Alexandra Basin Redevelopment 2

Bringing Dublin Port To 2040

Environmental Impact Assessment Report

Chapter 1 Introduction

Volume 2



CALAFORT ÁTHA CLIATH
DUBLIN PORT

TETRA TECH

Introduction

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1 Introduction

1.1 Context

This Environmental Impact Assessment Report (EIAR) has been prepared by Tetra Tech, on behalf of the applicant, Dublin Port Company (DPC), for permission in respect of the Alexandra Basin Redevelopment 2 (ABR2) Project. Development consent for the ABR2 Project is being sought to complete works previously consented in 2015 for the now expired Alexandra Basin Redevelopment (ABR) Project.

The ABR Project was the first Strategic Infrastructure Development (SID) project to be brought forward for planning consent by DPC (PL29N.PA0034) from the Dublin Port Masterplan 2040. The ABR Project was granted permission for a period of 10 years from the 8th of July 2015; however, due to several factors, including the impact of the COVID-19 pandemic, the construction phase was not fully completed in accordance with the plans and particulars submitted before the expiry of permission. An application under Section 146B of the Planning and Development Act, 2000 (as amended) ("the 2000 Act") (ABP-322353-25) was made on 15th of April 2025 regarding the position of the uncompleted works related to the ABR Project. This Section 146B application altered the terms of the development so as to omit aspects of the permitted development related to the North Wall Quay Extension. The Decision Order of the Commission determined on 18th of July 2025 that these proposed alterations would not be material and has confirmed these to the terms of the planning permission. Further details on the omissions and the completed elements of the ABR Project are provided in **Chapter 2 Project Justification**. Therefore, a new planning application will be submitted for the ABR2 Project with a 10-year permission to facilitate the completion of the required works, as detailed below.

The ABR2 Project includes the following main components:

- Capital dredging to a standard depth of -10m Chart Datum (CD) within Alexandra Basin West and subsequent treatment of dredged material;
- Demolition of existing marine infrastructure and subsequent infilling of the Berth 52/53 basin using remediated dredged material from Alexandra Basin West; and
- Raising of existing levels by 1.4m over an area of 95,000m^2 around the existing Berth 52/53 basin: the landside areas to the immediate east and west of the infilled basin and between the infilled basin and Terminal Road South, using clean imported material and, where suitable, remediated material from the dredged sediments.

This chapter of the EIAR introduces the ABR2 Project and outlines the procedures that were followed for the EIA Screening, the EIA Scoping exercise undertaken, and the preparation of this EIAR.

1.2 Purpose of the EIAR

Environmental Impact Assessment (EIA) is a procedure under the terms of European Union Directives[1] for the assessment of the likely significant effects of a project on the environment. An EIAR is a statement prepared by the applicant for development consent, providing information on the likely significant effects on the environment based on current knowledge and methods of assessment. It is carried out by competent experts, with appropriate expertise to provide an informed assessment within their discipline.

The primary objective of any EIAR is to identify the baseline environmental context of the proposed project, to identify the effects, if any, which the proposed project, if carried out, would have on the environment and to propose alternative options, where feasible. Where alternative options are not feasible, appropriate mitigation measures, where necessary, are proposed.

In preparing this EIAR, the following legal provisions and guidelines, amongst others, were followed:

- The requirements of EU EIA Directives and Irish law regarding Environmental Impact Assessment (including Part X of the2000 Act and Part 10 of the Planning and Development Regulations 2001, 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 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).

In addition, specialist disciplines have had regard to other relevant guidelines and legislation where appropriate, as noted in the specific chapters of the EIAR. This EIAR includes all of the information that may reasonably be required to reach a reasoned conclusion on the likely significant effects of the ABR2 Project on the environment, including all of the information specified in Annex IV of the EIA Directive, taking into account current knowledge and methods of assessment.

1.3 Function of the EIAR

This EIAR is a report, prepared on behalf of the developer, of the effects which the proposed project, if carried out, may have on the environment and includes the information specified in Annex IV of the Environmental Impact Assessment Directive, and is submitted to the competent authority as part of a development consent process. The competent authority uses the information provided in the EIAR to

[1] EU Directive 85/337/EEC, as amended, and codified by Directive 2011/92/EU (as amended by Directive 2014/52/EU).

assess the environmental effects of the project and, in the context of other considerations, to help determine if consent should be granted. The EIAR contains information regarding:

- The project;
- The likely significant effects of the project;
- The baseline scenario;
- The considered alternatives;
- The features and measures to mitigate any significant adverse effects;
- Additional information specified in Annex IV of the EIA Directive; and
- The non-technical summary.

Environmental Impact Assessment is a process consisting of:

i. The preparation of an EIAR by the developer;

ii. The carrying out of consultations;

iii. The examination by the competent authority of the information presented in the EIAR (and any supplementary information provided) and any relevant information received through the consultations;

iv. The reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to above (including, significantly, the examination of the information presented in the EIAR); and

v. The integration of the competent authority's reasoned conclusion into any other relevant decisions.

Accordingly, this EIAR includes the necessary information, and is of sufficient quality, for the competent authorities to reach a reasoned conclusion on the significant effects of the ABR2 Project on the environment. Article 5 of the EIA Directive, and Schedule 6 of the Planning and Development Regulations 2001, as amended specifies the minimum content of an EIAR. The EIAR has been prepared following an examination, analysis, and evaluation of the direct and indirect significant effects of the project in relation to the receiving environment.

1.4 Technical Difficulties or Lack of Data

The compilation of the information necessary for the EIAR did not present any significant difficulties. In addition to published datasets, the preparation of the EIAR has drawn on the environmental monitoring programme which is currently in place for the construction of the following projects at Dublin Port:

- ABR Project, the first SID project brought forward to planning from the Dublin Port Masterplan 2040, which commenced construction in 2016;
- MP2 Project, the second SID project brought forward to planning from the Dublin Port Masterplan 2040, which commenced construction in 2022.

The combined ABR Project and MP2 Project monitoring programme is comprised of:

- Continuous noise monitoring at three locations;
- Continuous dust monitoring at two locations;
- Periodic vibration monitoring;
- Continuous water quality monitoring (turbidity, dissolved oxygen, temperature, salinity, and pH since 2023) within the inner River Liffey channel at four locations;
- Continuous water quality monitoring (turbidity at three depths) within Dublin Bay at four locations over the period from October 2017 to March 2021. This was complemented by continuous wave climate and tidal current measurements;
- Passive Acoustic Monitoring (PAM) for Harbour Porpoise detection at two locations within Dublin Bay over the period October 2017 to March 2021 during the ABR Project capital dredging campaigns, and one location within the inner Liffey channel from July 2022;
- Static Acoustic Monitoring (SAM) for Harbour Porpoise detection at four locations within Dublin Bay over the period October 2017 to March 2021 during the ABR Project capital dredging campaigns, and at three locations from April 2022;
- Records of marine mammal sightings by Marine Mammal Observers (MMOs) during dredging and piling operations;
- Benthic surveys of the licenced dumping at sea site located at the entrance to Dublin Bay;
- Monthly seal surveys at Bull Island;
- Lamprey surveys within the Liffey;
- Wintering waterbird surveys within the South Dublin Bay & River Tolka Estuary Special Protection Area (SPA);
- Tern colony surveys;
- Black guillemot surveys; and

- Underwater noise surveys during piling and dredging activities to validate models used to assess the impact on migratory fish and marine mammals.

The site-specific and up-to-date scientific data collected were used in the preparation of the EIAR for the ABR2 Project and serve to illustrate the depth of understanding of the environment in and around Dublin Port, including the inner Liffey channel (Dublin Harbour) and Dublin Bay, and the quality of the data on which that understanding is based.

The preparation of this EIAR was further assisted by the extensive environmental datasets collated during the preparation of the Strategic Environmental Assessment (SEA), for the purposes of the review of the Dublin Port Masterplan during 2017 and 2018.

Additional survey work has been undertaken to provide up-to-date baseline information for the environmental assessments, in addition to the site-specific information from the existing databases from official sources, as detailed within specific chapters of this EIAR. This has included: a terrestrial habitats survey; benthic surveys and sample analysis; and monthly bird monitoring surveys between April 2025 and August 2025 for information on the usage of the basin of Berths 52/53 by all seabird species.

1.5 The ABR2 Project

As noted in **Section 1.1**, the ABR Project was granted permission for a period of 10 years from the 8th of July 2015. An application under Section 146B of the Planning and Development Act, 2000 (as amended) (ABP-322353-25) was made on 15th of April 2025 regarding the position of uncompleted works. This Section 146B application altered the terms of the development to omit aspects of the permitted development related to the North Wall Quay Extension. The Decision Order of the Commission determined on 18th of July 2025 that these proposed alterations would not be material and has confirmed these to the terms of the planning permission (PL29N.PA0034). In addition to the now omitted elements related to the North Wall Quay Extension, the ABR Project permitted the excavation and restoration of Graving Dock No. 1. Due to the need to retain hard-standing areas close to the berth, and as a result of pressures on DPC from stakeholders/tenants to facilitate the growth in volume of containers and dry goods between Ireland, the UK and mainland Europe, Graving Dock No. 1 will remain preserved and protected and may be excavated at a later stage under a specific, separate consent.

