveys during summer, autumn and winter of the western Irish Sea in 2016. Common and herring gulls could not be differentiated and were grouped together for the purposes of analysis. However, winter aerial surveys conducted by HiDef in a similar area did differentiate between species and indicates that while common gull numbers are significant in the winter herring gull (Larus argentatus) is the more abundant species. Based on Jessopp et al. (2018) and using HiDef to approximate the proportion of individual species populations it is estimated that 2,866 common gull individuals occurred in the SPA in the winter (NPWS unpublished data analysis). Non-breeding common gull is a SCI for Dundalk Bay SPA (004026) • **Lesser Black-backed Gull Larus fuscus [A183]** Breeding lesser black-backed gull is a SCI of Lambay Island SPA. This population exploits the surrounding marine waters of North-west Irish Sea SPA during the breeding season. The breeding lesser black backed gull population is estimated to have increased by 12% over the period 1999-2015 from 309 to 345 pairs (Mitchell et al., 2000; NPWS unpublished data). As

Attribute	Measurements	Targets	Comments
			lesser black-backed gull can range large distances from their nest sites during the breeding season it is likely that the North-west Irish Sea SPA does not contain all relevant foraging resources for the Lambay Island SPA breeding population (Moss et al., 2016; Power et al., 2021; Woodward et al., 2019). Conversely lesser black backed gull, breeding at other colonies and non breeding individuals will use the North-west Irish Sea SPA during the breeding period • **Herring Gull Larus argentatus [A184]** Herring gull is present within the North-west Irish Sea SPA throughout the year. Breeding herring gull is a SCI for Lambay Island, Ireland's Eye and Skerries Islands SPAs. Over the period 1999-2015, the herring gull breeding population are estimated to have decreased by 50% to 906 pairs at Lambay and increased by 29% to 318 pairs on Ireland's Eye (Cummins et al., 2019). The population was estimated to be 300 pairs in 1999. As herring gull can range large distances from their nest sites during the breeding season it is likely that this SPA does not contain all relevant foraging resources for the aforementioned SPAs' breeding populations (Power et al., 2021). Herring gull, breeding at other colonies and non-breeding individuals will use the North-west Irish Sea SPA during the breeding period. Based on survey data of Jessopp et al. (2018) and by HiDef (2019) it is estimated that 6,893 herring gull individuals occurred in the SPA in the winter • **Great Black-backed Gull Larus marinus [A187]** Jessopp et al. (2018) undertook an aerial survey of the western Irish Sea in 2016. Not all sightings of great black-backed gulls and lesser black-backed gulls (Larus fuscus) could be differentiated and were grouped together for the purposes of analysis. However, winter aerial surveys conducted by HiDef (2019) in a similar area did differentiate between species and indicates that great black-backed gull was significantly more abundant than lesser black backed gull in the winter. Based on Jessopp et al. (2018) and using HiDef to approximate the proportion of individual species populations it is estimated that 2,096 great black-backed gull individuals occurred in the SPA in the winter (NPWS unpublished analysis) • **Kittiwake Rissa tridactyla [A188]** Kittiwake is present within the North-west Irish Sea SPA throughout the year. Breeding kittiwake is a SCI for Lambay Island (004069), Howth Head (004113) and Ireland's Eye (004117) SPAs; all of which declined over the period 1999-2015 (19% to 3,320 pairs; 22% to 1,773 pairs; 52% to 455 pairs respectively) (Cummins et al., 2019). It is likely that this SPA does not contain all relevant foraging resources for all of the aforementioned SPAs (Baer and Newton, 2012; Moss et al., 2016; Power et al., 2021). Conversely kittiwake, breeding at other colonies and non-breeding individuals may use the North-west Irish Sea SPA during the breeding period. Based on Jessopp et al. (2018) data

Attribute	Measurements	Targets	Comments
			for summer, autumn and winter surveys of the western Irish Sea 1,632, 2,858, and 944 individuals are estimated to have occurred in the SPA, respectively • **Roseate Tern Sterna dougallii [A192]** Breeding roseate tern is also a SCI of Rockabill SPA. Since 1995 the Rockabill population has increased by 231% to 1,834 pairs (Allbrook et al., 2022; Hannon et al., 1997). Studies indicate that the waters of Rockabill SPA and the North-west Irish Sea SPA contain the majority of the foraging habitat for the Rockabill population (Power et al., 2022; Harwood et al., 2019; Power et al., 2021). At the latter stages of breeding season, and prior to migration, tern species can form large aggregations at terrestrial and intertidal roost sites along the coast (Burke et al., 2020). Notable concentrations have been recorded at South Dublin Bay and River Tolka Estuary SPA (004024) and Dalkey Islands SPA (004172) and are a SCI for these SPAs. More recent work has identified further areas along the east coast (Burke et al., 2020) • **Common Tern Sterna hirundo [A193]** Breeding common tern is also a SCI of two other SPAs. Between 1995-2022 the populations has increased by 328% to 1,503 pairs at Rockabill SPA (004014) and by 45% to 138 on the ESB Dolphin nesting platform (part of South Dublin and River Tolka Estuary SPA (004024)) by 45% to 138 pairs with a further 417 pairs located nearby on two structures outside of the SPA (Boland et al., 2022). Common tern can range up to 30km from nest sites it is likely that Rockabill SPA and the North-west Irish Sea SPA contain the majority of foraging habitat for the Rockabill population but a significantly lesser proportion for the Dublin Port colony (Power et al., 2021). Towards the end of the breeding season, and prior to migration, tern species form large aggregations at roost sites along the coast (Burke et al., 2020). Notable concentrations have been recorded at South Dublin Bay and River Tolka Estuary SPA and Dalkey Islands SPA (004172) and common tern is listed as an SCI for these SPAs • **Arctic Tern Sterna paradisaea [A194]** Breeding Arctic tern is a SCI for Rockabill SPA (004014). Population size at Rockabill has fluctuated over the years. However, the population size in 2022 (estimate of 49 - 60 pairs), was similar to that in 1995 (49 pairs) (Allbrook et al., 2022; Hannon et al., 1997). Arctic tern can range up to 46km from their nest sites during the breeding season, so it is likely that Rockabill SPA and the North-west Irish Sea SPA contain the majority of the foraging habitat for this population (Power et al., 2021; Woodward et al., 2019). Towards the end of the breeding season, and prior to migration, tern species form large aggregations at roost sites along the coast (Burke et al., 2020). Notable concentrations have been recorded at South Dublin Bay and River Tolka Estuary SPA (004024) and Dalkey Islands SPA (004172) and Arctic tern is listed as an SCI for these SPAs

Attribute	Measurements	Targets	Comments
			• **Little Tern Sterna albifrons [A195]** Breeding little tern is a SCI of Boyne Estuary SPA (004080). Population size at Baltray, Co. Louth has fluctuated over the years but the 2022 estimate of 84 pairs represents an increase of some 500% from the 1995 All-Ireland Tern Survey (Moënner and Hartigan, 2022; Hannon et al., 1997). The foraging range of breeding little tern from the colony is relatively small and therefore it is likely that all feeding resources for this colony during the breeding season are included within the Boyne Estuary SPA and North-west Irish Sea SPA (Woodward et al., 2019; Power et al., 2021; Power et al., 2022). However there is likely to be interchange of birds from other colonies around the Irish Sea during the breeding season and on passage • **Guillemot Uria aalge [A199]** Guillemot occur in the SPA throughout the year. Breeding guillemot is a SCI of Lambay Island and Ireland's Eye SPAs. From 1999-2015, individual population estimates at Lambay of 59,983 remained stable (-1%), and Ireland's Eye increased by 101% to 4,410 (Cummins et al., 2019). These birds exploit this SPA during the breeding season. As birds can range large distances from the colony during the breeding season it is likely that this SPA does not contain all relevant foraging resources for these populations (Baer and Newton, 2012; Power et al., 2021). Guillemot from other colonies and non breeding individuals may also use this SPA during the breeding period. Jessopp et al. (2018) undertook summer, autumn and winter surveys of the western Irish Sea; razorbill (Alca torda) and guillemot were categorised together. Based on this 18,621, 93,191, and 18,553 individuals are estimated to have occurred in the SPA respectively; it is likely that guillemot formed the majority of these • **Razorbill Alca torda [A200]** Razorbill occur in the SPA throughout the year. Breeding razorbill is a SCI of Lambay Island and Ireland's Eye SPAs. From 1999-2015, individual population estimates at Lambay of 7,353 increased by 70%, and Ireland's Eye increased by 207% to 1,600 (Cummins et al., 2019). These birds exploit this SPA during the breeding season. As birds can range large distances from the colony during the breeding season it is likely that this SPA does not contain all relevant foraging resources for these populations (Baer and Newton, 2012; Power et al., 2021). Razorbill from other colonies and non breeding individuals may use this SPA during the breeding period. Jessopp et al. (2018) undertook summer, autumn and winter surveys of the western Irish Sea; razorbill and guillemot were categorised together. Based on this 18,621, 93,191, and 18,553 individuals are estimated to have occurred in the SPA respectively; it is likely that razorbill formed a significant minority of these • **Puffin *Fratercula arctica* [A204]** Breeding puffin is also a SCI of Lambay Island SPA (004069). This breeding population

