Alexandra Basin Redevelopment 2

Bringing Dublin Port To 2040

Summary of Mitigation Measures



CALAFORT ÁTHA CLIATH
DUBLIN PORT

TETRA TECH

Summary of Mitigation Measures

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Summary of Mitigation Measures

Dublin Port Company (DPC) seeks to achieve the highest possible standards of environmental management during both the construction and operational phases of the ABR2 Project. A summary of all proposed mitigation measures and monitoring requirements proposed within the Environmental Impact Assessment Report (EIAR) are contained in this Chapter.

Construction Phase Mitigation Measures

This EIAR assesses the potential significant effects of the ABR2 Project on the environment arising from the construction of the ABR2 Project. Integration of the engineering design team with the planning and environmental team from an early stage in the project has enabled mitigation by design to be used, causing likely significant effects to be eliminated or reduced to an acceptable level during the preliminary design stage.

Following an examination, analysis and evaluation of the direct and indirect significant effects of the project in relation to the receiving environment, additional mitigation measures and monitoring programmes have been recommended which will be fully implemented during the construction phase of the ABR2 Project.

Table 22-1 summarises the mitigation measures and monitoring programmes recommended within the EIAR during the construction phase of the ABR2 Project. All mitigation measures proposed within the Natura Impact Statement (NIS) have been included in this EIAR. The development of the mitigation measures has greatly benefited from the experience gained from monitoring the effectiveness of similar mitigation measures during the construction of the ABR Project since 2016 and the ongoing construction of the MP2 Project since 2022.

Table 22-1: Construction Phase Mitigation measures and monitoring

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
Natura Impact Statement (NIS) Mitigation	
Environmental Facilities Manager (Environmental Clerk of Works)	An Environmental Facilities Manager will oversee the environmental management of the ABR2 Project. It is proposed that the construction works for the ABR2 Project will fall within the remit of the Environmental Facilities Manager. They have the authority to: • Review method statements; • Oversee work; • Provide instruction to the contractor(s); and • Request the temporary cessation of works, where necessary, from the client.
Pollution prevention	In addition to those mitigation measures defined with Chapter 9 Water Quality of the EIAR and inserted into this table below, the following mitigation measures will be implemented to prevent pollutants entering the Irish sea and reaching South Dublin Bay & River Tolka Estuary SPA, North-west Irish Sea SPA, North Bull Island SPA, South Dublin Bay SAC,

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	Rockabill to Dalkey Island SAC, Lambay Island SAC and Codling Fault Zone SAC's qualifying interests downstream of the application site: • No pollutants will be allowed to enter the watercourses during construction operations; this will be prevented by civil engineering methods (i.e. formation of drainage channels) and installation of silt fencing; • Any wet concrete required for the development works will be pre-mixed off site and transported in dedicated lorries; and • Washout of concrete trucks shall be strictly confined to a designated and controlled wash-out area, remote from watercourses, drainage channels and other surface water features.
Chapter 6 Risk of Major Accidents and Disasters	
Risk of Major Accident during Construction Phase	The individual berths that will be unavailable during phases of the construction works will be identified in advance and DPC will identify alternative berths to be used for the duration of the works. Changes to the availability of berths will be communicated to vessels operating at the Port in advance via Notices to Mariners. A project specific vessel traffic / movement plan will be developed to manage the interaction between work vessels carrying out the dredging in Alexandra Basin West, work vessels carrying out the infilling in the basin of Berths 52/53 and supporting vessels. The plan will take into account the need for commercial vessels to cross the route between Alexandra Basin West and the basin of Berths 52/53, and the potential conflicts between oil tankers and LPG vessels accessing the oil berths. The Dublin Port Pilots will be advised of the vessel traffic management plan in advance and on an ongoing basis over the course of the ABR2 Project. A traffic plan for the movement of ABR2 Project vehicles on the land side of the Port will be developed in advance to minimise where practicable, and manage the interaction between project vehicles and commercial and other traffic in the Port. Where practicable, the ABR2 Project traffic will be kept separate from vehicles transporting dangerous goods by road, either in bulk (road tankers conveying petroleum products or LPG road tankers) or in packages / containers.
Chapter 7 Biodiversity, Flora and Fauna	
Terrestrial Biodiversity and Ornithology	
Black Guillemot Nests	Black Guillemot nests may be lost as part of the infilling process at Berth 52/53. To compensate for the loss of these two nests the following mitigation is proposed: The Dublin Port Companies Black Guillemot Management Plan 2023-2030 (DPC, 2023, RPS, 2024) sets out that six new nest boxes are proposed within the new Berth 53 open pile structure at the eastern end of the Port. This will increase the amount of available nesting habitat available for Back Guillemot and offset the loss of two nests during the infilling of the Berth 52/53 basin. These nest box locations are proposed