The ABR2 Project will therefore comprise the remaining necessary elements of work from the ABR Project. The redevelopment works for the ABR2 Project will focus on two areas of Dublin Port:

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

The locations of these areas within the Dublin Port Estate are shown in **Figure 1-1**.

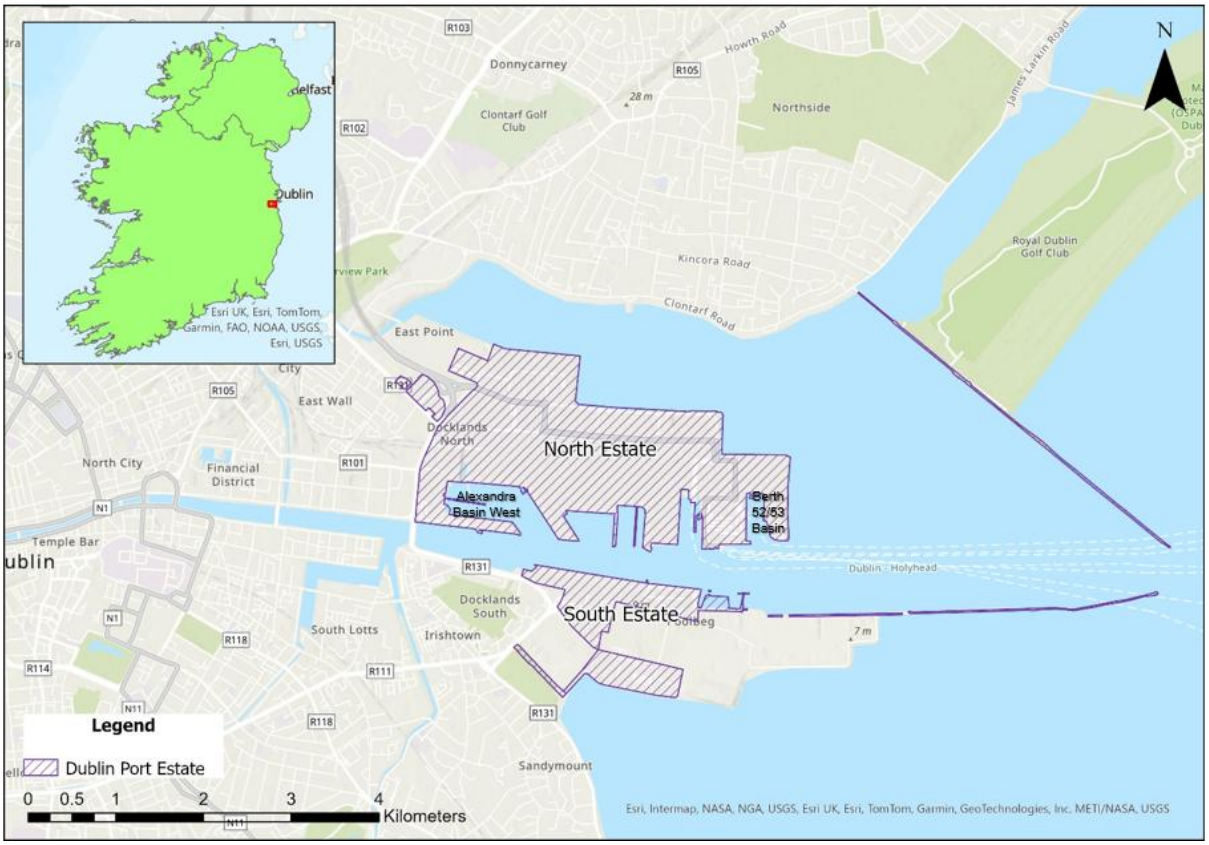


Figure 1-1: Location of works pertaining to the ABR2 Project

1.5.1 Alexandra Basin West

Capital dredging to a standard depth of -10m CD at Alexandra Basin West is required to allow access from deeper draughted ships in the years ahead. In addition, undertaking the works in Alexandra Basin West will allow DPC to take steps to address a legacy contamination issue in the basin, 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 (both operationally and financially) that DPC is able to include these berths within routine maintenance dredging campaigns.

Environmental sampling of sediment within Alexandra Basin West 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. Levels of contamination of existing materials within Alexandra Basin West result in this material being unsuitable for disposal at sea. The extent of contamination has been reaffirmed following recent site investigation works of less contaminated sediments at the entrance of Alexandra Basin West and analysis demonstrated that no material required to be dredged and removed from Alexandra Basin West may be disposed of at sea.

1.5.2 Berth 52/53

As noted previously, in accordance with the Dublin Port Masterplan 2040, the ABR Project was the first SID project to be developed and was consented in July 2015. The MP2 Project was the second SID project to be developed and was consented in July 2020 (ABP-304888-19). As permitted, the MP2 Project amended elements of the preceding ABR Project with respect to the alignment of Riverside Berth 52 to allow for the insertion and alignment of a new Riverside Berth 53 (**Figure 1-2**). The new Riverside Berth is currently under construction, and once constructed, the basin will be closed off from the main navigational channel, and the operational basin berths can be decommissioned. Works can then commence to infill the basin, as proposed under the ABR2 Project, which will facilitate the construction of the Unified Ferry Terminal (UFT), consented under the MP2 Project.

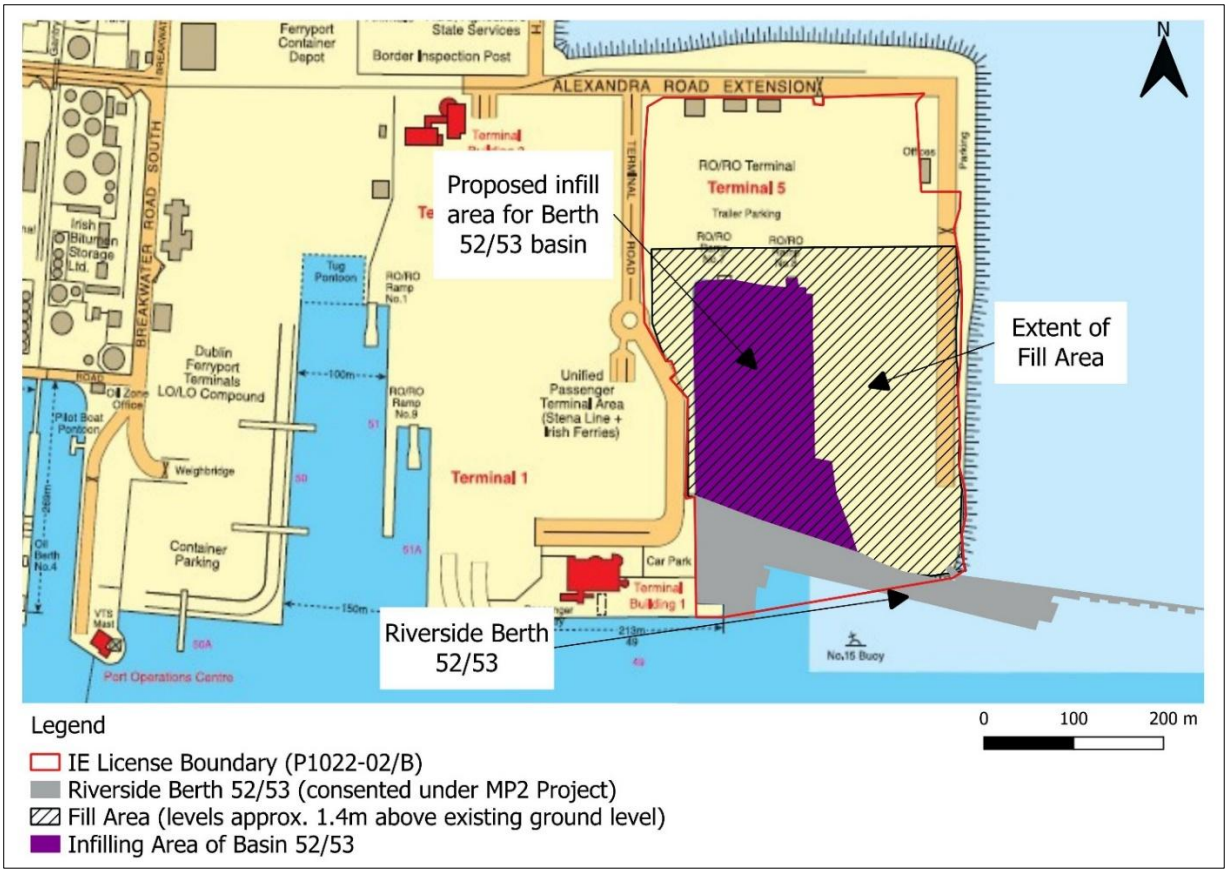


Figure 1-2: Interface with MP2 Project

DPC has investigated options to manage the future treatment of dredged sediments to facilitate dredging activities in Alexandra Basin West and the subsequent treatment and recovery of arising sediments for use as infill for the existing basin at Berths 52/53 in line with an Industrial Emissions (IE) licence issued by the Environment Protection Agency (EPA) (Licence Register No: P1022-02/B). This licence is for the ex-situ treatment by stabilisation/solidification and recovery of contaminated dredge material at specific locations within Dublin Port as part of the ABR Project. The waste to be treated under this IE licence comprises contaminated dredged sediment taken from Alexandra Basin West,

which is contaminated to varying degrees with heavy metals, TBT, DBT, hydrocarbons, and, to a lesser extent, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs).