Attribute	Measurements	Targets	Comments
			exploits the surrounding marine waters of North-west Irish Sea SPA during the breeding season. The breeding puffin population is estimated to have declined by 68% over the period 1999-2015 from 265 to 158 individuals (Mitchell et al., 2000; NPWS unpublished data). As puffin can range large distances from their nest sites during the breeding season it is likely that the North-west Irish Sea does not contain all relevant foraging resources for the Lambay Island SPA breeding population (Power et al., 2021). Also conversely non-breeding individuals will use the North-west Irish Sea SPA during the breeding period • **Little Gull *Hydrocoloeus minutus* [A862]** Jessopp et al. (2018) noted that little gull occurred over a wide range of depths across the western Irish Sea, although there were no sightings over waters deeper than 80m. Based on Jessopp et al. (2018) it is estimated that 391 individuals occurred in the SPA area in winter (NPWS unpublished data analysis)
Spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population	• **Common Scoter Melanitta nigra [A065]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas may vary throughout the season. This will affect the spatio temporal patterns of use of the habitats by the non breeding population • **Black-headed Gull Chroicocephalus ridibundus [A179]** • **Common Gull Larus canus [A182]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas may vary throughout the season. This will affect the spatio temporal patterns of use of the habitats by the non breeding population. HiDef aerial surveys (2018, 2019) were conducted from December to March and the survey area overlaps with the SPA. Peak observations of this species were recorded in the second December survey and concentrations were mainly in coastal habitats • **Lesser Black-backed Gull Larus fuscus [A183]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary through time. This will affect the spatio-temporal patterns of use of the habitats by lesser black-backed gull. Sightings of black-backed gulls by Jessopp et al. (2018) were normally of single individuals with some larger groups observed. Black-backed gulls showed no clear water depth

Attribute	Measurements	Targets	Comments
			preference although relatively more observations of lesser black-backed gulls occurred over shallower depths • **Herring Gull *Larus argentatus* [A184]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary throughout the season. This will affect the spatio-temporal patterns of use of the habitats by herring gull. Jessopp et al. (2018) survey of the western Irish Sea did not distinguish between common gull and herring gull – these gulls occurred across the range of available water depths in the survey area but more observations were noted in depths less than 50m. Winter HiDef aerial surveys (2018, 2019) were conducted from December to March and the survey area overlaps with the SPA. This survey showed that herring gull was mainly concentrated along the coast south of Dundalk Bay • **Great Black-backed Gull *Larus marinus* [A187]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the wintering population and its availability for use. The suitability and availability of habitat areas may vary throughout the season. This will affect the spatio temporal patterns of use of the habitats by the non breeding population. Sightings of black-backed gulls by Jessopp et al. (2018) were normally of single individuals with some larger groups observed. HiDef aerial surveys (2018, 2019) were conducted from December to March and the survey area overlaps with the SPA. Peak observations for great black backed gull were recorded in early December, the spatial distribution was varied in surveys in December and January but more concentrated in the north of the survey area in February and March • **Manx Shearwater Puffinus puffinus [A013]** Jessopp et al. (2018) noted that particularly during the summer survey manx shearwater were sighted throughout the survey area, but were not observed in the nearshore waters, instead generally being recorded at least 4km from the shore. Manx shearwaters had a clear preference for deeper waters in the survey area, with a marked absence of this species over shallow areas and sandbars with less than 20m water depth • **Cormorant Phalacrocorax carbo [A017]** . Aerial surveys of the western Irish Sea (Jessopp et al., 2018) did not differentiate shag (Phalacrocorax aristotelis) and cormorant by eye and they were grouped together. There was a

Attribute	Measurements	Targets	Comments
			clear peak in the distribution of sightings over water depths around 10m indicating a preference for shallow waters, with very few observations occurring over water depths in excess of 20m • **Shag *Phalacrocorax aristotelis* [A018]** Aerial surveys of the western Irish Sea (Jessopp et al., 2018) did not differentiate shag and cormorant by eye and they were grouped together. There was a clear peak in the distribution of sightings over water depths around 10m indicating a preference for shallow waters, with very few observations occurring over water depths in excess of 20m. Baer and Newton (2012) and Moss et al. (2016) provide telemetry based foraging information of this species relevant to this particular area • **Kittiwake *Rissa tridactyla* [A188]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary through time. This will affect the spatio-temporal patterns of use of the habitats by kittiwake. Jessopp et al. (2018) noted that sightings occurred throughout the western Irish Sea survey area, however, there was a distinct change in the distribution of sightings between the summer breeding season and the subsequent autumn and winter periods. In contrast to other gull species, and in all three seasons, areas of high sightings density occurred some distance from the coast. Based on several studies, Woodward et al. (2019) provides estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for kittiwake, which are 55km, 156km, and 770km respectively (see Power et al., 2021) • **Roseate Tern *Sterna dougallii* [A192]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary through time. This will affect the spatio-temporal patterns of use of the habitats by roseate tern. Boat based, visual tracking of roseate terns nesting on Rockabill showed terns feeding immediately around Rockabill Island, along coastal areas of north County Dublin, Louth and Meath as well as coastal areas from Skerries (immediately west of Rockabill Island) south to Donabate. Additionally, during the fledging period roseate terns foraged in deeper water offshore, immediately east of the colony (Harwood et al., 2019; Power et al., 2022)

Attribute	Measurements	Targets	Comments
			• **Common Tern *Sterna hirundo* [A193]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary through time. This will affect the spatio-temporal patterns of use of the habitats by common tern. Aerial surveys of the western Irish Sea (Jessopp et al., 2018) did not differentiate common and Arctic tern by eye and they were grouped together. While sightings occurred across a large range of sea depths, they occurred more frequently over shallow areas of sea in the central transects of the survey area during the summer breeding season, with some sightings also concentrated further south • **Arctic Tern *Sterna paradisaea* [A194]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary through time. This will affect the spatio-temporal patterns of use of the habitats by Arctic tern. Aerial surveys of the western Irish Sea (Jessopp et al., 2018) did not differentiate common and Arctic tern by eye and so they were grouped together. While sightings occurred across a large range of sea depths, they occurred more frequently over shallow areas of sea in the central transects of the survey area during the summer breeding season, with some sightings also concentrated further south • **Little Tern *Sterna albifrons* [A195]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary through time. This will affect the spatio-temporal patterns of use of the habitats by little tern. Breeding birds forage over marine and brackish waters quite close. (<5km) to the colony. • **Guillemot *Uria aalge* [A199]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat may vary through time. This will affect the spatio-temporal patterns of use of the habitats by the guillemot. Jessopp et al. (2018) noted that during the summer, guillemot/razorbill sightings concentrated around the central transect lines, while during autumn surveys, large numbers of sightings occurred in the northernmost transects. There was no obvious association between the occurrence of

Attribute	Measurements	Targets	Comments
			razorbills/guillemots and bathymetric features. HiDef (2019) undertook surveys off Gormanstown and noted that most areas were used regularly by guillemot, but were present at the highest density in the east of the study area. Woodward et al. (2019) provides estimates (i.e. mean, mean of max distances across all studies, and max distance) of guillemot movements from the colony, which are 33, 73, and 338km respectively • **Razorbill *Alca torda* [A200]** Razorbill occur in the SPA throughout the year. Breeding razorbill is a SCI of Lambay Island and Ireland's Eye SPAs. From 1999-2015, individual population estimates at Lambay of 7,353 increased by 70%, and Ireland's Eye increased by 207% to 1,600 (Cummins et al., 2019). These birds exploit this SPA during the breeding season. As birds can range large distances from the colony during the breeding season it is likely that this SPA does not contain all relevant foraging resources for these populations (Baer and Newton, 2012; Power et al., 2021). Razorbill from other colonies and non breeding individuals may use this SPA during the breeding period. Jessopp et al. (2018) undertook summer, autumn and winter surveys of the western Irish Sea; razorbill and guillemot were categorised together. Based on this 18,621, 93,191, and 18,553 individuals are estimated to have occurred in the SPA respectively; it is likely that razorbill formed a significant minority of these • **Puffin *Fratercula arctica* [A204]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the population and its availability for use. The suitability and availability of habitat areas may vary through time. This will affect the spatio-temporal patterns of use of the habitats by puffin • **Little Gull *Hydrocoloeus minutus* [A862]** Distribution encapsulates the number of locations and area of potentially suitable habitat for the non breeding population and its availability for use. The suitability and availability of habitat areas may vary throughout the season. This will affect the spatio temporal patterns of use of the habitats by the non breeding population

