Alexandra Basin Redevelopment 2

Bringing Dublin Port To 2040

Environmental Impact Assessment Report

Non Technical Summary

Volume 1



CALAFORT ÁTHA CLIATH
DUBLIN PORT

TETRA TECH

ABR2 PROJECT
NON-TECHNICAL SUMMARY

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Chapter 1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by Tetra Tech on behalf of Dublin Port Company (DPC) in support of the Alexandra Basin Redevelopment 2 (ABR2) Project. The project seeks planning permission to complete elements of the original Alexandra Basin Redevelopment (ABR) Project that were consented in 2015 but not completed before the permission expired. Delays arose due to a range of factors, including the COVID-19 pandemic. In 2025, a Section 146B application amended the original permission to remove the North Wall Quay Extension, and the ABR2 Project is now proposed to complete the remaining essential works.

The principal components of the ABR2 Project are:

- Capital dredging of Alexandra Basin West to a depth of -10m Chart Datum (CD);
- Treatment and remediation of contaminated dredged sediments;
- Demolition of existing marine infrastructure and infilling of the Berth 52/53 basin using remediated sediments; and
- Raising ground levels by approximately 1.4m across c.95,000m² using suitable remediated and imported clean material.

The purpose of the EIAR is to identify, assess and describe the likely significant environmental effects of the proposed development, consider alternatives, and identify mitigation measures where required. The assessment has been undertaken in accordance with EU and Irish environmental assessment legislation, including the EIA Directive, the Planning and Development Act 2000 (as amended), and EPA Guidelines on EIAR preparation.

The EIAR provides information on the project, existing environmental conditions, likely environmental effects, alternatives considered, mitigation measures, monitoring proposals, residual effects and a non-technical summary. Its function is to assist the competent authority in reaching a reasoned conclusion on the environmental implications of the project as part of the development consent process.

Preparation of the EIAR benefited from an extensive body of environmental information collected through monitoring programmes associated with the original ABR and subsequent MP2 projects. This includes long-term monitoring of noise, dust, vibration, water quality, marine mammals, birds, fish, benthic habitats, underwater noise, seals and other ecological receptors. Additional surveys undertaken specifically for ABR2 included terrestrial habitat surveys, benthic investigations, sediment analysis and bird monitoring. Consequently, no significant technical difficulties or data gaps were encountered during the assessment.

Project Description

The ABR2 Project focuses on two locations within Dublin Port:

Alexandra Basin West

- Dredging is required to maintain future access for deeper-draught vessels and support port operations.
- Sediments within the basin are contaminated with heavy metals and organotins resulting from historic industrial and maritime activities.

- Investigations confirmed that these sediments are unsuitable for disposal at sea and therefore require treatment and beneficial reuse or alternative recovery.

Berth 52/53

- Following completion of the adjacent MP2 Project works, the existing basin at Berths 52/53 will be infilled.
- Dredged sediments from Alexandra Basin West will be treated under an existing EPA Industrial Emissions Licence and reused where suitable as engineering fill.
- The completed works will facilitate future development of the Unified Ferry Terminal (UFT), previously approved as part of the MP2 Project.

The surrounding area comprises a range of active port operations including oil terminals, roll-on/roll-off (Ro-Ro) facilities, lift-on/lift-off (Lo-Lo) container terminals, ferry terminals and navigation infrastructure. The site is also located adjacent to ecologically sensitive environments including the Tolka Estuary, River Liffey and Dublin Bay.

Environmental Context

A number of internationally important European designated sites occur near the project, including:

- 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 project area also contains a number of protected archaeological and industrial heritage assets, including Graving Dock No. 1, Odlum's Mill and associated port infrastructure.

Screening and Scoping

An EIA Screening exercise concluded that an EIAR was mandatory due to the scale and nature of the proposed works, particularly:

- Marine dredging exceeding statutory thresholds; and
- Waste treatment and recovery activities exceeding regulatory thresholds.

Although a formal scoping opinion was not sought, DPC undertook extensive consultation with statutory bodies, prescribed authorities and stakeholders. This informed the scope of the assessments and ensured that key environmental issues were addressed in accordance with European Commission and EPA guidance.

Assessment Methodology

The EIAR follows a structured assessment process beginning with the establishment of baseline environmental conditions and a "do-nothing" scenario. The likely impacts of the project are then assessed by considering both:

- The magnitude of potential impacts; and
- The sensitivity of affected receptors.

Environmental topics assessed include biodiversity, land and soils, geology, hydrogeology, water quality, flood risk, air quality, climate, noise, coastal processes, material assets, cultural heritage, landscape, population and human health, and waste.

The assessment also considers:

- Climate change mitigation and adaptation;
- Biodiversity impacts;
- Natural resource use;
- Major accidents and disasters;
- Cumulative effects;
- Interactions between environmental topics;
- Alternatives considered; and
- Residual effects after mitigation.

Where significant adverse effects are identified, mitigation measures are proposed following the hierarchy of avoidance, prevention, reduction and, where necessary, offsetting. Appropriate monitoring measures are also identified to verify predictions and ensure environmental protection during implementation.

Structure of the EIAR

The EIAR is organised into a series of chapters covering project justification, consultation, assessment of alternatives, project description, major accident risks, environmental topic assessments, cumulative effects, mitigation measures and overall conclusions. Specialist assessments were prepared by a multidisciplinary team of environmental, engineering, planning, ecology, heritage, climate and technical experts.

Overall, Chapter 1 establishes the background, need, scope and assessment approach for the ABR2 Project, setting the framework for the detailed environmental assessments that follow in subsequent chapters.

Chapter 2 Project Justification

This Chapter of the EIAR explains the justification for the ABR2 Project and how it relates to the wider development of Dublin Port. It sets out the context in relation to the now expired ABR Project, the policy changes that have occurred since that permission was granted (July 2015) and outlines why a new planning application is now being made.

Dublin Port is Ireland's largest freight and passenger port and is a key part of the national transport network. It is also identified in national and European policy as a port of major strategic importance. The Dublin Port Masterplan 2040 provides the long-term vision for the Port and sets out how the existing port land should be used as efficiently as possible to meet future demand. The ABR Project was the first major development project taken forward from that Masterplan, and the ABR2 Project now seeks to complete the remaining parts of that earlier redevelopment.

The ABR Project received planning permission in 2015, but construction was not fully completed before the permission expired in July 2025. Some elements were not completed because of a range of factors, including the effects of the COVID-19 pandemic. In addition, some parts of the ABR Project were later amended by the permitted MP2 Project, and some works were removed altogether following a Section 146B application in 2025. As a result, the ABR2 Project now focuses only on the works that still need to be completed.

The ABR2 Project has two main components:

- Completion of dredging works in Alexandra Basin West, where contaminated material must be removed and treated; and
- Infilling of the Berths 52/53 basin, together with raising of surrounding land levels, to support the delivery of the Unified Ferry Terminal under the MP2 Project.

The dredging works are important because they will allow larger and deeper-draughted vessels to use the basin in the future. They will also address a legacy contamination issue in Alexandra Basin West, which currently limits routine maintenance dredging which occurs at the Port. The material to be dredged from Alexandra Basin West is contaminated and cannot be dumped at sea, so it will be treated and, where suitable, reused for infill works. This approach allows useful reuse of material while avoiding unnecessary disposal.