Where suitable, remediated material, combined with clean imported materials will be used to raise existing surface levels by 1.4m over an area of 95,000m^2. Surface levels will be raised around the infilled basin, the landside area to the west and the landside area to the east until Terminal Road South.

The proposed development areas and the IE licence boundary are illustrated in **Figure 1-3**.

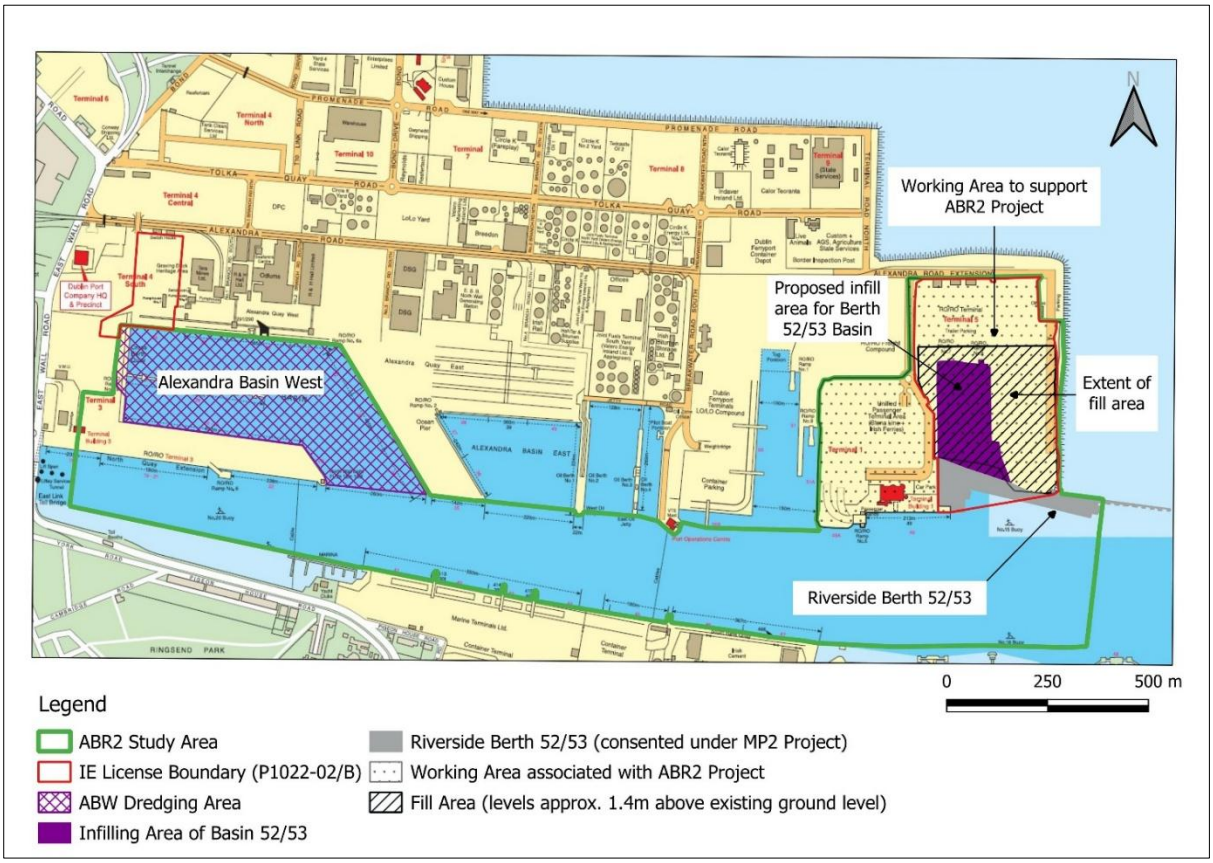


Figure 1-3: Proposed Development Areas

A General Arrangement Drawing illustrating the main elements of the ABR2 Project is presented in **Figure 1-4**, this also indicates the proposed redline boundary of the ABR2 Project for the planning application. 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.

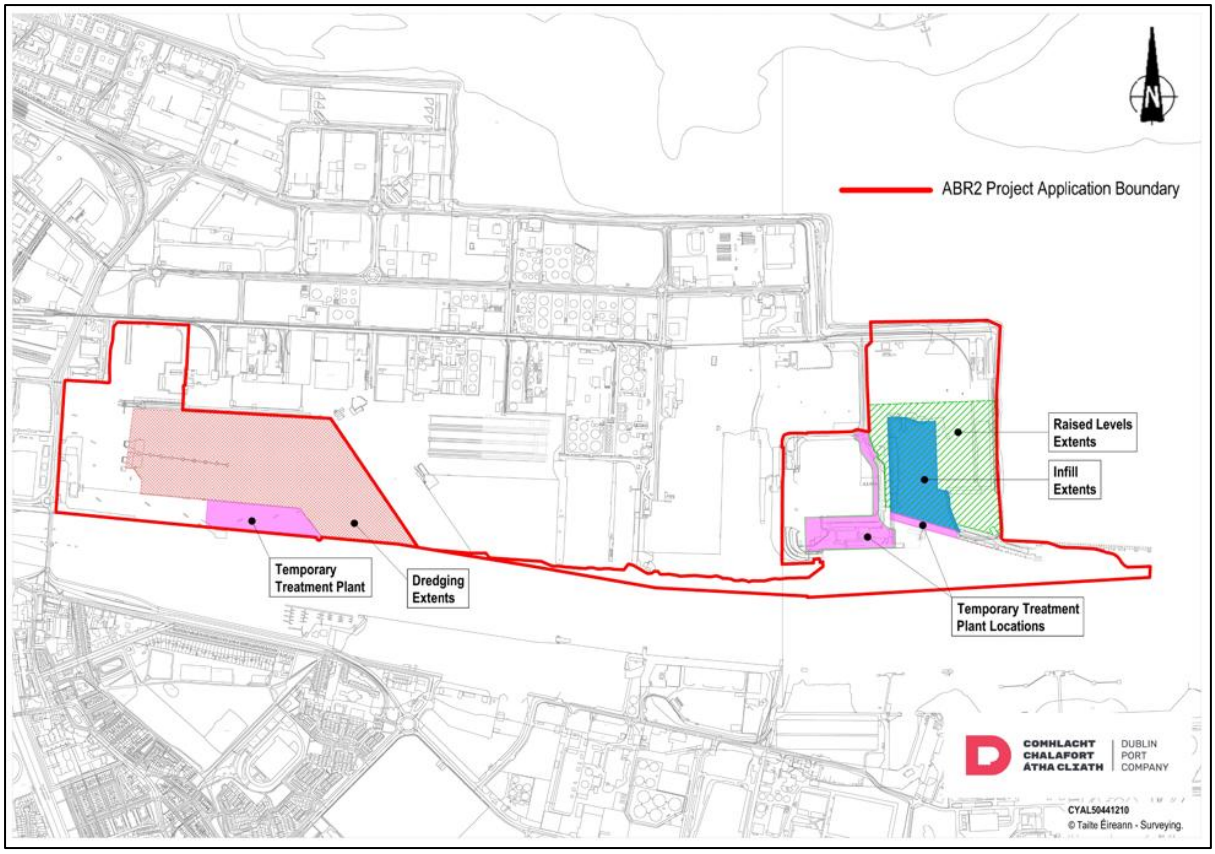


Figure 1-4: General Arrangement Drawing of the ABR2 Project and proposed red line boundary of the planning application

1.5.3 Adjacent Land Use

The site is bounded to the north and east by the Tolka estuary. The Tolka estuary is used for recreational purposes mostly by small sailing craft based at Clontarf. Swimming also takes place from the North Bull Wall throughout the year, including the winter season. There are no licensed aquaculture sites within the estuary. The Tolka Estuary is also of international importance due to its large populations of waterbirds.

The site is bounded to the south by the River Liffey, which is the main navigation channel for Dublin Port. DPC is the authority with responsibility for the safe passage of all vessels entering and leaving the port. All vessel movements and activities within the navigation channel are controlled by DPC's Harbour Master. No other commercial activities are permitted within the navigation channel for safety reasons. Maintenance dredging of the navigation channel takes place on a regular basis to maintain depth. The Great South Wall lies outside, but in close proximity to, the boundary of the site. A number of events are hosted by DPC including the annual 'Riverfest'. Accommodation is also made for sailing and boating activity based at the Poolbeg Yacht & Boat Club, Marina and Stella Maris Rowing Club.