Attribute	Measurements	Targets	Comments
Forage spatial distribution, extent, abundance and availability	Location and hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	• **Manx Shearwater *Puffinus puffinus* [A013]** Primarily clupeiform fish during the chick-rearing period; outside of this period, squid and other marine invertebrates may form a larger part of the Manx Shearwater's diet (Brooke, 1990). • **Cormorant *Phalacrocorax carbo* [A017]** The cormorant's diet consists predominantly of small benthic and pelagic fish, which are captured by pursuit diving, typically over shallow (<10 m) freshwater, estuarine and marine environments. • **Shag *Phalacrocorax aristotelis* [A018]** The diet of shag is almost exclusively fish, taken chiefly near the seabed or at intermediate depths, and principally of the families Ammodytidae (sandeels), Gadidae, Clupeidae, Cottidae and Labridae, but a wide range of species are taken, perhaps opportunistically. • **Common Scoter *Melanitta nigra* [A065]** Common scoter is a diving duck that feeds on prey species that live upon or within the upper few centimetres of the substratum. Common scoter diet primarily comprises bivalve molluscs, with other species (e.g. crabs, small fishes and gastropods) incorporated less frequently (Kaiser et al., 2006). • **Black-headed Gull *Chroicocephalus ridibundus* [A179]** • **Common Gull *Larus canus* [A182]** • **Lesser Black-backed Gull *Larus fuscus* [A183]** • **Great Black-backed Gull *Larus marinus* [A187]** Diet varies by location and season. Birds foraging in marine environments feed on fish and marine invertebrates (Moskoff et al., 2021). The diet of gulls is extremely broad and opportunistic. Coastal birds may feed on marine invertebrates and, to a lesser extent, on fish, sometimes following fishing vessels (Burger et al., 2020). HiDef aerial surveys showed the distribution patterns were coastal in all surveys, always south of Dundalk Bay. • **Herring Gull *Larus argentatus* [A184]** Herring gull is a generalist and opportunistic feeder and can forage over both terrestrial and aquatic habitats. Its diet includes fish, fish offal, bivalves, gastropods, crustaceans, squid, insects, other seabirds, small landbirds, small mammals, terrestrial insects, earthworms, berries, carrion,

Attribute	Measurements	Targets	Comments
			and a wide variety of human refuse (Weseloh et al., 2020). • **Kittiwake *Rissa tridactyla* [A188]** Kittiwake is a surface-feeding seabird and is primarily piscivorous (e.g. sandeels, herring, gadoids), with some invertebrates (e.g. euphausiids, amphipods) also recorded in the diet (Hatch et al., 2020). • **Roseate Tern *Sterna dougallii* [A192]** Roseate tern is largely piscivorous; studies from Rockabill SPA show that sandeels (Ammodytes spp.) along with clupeids and, to a lesser extent, gadoids can form important prey bases (e.g. Allbrook et al., 2022). Breeding birds forage over marine waters, often some distance from the colony (see Harwood et al., 2019; Power et al., 2021; Power et al., 2022). • **Common Tern *Sterna hirundo* [A193]** Common tern are largely piscivorous. Studies from Rockabill SPA show that sandeels (Ammodytes spp.) along with Clupeidae (herrings) and, to a lesser extent, Gadidae (cods, pollocks) can form important prey bases (e.g. Allbrook et al., 2022). Breeding birds forage over marine waters, often some distance from the colony (see Power et al., 2021; Power et al., 2022). • **Arctic Tern *Sterna paradisaea* [A194]** Arctic tern are largely piscivorous. Most frequent fish prey are small, schooling species commonly caught in open water, at tide rips, and over predators (e.g. jellyfish and marine mammals). These are usually 1- or 2-year-old fish, including from the Clupeidae (herrings), Gadidae (cods, pollocks) and Ammodytidae (sandeels) families (Hatch et al., 2020). • **Little Tern *Sterna albifrons* [A195]** Little tern are largely piscivorous. Studies from a more southerly Irish colony show that sandeels (Ammodytes spp.) along with clupeids and, to a lesser extent, gadoids can form important prey bases (Johnson et al., 2022). Breeding birds forage over marine and brackish waters quite close. • **Guillemot *Uria aalge* [A199]** The diet of guillemot consists of micronektonic prey, 2–25 cm in length (mainly 6–10 cm), including fish, euphausiids, large copepods and squid. In summer, it feeds mainly on fish,

Attribute	Measurements	Targets	Comments
			especially when feeding chicks, in contrast to a more diverse diet during the non-breeding period, with euphausiids in particular more important (Ainley et al., 2021). • **Razorbill *Alca torda* [A200]** The diet of razorbill comprises schooling fish including herring and sandeel. Crustaceans and polychaetes may also be important in adult diets (Lavers et al., 2020). Based on several studies, Woodward et al. (2019) provides estimates of foraging ranges from the nest site during the breeding season (i.e. overall mean, mean of maximum distances across all studies, and maximum distance recorded) for razorbill, which are 61 km, 89 km and 313 km respectively (see Power et al., 2021). • **Puffin *Fratercula arctica* [A204]** The diet of puffin predominately consists of small to mid-sized (5–15 cm) schooling midwater fish including sprat (Sprattus sprattus), sandeel (Ammodytes spp.) and herring (Clupea harengus) (Lowther et al., 2020). **Little Gull *Hydrocoloeus minutus* [A862]** A primarily aquatic forager that feeds on flying insects, small fish and aquatic invertebrates typically at the water surface (Ewins and Weseloh, 2020). Little is known of the winter diet of this species.
Disturbance across the site	Intensity, frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution	The impact of any significant disturbance (direct or indirect) to the breeding population will ultimately affect the achievement of targets for population size and/or spatial distribution. Disturbance contributes to increased energetic expenditure which can result in increased likelihood of mortality or reduced fitness (if energy expenditure is greater than energy gain) and, in turn, negatively impact population trends. Factors such as intensity, frequency, timing and duration of a (direct or indirect) disturbance source must be taken into account to determine the potential impact upon the targets for population size and spatial distribution. Seabird species can make extensive use of the marine waters adjacent to their breeding colonies for non sites-specific maintenance behaviours (e.g. courtship, bathing, preening) as defined in McSorley et al. (2003)

Attribute	Measurements	Targets	Comments
Barriers to connectivity	Number; location; shape; area (hectares)	The number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA	• **Common Scoter *Melanitta nigra* [A065]** • **Black-headed Gull *Chroicocephalus ridibundus* [A179]** • **Common Gull *Larus canus* [A182]** • **Lesser Black-backed *Gull Larus fuscus* [A183]** • **Herring Gull *Larus argentatus* [A184]** • **Great Black-backed *Gull Larus marinus* [A187]** Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the non-breeding population, and it may require access to other SPAs or undesignated sites for certain activities, such as additional foraging when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors • **Manx Shearwater *Puffinus puffinus* [A013]** • **Cormorant *Phalacrocorax carbo* [A017]** • **Shag *Phalacrocorax aristotelis* [A018]** • **Kittiwake *Rissa tridactyla* [A188]** • **Roseate Tern *Sterna dougallii* [A192]** • **Common Tern *Sterna hirundo* [A193]** • **Arctic Tern *Sterna paradisaea* [A194]** • **Little Tern *Sterna albifrons* [A195]** • **Guillemot *Uria aalge* [A199]** • **Razorbill *Alca torda* [A200]** • **Puffin *Fratercula arctica* [A204]** • **Little Gull *Hydrocoloeus minutus* [A862]** The above bird species require regular access to marine waters ecologically connected to their colonies during the breeding season and on migration. Barriers limiting the population's access to this SPA or ecologically important sites outside the SPA will ultimately affect the achievement of targets for population trend and/or spatial distribution. Factors such as the number, location, shape and area of potential barriers must be taken into account to determine their potential impact. Access to ecologically important sites outside the SPA must also be considered as a single SPA may not satisfy all the ecological requirements of the population, and it may require

Attribute	Measurements	Targets	Comments
			access to other SPAs or undesignated sites for certain activities, such as breeding and additional foraging locations when preferred foraging areas are unavailable due to disturbance, prey availability, or other factors

North Bull Island SPA

Attribute	Measurements	Targets	Comments
Conservation Objectives: To maintain each feature in favourable condition, as defined by a series of attributes and targets • **Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]** • **Shelduck (*Tadorna tadorna*) [A048]** • **Teal (*Anas crecca*) [A052]** • **Pintail (*Anas acuta*) [A054]** • **Oystercatcher (*Haematopus ostralegus*) [A130]** • **Golden Plover (*Pluvialis apricaria*) [A140]** • **Grey Plover (*Pluvialis squatarola*) [A141]** • **Knot (*Calidris canutus*) [A143]** • **Sanderling (*Calidris alba)* [A144]** • **Dunlin (*Calidris alpina*) [A149]** • **Black-tailed Godwit (*Limosa limosa*) [A156]** • **Bar-tailed Godwit (*Limosa lapponica*) [A157]** • **Curlew (*Numenius arquata*) [A160]** • **Redshank (*Tringa totanus*) [A162]** • **Turnstone (*Arenaria interpres*) [A169]** • **Black-headed Gull (*Chroicocephalus ridibundus*) [A179]** • **Shoveler (*Spatula clypeata*) [A857]** • **Wetland and Waterbirds [A999]**			
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in Part 4 of the conservation objectives supporting document