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	under the MP2 project as part of MP2 Project Foreshore consent, Condition 2(b) and the ports wider biodiversity strategy.
Diminution of Water Quality and Habitats Deterioration	**Dredging** • As noted in Chapter 9 (Water Quality and Flood risk Assessment), the following key relevant mitigation measures will apply to each dredging campaign in the ABR2 Project: • Loading will be carried out by a backhoe dredger. • The backhoe will have a clamshell bucket adapted for environmental dredging when working in Alexandra Basin West. • A silt curtain is to be utilised around the dredger whilst the dredging of contaminated material is ongoing. • Material dredged in Alexandra Basin West is to be treated and reused for reclamation within the Port as far as practicable, specifically as infill for Berths 52/53. • A contingency bubble curtain installed across the entrance to Alexandra Basin West will be utilised in the event of a breach of the silt curtain around the dredger. • Dredged material will be transported to the proposed treatment facility by barge and treated under the terms of the existing IE licence P1002-02, or as may otherwise be agreed with the EPA during a licence review to account for amendments to the licence which may be required to accommodate the works as outlined in the ABR2 Project. • No overtopping of barges is permitted, and spill plates are to be utilised to prevent spillage during offloading operations. • Full-time monitoring of Marine Mammals within 500m of loading operations will be undertaken in accordance with the measures contained in the Guidance to Manage the Risk to Marine Mammals from Man-Made Sound Sources in Irish Waters (NPWS, 2014). • A documented Accident Prevention Procedure will be put in place prior to commencement. • A documented Emergency Response Procedure will be put in place prior to commencement. • A full record of loading locations and a record of the material being treated will be maintained for each trip. • When any dredging is scheduled to take place within a 500m radius of power station intakes, the relevant stakeholders will be notified so that precautionary measures can be taken if deemed necessary. **Release of contaminated surface water drainage** Sediments arising from Alexandra Basin West will be subjected to storage in stockpiles and potentially soil washing techniques appropriate to the concentrations of contaminants. All contaminated water will be managed and directed through the wastewater treatment system prior to discharge under the requirements of the IE licence. Dredged sediments will be stored in bunded areas, stockpiles will not exceed the heights applicable to the material being stored at North Wall Quay Extension to ensure that the loading of materials onto the structure do not exceed service loading, or at Berth 49 and Riverside Berth 52 West will not exceed the height of a stockpile placed at the natural angle of repose of the sediments within the footprints of the storage areas (nominally 4.5m in height). Precipitation falling on the stockpiled dredge material within the three treatment areas