Within the application boundary there are also further Port lands with similar land uses to that within the development areas of Alexandra Basin West and Berths 52/53 basin.

Oil Berths

Dublin Port handles many different bulk liquid products including petrol, diesel and kerosene, but also non-petroleum liquids such as molasses. 61% of oil imported into Ireland comes through Dublin Port. The liquid petroleum products are discharged from tanker ships at four dedicated berths within the Dublin Port Estate and then pumped through a pipeline system, shared by different operators, to storage tanks within the Port Estate. Storage capacity in excess of 300,000 tonnes of oil products is available within the Port. Oil products are delivered by road from the Port to distribution centres and filling stations outside the Port. There are two Oil Jetties in operation within the Dublin Port Estate supporting a range of above ground pipework. The Western Oil Jetty has two berths (Oil Berth 1 and Oil Berth 2). These berths facilitate the majority of petroleum product imports at Dublin Port. The Eastern Oil Jetty also has two berths (Oil Berth 3 and Oil Berth 4). These berths facilitate the majority of bitumen products and all of the Liquid Petroleum Gas (LPG) imports at Dublin Port.

Lo-Lo (Lift-On Lift-Off) Container Freight Terminal

There are two Lo-Lo Container Freight Terminals within the application boundary of the ABR2 Project. These are operated at Dublin Ferryport Terminals and at Alexandra Quay East. There are two main groups of cargo handling equipment used for containers: primary handling equipment and secondary handling equipment. Primary handling equipment refers to cranes of different types used to load and unload containers on and off the ship.

Ro-Ro (Roll-On Roll-Off) Terminals

There are a currently five Terminals within the application boundary of the ABR2 Project development area with ramps for Ro-Ro freight and passengers. These are located at Terminal 1, Terminal 2, Terminal 4 and Terminal 5. Ro-Ro refers to shipping services and activities where vehicles are driven on and off ferries or other specialised ships (such as car carriers). Some services are freight only; others carry a combination of freight and passengers. Ro-Ro freight is transported either “accompanied” or “unaccompanied”. “Accompanied” refers to trailer units to which the cab is attached at all times and the driver accompanies the vehicle on the Ro-Ro ferry. “Unaccompanied” refers to freight trailers that are delivered and collected from the compound adjacent to the vessel. These trailers are driven on and off ships by dock workers. The main difference in the two operations is the amount of land needed to service the units. In the case of accompanied freight, the units drive off the vessel and leave the port immediately. Unaccompanied freight requires larger areas of parking.

Ferry Terminal Buildings

There are three ferry terminal buildings located within the ABR2 Project application boundary of Terminal 1, Terminal 2 and Terminal 3. The existing Terminal 1 Building being used as a unified terminal building thereafter.

1.5.4 European Sites

As set out in more detail in **Chapter 7 Biodiversity, Flora and Fauna** of this EIAR and, in particular, the Appropriate Assessment Screening Report (AASR) and Natura Impact Statement (NIS) submitted

with the application for permission in respect of the ABR2 project, there are a number of Natura 2000 sites designated as Special Protection Areas (SPAs) or Special Areas of Conservation (SACs) which have the potential to interact with the proposed development, namely:

- South Dublin Bay and River Tolka Estuary SPA;
- North Bull Island SPA;
- North Dublin Bay SAC;
- South Dublin Bay SAC;
- Lambay Island SAC;
- Rockabill to Dalkey Island SAC; and
- North-West Irish Sea SPA.

The spatial configuration of these protected sites and their relationship with the proposed ABR2 Project is presented and assessed in **Chapter 7** of this EIAR, and in the AASR and NIS submitted with the application for permission. Separately, there are a number of protected archaeological and/or industrial heritage features designated within the development area. The key sites are:

- North Wall Quay Extension;
- Pumphouse at Alexandra Road;
- Graving dock No. 1;
- R. and H. Hall Granary at Alexandra Road;
- Electricity Substation at Alexandra Road;
- Odlum's Mill; and
- Industrial building at Alexandra Road, Branch Road South.

1.6 Project Screening, Scoping and Requirement for EIAR

The Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022) summarise the position of an EIAR within the overarching EIA process (Figure 2.1 reproduced in **Figure 1-5** of this Chapter of the EIAR).

An EIA Screening exercise (Appendix 1-1) was undertaken for the ABR2 Project, which concluded that an EIA is required with regard to Schedule 5 Part 2 of the Planning and Development Regulations 2001, as amended. The ABR2 Project falls within the following classes of development:

Class 2 Extractive Industry (d) - *Extraction of stone, gravel, sand or clay by marine dredging (other than maintenance dredging), where the area involved would be greater than 5 hectares or, in the case of fluvial dredging (other than maintenance dredging), where the length of river involved would be greater than 500 metres;* and

Class 11 Other projects (b) – *Installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part 1 of this Schedule.*

Having regard to the nature and scale of the ABR2 Project, the applicant has, following a screening exercise, determined that the relevant EIA thresholds prescribed under Directive 2014/52/EU and the corresponding Irish legislative provisions, as set out in the 2000 Act and Planning and Development Regulations 2001, as amended, are exceeded. Accordingly, an Environmental Impact Assessment is required as part of the application for permission.

In accordance with Directive 2014/52/EU, the developer is required to prepare and submit an Environmental Impact Assessment Report (EIAR) to the competent authority. The purpose of the EIAR is to identify, describe and assess the likely significant effects of the proposed development on the environment and to inform the decision-making process.

As further detailed in **Chapter 3 Section 3.6** a pre-application meeting was held with An Coimisiún Pleanála (the Commission) on the 5th of February 2026 to discuss the proposed ABR2 Project. Information on the permitted alterations to the original planning permission for the ABR Project (Ref. PL 29N.PA0034) were also discussed at this meeting.

The works proposed under the ABR2 Project are within the terrestrial and nearshore areas as defined in the Planning and Development Act 2000. The proposed area for dredging works at Alexandra Basin West exceeds five hectares and also falls within the scope Class 11(b) of the Eighth Schedule of the Planning and Development Act 2000 ("the 2000 Act") within Classes of Development specified for purposes of Chapter III of Part XXI "Other Development in the Maritime Area". Class 11(b) refers to the following;

11. Development consisting of—
(b) the extraction of stone, gravel, sand or clay by marine dredging (other than maintenance dredging), where the area of extraction would be greater than 5 hectares.

The works at Terminal 5 also falls within the scope Class 21 (b) of the 2000 Act. Class 21(b) refers to the following;

21. A Harbour or port installation, including –
(b) vehicle queuing and parking areas,
As a result, it is clear that the proposed ABR2 Project constitutes development to which Chapter III of the 2000 Act applies. Section 286 of the Planning and Development Act 2000 refers to the *"obligation to obtain permission to carry out development"* to which Chapter III applies.