Attribute	Measurements	Targets	Comments
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by shelduck, other than that occurring from natural patterns of variation	Waterbird distribution from the 2011/2012 waterbird survey programme is discussed in Part 5 of the conservation objectives supporting document

South Dublin Bay SAC

Attribute	Measurements	Targets	Comments
Conservation Objectives: **To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC, which is defined by the following list of attributes and targets:** • **1140 Mudflats and sandflats not covered by seawater at low tide**			
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	Habitat area was estimated using OSi data as 720ha
Community extent	Hectares	Maintain the extent of the Zostera-dominated community, subject to natural processes	Based on an intertidal survey undertaken in 2011 (MERC, 2012). See marine supporting document for further information
Community structure: Zostera density	Shoots/m²	Conserve the high quality of the Zostera-dominated community, subject to natural processes	Based on an intertidal survey undertaken in 2011 (MERC, 2012). See marine supporting document for further details
Community distribution	Hectares	Conserve the following community type in a natural condition: Fine sands with Angulus tenuis community complex.	Based on intertidal surveys undertaken in 2006 (Aquafact, 2006) and 2011 (MERC, 2012).
Annual vegetation of drift lines [1210]			
Site description of habitat	In recent years, a small area of coastal habitat has developed along Sandymount Strand on the seaward side of Booterstown Marsh in South Dublin Bay SAC. 1210 Annual vegetation of drift lines is among the habitats that have developed.		

Overall objective	The overall objective for 'Annual vegetation of drift lines' in South Dublin Bay (site code: 000210) is to 'maintain the Favourable conservation condition'. This objective is based on an assessment of the recorded condition of the habitat(s) under a range of attributes and targets. The assessment is divided into three main headings: (a) Area (b) Range and (c) Structure and Functions. This conservation objective applies to the total extent of this habitat within the SAC, including but not limited to any mapped areas of this habitat. No field surveys of 1210 Annual vegetation of drift lines have yet been carried out at this site.
Habitat Area	Coastal habitats are generally dynamic and increase and decrease in area due to natural processes. These natural changes are not taken into account in conservation status assessments. Changes associated with human activities including destruction and restoration do contribute to the assessment of conservation status. The 1210 Annual vegetation of drift lines arose recently and has not yet been mapped at the site. There is no evidence of habitat loss to date. Target: Area stable or increasing, subject to natural processes, including erosion and succession.
Range - Habitat distribution	This habitat has developed in recent years. Evidence from aerial photograph analysis indicates that dune habitats have arisen naturally in the north and south western portions of the SAC. Target: No decline, subject to natural processes.
Structure and Functions	**Physical structure: functionality and sediment supply** Target: Natural circulation of sediment and organic matter, absence of any physical obstructions or evidence of sediment extraction from the beach and its environs. Physical obstructions that have been in place and are unchanged since prior to 1994 are excluded from this target, unless they have a current adverse impact on sediment circulation. **Disturbance** Target: No more than 20% of the habitat is subject to disturbance e.g. trampling, vehicle damage, removal of substrate. **Vegetation composition: typical species (positive indicators)** Target: At least one species occurs with a frequency of at least 40% of stops and another species occurs with a frequency of more than 20% of stops. **Vegetation composition: native negative indicator species** Target: No negative species occurs at a frequency of more than 60% of stops and combined cover of all negative species across the habitat is 5% or less and highest % cover of any negative species within any stop is 25% or less. **Vegetation composition: non-native species** Target: No individual species occurs at a frequency of more than 20% of stops and no evidence that % cover is increasing. **Indicators of local distinctiveness: site-specific target features (including rare and notable species)** Target: No evidence of decline since designation. There has been no Structure and Functions assessment of this habitat type at South Dublin Bay SAC to date.

Salicornia and other annuals colonising mud and sand [1310]	
Site description of habitat	1310 Salicornia and other annuals colonising mud and sand is a sparsely vegetated habitat of intertidal mudflats.
Overall objective	The overall objective for 'Salicornia and other annuals colonising mud and sand' in South Dublin Bay SAC (site code: 000210) is to maintain the Favourable conservation condition'. This objective is based on an assessment of the recorded condition of the habitat(s) under a range of attributes and targets. The assessment is divided into three main headings: (a) Area (b) Range and (c) Structure and Functions. This conservation objective applies to the total extent of this habitat within the SAC, including but not limited to any mapped areas of this habitat. No field surveys of 1310 Salicornia and other annuals colonising mud and sand have yet been carried out at this site.
Habitat area	Coastal habitats are generally dynamic and increase and decrease in area due to natural processes. These natural changes are not taken into account in conservation status assessments. Changes associated with human activities including destruction and restoration do contribute to the assessment of conservation status. Field surveys have not yet been carried out to establish the area of 1310 Salicornia and other annuals colonising mud and sand. Aerial photograph analysis indicates no evidence of habitat loss. Target: Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat distribution	Field surveys have not yet been carried out to establish the area of 1310 Salicornia and other annuals colonising mud and sand. The habitat is understood to have arisen naturally at the site without known impact of human activity on distribution. Target: No decline, subject to natural processes.
Structure and Functions for Salicornia and other annuals colonising mud and sand are assessed on the basis of:	**Physical structure: hydrology** Target: Natural hydrology and processes of erosion and succession intact, no disturbance to creek and pan structure, as compared to baseline data. **Signs of negative activities e.g. infilling, reclamation, turf-cutting, pollution Target: None recorded Vegetation composition: typical species (positive indicators)** Target: There should be a combined density of more than 10 plants per sq. metre at 75% of stops or more. **Vegetation composition: negative indicator species** Target: Percentage Spartina spp. cover, or other negative species, within 5m radius of stop less than/equal to baseline at 75% of stops or more. **Vegetation composition: negative indicator species: presence of Spartina spp. within vicinity of habitat** Target: Not present where not recorded by baseline. Indicators of local distinctiveness: site-specific target features (including rare and notable species) Target: No evidence of decline or loss of target species. No habitat assessments have been carried out to date. There is no known

	evidence of impeded Structure and Functions.
Embryonic shifting dunes [2110]	
Site description of habitat	There is a small area of coastal habitat along Sandymount Strand on the seaward side of Booterstown Marsh.
Overall Objective	The overall objective for 'Embryonic shifting dunes' in South Dublin Bay SAC (site code: 000210) is to 'maintain the Favourable conservation condition'. This objective is based on an assessment of the recorded condition of the habitat(s) under a range of attributes and targets. The assessment is divided into three main headings: (a) Area (b) Range and (c) Structure and Functions. This conservation objective applies to the total extent of this habitat within the SAC, including but not limited to any mapped areas of this habitat. No field surveys of 2110 Embryonic shifting dunes have yet been carried out at this site for NPWS.
Habitat area	Coastal habitats are generally dynamic and increase and decrease in area due to natural processes. These natural changes are not taken into account in conservation status assessments. Changes associated with human activities including destruction and restoration do contribute to the assessment of conservation status. A small area of 2110 Embryonic shifting dunes are known to occur in the south-west of the site, near Booterstown. There is no evidence of habitat loss or impaired functioning. Target: Area stable or increasing, subject to natural processes, including erosion and succession.
Habitat distribution	A small area of dune vegetation is developing on a new accumulating sandbank along the shoreline of Sandymount Strand, north of Booterstown Marsh. It is dominated by immature sand dune vegetation. Target: No decline, subject to natural processes.

Structure and Functions	**Physical structure: functionality and sediment supply** Target: Natural circulation of sediment and organic matter, absence of any physical obstructions or evidence of sediment extraction from the beach and its environs. Physical obstructions that have been in place and are unchanged since prior to 1994 are excluded from this target, unless they have a current adverse impact on sediment circulation. **Disturbance** Target: No more than 20% of the habitat should be subject to disturbance e.g. trampling, vehicle damage, removal of substrate. **Flowering and fruiting of any positive indicator species** Target: Present in 40% or more of stops. **Vegetation composition: typical species (positive indicators)** Target: At least one species occurs with a frequency of more than 40% of stops.