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	will be collected within a bund surrounding the contaminated material and then subsequently pumped to the wastewater treatment works for treatment. Therefore, the surface water generated in the stockpiled contaminated dredge areas will be contained within the bund and then treated in the wastewater treatment plant. Clean surface water generated in the treatment areas will drain to the existing drainage network. The treatment of soil and sediment washing allows the recovery of the inert fraction with coarser particle size (sands and gravels) for reuse on site. It is expected that this form of treatment will be applied to c. 120,000m^3 of dredge sediment arising from Alexandra Basin West. The mitigation and control measures to address the impact from suspended sediments associated with these activities will follow sound design principles and good working practices as listed in the NetRegs Guidance for Pollution Prevention series. In addition to the requirements of best practice and relevant guidelines, the following mitigation measures will be implemented by the contractor during the construction phase: • Sampling points will be included within the pipe work system of the wastewater treatment system for contaminated water to allow for the collection of water samples from the emission point as per the IE licence. The sampling and testing schedule will be in accordance with Schedule C of the IE licence; • A controlled outlet from Berths 52/53 will be constructed to control water level/flow. A written record of the types and quantities of material recovered at the infill sites will be maintained. Ongoing monitoring of the soil washing and S/S process will also take place during construction and will consist of the following: i) Geotechnical tests, e.g. the permeability (hydraulic conductivity) and the compression strength of the stabilised materials after different strength development periods; ii) Environmental testing, e.g. batch leaching tests and diffusion testing to measure the leaching of contaminants from the treated dredge material as per the IE licence requirements; iii) An ongoing monitoring programme will be undertaken prior to, during, and post the recovery operation (surface water quality in harbour, monitoring of pore water in the construction, sediment samples from the harbour, water levels and groundwater quality) as per the IE licence requirements; and iv) A Quality Assurance/Quality Control (QA/QC) programme will be established. • Where preferential surface flow paths occur, silt fencing or other suitable barriers will be used to ensure silt-laden or contaminated surface runoff from the site does not discharge directly to a water body or surface water drain. • In the event that dewatering of foundations or drainage trenches is required during construction and/or discharge of surface water from sumps, a treatment system prior to the discharge will be used; silt traps, settlement skips, etc. This measure will allow additional settlement of any suspended solids within stormwater arising from the construction areas.
Potential Impacts on Otters	**Pre-Commencement Terrestrial Otter Search** Prior to the commencement of any construction works (including the moving and storage of materials), an Environmental Facilities Manager will undertake a detailed search for resting otters along all potentially

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	suitable land along the water's edge, out to more than 30m from proposed construction works. If otters are encountered, all works in that vicinity will cease until they have moved on. **Timing of Works** Otter are most active during and after sunset, emerging from their holts to hunt, forage, and commute. The current IE Licence facilitates operation of the treatment infrastructure between the hours of: • 08:00 and 18:00 on Monday to Friday • 08:00 and 13:00 on Saturday Alexandra Basin West dredging and treatment of dredged material may occur during a daytime window of 07:00-19:00 and an evening window of 19:00-23:00. Activity will be lower during the night, with the only permitted activities during a 23:00-07:00 window being dredging of Alexandra Basin West area 1 and area 4, along with associated barge transport of dredged material. **Excavations & Pipes** Open excavations and / or trenches will either be covered to avoid access by otters, or a means of escape installed to facilitate egress, at the end of each working day. All pipes will be capped overnight to prevent access by otters.
Benthic Biodiversity and Fisheries	

Dredging Methodology and Sediment Disturbance Control	Dredging activities represent the primary source of potential disturbance to benthic habitats and sediment stability during the construction phase. The following mitigation measures are designed to minimise sediment resuspension, reduce the extent of seabed disturbance, and control the release of fine material into the water column during excavation and handling operations.
	• Capital dredging will be undertaken using a closed environmental bucket dredger, which will be specified and operated by the appointed Marine contractor, to minimise sediment loss during excavation and lifting.
	• The Marine contractor will ensure that dredging operations are carried out in a controlled manner, including:
	  ○ minimising overfilling of the bucket
	  ○ avoiding rapid lifting through the water column
	  ○ maintaining vertical alignment during excavation
	• Barge loading procedures will be implemented by the Marine contractor to prevent overtopping and spillage, including maintaining freeboard and controlled loading rates.
	• Where dredging occurs in areas of finer or more contaminated sediments, silt curtains or equivalent containment measures will be deployed where practicable by the contractor, subject to navigation and safety constraints, to reduce lateral dispersion of suspended sediments.