The ABR2 Project is supported by a strong policy and planning basis. Dublin Port is identified in national, regional and local planning policy as a strategic economic asset. These policies support the continued development of the Port, the efficient use of existing port land, and the improvement of infrastructure needed to support Ireland's trade, transport, and supply chains. The ABR2 project does not seek to extend the port beyond its existing footprint. Instead, it is intended to complete and optimise redevelopment already planned within the Masterplan.

A key part of the justification for the project is the need to ensure that Dublin Port remains ahead of demand, as cargo volumes have grown over time and are expected to continue to grow. At the same time, ships are becoming larger, and port infrastructure must adapt to remain competitive. The ABR2 Project is therefore presented as necessary to maintain capacity, improve operational efficiency, and support the long-term future of the port.

The ABR2 Project must be delivered within an active port environment, where construction has to be carefully phased to avoid disrupting existing operations. This adds to the complexity of the works and helps explain why a new ten-year planning permission is being sought.

In summary, the ABR2 Project is not a new expansion of Dublin Port, but rather the completion of important works already planned and largely consented under the ABR Project. It is intended to support port capacity, improve operational efficiency, address contaminated dredged material, and help ensure that Dublin Port can continue to meet future national and international needs.

Chapter 3 Consultation and Scoping

This Chapter explains how DPC developed the ABR2 Project through a long process of consultation, public engagement, and environmental scoping. The ABR2 Project is designed to complete the remaining elements of the earlier ABR project, which received planning permission in 2015 but was not fully finished before that permission expired in 2025.

Preparation for the ABR2 Project involved consultation with statutory bodies, technical experts, local stakeholders, and the public. Dublin Port Company chose to go beyond the minimum legal requirements and carried out voluntary scoping of the EIAR. This helped identify the most important environmental issues early and ensure that the project design could be adjusted where needed. The consultation process has been iterative, meaning that feedback from others has helped shape the project over time.

At a strategic level, consultation began with the Dublin Port Masterplan 2040 and its later reviews. These consultations looked at the long-term future of the port, how it might continue to operate, and what infrastructure would be needed to support future port activity. Public consultation on the Masterplan and later dialogue papers attracted interest from a wide range of organisations and members of the public. The responses confirmed the need to complete planned port infrastructure and supported the overall direction of continued development at Dublin Port. These earlier consultations also helped set the background for the ABR2 Project.

The ABR project was also subject to extensive consultation during planning and assessment. Statutory bodies, local authorities, and specialist agencies were involved throughout the process, and the project was shaped by comments received from the public and other stakeholders. This earlier project is important because ABR2 focuses on the final remaining works needed to complete it.

For the ABR2 Project itself, further pre-application consultations were held in 2025 and 2026 with An Coimisiún Pleanála, Dublin City Council technical sections, and a number of specialist agencies. These included discussions on noise, dust, traffic, drainage, water quality, biodiversity, and other matters. Written feedback from these bodies was used to refine the environmental assessment and ensure that the EIAR addresses the main concerns raised. In general, the responses supported the proposed approach, while also identifying points that needed further attention in the final assessment.

Public consultation was also an important part of the process. A dedicated website was launched for the ABR2 Project, and public information events were held in Clontarf, East Wall, and Ringsend in March 2026. The public was informed through newspaper advertising, social media, posters, and engagement with local community groups. The events and website attracted public interest, with attendees asking questions and raising comments about the project and other Dublin Port developments. The feedback received was considered in the design and assessment of the project.

The scoping process identified the main environmental topics that needed to be assessed in the EIAR. These included biodiversity, flora and fauna, land, soils, geology and hydrology, water quality and flood risk assessment, air quality, climate, noise, coastal processes, traffic, services, heritage, landscape, population and human health, and waste. A number of specialist studies and baseline surveys were carried out to support the

assessment. These studies were informed by the long-running monitoring programmes already in place for the ABR Project and other port works.

Overall, this chapter shows that the ABR2 Project has been developed through extensive consultation and careful environmental scoping. The process helped identify the main issues, shape the project design, and ensure that the EIAR focuses on the topics most likely to be affected.

Chapter 4 Assessment of Alternatives

This Chapter of the EIAR comprises an Assessment of Alternatives which were considered before finalising the ABR2 Project. Its purpose is to show that Dublin Port Company examined reasonable options and selected the approach that best met the project's objectives while also reducing environmental effects where possible.

The ABR2 Project is not a new port development. It is the completion of the remaining works from the earlier ABR Project. The ABR2 Project is designed to improve the use of Dublin Port's existing land and infrastructure, increase capacity for larger vessels, and support the future Unified Ferry Terminal. It also deals with contaminated sediments that remain in Alexandra Basin West by dredging, treating, and re-using them within the port.

The assessment of alternatives considered three main levels: strategic site location, strategic site layout, and detailed project design and process design.

At the strategic site level, Dublin Port Company considered whether future capacity should be provided within the existing port estate or at a new location elsewhere on the east coast. The "do-nothing" option would mean no further development, but this would not provide the capacity needed for future growth. New greenfield options such as Bremore and Arklow were examined, but these were found to be much larger, more expensive, more complex, and much slower to deliver. They would also create significant environmental and planning challenges. As a result, they were not considered practical alternatives for meeting Dublin Port's needs in the required timeframe. The preferred site location was therefore the existing Dublin Port estate.

At the strategic layout level, different ways of developing the port within the existing estate were reviewed. The original Masterplan 2012 included proposals that would have involved infilling part of the Tolka Estuary. This approach was later replaced by the revised Masterplan 2018, which instead relied on redevelopment of brownfield port lands and the creation of Dublin Inland Port to support future growth. This revised layout was preferred because it avoided direct impacts on the South Dublin Bay and River Tolka Estuary protected area and was considered more sustainable overall.

At the project design level, the chapter looks at the detailed choices for dredging, transport, treatment, storage, and infilling. The "do-nothing" option would leave Alexandra Basin West at its current depth and would not complete the removal of legacy contaminated material. This would limit the Port's ability to operate efficiently and would fail to deliver the ABR2 Project's objectives.

For dredging, mechanical dredging using a backhoe dredger was selected as the best method. Other methods were considered but were found to be less suitable because of the site conditions or because they could create greater environmental risk. Measures such as controlled working hours, spill prevention, silt curtains, and an air/bubble curtain were included to reduce impacts.

For transport, barges were preferred for moving dredged material within the port because they are the most practical and environmentally efficient option. HGVs would be used only for smaller import and export movements, where appropriate. For treatment, the preferred option is to wash and stabilise the contaminated sediment so that it can be safely reused. This is considered better than disposal because it follows the waste hierarchy and makes beneficial use of material already present on site. For infilling, conventional construction

methods were selected, together with monitoring and control measures to protect water quality and ensure the fill is stable.

The chapter concludes that the chosen option is the best environmental and practical solution. It makes use of existing brownfield port land, avoids expansion into Dublin Bay, reduces the need for new land take, and provides a way to manage contaminated sediments beneficially. Overall, the preferred alternative is considered the most sustainable way to complete the port works needed for future capacity and operational efficiency.

Chapter 5 Project Description

This Chapter describes the ABR2 Project and explains the location, main works, construction approach, operating arrangements, and other related matters needed for the purpose of the environmental assessment.

The ABR2 Project is located entirely within the North Estate of Dublin Port on Ireland's east coast. It covers two main areas: Alexandra Basin West and Berths 52/53. These are already existing port lands and the Project does not involve expansion outside the existing port footprint. The purpose of the Project is to complete the remaining works from the ABR Project and help provide the infrastructure needed for the future Unified Ferry Terminal (UFT), as consented under the MP2 Project.