Rockabill to Dalkey Island SAC

Attribute	Measurements	Targets	Comments
To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC, which is defined by the following list of attributes and targets: 1140 Mudflats and sandflats not covered by seawater at low tide			
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	Habitat area was estimated using OSI data as 720ha
Disturbance	Level of impact	Human activities should occur at levels that do not adversely affect the harbour porpoise community at the site	See marine supporting document for further details
To maintain the favourable conservation condition of Reefs in Rockabill to Dalkey Island SAC, which is defined by the following list of attributes and targets: • **1170 Reefs**			
Habitat area	Hectares	The permanent area is stable or increasing, subject to natural processes	Habitat area estimated as 182ha using 2010 and 2011 intertidal and subtidal reef survey data (MERC, 2010, 2012a,b), InfoMar bathymetry and the Arklow to Skerries Islands Admiralty Chart (1468_0)

Attribute	Measurements	Targets	Comments
Habitat distribution	Occurrence	Distribution is stable or increasing, subject to natural processes.	Distribution derived from 2010 and 2011 intertidal and subtidal reef survey data (MERC, 2010, 2012a,b), InfoMar bathymetry and the Arklow to Skerries Islands Admiralty Chart (1468_0).
Community structure	Biological composition	Conserve the following community types in a natural condition: Intertidal reef community complex; and Subtidal reef community complex.	Reef community mapping based on 2010 and 2011 intertidal and subtidal reef survey data (MERC, 2010, 2012a,b)
To maintain the favourable conservation condition of Harbour porpoise in Rockabill to Dalkey Island SAC, which is defined by the following list of attributes and targets • **1351 Harbour porpoise Phocoena Phocoena**			
Access to suitable habitat	Number of artificial barriers	Species range within the site should not be restricted by artificial barriers to site use.	-

Lambay Island SAC

Attribute	Measurements	Targets	Comments
To maintain the favourable conservation condition of Reefs in Lambay Island SAC, which is defined by the following list of attributes and targets: **1170 Reefs**			
Habitat area	Hectares	The permanent area is stable or increasing, subject to natural processes.	Habitat area estimated as 58ha from intertidal and subtidal reef surveys in 2010 and 2011 (MERC, 2010, 2012a,b)
Distribution	Occurrence	The distribution of reefs is stable or increasing, subject to natural processes.	Based on information from intertidal and subtidal reef surveys in 2010 and 2011 (MERC, 2010, 2012a,b)
Community structure	Biological composition	Conserve the following community types in a natural condition: Intertidal reef community complex; Laminaria-dominated community complex.	Reef community mapping based on information from intertidal and subtidal reef surveys in 2010 and 2011 (MERC, 2010, 2012a,b)
To maintain the favourable conservation condition of Vegetated sea cliffs of the Atlantic and Baltic coasts in Lambay Island SAC, which is defined by the following list of attributes and targets: • **1230 Vegetated sea cliffs of the Atlantic and Baltic coasts**			

Attribute	Measurements	Targets	Comments
Habitat length	Kilometres	Area stable, subject to natural processes, including erosion. Total length of cliff section mapped: 7.27km.	Based on data from Browne (2005). Cliff extent re-digitised onto 1:5000 OSi map background. Cliffs are linear features and are therefore measured in kilometres.
Habitat distribution	Occurrence	No decline, subject to natural processes.	Cliffs distributed along north, east and south coasts of Lambay Island. Hard cliffs are the dominant type. See coastal habitats supporting document for further details
Physical structure: functionality and hydrological regime	Occurrence of artificial barriers	No alteration to natural functioning of geomorphological and hydrological processes due to artificial structures	Maintaining natural geomorphological processes including natural erosion is important for the health of vegetated sea cliffs. Hydrological processes maintain flushes and in some cases tufa formations that can be associated with sea cliffs. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of sea cliff habitat zonations including transitional zones, subject to natural processes including erosion and succession	On Lambay Island, grazing has resulted in a zone of cliff vegetation that is very narrow and confined to the cliff edge. This is observed as an abrupt change from cliff vegetation to semi-improved pasture. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Excessive grazing close to the cliff edge has confined the maritime vegetation to a narrow zone. See coastal habitats supporting document for further details

Attribute	Measurements	Targets	Comments
Vegetation composition: typical species and sub communities	Percentage cover at a representative sample of monitoring stops	Maintain range of sub communities with typical species listed in the Irish Sea Cliff Survey (Barron et al., 2011	Based on Goodwillie et al. (1988). Locally distinctive species include knotted clover (Trifolium striatum), Spring vetch (Vicia lathyroides) and spring squill (Scilla verna), which are locally common on the east coast of Ireland (Preston et al., 2002). See coastal habitats supporting document for further details
Vegetation composition: negative indicator species	Percentage	Negative indicator species (including non-natives) to represent less than 5% cover	Based on data from the ISCS (Barron et al., 2011). See coastal habitats supporting document for further details
Vegetation composition: bracken and woody species	Percentage	Cover of bracken (Pteridium aquilinum) on grassland and/or heath less than 10%. Cover of woody species on grassland and/or heath less than 20%	Based on data from the ISCS (Barron et al., 2011). Bracken is common on the gently sloping northern cliffs. Some sheltered gullies support scrub with stunted elder (Sambucus nigra). See coastal habitats supporting document for further details
To maintain the Favourable conservation condition of Harbour Porpoise (Phocoena phocoena) in Lambay Island SAC, which is defined by the following list of attributes and targets: • **1351 Harbour Porpoise *Phocoena Phocoena***			
Access to suitable habitat	Number of artificial barriers	Species range within the site should not be restricted by artificial barriers to site use.	See the Lambay Island SAC conservation objectives supporting document - Harbour Porpoise for further details (NPWS, 2024)

Attribute	Measurements	Targets	Comments
Disturbance	Level of impact	Human activities should occur at levels that do not adversely affect the Harbour Porpoise community at the site	See the Lambay Island SAC conservation objectives supporting document - Harbour Porpoise for further details (NPWS, 2024)
To maintain the favourable conservation condition of these species in Lambay Island SAC, which is defined by the following list of attributes and targets: • **1364 Grey Seal *Halichoerus grypus*** • **1365 Harbour Seal *Phoca vitulina***			
Access to suitable habitat	Number of artificial barriers	Species range within the site should not be restricted by artificial barriers to site use.	-
Breeding behaviour	Breeding sites	The breeding sites should be maintained in a natural condition.	1364 Grey Seal Halichoerus grypus Attribute and target based on background knowledge of Irish breeding populations, review of data from Summers (1983), Kiely et al. (2000), Lidgard et al. (2001), Lyons (2004), a comprehensive breeding survey in 2005 (Ó Cadhla et al., 2008) and unpublished NPWS records. See marine supporting document for further details 1365 Harbour Seal Phoca vitulina Attribute and target based on background knowledge of Irish populations and the review of ancillary data provided by Kiely et al. (2000), Lidgard et al. (2001), Ó Cadhla and Strong (2007), Ó Cadhla et al. (2008) and unpublished NPWS data. See marine supporting document for further details

Attribute	Measurements	Targets	Comments
Moulting behaviour	Moult haul-out sites	The moult haul-out sites should be maintained in a natural condition	1364 Grey Seal Halichoerus grypus Attribute and target based on background knowledge of Irish populations, research by Kiely et al. (2000), a national moult survey (Ó Cadhla and Strong, 2007) and unpublished NPWS records. See marine supporting document for further details 1365 Harbour Seal Phoca vitulina Attribute and target based on background knowledge of Irish populations and the review of ancillary data provided by Kiely et al. (2000), Lidgard et al. (2001), Ó Cadhla and Strong (2007), Ó Cadhla et al. (2008) and unpublished NPWS data. See marine supporting document for further details
Resting behaviour	Resting haul-out sites	The resting haul-out sites should be maintained in a natural condition.	1364 Grey Seal Halichoerus grypus Attribute and target based on review of data from Kiely et al. (2000), Lyons (2004), Cronin et al. (2004) and unpublished NPWS records. See marine supporting document for further details 1365 Harbour Seal Phoca vitulina Attribute and target based on background knowledge of Irish populations and the review of ancillary data provided by Kiely et al. (2000), Lidgard et al. (2001), Ó Cadhla and Strong (2007), Ó Cadhla et al. (2008) and unpublished NPWS data. See marine supporting document for further details
Disturbance	Level of impact	Human activities should occur at levels that do not adversely affect the seal population at the site	See marine supporting document for further details

Codling Fault Zone SAC

Attribute	Measurements	Targets	Comments
To maintain the favourable conservation condition of Submarine structures made by leaking gases in Codling Fault Zone SAC, which is defined by the following list of attributes and targets: • **1180 Submarine structures made by leaking gases**			
Area of methane derived authigenic structures (MDAC) features	Hectares	The permanent area is stable or increasing, subject to natural processes.	The entire area of the methane derived authigenic structures (MDAC) features in Codling Fault Zone SAC is currently unknown. The mapped point locations of the MDAC mounds, based on Croker et al. (2005), are shown on map 2. See also Judd et al. (2007), O'Reilly et al. (2010) and Leahy (2013). It is important to note that further unsurveyed areas of the habitat may be present in the SAC. See the Codling Fault Zone SAC conservation objectives supporting document for marine habitats for further details
Distribution	Occurrence	Distribution stable or increasing, subject to natural processes.	The point locations of the mapped methane derived authigenic structures (MDAC) based on Croker et al. (2005) are shown on map 2. See also Judd et al. (2007), O'Reilly et al. (2010) and Leahy (2013). Please note that further unsurveyed areas of the habitat may be present in the SAC. See the marine habitats supporting document for further details
Physical structure	Presence and structure	Maintain the structural integrity of the MDAC features, subject to natural processes	Based on information from Leahy (2013). See the marine habitats supporting document for further details
Community structure	Biological composition	Conserve the Codling Fault Zone MDACs community complex in a natural condition, subject to natural processes	Based on information from Leahy (2013).