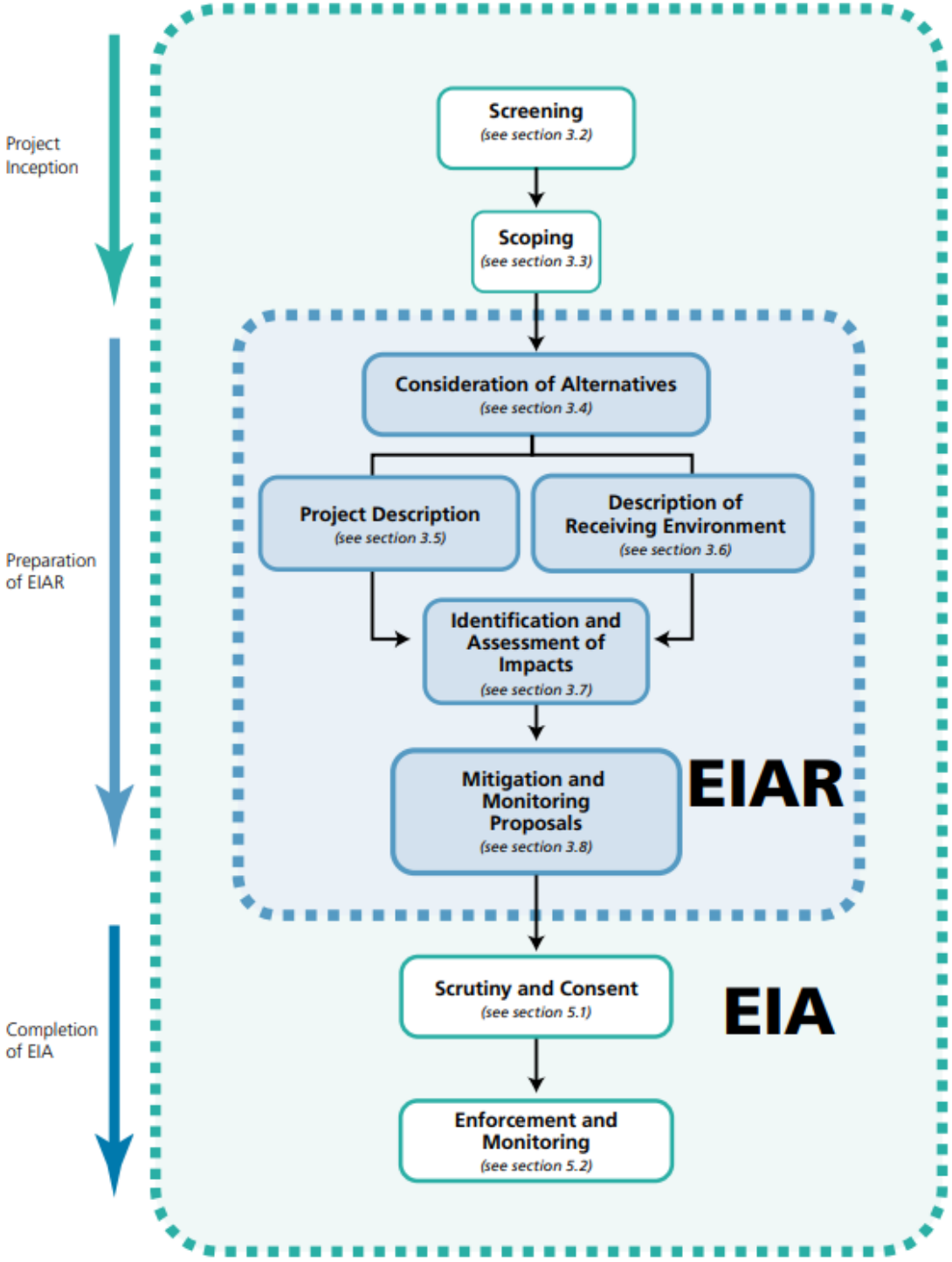


Figure 1-5: The position of this EIA within the overall EIA Process

Detailed scoping has been undertaken with respect to the ABR2 Project. Rather than seek a formal or statutory scoping opinion from a competent authority, DPC opted, in accordance with good practice, to voluntarily scope the contents of the ABR2 Project by engaging in consultation with prescribed and statutory bodies, and with other stakeholders. In accordance with the European Commission's 2017 "Environmental Impact Assessment of Projects Guidance on Scoping" and the EPA's "Guidelines on

the information to be contained in Environmental Impact Assessment Reports (May 2022)", the latter of which states:

> *"There can be considerable benefits in the developer engaging in early consultation about the scope of an EIAR to help to identify the relevant issues. This can be done formally (under the legislation) or informally."*

The EPA Guidelines (2022) define "scoping" as follows:

> *"Scoping" is a process of deciding what information should be contained in an EIAR and what methods should be used to gather and assess that information. It is defined in the European Commission Guidance (2017) as:*
>
> *'The process of identifying the content and extent of the information to be submitted to the Competent Authority under the EIA process.'*
>
> *Scoping is best carried out by personnel having appropriate expertise and relevant prior experience. Knowledge of the characteristics of the project type and of the sensitivities likely to be present in the receiving environment are particularly useful for scoping.*
>
> *[…]*
>
> *Scoping is carried out on a case-by-case basis because the significant issues for different projects are unlikely to ever be identical. However, there are standard issues that a developer should consider for each project to establish whether they apply in specific cases. The Advice Notes contain guidance on relevant environmental factors for principal project types.*
>
> *The potential for likely significant effects throughout different phases of the proposed project, are considered as far as possible at scoping stage – whether they would individually require consent or not. These include, as relevant, site investigations, construction, commissioning, and operation to eventual decommissioning. Scoping also considers the range of alternatives to be considered in an EIAR.*

In addition to the requirements of the EIA Directive and Irish implementing legislation, the scope of the EIA Scoping Report and EIAR, conducted in respect of the ABR2 Project, has had due regard to the following documents, amongst others:

- European Commission Environmental Impact Assessment of Project Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU), 2017.
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (May 2022), Environmental Protection Agency.
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, 2018.

- Dublin City Development Plan 2022-2028.
- The Habitats Directive.
- The Water Framework Directive.
- The Birds Directive.
- The Maritime Area Planning Act 2021.

1.7 Methodology and Structure of EIAR

The objective of this EIAR is to provide information on the project to the public, relevant prescribed bodies and, ultimately, to the competent authority. To this end, Article 3(1) of the EIA Directive requires that significant effects are identified, assessed and described in an 'appropriate manner'. Article 5(1) requires that the specified information is supplied in an appropriate form – the information should be presented in an EIAR that enables stakeholders and authorities to form opinions, and to make decisions regarding the project. While there are no formal requirements concerning the format and the presentation of the report, this EIAR clearly sets out the methodological considerations and the reasoning behind the identification and assessment of likely significant effects.

1.7.1 EIAR Content

Article 5(1) sets out what must be included as a minimum in the EIAR. Annex IV to the Directive, expands on these requirements. In short, this includes the following:

- A description of the project: this is an introduction to the project and includes a description of the location of the project, its characteristics, including land use requirements during construction and operational phases, as well as estimates of the expected residues, emissions, and waste produced during the construction and operation phases.
- Baseline scenario: a description of the relevant aspects of the current state of the environment, and the likely evolution thereof, without the implementation of the project, on the basis of the availability of environmental information and scientific knowledge.
- Environmental factors affected: a description of the environmental factors likely to be significantly affected by the project, including consideration of climate change mitigation and adaptation, biodiversity, natural resource sustainability, and the risks of major accidents and disasters.
- Effects on the environment: a description of the likely significant effects of the project on the environment. Such significant effects include direct and indirect, secondary, cumulative, transboundary, short-term, medium-term, and long-term, permanent and temporary, and positive and negative, as appropriate.

- Assessment of alternatives: a description of the studied reasonable alternatives to the project, with an indication of the main reasons for the selection of the option chosen, including a comparison of environmental effects.

- Mitigation measures: a description of the measures envisaged to avoid, prevent, reduce and, where possible, offset any identified significant adverse effects on the environment, including a determination of the effectiveness of such measures, their reliability and certainty, as well as the commitment to ensuring their practical implementation and monitoring of results.

- Monitoring: a description of any measures proposed to monitor significant adverse effects on the environment and/or measures taken to mitigate them.

- Non-Technical Summary: an easily accessible summary of the content of the EIAR presented without technical jargon, hence understandable to anybody without a background in the environment or the project.

- Quality of the EIAR: the experts responsible for preparing the EIAR are competent.

1.7.2 Assessment Methodology

1.7.2.1 Baseline Scenario

An assessment of the relevant aspects of the current state of the environment, and the likely progression thereof, without implementation of the project, is undertaken by qualified experts based on detailed environmental data and scientific knowledge. The consideration of the baseline scenario accords, in particular, with the detailed guidance in that respect provided in European Commission Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU) (European Commission, 2017).

The outcomes of the assessment are provided in a description of existing environmental conditions, and the 'do-nothing' scenario, within each environmental topic chapter. This forms the foundation against which likely significant effects can be compared and evaluated. It further provides the baseline against which ex-post-facto monitoring can be used to measure change, once the project has been implemented.

1.7.2.2 Environmental Factors

Article 3(1) requires that the following environmental factors be considered in an EIA so as to appropriately identify, describe and assess the likely significant effects which could potentially impact upon them as a result of the implementation of the project:

- Biodiversity, flora and fauna;

- Land, soils, geology and hydrogeology;

- Water quality and flood risk;
- Air;
- Climate;
- Noise and vibration;
- Coastal processes;
- Material assets – traffic and transportation;
- Material assets – services;
- Archaeology and cultural heritage;
- Landscape and visual;
- Population and human health; and
- Waste.

Consideration must also be given to the interaction of these environmental factors and the potential for cumulative effects.