The ABR2 Project has two main elements. The first is the deepening of Alexandra Basin West to a standard depth of -10m CD so that deeper-draught vessels can use the basin. This work also allows contaminated sediments already present in the basin to be removed and treated. The second element is the infilling of the Berths 52/53 basin and raising of nearby ground levels, so the area can support future port use and deliver the UFT.

A key feature of the Project is the handling of contaminated dredged material. Sediments dredged from Alexandra Basin West cannot be disposed of at sea because of contamination present from historic port and industrial activity. Instead, the material will be treated and reused within the Port where possible. Two main treatment methods may be used: soil washing, which separates cleaner coarse material from contaminated fine material, and stabilisation/solidification, which stabilises contaminants into a solid form so the material can be safely reused. The treated material may then be used as infill in the Berth 52/53 basin or, in the highly unlikely event that there is insufficient void space, untreated material will be exported to facilities within Ireland via HGV or internationally to facilities in Belgium or the Netherlands.

The Project also includes a number of temporary construction activities and facilities. These include dredging barges, treatment plants, temporary stockpiles, wastewater treatment equipment, site offices, welfare facilities, laboratories, and fuel storage areas. Depending on how the Port is operating at the time, treatment works may take place at North Wall Quay Extension, Berth 49, or Berth 52 West using temporary works. The chapter explains several possible working arrangements, but the exact combination will depend on operational needs when construction begins.

The construction programme is phased over several years. It includes demolition of selected marine structures, dredging of Alexandra Basin West, treatment of dredged material, infilling of the Berth 52/53 basin, installation of capping and surcharge materials, and final surfacing. The Project also involves some import and (potential) export of materials, along with measures to manage traffic, water quality, drainage, noise, dust, and other environmental effects.

During construction, work will be managed through a Construction Environmental Management Plan (CEMP). This will set out the controls and mitigation measures to protect the environment and nearby users of the port. Working hours vary by activity, with some dredging allowed on a 24-hour basis in certain areas, while treatment and infilling are more restricted. The chapter also outlines that marine mammal observers (MMOs), environmental monitoring, water quality checks, and waste controls will all be used during the works.

During the operation phase, the ABR2 Project is expected to support more efficient port activity, deeper berths, and the future UFT as consented under the MP2 Project. The Project is designed as a long-term part of Dublin Port's infrastructure and is not intended to be decommissioned in the future, apart from temporary treatment facilities once construction is complete.

Chapter 6 Risk of Major Accidents and Disasters

This Chapter describes the assessment undertaken of the potential risks of major accidents and disasters relevant to the ABR2 Project. The ABR2 Project is within the vicinity of several establishments that fall within the scope of the Chemicals Act (Control of Major Accident Hazards) Regulations 2015 within Dublin Port, and the Project lies within the Consultation Distance of three COMAH establishments. Chapter 6 describes the individual and societal risks to the Project arising from potential major accidents at establishments covered by the COMAH Regulations, the risks associated with other events (natural and other external events) that could contribute to, cause, or exacerbate a major accident or that could directly impact on the ABR2 Project, and the potential for a major accident at the ABR2 Project to impact on the adjacent parts of Dublin Port and the COMAH establishments.

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 examined three categories of potential impact: individual and societal risks to the ABR2 Project arising from potential major accidents at the COMAH establishments; risks from natural and external hazards (earthquakes, lightning, flooding, extreme weather, and aircraft); and non-COMAH major accident risks from the transport of dangerous goods by road, sea, and pipeline. The assessment concludes that the ABR2 Project is compatible with the HSA's land use planning criteria under both the current 2023 guidance and the proposed 2026 guidance, with the working areas falling within Development Sensitivity Level 1 or 2, both of which are compatible with the COMAH risk zones. Natural and external hazards present a low risk given Ireland's low seismic and lightning activity and the limited flood history within the Port estate, and non-COMAH risks from the transport of dangerous goods are assessed as acceptable given the existing regulatory controls in place.

Chapter 7 Biodiversity, Flora and Fauna

This Chapter provides an assessment of the likely effects of the Project on Biodiversity, Flora and Fauna with respect to the following topics:

- Terrestrial Biodiversity and Ornithology
- Benthic Biodiversity and Fisheries
- Marine Mammals

Terrestrial Biodiversity and Ornithology

This section comprises an appraisal of the existing Terrestrial Biodiversity and Ornithological conditions within the ABR2 Project study area and addresses the potential effects of the Project on these baseline conditions. The assessment is based on the description of works as noted in Chapter 5 Project Description. Where potential adverse impacts are identified, the assessment identifies mitigation measures that will be implemented to prevent, reduce or offset potential adverse effects, or enhance potential beneficial effects where possible.

The assessment concluded the potential for permanent loss of features of Local (Lower) ecological value, resulting in a minor negative magnitude of effect, as their loss does not result in any significant environmental impact. No adverse likely significant effects are predicted on Badger, Bats and Birds.

Adverse likely significant effects may occur on otter during construction, and adverse likely significant effects may occur due to diminution of water quality and sedimentary pollution on all hydrological linked designated sites.

In the absence of mitigation, butterfly bush and ragwort may colonise exposed substrates across the ABR2 Project in the absence of management or mitigation measures. Adverse likely significant effects in relation to invasive species are not expected as they are low impact species already widespread in the area.

No significant effects are expected in relation to habitat loss; therefore, we do not require avoidance, reduction or compensatory planting measures to be implemented.

Likely significant adverse effects are expected in-combination in relation to diminution of water quality and habitat deterioration in the absence of mitigation in relation to 3FM – ABP Reg. Ref.PA29N.320250, MP2 Reg. Ref. ABP304888-19, Dublin Harbour Capital Dredging Project and Dublin Port Maintenance Dredging Programme, both with each other and in-combination with the Project.

Following the implementation of mitigation measures, no significant adverse effects are predicted to occur either alone or cumulatively.

Benthic Biodiversity and Fisheries

This section summarises the assessment of potential effects of the ABR2 Project on benthic biodiversity and fisheries within Dublin Port and the lower River Liffey. Benthic biodiversity refers to the plants and animals that live on or within the seabed, while fisheries include both estuarine fish species and migratory species such as salmon, eel and lamprey that pass through the estuary.

The assessment identified a range of potential impacts associated with construction activities, including dredging, sediment handling and infilling. These include temporary disturbance to seabed habitats, increases in suspended sediment, localised changes in water quality, and temporary disturbance to fish. During operation, potential impacts relate primarily to long-term habitat loss within the infilled basin and ongoing vessel activity. Overall, most effects were assessed as Minor and Not Significant in Environmental Impact Assessment terms, due to the already modified nature of the environment, the limited spatial extent of impacts, and the implementation of mitigation measures. No significant long-term or irreversible impacts on benthic biodiversity or fisheries are predicted.

Capital dredging will remove seabed habitats and associated organisms within the dredging footprint. This represents a temporary loss of benthic habitat; however, the affected communities are composed of species that are naturally tolerant of disturbance and are expected to recover following completion of works. The impact is localised and was assessed as Minor.

Dredging and sediment handling will temporarily increase suspended sediment levels, which may settle on nearby seabed areas. This may temporarily affect benthic organisms and water clarity. However, these effects are expected to be short-term, confined to areas close to the works, and reversible once activities cease. The impact was assessed as Minor.