Attribute	Measurements	Targets	Comments
To maintain the Favourable conservation condition of Harbour Porpoise (Phocoena phocoena) in Codling Fault Zone SAC, which is defined by the following list of attributes and target • **1351 Harbour Porpoise *Phocoena Phocoena***			
Access to suitable habitat	Number of artificial barriers	Species range within the site should not be restricted by artificial barriers to site use	See the Codling Fault Zone SAC conservation objectives supporting document - Harbour Porpoise for further details (NPWS, 2024)
Disturbance	Level of impact	Human activities should occur at levels that do not adversely affect the Harbour Porpoise community at the site	See the Codling Fault Zone SAC conservation objectives supporting document - Harbour Porpoise for further details (NPWS, 2024)

5.3 Summary Impact Prediction

The ABR2 Project has been identified as having potential for Likely Significant Effects in relation to sediment pollution and degradation of habitats, which could give rise to adverse impacts upon South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA, North Bull Island SPA, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Lambay Island SAC and Codling Fault Zone SAC with respect to the conservation objectives, both alone and in-combination with other plans and projects, in the absence of mitigation measures. Accordingly, as part of the Stage 2 Appropriate Assessment, mitigation measures are examined, analysed and evaluated in the next section of the NIS.

5.4 Mitigation Measures

5.4.1 Environmental Facilities Manager

DPC has appointed an Environmental Facilities Manager to oversee the environmental management of both the ABR Project and MP2 Project. It is proposed that the construction works for the ABR2 Project will fall within the remit of the Environmental Facilities Manager, who will have the authority to:

- Review method statements:
- Oversee work;
- Provide instructions; and
- Request the temporary cessation of works, where necessary.

5.4.2 Pollution Prevention

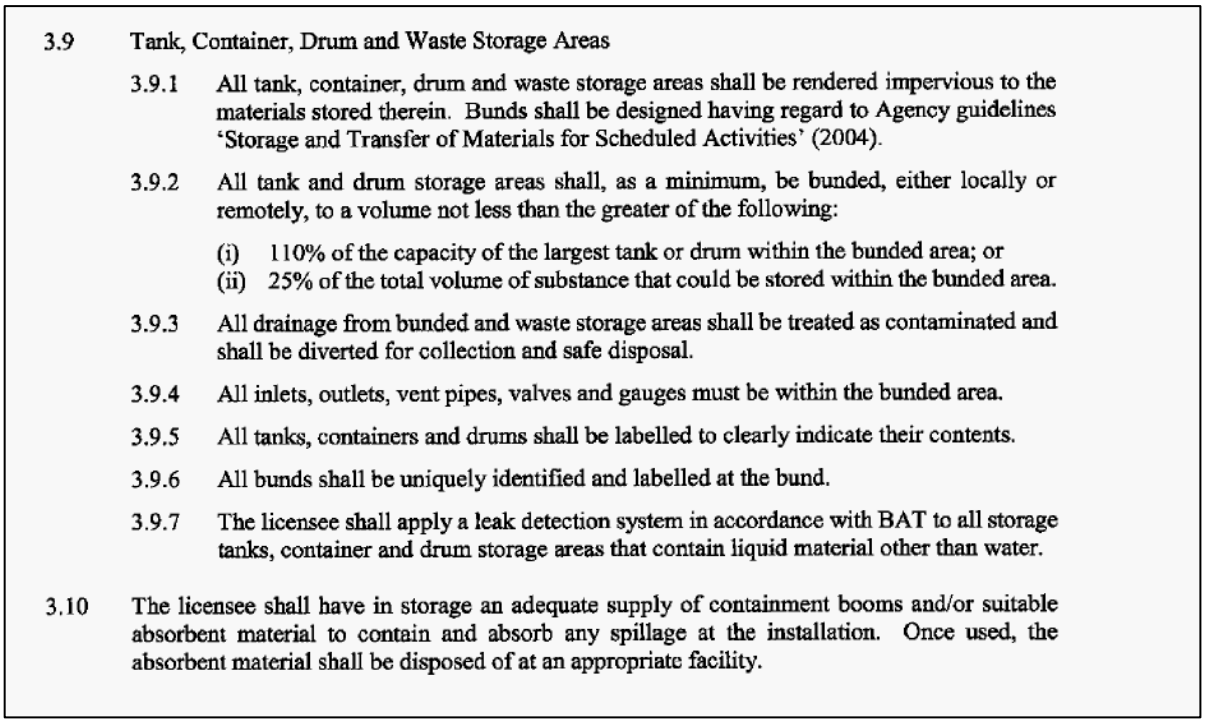
The following pollution control measures will be adhered to during the construction phase:

- Prior to entering the site, and also twice daily, all vehicles and plant material shall be cleaned and checked for leaks or drips.
- No container is to be filled more than ¾ full with fuel.
- Fuel, oil and chemical storage will be sited on an impervious base within a bund and secured. The base and bund walls must be impermeable to the material stored and of adequate capacity.
- The control measures in GPP2: Above Ground Oil Storage Tanks and GPP 26 “Safe storage – drums and intermediate bulk containers” will be implemented to ensure safe storage of oils and chemicals;
- The safe operation of refuelling activities shall be in accordance with GPP 7 “Safe Storage – The safe operation of refuelling facilities”
- The following mitigation measures will be implemented to prevent pollutants entering Dublin Bay and the Irish sea
- pollutants, including sediments, will be prevented from entering the watercourses during construction operations, by civil engineering measures (i.e. formation of drainage channels) and installation of silt fencing.

- Any wet concrete required for the development works will be pre-mixed off site and transported in dedicated lorries.
- Washout of concrete trucks shall be strictly confined to a designated and controlled wash-out area, remote from watercourses, drainage channels and other surface water features

5.4.3 Storage of fuels and hazardous materials

- The tank(s) will have a fill point which is a lockable screw fill cap with a chain and be marked clearly with the product type, tank capacity and, where appropriate, tank number. All tanks will be fitted with a suitable sight gauge.
- All storage tanks/connections shall be situated within a secondary containment (bund), which will be impermeable to oil and water and have no direct outlet such as a pipe, valve or other opening to drain the system.
- Fuel shall be stored at least 50m away from the River Liffey or Dublin Bay. A suitable location will also be selected to minimise the risk of damage to the fuel storage and the secondary containment system by impact or collision. It will be placed in a location where flooding is unable to occur.
- Oils and lubricants used on the Site shall be stored in temporary vessels designed to hold 110% of the containers. No oil or lubricants shall be stored within 15m away from drainage channel or a drainage manhole.
- Refuelling will only take place in designated areas, on hardstanding, by appropriately trained personnel. The funnels/nozzles used will be appropriate to the equipment being used. The fill cap will be replaced on to the fill point after each delivery to protect it from damage and unauthorised use.
- Refuelling on the Site shall be undertaken at least 50m from the River Liffey or Dublin Bay. Tanks, pipes, taps and valves will be locked when not in use.
- Only double bunded fuel bowsers shall be used. Vehicles shall not be left unattended during refuelling operations.
- All fuel, chemicals and oils shall be stored within bunded areas.
- All tank discharge pipes, valves and trigger guns shall be contained securely within the bund when not in use.
- Bowsers shall be stored within secure areas when not in use, protected from theft and vandalism.
- All plant shall be checked for leaks of fuel and lubricants before being allowed onto the Site, whilst onsite, they shall be checked on a daily basis.
- Pumps and generators used on the site will have integral drip trays where possible. All items of plant without an integral drip tray shall be stored over a portable drip tray. Drip trays shall be inspected and kept free of accumulated rainwater as necessary. Any oily water shall be disposed of at an appropriate licensed facility.
- Any cleaning/arisings from drip trays etc. will be disposed of as hazardous waste
- All fuel will be stored as outlined in condition 3.9 of the IE License as outlined below:



3.9 Tank, Container, Drum and Waste Storage Areas

3.9.1 All tank, container, drum and waste storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004).

3.9.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:

(i) 110% of the capacity of the largest tank or drum within the bunded area; or
(ii) 25% of the total volume of substance that could be stored within the bunded area.

3.9.3 All drainage from bunded and waste storage areas shall be treated as contaminated and shall be diverted for collection and safe disposal.

3.9.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.

3.9.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.

3.9.6 All bunds shall be uniquely identified and labelled at the bund.

3.9.7 The licensee shall apply a leak detection system in accordance with BAT to all storage tanks, container and drum storage areas that contain liquid material other than water.

3.10 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the installation. Once used, the absorbent material shall be disposed of at an appropriate facility.