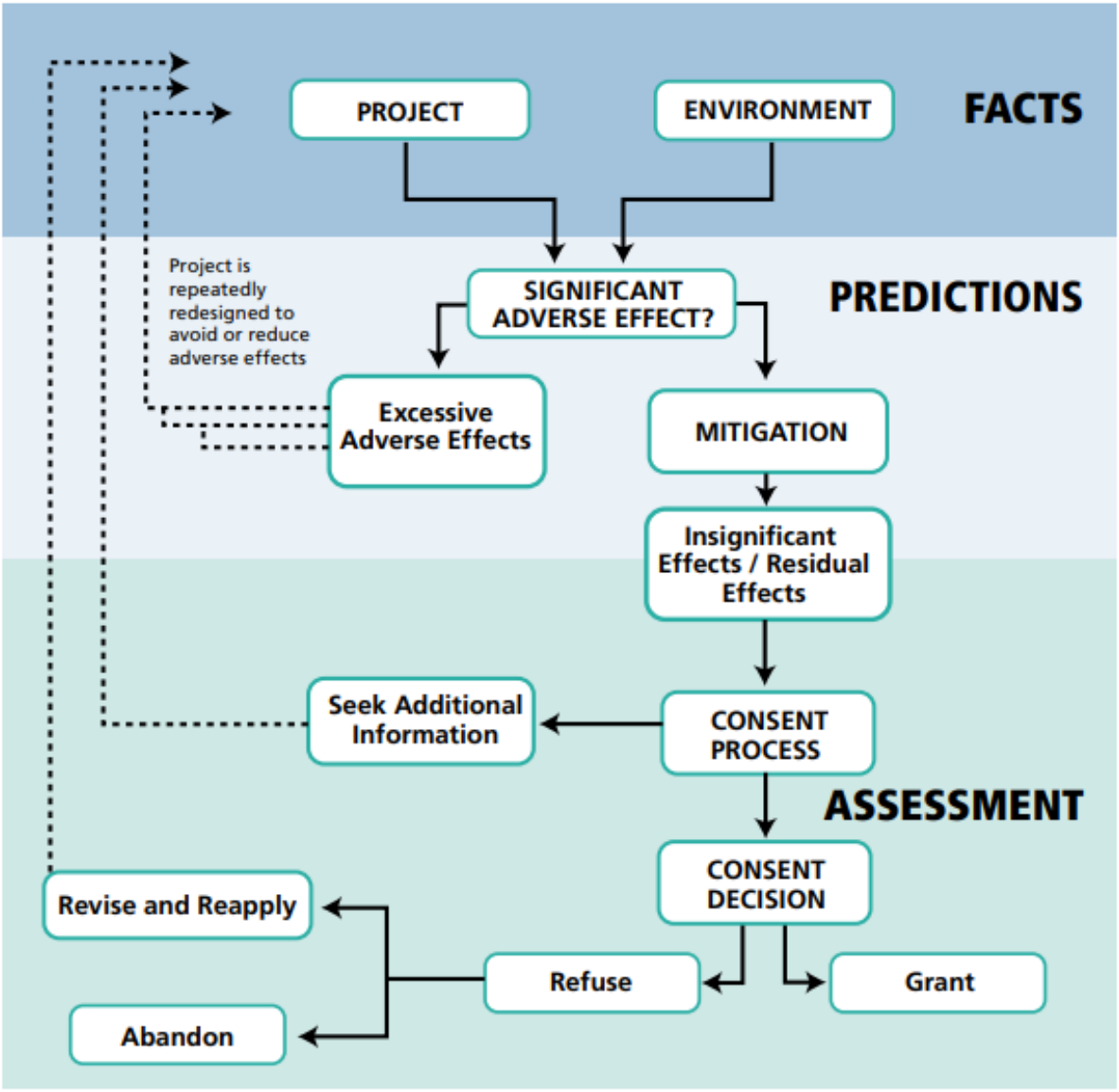


Figure 1-6: EIA Process Flow Chart

The Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022) illustrate the EIA process flow chart which is applied to each environmental factor (Figure 2.2 reproduced in **Figure 1-6** of this Chapter of the EIAR). It illustrates that the EIA process can be considered as involving three main parts:

- The first consists of a compilation of facts – i.e. the description of the existing environment and the description of the proposed project;
- The second consists of predictions of likely effects – this may be carried out on an iterative basis as the design is improved to eliminate excessive adverse effects; and
- The final part consists of the assessment of the environmental effects as part of a consent process, which may decide to grant, condition, refuse or seek additional information.

Specific topic-related methodologies are outlined in this section. Further to these, consideration is also given to the additional factors identified below, which are incorporated into assessment procedures to provide a complete understanding of the interaction between the project and the environment.

1.7.2.3 Climate Change

The assessment in the EIAR has been undertaken in accordance with the relevant (Climate change) provisions of: *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment*, European Commission (2017).

In addition to considering the effects of the project upon climatic factors, consideration is also given to the project's compliance with national policy in the form of the Climate Action Plans, the potential impacts of the project on climate change through greenhouse gases and embodied carbon, and the vulnerability of the project to future changes in the climate, and to its capacity to adapt to such changes in the future.

This EIAR assesses the direct and indirect effects of the project's construction and operation on climate change over its lifetime, and how the project's construction and operation comply with the Climate Action Plans.

1.7.2.4 Major Accidents and Disasters

Consideration is given to the potential of the project to cause accidents and/or disasters (both natural and man-made), and to the vulnerability of the project to potential accidents and/or disasters. The assessments of the risks presented by the project in this regard have focused on prevention, monitoring, and early warning. Identified risks have been examined to determine the best ways to manage and control their potential impacts, including by way of a comprehensive emergency management plan.

1.7.2.5 Biodiversity

Further to consideration of the effects of the project upon flora and fauna, consideration is also given to the effects of the ABR2 Project upon biodiversity; understood to be the variability among living organisms, this includes diversity within species, between species and of ecosystems. The assessment in the EIAR has been undertaken in accordance with the relevant (Biodiversity) provisions of: *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment*, European Commission (2017).

When assessing biodiversity, particular regard has been given to the ecologically significant environs of the project within Dublin Port and the surrounding area. The species and habitats which are to be found in the surrounding environs have been the subject to extensive monitoring and assessment by DPC for many years. This EIAR draws on this significant body of data.

In addition, as set out in detail in Chapter 7 *Biodiversity, Flora & Fauna* of this EIAR and, in particular, the Appropriate Assessment Screening Report [AASR] and Natura Impact Statement [NIS] submitted

with the application for permission in respect of the ABR2 project, special attention has been given to sites protected under the Habitats Directive and Birds Directive.

DPC has assessed the impacts of the project on the surrounding marine environment in line with the Marine Strategy Framework Directive 2008. The assessment of the project's impacts in this regard has been greatly assisted by the diverse suite of data-gathering apparatus present at the port and the surrounding waters.

1.7.2.6 Natural Resources

Consideration is given to the sustainability of resources, particularly with regard to land, soil, water and biodiversity, as well as energy. The assessment of the project's impacts upon the availability of natural resources is in addition to the assessment of the impacts of the project upon the resource itself.

1.7.2.7 Assessing Impact

The identification, description, and assessment of the effects of the project upon the aforementioned factors is premised upon an understanding of the likely magnitude of predicted impacts and the sensitivity to change of affected receptors. This provides for a determination of the likely significance of effects. The consideration of significance in this context has been informed by the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022), on describing the significance of effects, as well as the expert judgement of the consultants involved in the preparation of this EIAR. Given the unique setting of Dublin Port, the setting of 'significance criteria' has been carried out in a context-specific and tailored manner, taking into consideration the characteristics of the impact and the values associated with the environmental issues affected, in light of the EPA Guidelines.

The baseline scenario relating to each environmental factor is used to identify potential receptors. The sensitivity of a given receptor is dependent on the receptor concerned and the effect to which it is subject. For this reason, given that sensitivity is context-specific, it is thus defined within each topic chapter, but nonetheless considers:

- The vulnerability of the receptor;
- The capacity of the receptor to recover; and
- The value / importance attributed to the receptor.

An impact is defined as a physical change to the environment which is attributable to the implementation of the project. The impacts which are likely to arise, and their magnitude, are detailed within individual topic chapters. Nonetheless, unless otherwise stated, the magnitude of impacts generally takes into account factors such as:

- The extent of the impact;

- The duration of the impact;
- The frequency of the impact; and
- The capacity for the impact to be reversed.

The significance of an effect, defined in terms of the expressed consequence of an impact, is determined with regard to the magnitude of the impact and the sensitivity or value of the receptor. The level of significance of effects is defined separately within each section and has been developed to accord with Table 3.4 Descriptions of Effects in the Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022).

Effects are also considered, and categorised, in terms of being direct, indirect, secondary, cumulative, transboundary, short-term, medium-term, long-term, permanent, temporary, positive and negative, as appropriate. Effects are described in an appropriate manner, allowing the competent authorities to assess them in the decision-making process. The assessment of significance or otherwise of any effects are substantiated in detail. The methodologies used are identified and explained, allowing the weight attached to different factors to be observed and understood.

Cumulative effects are defined in the Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022) as “the addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects” and arise from changes to the environment that are caused by an action in combination with other actions. Cumulative effects can arise from a number of sources, where relevant, including:

- The in-combination effects of different projects in the same area; and
- The interaction between the various impacts within a single project.

The cumulative effects of the ABR2 Project, in conjunction with other proposed projects, are considered within each topic chapter. Relevant developments considered within the cumulative assessments include those which are:

- Under construction;
- Permitted, but not yet implemented; and
- Submitted for development consent, but not yet determined.

It is noted that developments that are built and operational at the time of submission are considered to be part of the existing baseline conditions and thus are dealt with in specific environmental topic chapters.

Each topic chapter further considers whether there are significant cumulative effects which are likely to arise as a result of interaction between effects as part of the same project.

1.7.2.8 Assessment of Alternatives

The EIA Directive requires assessment of reasonable alternatives which are relevant to the proposed project including, as appropriate, an outline of the likely evolution of the current state of the environment without implementation of the project (baseline scenario), as a means of improving the quality of the environmental impact assessment process and of allowing environmental considerations to be integrated at an early stage in the project's design.