Construction activities may cause temporary disturbance to fish due to increased turbidity and underwater noise. Migratory species such as salmon and eel may temporarily avoid the area, but no barriers to movement will be created and any effects will be short-lived. The impact was assessed as Minor to Moderate but not significant in the long term.

The potential for cumulative effects with other developments within Dublin Port was considered. These include other dredging works, port operations and marine infrastructure projects. Given the localised and temporary nature of construction impacts, together with the already modified condition of the port environment, no significant cumulative effects on benthic habitats or fisheries are predicted. Any overlapping impacts would be short-term and confined to small areas within the port.

Marine Mammals

This section summarises the assessment of potential effects of the proposed Project on marine mammals, including seals, dolphins and porpoises, within Dublin Port and the wider Dublin Bay area. The assessment considered how construction activities, particularly dredging and associated vessel movements, as well as operational changes, may affect marine mammals. The assessment is informed by extensive long-term monitoring datasets collected by IWDG Consulting between May 2016 and April 2026, including land and vessel-based marine mammal observations during maintenance, capital and IED dredging campaigns, long-term acoustic monitoring within Dublin Bay and seal monitoring at North Bull Island.

Marine mammals regularly recorded in Dublin Bay include grey seal, harbour seal and harbour porpoise. Long-term monitoring data collected by IWDG Consulting between May 2016 and April 2026 indicate that seals are commonly observed within Dublin Port, while cetaceans such as harbour porpoise occur more frequently in the wider bay and are only infrequently recorded within the breakwater walls of the Port. No cetacean sightings were reported within ABW during the 2019-2022 IED dredging monitoring programme.

Dublin Port is a highly active environment, characterised by frequent vessel traffic and ongoing industrial activity. Marine mammals in the area are therefore considered to be tolerant of elevated levels of background noise and disturbance. No breeding or seal haul-out sites occur within the immediate works area. The closest seal haul-out site is at North Bull Island, which lies outside the area of direct disturbance from the proposed works.

The assessment considered potential impacts including underwater noise from dredging, increased vessel movements, temporary increases in suspended sediment and associated behavioural disturbance to marine mammals. Overall, effects are predicted to be temporary, localised and of low magnitude. With the implementation of standard mitigation measures in accordance with NPWS (2014), all impacts are assessed as Slight adverse or lower, and not significant in EIA terms, with no injury or population-level effects expected.

Chapter 8 Land, Soils, Geology and Hydrogeology

This Chapter assesses whether the ABR2 Project at Dublin Port could affect land, soils, geology or groundwater. The assessment follows national and international environmental guidance and is informed by previous site studies, monitoring data, and regulatory controls already in place at the Port.

The development site is located within an intensively developed port environment and is underlain by made ground created during historic reclamation works. Beneath the made ground, the geology comprises limestone bedrock with overlying sands, gravels and clays. Groundwater beneath the site is brackish, close to sea level, influenced by tides, and is not used as a drinking water supply. Long-term groundwater monitoring carried out between 2019 and 2024 shows stable overall groundwater quality.

Potential impacts associated with dredging, treatment of contaminated sediment, infilling works and long-term operation were assessed. With the application of established mitigation and regulatory controls, the majority of effects were assessed as neutral or beneficial, and none are significant in environmental assessment terms.

Dredging of contaminated sediments within Alexandra Basin West will have a beneficial effect by removing a historical source of contamination from the marine environment. The treatment and reuse of these sediments under an EPA Industrial Emissions Licence further reduces environmental risk and avoids disposal to landfill. Infilling of Berth 52/53 and long-term operation of the site will not result in measurable impacts on groundwater, soils or geology.

No cumulative effects on land, soils, geology or groundwater are predicted when the Project is considered alongside other nearby projects within Dublin Port.

The assessment concludes that the Project can proceed without giving rise to significant adverse effects on land, soils, geology or hydrogeology, provided that the existing mitigation and monitoring measures are implemented as proposed.

Chapter 9 Water Quality and Flood Risk Assessment

This Chapter of the EIAR identifies, describes, and assesses the potential effects of the proposed ABR2 Project on the surface water environment, with respect to the following topics:

- Water Quality; and
- Flood Risk Assessment

Water Quality

The primary purpose of the Water Quality section of the EIAR is to provide an assessment of the likely effects of the Project during the construction and operational phases. Impacts to the receiving water environment and Water Framework Directive (WFD) compliance is assessed by establishing existing water quality in the vicinity of the Project using available published water quality information, the WFD monitoring programmes and Dublin Ports comprehensive water quality monitoring programme which has been operational since 2016. This chapter then identifies potential significant effects on Water Quality that may arise from the Project and presents mitigation measures that will be implemented to address the potential significant effects.

During each phase of the ABR2 Project (construction and operation) a number of activities will take place at the project site which will have the potential to affect the hydrological regime or water quality within the Liffey Estuary Lower and downstream Dublin Bay water bodies. The main potential effects on the surface water environment will occur during the construction phase, while very few potential direct effects are envisaged during the operational phase of the Project. These potential effects arise from mobilisation of sediments and contaminated sediments during dredging activities, surface water drainage and discharge from the treatment area for contaminated sediments. Potential effects may also arise from other pollutants such as hydrocarbons which will be present at the Project site and hydromorphological changes to the Liffey Estuary Lower. Surface water drainage measures, environmental dredging, contaminated dredge material treatment, pollution control measures and other preventative measures have been incorporated into the project design to minimise significant negative effects on downstream water quality. Proven and effective measures to mitigate the risk of releases of sediments and pollutants have been proposed and will ensure that no significant effects will occur. Preventative pollution measures which also include fuel management have been incorporated into the Construction and Environmental Management Plan.

To assess the potential for cumulative effects with adjacent or nearby developments, as comprehensive list was provided in **Chapter 21**. These have each been reviewed and assessed for environmental impact within their respective applications. Those consented all must adhere to their respective CEMP's and water quality management plans. This along with differences in construction timings reduces the likelihood of cumulative effects. Therefore, at this stage, it is considered that there are no potential cumulative effects arising from adjacent or nearby development, together with those predicted for the Project.

Flood Risk Assessment

The primary purpose of this section of the EIAR is to provide an assessment of the likely effects of the Project on flood risk during the construction and operational phases. The assessment was prepared to show compliance

with ‘The Planning System and Flood Risk Management, Guidelines for Planning Authorities’ published by DoEHLG & OPW in 2009.

During construction, there is a risk of flooding to the works from extreme tidal events that will need to be managed. The effects are not expected to occur often, and any longer-term impacts are reversible. The overall magnitude of effects is likely to be Negligible. Therefore, the overall significance of effects is Minor. Tidal early warning systems will be used by the Contractor during the construction phase.

Once construction is completed, the dredging works at Alexandra Basin West will not be impacted by flooding. The proposed Berth 52/ 53 will be infilled, and the existing levels of the surrounding area will be raised by 0.9m. There are no operational activities or infrastructure associated with this Project that will at risk of flooding.

Infilling of the coastal floodplain will have a negligible effect on the extent of the coastal floodplain, now or in the future, considering the anticipated climate change. There are no potential cumulative effects arising from adjacent or nearby development, together with those predicted for the Project.

Chapter 10 Air Quality

This Chapter comprises the air quality assessment undertaken for the Project to determine the potential effects of construction phase dust and emissions on air quality at identified existing receptor locations. It is considered highly unlikely that the operational phase of the ABR2 Project will have any impacts on local air quality due to the minimum number of vehicle trips (as outlined in **Chapter 15 Material Assets – Traffic and Transportation**) associated with the operation and maintenance of the ABR2 Project. Therefore, traffic operational impacts of the ABR2 Project on air quality have been scoped out for further assessment in this EIAR.