Figure 5-1: Condition 3.9 IE License

5.4.4 Spill response plans and pollution control measures

- A spill response kit will be available onsite and accessible to all to control pollution incidents. These spill kits will contain absorbent pads, absorbent granules and methods of disposal of materials and used kit. These kits will be located at appropriate points around the Site which are considered to be at a higher risk of pollution (e.g. refuelling area and next to fuel tanks). Further spill kits and supplies will be located in the stores within the Site, where replacements for used kits will be found.
- Spill kits will need be regularly inspected and immediately replaced if used.
- Toolbox talks will be communicated to Site staff and contractors so that they are fully informed of refuelling procedures.

5.4.5 Emergency pollution response plan

- The Pollution Incident Response Plan, detailed within the draft CEMP, will include the location of the spill response kits, details of the site drainage infrastructure and the manner in which spillages are to be prevented from entering the drainage network; and incident notification procedures.
- The Pollution Incident Response Plan incorporates the contents of the CEMP and includes information in relation to:
  - Location of all spill kits;
  - Details of site drainage infrastructure and the manner in which spillages are to be prevented from entering this network and residue removed from site;
  - An assessment of excavation and earthworks likely to cause silty run-off and the mechanisms required to mitigate this risk;
  - Neighbour notification procedures;

  - Incident notification procedures and responsibilities;
  - Staff notification and briefing and site induction procedures for environmental issues; and,
  - Contact details for all Regulatory Authorities and relevant Emergency Services to be contacted in the event of a pollution incident.
- Site staff will be trained in mitigating impacts to the environment, resulting from a pollution incident.
- Pollution control equipment will be available in high-risk areas and will be checked on a weekly basis to ensure the equipment is available and re-stocked if used.
- Work will be stopped in the vicinity of any spill and the discharge stopped at source (i.e. turn plant off). Containment equipment will be deployed in the form of spill kits/booms/sandbags/granules/straw bales/terram, depending on the type of pollution discharged.
- Toolbox talks will be communicated to site staff and contractors so that they are fully informed of Dealing with Environmental Incidents.
- In addition, monitoring of the adherence to the CEMP, any incidents or near misses, shall be recorded in regular progress reports, as well as regulatory involvement and any mitigation action taken if required.

5.4.6 Water Pumping & Infilling of Berth 52/53

- If pumping of water is required onsite, this will be done by pumping water over hardstanding or vegetated area through terram and silt fencing (incorporating the measures outlined in Section 5.4.2). No untreated water will be discharged into Dublin Bay or the River Liffey.
- All water removed from the basin will be directed to the on-site treatment system for treatment prior to discharge, in accordance with the IE Licence.
- A single lane water treatment plant will be constructed to remove suspended solids, product and contaminants (if present) from the wastewater produced from the dredging, dewatering and treatment processes.
- The infill area will be constructed as a contained system, including engineered barrier layers and drainage infrastructure, installed by the Contractor in accordance with design specifications.
- Placement of treated and recovered sediments within the infill area will be managed to:
- minimise disturbance to surrounding waters
- prevent overflow or uncontrolled discharge
- The pollution prevention measures further outlined in **Section 5.4.7 and 5.4.8** will be incorporated as part of the dewatering and the basin of Berth 52/53 infilling process.

5.4.7 Dredging Sediment Control

- Capital dredging will be undertaken using a closed environmental bucket dredger, to minimise sediment loss during excavation and lifting.
- It shall be a requirement, under supervision from the Environmental Facilities Manager, to ensure that dredging operations are carried out in a controlled manner, including:
- Minimising overfilling of the bucket
- Avoiding rapid lifting through the water column

- Maintaining vertical alignment during excavation
- Barge loading procedures will be implemented to prevent overtopping and spillage, including maintaining freeboard and controlled loading rates.
- Where dredging occurs in areas of finer or more contaminated sediments, silt curtains or equivalent containment measures will be deployed by the Contractor, subject to navigation and safety constraints, to reduce lateral dispersion of suspended sediments.

5.4.8 Dredging Sediment Treatment & Management

- All sediment handling, including screening, soil washing, separation and dewatering, will be undertaken within designated treatment areas at North Wall Quay Extension, Berth 49 and/or Berth 52 West, as defined in the CEMP.
- The following measures shall be implemented:
  - Sediment processing areas are bunded and graded to contain runoff
  - All process water is directed to the wastewater treatment system
- Temporary stockpiling of dredged material will be managed to minimise exposure to rainfall and runoff, including:
  - Use of contained storage areas
  - Minimisation of stockpile duration
- Transfer of sediment between dredging, treatment and infill areas (via barge, pipeline or haulage) will be managed so as to prevent spillage or leakage, including:
  - Use of sealed pipelines where applicable
  - Controlled transfer points
  - Immediate clean-up procedures in the event of accidental release
- All water generated during dredging, sediment treatment and basin dewatering will be collected and treated prior to discharge via an on-site water treatment system prior to discharge.
- The Wastewater Treatment Plant (WWTP) will be designed and operated to ensure compliance with EPA IE Licence emission limit values (ELVs) at all times.
- No untreated process water will be discharged directly to the River Liffey or Dublin Bay.
- The Contractor will undertake sampling of treated effluent from the wastewater treatment system at frequencies specified in the IE Licence

5.4.9 Marine Mammal Mitigation Plan

Mitigation will be implemented through implementation of a Marine Mammal Management Plan (MMMP) as part of the Project's CEMP. The MMMP sets out specific mitigation procedures, including pre-start monitoring, implementation of mitigation zones and communication protocols between MMOs and site personnel.

The following measures are proposed as part of the MMMP:

Marine Mammal Observer (MMO) Programme

A suitably qualified MMO will be appointed to implement the MMMP for dredging activities. The MMO will:

- Undertake pre-start monitoring prior to the commencement of dredging after any pause in activity of more than 30 minutes
- Conduct visual monitoring of the works area and surrounding waters during active dredging activities
- Record dredging activity, MMO monitoring effort, environmental conditions and all marine mammal observations
- Complete the relevant NPWS (2014) marine mammal monitoring data sheets for each day of monitoring
- Record any mitigation actions implemented, including delays to works or other precautionary measures
- Advise the contractor in the event marine mammals are observed within the defined monitoring zone for dredging and recommend appropriate mitigation measures where required
- Maintain a detailed log of all monitoring effort and mitigation actions throughout the works
- Maintain regular communication with the contractor (e.g. via site communication systems / WhatsApp group) to ensure real-time implementation of mitigation where required.

Upon completion of the works, a final MMO Report will be prepared. This report will summarise the monitoring effort, contractor activity, marine mammal observations, mitigation actions implemented and confirm compliance with NPWS (2014) guidance. The report will be submitted to NPWS and MARA, as required via the Project's Point of Contact.

Although dredging activities are non-impulsive and low risk in terms of injury, a statutory pre-start monitoring period will be implemented, in accordance with NPWS (2014) guidance.

Prior to the commencement of dredging:

- The MMO will conduct a 30-minute visual pre-start monitoring period at the works area
- The monitored zone will extend to a 500 m radial distance from the works
- If marine mammals are observed within the monitored zone, the commencement of dredging will be delayed. Dredging may only commence once the animal(s) have left the monitoring zone, and at least 30 minutes have elapsed with no marine mammals detected within the monitored zone

The procedure is as required by the standard Irish marine mammal mitigation guidance (NPWS, 2014), which specifies that sound-producing activities should not commence until at least 30 minutes of continuous monitoring confirms the absence of marine mammals within the defined zone.

Vessel Speed Control

All project vessels will adhere to established maritime safety procedures within Dublin Port. In addition:

- Vessel speeds will be reduced where safe and practicable

- Vessel masters will remain vigilant for marine mammals
- Sudden changes in direction or speed will be avoided where possible

Given the already high level of vessel traffic within the port, and the implementation of the above measures, the Project will not result in a significant increase in risk to marine mammals.

Sediment Control Measures

The following measures will be implemented in tandem with those outlined in **sections 5.4.1 – 5.4.8.**

- Silt curtains will be utilised around the dredger during dredging operations to minimise the dispersion of suspended sediments
- A contingency bubble curtain will be available (stored on site) and will be deployed across the entrance to Alexandra Basin West in the event of a silt curtain breach
- Environmental buckets will be used for dredging to reduce sediment disturbance and release at source

These measures will minimise the spatial extent and duration of sediment plumes and reduce the potential for impact on marine mammals.

Operational Monitoring

Marine mammal monitoring associated with operational phase activities, including maintenance dredging, is already undertaken as part of DPC's ongoing maintenance dredging programme. This includes the use of MMOs and adherence to NPWS (2014) guidance. No additional project-specific marine mammal monitoring is proposed for the operational phase of the ABR2 Project.

Prior to the commencement of dredging:

- The MMO will conduct a 30-minute visual pre-start monitoring period at the works area
- The monitored zone will extend to a 500m radial distance from the works
- If marine mammals are observed within the monitored zone, the commencement of dredging will be delayed. Dredging may only commence once the animal(s) have left the monitoring zone, and at least 30 minutes have elapsed with no marine mammals detected within the monitored zone.