The process allows for adjustment to minimise environmental impact, thus minimising the project's significant effects on the environment.

In this context, in accordance with the relevant provisions of the European Commission *Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)* (European Commission, 2017), DPC has carried out a detailed assessment of alternatives under the following headings, amongst others:

- Design;
- Technology;
- Location;
- Size; and
- Scale.

In addition, EPA EIAR Guidelines (EPA, 2022) state that *"The objective is for the developer to present a representative range of the practicable alternatives considered. The alternatives should be described with 'an indication of the main reasons for selecting the chosen option'. It is generally sufficient to provide a broad description of each main alternative studied and the key issues associated with each, showing how environmental considerations were taken into account in deciding on the selected option. A detailed assessment (or mini-EIA) of each alternative is not required."*

Assessment of alternatives includes consideration of the avoidance, prevention, reduction, or offsetting of adverse environmental effects, which may be described at a number of levels including:

- Those assessed at the plan stage (which the EU guidance states *"it would likely be unnecessary to consider them again");* and

- those assessed at design stage (which the EU guidance describes as *"alternatives or variants of Project components in order to mitigate significant environmental impacts that emerge during assessment"*).

In this EIAR, the 'do-nothing' alternative has been assessed, which is defined in the EPA Guidelines (EPA, 2022) as "a general description of the evolution of the key environmental factors of the site and environs if the proposed project did not proceed". This alternative would lead to extreme constraints on the capacity of Dublin Port within a decade. Further details in this regard are set out in **Chapter 4 Assessment of Alternatives.**

Within each potential design solution proposed, there has been extensive assessment of different processes, methods and materials which might be used in each context to minimise any potential effects on the environment.

Mitigation measures, where required, have been proposed only after a consideration of any alternative measures which might be available, having assessed each alternative for its appropriateness in the relevant context and its efficacy.

The EIAR includes the main reasons for selecting the chosen option, in each circumstance, with regard to its potential environmental impacts. In tandem with the assessment of mitigation measures below, the consideration of reasonable alternatives has focused on the avoidance or prevention of adverse effects on the environment. Where alternatives have not been selected due to technological obstacles, budgetary obstacles, stakeholder obstacles, or legal/regulatory problems, these alternatives have nevertheless been thoroughly considered, and the details of the relevant assessments are set out in this EIAR.

DPC has made use of its extensive local knowledge, its institutional memory, and its deep and ongoing engagement with the local communities in the environs of the port, to assess alternatives in the context of this project. Detailed consultation with the public has been taken on board and used to inform the design of the project and in the selection of relevant alternatives where appropriate.

1.7.2.9 Mitigation Measures

Where required, mitigation measures are identified and described within individual topic chapters. These are measures which could further avoid, prevent, reduce and, where possible, offset likely significant adverse effects upon the environment. Measures have been assessed in order to prioritise avoidance and prevention where possible. Only where effects are unavoidable have reduction and offsetting measures been proposed. Where possible, a long-term approach to mitigation has been adopted.

A description of those potentially adverse effects which proposed mitigation measures are intended to avoid, prevent, reduce or offset is provided in addition to a summary regarding the proposed measures' effectiveness, reliability, and certainty, as well as the commitment to ensuring their practical

implementation and monitoring of results. These proposed measures have been fully incorporated into the proposed design and operation of the project.

1.7.2.10 Monitoring

In the context of environmental assessment, monitoring is defined (EPA, 2022) as "the observation, measurement and evaluation of environmental data to follow changes over a period of time, to assess the efficiency of control measures and to record any unforeseen effects in order to be able to undertake appropriate remedial action." Monitoring is typically a repetitive and continued process carried out during the construction, operation or decommissioning of a project.

The Dublin Port Masterplan has a long-standing suite of monitoring and data-gathering measures that have informed the contents of this EIAR. Further monitoring is proposed for the construction and operational phase of the proposed project. Nevertheless, duplication of efforts will be strictly avoided.

As observed in the Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022), it may be appropriate, where relevant, to propose that monitoring takes place after consent is granted in order to check that the project, in practice, conforms to the predictions made during the EIA and to record any unforeseen effects in order to undertake appropriate remedial action. In addition, monitoring confirms that proposed systems are operating as intended. Monitoring is proposed, as appropriate, in the individual chapters of this EIAR.

Further to mitigation measures, appropriate and proportionate monitoring measures are also identified and summarised within individual topic chapters.

1.7.2.11 Residual Effects

Residual effects are the final predicted or intended effects which occur after the proposed mitigation measures have been implemented. They refer to the degree of change that will occur after the proposed mitigation measures have taken effect.

It may not always be possible or practical to mitigate all adverse effects, and those which may remain are referred to as 'residual effects'. Residual effects must be clearly described and are a key consideration in deciding whether the project should be permitted or not.

1.7.2.12 Conclusion on Likely Significant Effects

A conclusion by the authors of the EIAR on the likely significant effects of the ABR2 Project on the environment, taking into account the results of the examination of the information presented in the EIAR, is provided in each chapter. In addition, a summary of the key impacts, mitigation and monitoring measures associated with the ABR2 Project is provided, along with a discussion of cumulative impacts, interactions, and inter-relationships between environmental factors. This conclusion will inform the reasoned conclusion to be made by the competent authority in conducting the EIA.

1.7.3 Structure of the EIAR

The EIAR has been structured in accordance with the European Commission's Guidance "Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU)" (2017) and EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022) on describing the significance of effects (EPA, 2022). Accordingly, the EIAR:

- Is presented with a clear structure with a logical sequence that describes, inter alia, existing baseline conditions, predicted impacts (nature, extent, and magnitude), scope for mitigation, proposed mitigation measures, and significance of unavoidable/residual impacts for each environmental factor;
- Contains a table of contents at the beginning of the document;
- Comprises a description of the development consent procedure and how EIA fits within it;
- Reads as a single document with appropriate cross-referencing and is concise, comprehensive, and objective;
- Is written in an impartial manner without bias;
- Includes a full description and comparison of the alternatives studied;
- Makes effective use of diagrams, illustrations, photographs, and other graphics to support the text;
- Uses consistent terminology with a glossary;
- Has a clear explanation of complex issues;
- Contains a good description of the methods used for the studies of each environmental factor;
- Covers each environmental factor in a way which is proportionate to its importance;
- Provides evidence of effective consultations;
- Provides a basis for effective consultations to come;
- Makes a commitment to mitigation (with a programme) and to monitoring;
- Contains a Non-Technical Summary which does not contain technical jargon; and
- Contains, where relevant, a reference list detailing the sources used for the description and assessments included in the EIAR.