A qualitative construction phase assessment was undertaken, and measures were recommended to minimise emissions during construction activities. With the implementation of these mitigation measures the impact of construction phase dust emissions is considered to be 'not significant' in accordance with Institute of Air Quality Management (IAQM) guidance. The level of traffic generated during the construction phase of the Project was below the relevant criteria for the requirement for a detailed assessment to be undertaken. Therefore, the impact of construction phase road traffic emission on air quality was considered to be 'not significant'.

No significant air quality impacts were predicted as a result of construction of the Project. The assessment concludes that the Project is considered to be suitable for the proposed uses with regard to the current relevant air quality objectives. Impacts associated with the construction phase of the Project are predicted to be 'not significant'.

Chapter 11 Climate

This Chapter of the EIAR comprises an appraisal of the existing Climate conditions within the Project study area and addresses the potential effects of the Project on Climate, as well as the vulnerability of the Project to climatic factors. The assessment is based on the description of works as noted in **Chapter 5 Project Description**. Where potential adverse impacts are identified, the assessment identifies mitigation measures that will be implemented to prevent, reduce or offset potential adverse effects, or enhance potential beneficial effects where possible.

The assessment examines the potential impacts during the construction and operational phases of the ABR2 Project. The climate assessment comprises of two main elements, which include:

- A greenhouse gas (GHG) assessment, which assesses the impact of the ABR2 Project on climate through carbon emissions and;
- A climate change risk assessment (CCRA), which assesses the vulnerability of the ABR2 Project to future climate change.

The construction phase climate assessment was carried out to identify sources and quantify total GHG emissions generated from the construction activities associated with the Project. A series choices of low carbon concrete and steel materials will help mitigate this impact and fully comply with the targets of CAP25. As such the GHG emissions associated with the proposed construction of the development will result in a direct permanent minor adverse impact.

Climate Change Risk Assessment

The climate change risk register shows that with the detailed controls in place, the risk of adverse climate impact on the Project has been suitably mitigated to reduce the likelihood of such an event having a significant adverse impact. In short, the vulnerability of the works and operations to climate change has been suitably mitigated and the potential impact is considered to be minor adverse for the short-term construction phase and for the longer-term operation phase.

There are potential cumulative construction phase impacts for each of the in-port projects listed through the need for significant material inputs, depending on the scale of the projects listed, as well as material transport. The climate impact assessments for the projects included construction phase mitigation to support the use of low-carbon materials for these projects. Therefore, while there is potential for cumulative construction phase impacts to climate from embodied carbon in materials and construction methods from these projects, the cumulative impacts are considered minor adverse, not significant given the level of mitigation applied.

For the surrounding projects in the area, there are potential construction phase impacts associated with the significant material inputs required and therefore, potential for cumulative adverse impact from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse, not significant given the level of mitigation applied as mandated by the CAP policies on embodied carbon.

During operations, each of these developments will generate or carry additional road traffic volumes on the local road network. The ABR2 Project will also have traffic impacts during the construction phase. Mitigation of road

transport emissions is mandated at the national level through the CAP, and the residual cumulative climate impact from road traffic from these projects is considered moderate adverse, not significant.

There are a number of offshore wind energy projects planned for the Irish sea as listed and each of these projects has potential for construction phase climate impacts through the need for significant material inputs and construction methods. However, the net climate impact of these developments once operational is long-term and positive in relation to Climate, given the introduction of renewable electricity generation and reducing the demand for fossil fuel combustion to generate electricity in line with CAP25 targets.

Chapter 12 Terrestrial Noise and Vibration

This Chapter comprises the Terrestrial Noise and Vibration Impact Assessment which was completed to determine the likely noise and vibration impacts from the ABR2 Project at the nearest noise sensitive receptors. This assessment included an appraisal of the likely noise and vibration impacts from the construction and operational phases of the ABR2 Project.

As part of the Terrestrial Noise Impact Assessment, a detailed baseline noise monitoring survey was completed at a different locations in the vicinity of the existing port to determine the noise environment in the vicinity of the ABR2 Project. This baseline noise monitoring survey was used as a basis for determining the likely noise impacts associated with the ABR2 Project.

The Terrestrial Noise and Vibration Impact Assessment was completed with reference to a range of relevant Irish and international noise and vibration guidance documents.

During the construction phase, worst-case predicted noise levels from the ABR2 Project will be below the most onerous Category A noise threshold limits included in BS5228:2009+A1:2014 for each of the day, evening and night-time periods. Noise mitigation measures are included in the EIAR to ensure that construction noise levels are below the appropriate noise threshold limits. There will be no significant cumulative construction noise impact associated with the ABR2 Project in tandem with any other proposed projects.

There will be no significant noise impact associated with traffic flow changes as a result of the construction or operational phases of the proposed redevelopment. The majority of traffic flow increases associated with the Project and the road network in the vicinity of the port will result in negligible increases in traffic noise (i.e. less than 1dB). These changes will not result in any audible increase in traffic noise levels at any of the nearest noise sensitive receptors.

On account of the significant distance between the ABR2 Project Works and the nearest receptors and the nature of the works, there is no potential for any significant vibration impacts at the nearest sensitive properties.

As the ABR2 Project consists only of the outstanding construction elements included in the ABR Project that were not completed before the planning timeframe by which they were required to be completed, there is not operational phase aspect to the ABR2 Project.

Chapter 13 Underwater Noise and Vibration

This Chapter of the EIAR comprises an assessment of the Project on Underwater Noise and Vibration. Dredging of the Alexandra Basin West and demolition of jetty and dolphin structures in nearby berths give rise to additional underwater noise in Dublin Port, Ireland.

Dublin Port is a busy port with regular traffic of large vessels meaning the port waters are generally noisy with frequent broadband noise levels above 120-150 dB SPL throughout as shown by measurements campaigns.

This Chapter assessed the impact of the Project on Underwater Noise through source modelling, propagation modelling and fleeing modelling of the relevant marine species. Given that the demolition will be confined to the basin of historical berths 52 & 53, and that this basin will be separated from the surrounding water by land at all sides, any underwater noise emissions will be negligible. It was noted that the noise emissions from the Project are comparable to common noise sources in the port, such as large vessels and the general underwater noise levels in the port are not significantly affected by the Project.

Chapter 14 Coastal Processes

This Chapter of the EIAR comprises of an appraisal of the existing coastal processes conditions within the study area and addressed the potential effects of the ABR2 Project on coastal processes. A comparative study was undertaken to assess potential changes, supported by numerical modelling, desk studies, site-specific surveys, and consultation with stakeholders. This work also supported other environmental disciplines' assessments, such as water quality, flood risk, and biodiversity, flora, and fauna.

Based on the description of works, two key coastal processes were identified to have the potential to either significantly change or impact other potential receptors. These included increased suspended sediment concentrations arising during dredging activities within Alexandra Basin West, and changes to local tidal current conditions arising from the proposed dredging of Alexandra Basin West and infilling of Berth 52/53. Additionally, potential changes in sediment transport were inferred from changes to tidal currents. In all cases, potential impacts were determined to be not significant in EIA terms.