Acoustic Monitoring

In addition to visual monitoring, acoustic monitoring has been and will continue to be undertaken within Dublin Port and Dublin Bay. Real-time acoustic monitoring using the LIDO system has been deployed at the North Bank Lighthouse in recent years.

As part of ongoing monitoring programmes associated with Dublin Port activities, this system is proposed to be replaced by static and passive acoustic monitoring devices. These systems will continue to be deployed at strategic locations within Dublin Bay, including the entrance to the port, Burford Bank spoil grounds and a control location offshore (Scotsman's Bay), to support the assessment of harbour porpoise presence and potential displacement in relation to ongoing maintenance dredging and capital dredging activities.

Acoustic monitoring will contribute to the long-term evidence base for marine mammal occurrence within Dublin Port and Dublin Bay and provide context for construction-phase observations.

5.4.10 Noise Mitigation

British Standard BS5228:2009+A1:2014 – Noise and vibration control on construction and open sites: Part 1 Noise outlines a range of measures that can be used to reduce the impact of construction phase noise on the nearest noise sensitive receptors. These measures shall be applied during the construction phase of the proposed development, including those measures listed below:

- Mechanical plant and equipment used for the purpose of the works shall be fitted with effective exhaust silencers and are maintained in good working order;
- Careful selection of quiet plant and machinery to undertake the required work where practicable;
- All major compressors shall be 'sound reduced' models fitted with properly lined and sealed acoustic
- covers which should be kept closed whenever the machines are in use;
- Any ancillary pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers;
- Machines in intermittent use shall be shut down in the intervening periods between work; ancillary plant such as generators, compressors and pumps shall be placed behind existing physical barriers, and the direction of noise emissions from plant including exhausts or engines shall be placed away from sensitive locations, in order to cause minimum noise disturbance;
- Handling of all materials shall take place in a manner which minimises noise emissions; and
- Audible warning systems shall be switched to the minimum setting required by the Health & Safety Authority.

5.4.11 In-combination Assessment

The following plans/projects have been screened in during Stage 1 as potentially causing likely significant adverse in-combination effects on the QI's of the assessed European Sites with the ABR2 project in the absence of mitigation measures (See **Section 4.2.5** for full details on the plans/projects outlined below).

Dublin City Development Plan 2022-2028

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. There are no pathways for in-combination effects with the Dublin City Development Plan or any other plan/project following the implementation of both ABR2's mitigation measures and the development plans measures. .

3FM – ABP Reg. Ref.PA29N.320250

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise &

Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. There are no pathways for in-combination effects with the 3FM – ABP Reg. Ref.PA29N.320250 or any other plan/project following the implementation of the mitigation measures laid out in this AASR/NIS and 3FM's associated NIS and EIAR reporting.

MP2 Reg. Ref. ABP304888-19

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. There are no pathways for in-combination effects with the MP2 Reg. Ref. ABP304888-19 or any other plan/project following the implementation of the mitigation measures laid out in this AASR/NIS and MP2's associated NIS and EIAR reporting.

Dublin Harbour Capital Dredging Project – Reg. Ref. Foreshore Application FS007164/DAS Application S0033-01

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level.

There are no pathways for in-combination effects with the Dublin Harbour Capital Dredging Project or any other plan/project following the implementation of the mitigation measures laid out in this AASR/NIS and the Capital Dredging Projects NIS reporting.

Dublin Port Maintenance Dredging Programme 20222029 – Reg. Ref. FS007132 / DAS Permit S0004-03

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. There are no pathways for in-combination effects with the Dublin Port Maintenance Dredging Programme or any other plan/project following the implementation of the mitigation measures laid out in this AASR/NIS and the Maintenance Dredging Projects NIS reporting.

Development at the Ringsend Wastewater Treatment Plan. Reg. Ref. 5319/22 & Upgrade of the Ringsend Rd

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. Construction of the Ringsend Road Wastewater Treatment Plan & Upgrade has concluded and any Diminution of Water Quality and Habitat Deterioration arising from construction has ceased. The Ringsend Project's operation and maintenance will be in line with existing port activities and does not offer any new pathways for operational water pollution to occur. Therefore, there are no pathways for effects to occur, in-combination with the ABR2 Project or any other plans or project following the implementation of mitigation measures outlined within this AASR and NIS.

Alexandra Basin & R&H Hall Silo Building Application Number 4585/23

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. Impacts due to Application 4585/23 are expected to be localized, short term in nature water pollution effects. Therefore, there are no pathways for effects to occur, in-combination with the ABR2 Project or any other plans or project following the implementation of mitigation measures outlined within this AASR and NIS.

Branch Road No. 1 Case reference: PL29N.319742

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. The measures outlined in Dublin Port Maintenance Dredging Programme's Stage 2 Assessment (That apply to the Branch Road No. 1 Project) reduce the potential adverse effects of this construction works to a negligible level. Therefore, there are no pathways for effects to occur, in-combination with the ABR2 Project or any other plans or project following the implementation of mitigation measures outlined within this AASR and NIS and the Dredging Programs NIS.

Aviation Fuel Pipeline Case reference: PL29N.245738

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. Construction of Application PL29N.245738 has been completed, therefore there are no pathways for in-

combination construction related effects to occur either alone or in combination with any other plan/project. Construction of the pipeline has concluded and possesses a robust operational phase leak detection and shutoff system, capable of preventing significant hydrocarbon release in the event of damage/leaks/other failure. Following the implementation of the mitigation measures outlined above in this AASR/NIS, and the integrated design mitigation included as part of the pipeline application, there are no pathways for likely significant in-combination effects to occur, either alone or in combination for any plans/projects.

Terminal 4 North Land Application Number 4483/19

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. The Terminal 4 application had construction phase pollutant impacts scoped in during appropriate assessment. Construction, however, has finished, and there are no further works occurring that could cause adverse impacts on the QI's of nearby European sites. Following the implementation of the mitigation measures outlined above in this AASR/NIS, and the integrated design mitigation included as part of the pipeline application, there are no pathways for likely significant in-combination effects to occur, either alone or in combination for any plans/projects.

Berth 49 Ramp & Approachway Application Number 3176/19

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. Similarly, the Berth 49 Ramp & Approachway project scoped in similar habitat deterioration and pollution effects on the QI's of Dublin bays designated sites, However, following the implementation of mitigation measures outlined in the projects Stage 2 NIS, adverse effects have been reduced to a negligible level. Following the implementation of the mitigation measures outlined above, no pathways for significant adverse in-combination effects to occur over are present, alone or in-combination with any other plans/projects.

Kish and Bray Banks Case reference: OA06D.321992

The ABR2 Project has the potential to cause likely significant effects in relation to Diminution of Water Quality and Habitat Deterioration (due to contaminant/pollutant release into the water column), Underwater Noise & Disturbance and Aerial Noise & Disturbance on the QI habitats of the assessed designated sites, however, following mitigation outlined in Section 5.4) these impact pathways will be reduced to a negligible level. The Kish and Bray Banks project recommends several mitigation measures for pollution, underwater noise and disturbance in its environmental statement, reducing the impact of these effects on European sites to a negligible level. Therefore, there are no pathways for in-combination effects with the Dublin Port Maintenance Dredging Programme or any other plan/project following the implementation of the mitigation measures laid out in this AASR/NIS and the Kish and Bray Banks environmental reporting.

With the implementation of the mitigation measures outlined above, and those associated with the above assessed plans/projects, we expect that there will be no likely significant in-combination effects on the QI's of any nearby, scoped in European Sites, alone or in-combination with any nearby plans/projects.

5.4.12 Residual Impacts

With the implementation of mitigation measures (See Section 5.4) outlined above, there is no likelihood of the ABR2 Project adversely affecting the conservation objectives or favourable conservation condition of the QI's and SCI's identified for South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA, North Bull Island SPA, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Howth Head SAC, Lambay Island SAC and Codling Fault Zone SAC.

There are therefore, no residual direct or indirect impacts associated with the Project that could adversely affect the integrity of South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA, North Bull Island SPA, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Howth Head SAC, Lambay Island SAC and Codling Fault Zone SAC either alone or in-combination with other plans/projects.

6.0 Conclusion

Stage 1 Screening has been completed, upon the conclusion of which, Likely Significant Effects of the ABR2 Project on South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA, North Bull Island SPA, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, Howth Head SAC, Lambay Island SAC and Codling Fault Zone SAC could not be excluded. In particular, it was concluded Likely Significant Effects on these European sites could not be excluded in relation to diminution of water quality and degradation of habitats due to point-source pollutant release into the water column, in the absence of mitigation measures. Accordingly, it was necessary to carry out Stage 2 Appropriate Assessment.

Stage 2 Appropriate Assessment has been completed and it has been concluded that the ABR2 Project is not directly connected with or necessary to the management of any European site; will not give rise to adverse effects on the integrity of any European site with implementation of mitigation measures; and will not give rise to significant in-combination effects with the other plans or projects. It can be objectively concluded, on the basis of objective evidence, beyond scientific doubt, that there will be no adverse effects on the integrity of any European site

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