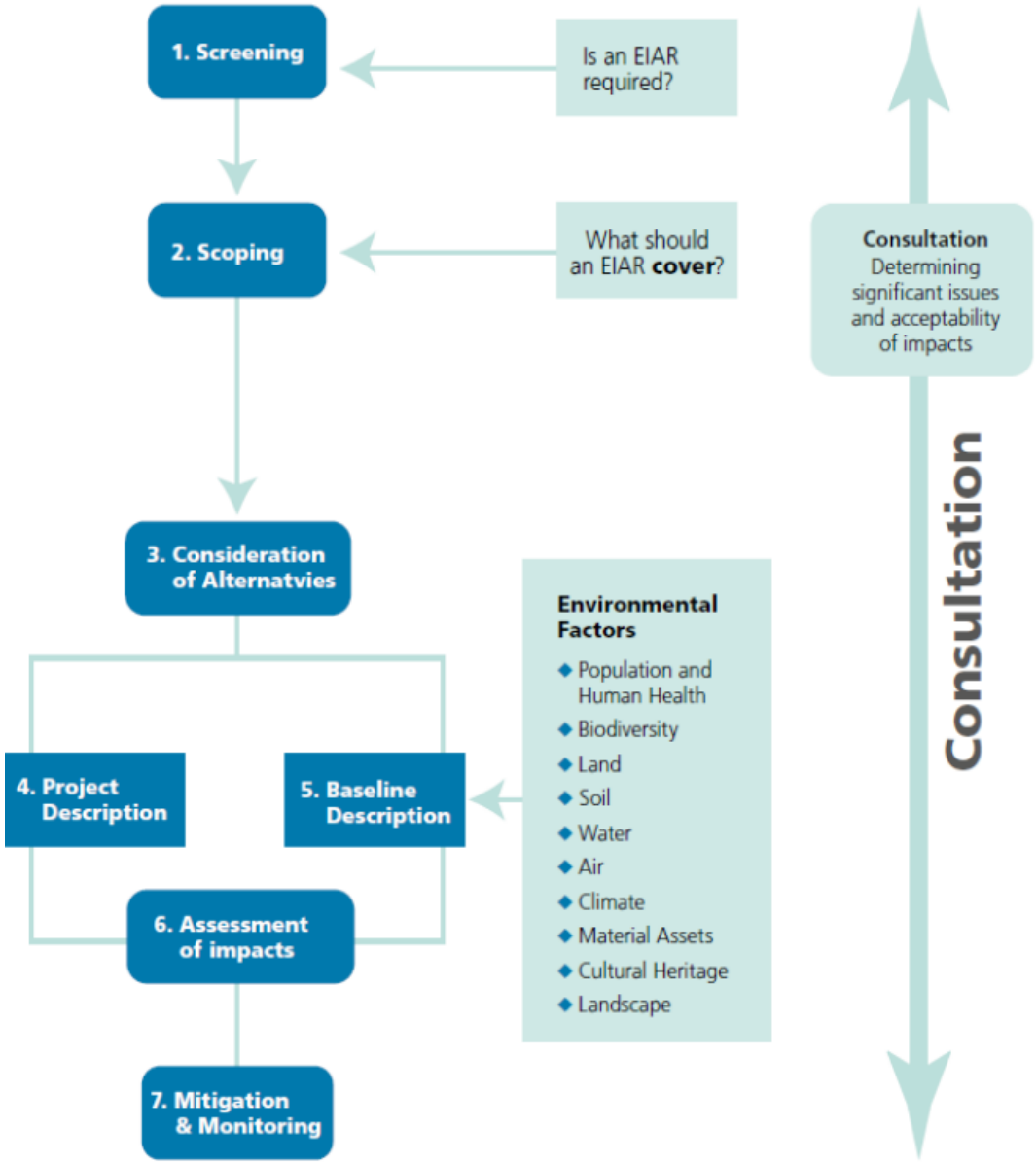


Figure 1-7: EIAR Contents and General Sequence

The Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022) illustrate a general seven-step sequence which helps ensure an objective and systematic approach to the EIAR process (Figure 3.1 reproduced in **Figure 1-7** of this Chapter of the EIAR).

Following this approach, this EIAR is broken down into the following Chapters.

STAGE 1

- Introduction

STAGE 2

- Project Justification
- Consultation, Screening and Scoping

STAGE 3

- Assessment of Alternatives

STAGE 4

- Project Description
- Risk of Major Accidents and Disasters

STAGES 5 AND 6 (by Environmental Factor)

Subsequent chapters address specific environmental factors and provide a description of the existing environment, the likelihood of effects, the significance of effects, remedial and mitigation measures, residual impacts, and monitoring measures. The specific environmental factors considered are:

- Biodiversity, Flora and Fauna
- Land, Soils, Geology and Hydrogeology
- Water Quality and Flood Risk Assessment
- Air Quality
- Climate
- Terrestrial Noise and Vibration
- Underwater Noise and Vibration
- Coastal Processes
- Material Assets - Traffic and Transportation
- Material Assets - Services
- Cultural Heritage
- Landscape and Visual
- Population and Human Health

- Resource and Waste

STAGE 7

- Cumulative Effects and Environmental Interactions
- Summary of Mitigation Measures
- Conclusions
- References
- Glossary of Terms

The advantages of using this type of format are that it is easy to examine each environmental topic and it facilitates easy cross-reference to specialist studies undertaken as part of the assessment.

Each topic of environmental assessment is considered as a separate chapter and is drafted by relevant specialists.

In addition to the EIAR and its appendices, the application documentation also comprises:

- Planning Report;
- Planning Drawings;
- Screening for Appropriate Assessment Report;
- Natura Impact Statement (NIS); and
- Draft Construction Environmental Management Plan (CEMP), including a Mobility Management Plan (MMP) and Project Carbon Management Plan (PCMP).

The following specialists were involved in the preparation of the EIAR:

- Tetra Tech – Planning consultants for the ABR2 Project;
- Tetra Tech – Lead Environmental consultants for the ABR2 Project; and
- Tetra Tech – Lead Engineering consultants for the ABR2 Project.

The production of the EIAR has been co-ordinated by Tetra Tech. The EIAR structure, responsibility and qualified input for each chapter are detailed in **Table 1-1**.

Table 1-1: List of Contributors to EIAR Chapters

Chapter of EIAR	Lead Author(s)	Company	Subject	Qualifications
Chapter 1	Richard Bingham	Tetra Tech	Introduction	BSc MSc CSci FCIWEM C.WEM
Chapter 2	Richard Bingham	Tetra Tech	Project Justification	BSc MSc CSci FCIWEM C.WEM
	Helena Gavin	Tetra Tech	Spatial Planning Policy	BA, MSc Town & Country Planning, PG Dip EnvEng, MIPI
Chapter 3	Richard Bingham	Tetra Tech	Consultation, Screening and Scoping	BSc MSc CSci FCIWEM C.WEM
Chapter 4	Grace Glasgow	Tetra Tech	Assessment of Alternatives	MEng EurIng CEng CSci CWEM FIEI FCIWEM FICE
Chapter 5	Donal Doyle	Tetra Tech	Project Description	BEng MSc CEng FICE MIEI
Chapter 6	Douglas Adamson	Byrne Ó Cléirigh Consulting	Risks of Major Accidents and Disasters	BA BAI ME(Mgmt) CEng MIEI MEI
Chapter 7	Shane O'Boyle	Aquafact	Benthic Biodiversity and Fisheries	BSc PhD CSci FRSB FRGS
	Simon Berrow	IWDG Consulting	Marine Mammals	BSc (Hons) PhD
	James McCrory	Tetra Tech	Terrestrial Biodiversity and Designated Areas	BA (Mod) MSc CEcol CEnv MCIEEM CBiol MRSB
	Adam McClure	Tetra Tech	Avian Biodiversity	BSc MCIEEM
Chapter 8	Joseph McGrath	Tetra Tech	Land, Soils, Geology and Hydrogeology	BSc (Hons) MSc MCIWEM MIEnvSc
Chapter 9	Mark Magee	Tetra Tech	Water Quality	BA (Mod), MSc, CSci, CEnv, CWEM, MCIWEM
	Diane McGinnis		Flood Risk Assessment	BEng CEng MSc MIEI MICE
Chapter 10	Stephen McAfee	Tetra Tech	Air Quality	BSc MSc MIAQM CMIES
Chapter 11	Paul Chadwick	Tetra Tech	Climate	BA (Mod) M.Phil AIEMA
Chapter 12	Stephen Cleary	Alive Environmental Ltd	Terrestrial Noise and Vibration	BA (Mod) MSc MIEMA MIOA CEnv
Chapter 13	Rasmus Pedersen	Tetra Tech	Underwater Noise and Vibration	BA MSc PGDip MIOA
Chapter 14	Kristopher Calder	Tetra Tech	Coastal Processes	BSc MSc C.Sci MCIWEM C.WEM AMICE
Chapter 15	Conor O'Hara	Tetra Tech	Material Assets – Traffic and Transportation	BSc

Chapter of EIAR	Lead Author(s)	Company	Subject	Qualifications
Chapter 16	Emma Hayes	Tetra Tech	Material Assets – Services	BSc PhD fCMgr MCIWEM
Chapter 17	Niall Brady	ADCO	Cultural Heritage	BA MA PhD FSA
Chapter 18	Ray Holbeach	Tetra Tech	Landscape and Visual	BSc(Hons) MLA CMLI
Chapter 19	Andrew Buroni	Savills	Population and Human Health	PhD MSc BSc (Hons) Fellow of the Royal Society of Medicine, Fellow of the Royal Society for Public Health
Chapter 20	Peter Braithwaite	Tetra Tech	Resource and Waste	BSc (Hons) MSc MCIWM
Chapter 21	Richard Bingham	Tetra Tech	Cumulative Effects and Environmental Interactions	BSc MSc CSci FCIWEM C.WEM
	Emma Hayes			BSc PhD fCMgr MCIWEM
Chapter 22	Richard Bingham	Tetra Tech	Summary of Mitigation Measures	BSc MSc CSci FCIWEM C.WEM
	Emma Hayes			BSc PhD fCMgr MCIWEM
Chapter 23	Richard Bingham	Tetra Tech	Conclusions	BSc MSc CSci FCIWEM C.WEM
	Emma Hayes			BSc PhD fCMgr MCIWEM

1.8 Viewing and Purchasing of the EIAR

The EIAR is available to view and download at the following dedicated web address: https://dublinportabr2.ie/.

The EIAR can be inspected free of charge or purchased on payment of a specified fee (which shall not exceed the reasonable cost of making such a copy) during public opening hours at the offices of An Coimisiún Pleanála and Dublin City Council.

The EIAR can be viewed at the reception of the Dublin Port Company, Estuary House, Block P7, East Point Business Park, Alfie Byrne Road, D03 Y6A2, during normal working hours. A computer and screen have also been made available with appropriate search facilities. Hard copies and e-copies of the EIAR may also be purchased from DPC at the reasonable cost of making such a copy by phoning the following number during normal business hours, 01 8876000; or by post to Dublin Port Company, Estuary House, Block P7, East Point Business Park, Alfie Byrne Road, D03 Y6A2; or by email to abr2@dublinport.ie.