During the course of the dredging operations in Alexandra Basin West, temporary increases in suspended sediment concentrations were found not extend to the designated areas of Dublin Bay. Rather, the sediment plumes remain within Dublin Port, primarily contained within the Basin itself.

As part of the initial simulations, dredging operations were represented using typical good industry practices, including the use of a backhoe dredger with an environmental bucket to reduce sediment losses and prohibiting overspill from the hopper vessel. Limited dredging rates and operating hours were also applied. Based on this initial assessment the overall effect of the proposed dredging operations to be undertaken as part of the ABR2 project was considered to be of low magnitude and low sensitivity, thus of minor significance**.** However, recognising the environmental sensitivity of the area and natural variations in suspended sediment loads, the project will apply additional mitigation measures to further reduce the potential for impacts arising from the dispersion of suspended sediment.

Additional mitigation measures are to include the deployment of a silt curtain during dredge operations to further limit the dispersion of sediment. To underpin the effectiveness of this silt curtain, a dredge management protocol will also be implemented. This will entail agreeing appropriately scheduled dredging paths and windows in conjunction with Port operations through close liaison with the harbour master, thereby minimizing silt curtain redeployment and movement, improving the efficiency and efficacy of this mitigating measure. A bubble curtain is also included as an additional mitigation measure; however, this is treated as a failsafe/back-up mitigation and therefore not implemented within the modelling.

Further model simulations to assess these additional mitigation measures demonstrated that, whilst dispersed suspended sediment concentrations remain broadly similar to those predicted without the additional mitigation measures in place, the *extent* of the resultant sediment plumes is significantly less when mitigation measures are applied. Consequently, the magnitude of the impact from increased suspended sediment concentrations was reduced from low adverse to negligible adverse, resulting in minor/negligible significance.

In terms of changes to the current speeds, the hydrodynamic regime is variable throughout tidal cycles and due to meteorological conditions, with the scale of the impacts being well within the natural variation. The impact of the Project is predicted to be of local spatial extent, long term duration, continuous and low reversibility. The

changes to the tidal currents are insignificant in terms of the hydrodynamic regime and will not significantly impact on the supporting hydromorphological conditions in the coastal water bodies (and therefore coastal features) within the Coastal Processes Study Area. Owing to the minimal changes in current speeds, the potential for any change in the existing sediment transport regime arising from the ABR2 Project is considered minimal. Overall, the magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of minor/negligible and slight adverse significance, which is not significant in EIA terms.

Other projects located within the Coastal Processes Study area have been considered on a case-by-case basis for screening in or out of this chapter's cumulative impacts assessment based upon data confidence, effect-receptor pathways, and the spatial/temporal scales involved.

The main component of the ABR2 Project which may give rise to a cumulative effect is the potential overlap of sediment plumes during project construction with plumes arising from other projects in the area. At this stage, it is considered that there are no potential cumulative effects arising from adjacent or nearby developments.

Chapter 15 Material Assets – Traffic and Transportation

This Chapter assesses the traffic and transport impact of the Project upon the surrounding highway network. The assessment considers the construction phase of the Project as there are no traffic impacts during the operational phase.

Traffic surveys have been undertaken on the surrounding road network to identify the existing traffic volumes in the vicinity of the Project site. The traffic surveys consider the main arrival / departure points to Dublin Port as well as the connections to both the local and strategic road network.

The main arrival / departure route for construction traffic will be Promenade Road via the M50 Dublin Port Tunnel. The predicted volume of construction traffic has a less than 1% impact on traffic volumes on Promenade Road, representing an insignificant / negligible impact upon the surrounding road network.

A Construction Traffic Management Plan will be developed prior to the commencement of construction phase of the Project and this will set out the procedures in place for the construction phase of the development.

Whilst there are a number of potential cumulative developments in the vicinity of the Project envelope, the predicted low volume of average hourly traffic associated with the construction phase of this project indicates that there is unlikely to be a significant cumulative impact on the surrounding road network.

Chapter 16 Material Assets – Services

This Chapter assesses the likely effects of the ABR2 Project on material assets in the form of services and infrastructure. These include water supply, wastewater, drainage, electricity, gas and telecommunications within the Dublin Port area. The assessment was based on desktop studies, available utility and infrastructure data, consultation with relevant bodies, and the proposed construction and operational arrangements described in the project design. The purpose was to identify whether the Project could affect existing services or create new service demands that might impact other users or surrounding communities, and to set out mitigation measures where needed.

The main water-related impact is the temporary demand created by construction facilities such as site offices, welfare units, toilets, showers and canteens. Overall, the water effects are assessed as neutral to slight, with residual effects expected to be negligible.

The project is not expected to create additional discharge to public sewers. Wastewater from treatment activities will be treated on site and discharged under the existing Industrial Emissions licence to the River Liffey, so the effect on the public sewer network is assessed as neutral.

Construction activities such as wastewater treatment plants, solidification/stabilisation plants and soil washing equipment will need temporary electricity supply. The chapter concludes that this can be provided through a temporary ESB connection, with any interruption likely to be short term and controlled under standard procedures. The effect on the electricity network is therefore assessed as minor and short-term. More sensitive infrastructure includes the Terminal 5 substation and the EirGrid cable route near Berths 52/53. The chapter notes that the substation will remain at a lower level than the surrounding raised ground and could be vulnerable to flooding if drainage is not properly designed. However, with suitable drainage and access arrangements, the residual effect is expected to be neutral. In relation to the EirGrid cable replacement programme, the main issue is possible overlap in construction timing. This is addressed through coordination between contractors, and the resulting residual effect is expected to be neutral.

The cumulative assessment considers the combined effects of the ABR2 Project with other nearby or related works, especially the EirGrid underground cable replacement programme. The main cumulative concerns are temporary overlap in demand for water and electricity services, as well as the need to coordinate access to utility corridors and construction areas. These cumulative effects are likely to remain low if coordination is effective, and that the use of phased programming, temporary supplies, monitoring and contractor liaison will avoid significant combined impacts.

Chapter 17 Cultural Heritage

This Chapter of the EIAR comprises an appraisal of the existing Cultural Heritage conditions within the Project study area and addresses the potential effects of the Project on Cultural Heritage. The assessment is informed by a desktop study and the acquisition of new data arising from archaeological monitoring conducted during the ABR Project.

Cultural heritage inputs since 2014 have included archaeological monitoring of works across the ABR Project area, and the detailed recording of buildings and features both upstanding and buried, and underwater. In addition, the North Wall Quay Extension has been added to the Record of Protected Structures by Dublin City Council and is now a protected site (reference RPS 8879). The archaeological monitoring carried out has been licenced by the Department of Housing, Local Government and Heritage, principally with licence 16E0212 granted to cover the terrestrial works, and licence 17E0506 to cover marine works, with all discoveries recorded and providing detailed insight to the history of the port estate. The information has contributed to the *Dublin Port Heritage Conservation Strategy* (Brady, 2024), a landmark publication for Ireland, as the first detailed cultural heritage conservation strategy developed for a port estate.

The key potential effects are associated with four items:

- Use of the North Wall Quay Extension (NWQE), a protected structure, for processing and treatment facility
- Excavation and restoration of Graving Dock No. 1
- Capital Dredging at Alexandra Basin West
- Infilling at Berth 52/53 Basin

The presence of plant and stock-piled sediment on the deck of the historic quay and adjacent to the historic lighthouse represents an adverse effect on the cultural heritage assets. However, the effects will be limited and mitigated by a programme of archaeological inputs and design inputs that will ensure the effects are not significant as the installation of the treatment plant and associated works will be reversible and return the NWQE to its previous state.

The excavation and restoration of Graving Dock No. 1 as originally proposed by the ABR Project has now been excluded from the ABR2 Project. Consequently, there will be no impact on Graving Dock No. 1 from the ABR2 Project.

The dredging programme to remove the remaining 334,000m^3 of sediment from Alexandra Basin West will continue a process that began in the ABR project, excavating to a standard depth of -10m Chart Datum. The potential to observe and recover archaeological features during capital dredging exists, and programme of archaeological monitoring, established for the ABR project, will mitigate the effects.

The infilling programme at Berths 52/53 as permitted in the ABR Project is assessed as being of low archaeological potential. This assessment has not changed.

The MP2 Project will intersect with the ABR2 Project in relation to the infilling of Berths 52//53 and the raising of the ground level of Terminal 5. The interaction will be that of ABR2 facilitating completion of MP2, and consequently the effect will be positive.

The Dublin Harbour Capital Dredging project concerns the deepening of existing berths and will continue seasonally until 2029. Where the dredging takes place in proximity to Alexandra Basin West, the interaction will be to facilitate the dredging associated with ABR2, and consequently the effect will be positive.

The 3FM project is focused on the south side of the approach channel but has certain engagement with the north side. The 3FM project boundary touches on Alexandra Basin West and also Berths 52/53 and Terminal 5. With respect to the ABR2 Project, works will take place on NWQE associated with the extension of the Port's internal road and bridge across the Liffey channel. Such works, however, will take place at the west end of the NWQE and will not overlap with those being considered for ABR2.

Chapter 18 Landscape and Visual

This Chapter comprises the Landscape and Visual Impact Assessment (LVIA) which has been completed for the Project to identify and determine the potential significant effects on landscape character, landscape features and views experienced by visual receptors arising because of the construction and operational phases of the Project.

The LVIA has assessed the potential impacts resulting from the introduction of the Project upon the landscape character and visual resources associated with Dublin Port and the surrounding area, identifying minor, localised direct impacts on the character of the port during the construction phase only, with negligible effects predicted for the operational phase of the Project. In relation to impacts on landscape designations and Protected Views and Prospects, no effects are predicted to occur. In relation to visual impacts, minor temporary impacts arising because of the construction phase have been identified for 5 of the 12 viewpoints assessed with no significant impacts predicted to occur during the operational phase for any of the viewpoints assessed.

No significant cumulative landscape and visual effects have been predicted. Construction stage activities involve an increase in construction traffic for all cumulative projects. HGV traffic and shipping movements are a frequent feature of this marine industrial landscape, and the existing Dublin city road network and port area consists of very busy roads with low potential for significant cumulative visual impacts as a result. The operational stage activities as part of the Project are similar in character that they are difficult to discern from the existing busy port context.

Chapter 19 Population and Human Health

This Chapter assesses the potential effects of the Project on population and human health. The population and human health assessment considered potential impacts arising during the construction phase of the Project through key health pathways, namely changes in air quality, noise and traffic. The ABR2 Project comprises only the completion of outstanding construction elements of the ABR Project that were not delivered within the original planning time frame, and therefore no operational impacts exist beyond that for which are already consented.

The assessment concluded that impacts on human health during construction would range from negligible to minor adverse, would be temporary and localised in nature and would not be significant in EIA terms.

Air quality related health effects were considered during the construction phase as construction activities may give rise to short-term dust generation. With the implementation of standard dust control and management measures through the Construction Environmental Management Plan which will include a Dust Management Plan, any potential changes in exposure would be temporary and localised. On this basis, construction phase air quality effects on population and human health were assessed as negligible and not significant.

Construction noise was assessed using conservative modelling of representative worst-case activities and the assessment demonstrated that predicted noise levels at the nearest sensitive receptors would remain below relevant guideline limits. In addition, construction activities will be managed through a project-specific Noise Management Plan which will set out measures to further minimise noise. On this basis, construction noise is not expected to result in noticeable or harmful effects on health and any related health effects were assessed as negligible and not significant.

Construction traffic associated with the Project would result in a small increase in vehicle movements in the context of the surrounding road network and would not materially affect road safety or amenity. On this basis, potential health effects following implementation of mitigation provided through a Construction Traffic Management Plan were assessed as negligible and not significant.

Potential cumulative health effects were considered in relation to combined air quality, noise and traffic effects arising from other nearby developments during construction. However, assuming the implementation of standard mitigation across other construction sites, the interaction between projects would be limited and no significant cumulative effects on human health are anticipated.

Chapter 20 Resource and Waste

This Chapter assesses the potential effects of the Project on Resource and Waste. A range of non-hazardous and hazardous wastes will be generated from the construction phase of the Project. These wastes will be required to be stored, transferred and managed at various waste treatment or disposal facilities to comply with regulatory requirements and minimise impacts on the environment. The Project will produce quantities of waste from the demolition of existing infrastructure in Berth 52/53, and large quantities of hazardous wastes from dredging works with Alexandra Basin West. These contaminated sediments are planned to be treated at the port and used to infill Berth 52/53 in line with previously approved EPA licence.

Details of all waste types that will be produced from the construction phase will be documented in the Resource and Waste Management Plan (RWMP) that will form part of the CEMP. The RWMP will detail how each waste stream will be managed and the locations and requirement for storage of wastes, along with appropriate management option at approved waste contractors and treatment processes within the Project.

By implementing the mitigation measures and by managing wastes in accordance with the waste hierarchy as required, wastes generated during the construction phase of the works associated with the demolition in Berth 52/53, further dredging campaign in Alexandra Basin West, and associated treatment of the removed contaminated sediment prior to infilling (and potential export for recovery) will have no adverse effect where control measures are put in place in the RWMP and adhered to by the contractors.

It is concluded that the demolition works and dredging campaign, which includes development and implementation of a detailed RWMP will have a neutral or slight effect on the environment in relation to waste management. The residual effects of the Project considering the mitigation measures are determined to be Not Significant. A review of other relevant projects as part of the Cumulative effects assessment did not identify other large quantities of wastes that would lead to potential cumulative effects. Other approved dredging projects within the vicinity of the port will remove large quantities of dredge sediment for disposal at offshore disposal locations. These sediments are demonstrated to be within the action levels to allow offshore disposal and will not affect construction works within the Project.

Chapter 21 Cumulative Effects and Environmental Interactions

This Chapter assesses the potential cumulative effects of consented schemes nearby the ABR2 Project. Relevant projects were selected, and the project team defined significance thresholds and criteria for assessment. These were based on professional judgement, alongside relevant standards and guidelines, to determine whether in combination effects give rise to additional levels of significance.

The 3FM Project and MP2 Project were considered significant in terms of cumulative impact, as these projects involve potentially overlapping construction activities of a similar nature taking place across the navigation channel from the ABR2 Project. The MP2 Project was selected due to the potential overlapping for construction activities of some of its later phases of marine infrastructure after the commencement of the ABR2 Project. Should planning be granted for the 3FM Project, there will be potential for overlapping of the construction activities planned within Dublin Port after the commencement of the ABR2 Project

The key environmental topics with potential cumulative effects with the ABR2 Project were: Biodiversity; Water Quality; and Climate. Construction phase mitigation measures were identified to prevent the potential interaction, and thus mitigate the potential for, cumulative effects on all of these environmental topics.

As part of the wider approach to Capital Projects in Dublin Port as detailed in their respective CEMPs, DPC have a commitment to undertake only one capital or maintenance dredging campaign at any one time within the Port. As the dredged material from the ABR2 Project is also treated rather than dumped at sea. This removes any potential for cumulative effects between the 3FM, MP2, maintenance or capital dredging campaigns and the ABR2 Project. This means that the dredging element of the ABR2 Project will not overlap with 3FM capital dredging and/or DPC maintenance dredging campaigns, thus reducing potential impacts to water quality, biodiversity/habitat deterioration and underwater noise. Under the 3FM Project, an estimated 70,000m3 of Dredge Material from Poolbeg Marina will require recovery/disposal. It is proposed that this material is also treated and recovered as a fill material at the Berth 52/53 basin under a revised IE licence, subject to availability of receptor capacity. The license revision process, and its in built controls, will therefore ensure that the two projects will not result in cumulative impact thus reducing potential impact to Waste. In terms of the operation phase of the in-port projects, such as the 3FM and MP2 Projects, it is noted that these developments will facilitate greater shipping and road traffic movements at the port. This is intrinsic to the objectives of the ABR2 Project.

The ABR2 Project will facilitate greater shipping and road traffic movements in the port environs which although will have positive cumulative impacts for traffic and transportation, will inherently have adverse residual cumulative impacts with regards to climate. However, the ABR2 Project complies with existing and emerging policy requirements implemented in the CAP24 and elsewhere, which includes national measures such as the electrification of the road haulage fleet and the biofuels blend. With regards to the ABR2 Project, DPC has adhered to the requirements of section 15 of the Climate Action and Low Carbon Development Act 2015, as amended, and the Climate Action Plan 2024. For impacts under the direct control of DPC, the impacts have been suitably mitigated and designed in line with national policy. While there are moderate adverse residual cumulative impacts identified as a result of road traffic and shipping, the planned legislative mitigation measures at international, EU and national levels will reduce these impacts. DPC will continue to perform its functions, in

so far as practicable, in a manner consistent with any current or future climate policy on road traffic and shipping to aid in the reduction of these indirect sources.

DPC has commissioned and published the Conservation Strategy 2024 for the entire Dublin Port Estate. This involves a strong commitment to Heritage values across all of DPC's projects, which deliver a coherent heritage strategy across all the phases of Masterplan 2040. As such, the ABR Project, the MP2 Project, the 3FM Project and the ABR2 Project involved the advice of the Heritage team and add a positive contribution to the interpretation of Heritage on the overall site. The Liffey-Tolka Project also offers a significant contribution to Port-City integration. Consequently, these projects connect to provide a heritage landscape with an overall positive social and cultural cumulative impact. As the ABR2 Project includes the potential for the introduction of a treatment area and stockpiling at the historic North Wall Quay Extension, specific mitigation measures to ensure that this protected feature is not damaged by activities and can be reversed to its original condition have been included within the ABR2 Project.

The other selected projects were assessed across all environmental topics, and no significant cumulative impacts (positive or negative) were identified on the basis that the ABR2 Project mitigations were applied. Therefore, no further cumulative impact mitigations were required.

The potential interactions between environmental aspects arising from within the ABR2 Project were assessed. Each technical environmental chapter within the EIAR identifies and analyses the potential for other environmental interactions. These chapters also detail environmental baseline information and identify the significant potential and residual construction and operational effects/impacts of the discrete ABR2 Project. The cumulative assessment identified many potential inter-relationships and interactions. Additional mitigation measures were included to minimise and/or off-set the potential for significant effects resulting from such interactions.

All potential cumulative effects and environmental interactions of the ABR2 Project's construction and operational stages are included in **Chapter 21.** All mitigation measures for the ABR2 Project resulting from the individual assessments, and the cumulative effects and environmental assessment are listed in detail in **Chapter 22** and the Project Construction Environmental Management Plan (CEMP). Provided the suggested mitigation measures as listed in the environmental chapters are employed during construction and/or operation the overall impact to the environment, even considered in combination, is considered negligible.

Chapter 22 Summary of Mitigation Measures

This Chapter outlines the series of mitigation measures that will be used to avoid, reduce, or manage the environmental effects of the ABR2 Project during construction and operation. The main focus is on the capital dredging of Alexandra Basin West, the treatment and reuse of dredged material, and the controls that will be put in place to protect water quality, habitats, and nearby receptors. The ABR2 Project has been designed to reduce impacts from the outset, through mitigation by design, and how good construction practices will support this approach.

A key element of the project is the capital dredging of Alexandra Basin West to a depth of -10m CD. This dredging is needed to complete the basin deepening and to remove contaminated sediment left in the basin from historic port activity. The dredging will be carried out using a closed environmental bucket dredger to reduce sediment loss during excavation and lifting. Works will be carefully managed to avoid overfilling of the bucket, to control the speed of lifting, and to keep the bucket aligned vertically to avoid any spillages of dredged material. Barges to transport the dredged material will be loaded in a controlled way, with no overtopping permitted, and spill plates will be used to prevent material entering the water during transfer. A silt curtain will also be employed around the dredger to reduce the spread of suspended sediment, and a bubble curtain is available for use across the entrance of Alexandra Basin West should a sediment spillage occur. The Project has also been designed to reduce impacts through the way the works are arranged and phased. Dredging will be sequenced to match the capacity of the treatment areas and the available infill space, so that material can be managed in a controlled way. The treatment and reuse of dredged material for infilling within the port reduces the need for disposal at sea and avoids the use of large volumes of virgin materials. This is an important environmental benefit of the project design.

A range of measures will protect water quality during the dredging and treatment works. Water arising from dredging, dewatering, sediment treatment, and basin infilling will be collected and treated on site before discharge. No untreated process water will be discharged to the River Liffey or Dublin Bay. The wastewater treatment plant will be designed to meet the relevant IE licence limits, and sampled effluent will be checked regularly. Where needed, work will be stopped and treatment adjusted if discharge standards are not being met.

Measures are also included to protect marine mammals and other aquatic species. A Marine Mammal Management Plan will be in place, with a trained observer monitoring the area before and during dredging. Dredging will only begin after a pre-start monitoring period confirms that no marine mammals are within the required exclusion zone. Standard controls will also be used to reduce noise and disturbance to marine life and fish, including careful vessel handling and reduced speeds where practicable.

A series of controls will apply to sediment treatment, stockpiling, transport, and infilling. These activities will take place in designated and bunded work areas, with runoff controls, drainage management, and pollution prevention measures in place. Temporary stockpiles will be kept to controlled heights and stored in areas designed to prevent pollution or runoff.

General construction good practice is an important part of the mitigation strategy. This includes keeping work areas tidy, controlling dust, managing noise, cleaning vehicles and roads, storing fuels and chemicals safely,

preparing spill response kits, training staff, and using clear site procedures. A Construction Environmental Management Plan (CEMP) will bring all of these measures together and ensure they are properly implemented and monitored throughout the project. Overall, the mitigation approach for the ABR2 Project is based on a combination of good design, controlled construction methods, careful management of dredged material, and strong environmental oversight. These measures are intended to keep impacts as low as possible while allowing the project to be completed safely and effectively.

Chapter 23 Conclusions

Overall, the authors of the EIAR believe that the ABR2 Project complies with the principles of proper planning and sustainable development, and that the EIAR has objectively demonstrated that the proposed project does not adversely affect the environment in all its facets, including the integrity of Natura 2000 sites.