Sediment Handling, Treatment and Storage	Sediment handling and treatment activities have the potential to generate localised sediment disturbance and runoff if not appropriately controlled. The following mitigation measures are designed to ensure that dredged material is managed in a contained and controlled manner throughout

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation

	processing, storage and transfer, thereby minimising the risk of sediment release and protecting water quality within the receiving environment.
	• All sediment handling, including screening, soil washing, separation and dewatering, will be undertaken within designated treatment areas at North Wall Quay Extension, Berth 49 and/or Berth 52 West.
	• Sediment processing areas shall be bunded and graded to contain runoff;
	• All process water is directed to the wastewater treatment system
	• Temporary stockpiling of dredged material will be managed to minimise exposure to rainfall and runoff, including:
	  ○ use of contained storage areas
	  ○ minimisation of stockpile duration
	• Transfer of sediment between dredging, treatment and infill areas (via barge, pipeline or haulage) will be managed to prevent spillage or leakage, including:
	  ○ use of sealed pipelines where applicable
	  ○ controlled transfer points
	  ○ immediate clean-up procedures in the event of accidental release

Water Quality Protection	Construction activities, particularly dredging, sediment treatment and basin dewatering, have the potential to affect water quality through increased suspended sediments and associated contaminants. The following mitigation measures are designed to ensure that all water arising from construction processes is appropriately contained, treated and discharged in a controlled manner, thereby preventing deterioration of water quality within the River Liffey and Dublin Bay.
	• All water generated during dredging, sediment treatment and basin dewatering will be collected and treated prior to discharge via an on-site water treatment system prior to discharge.
	• The WWTP will be designed and operated to ensure compliance with EPA IE licence emission limit values (ELVs) at all times.
	• The following measures shall be implemented:
	  ○ controlled discharge points
	  ○ flow regulation to prevent surcharging of the treatment system
	• No untreated process water will be discharged directly to the River Liffey or Dublin Bay.
	• Stop/start sequences will be programmed to minimise emissions. A stop procedure will also be developed to minimise emissions to the environment during malfunctions, breakdowns and momentary stoppages.

Protection of Fish and Migratory Species	Construction activities within Dublin Port have the potential to cause temporary disturbance to estuarine fish and diadromous migratory species through underwater noise, increased turbidity and vessel movements. The following mitigation measures are designed to minimise disturbance to fish, maintain access to established migratory pathways, and reduce the risk of behavioural disruption during the construction phase.

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	• Dredging and marine construction activities will be undertaken using non-percussive methods, thereby avoiding high-intensity impulsive noise that could cause injury to fish. • No physical barriers will be introduced within the main Liffey navigation channel • Vessel movements will be managed to maintain navigational access at all times. • Where practicable, the construction programme will be managed by DPC and the contractor to avoid peak migration periods for key diadromous species, informed by available fisheries data and regulatory guidance. • Vessel movements associated with construction will be controlled by the contractor to minimise unnecessary manoeuvring and reduce disturbance to fish within and adjacent to the basin.

Dewatering and Infill Management	Dewatering of the Berth 52/53 basin and the placement of infill material have the potential to influence water quality and sediment stability if not appropriately controlled. The following mitigation measures are designed to ensure that dewatering and infilling activities are undertaken in a controlled and contained manner, minimising the release of suspended sediments and preventing indirect effects on the surrounding aquatic environment.
	• Partial dewatering of the Berth 52/53 basin will be undertaken in a controlled and staged manner by the contractor to prevent uncontrolled release of suspended sediments.
	• All water removed from the basin will be directed to the on-site treatment system for treatment prior to discharge, in accordance with the IE licence.
	• Placement of treated and recovered sediments within the infill area will be managed to:
	  ○ minimise disturbance to surrounding waters and
	  ○ prevent overflow or uncontrolled discharge.
	• The infill area will be include drainage infrastructure, installed by the contractor in accordance with design specifications.

Marine Mammals	
Marine Mammal Management Plan	Mitigation will be implemented through implementation of a Marine Mammal Management Plan (MMMP). The MMMP sets out specific mitigation procedures, including pre-start monitoring, implementation of mitigation zones and communication protocols between MMOs and site personnel. The measures are designed to avoid or minimise potential disturbance to marine mammals during the construction phase. Given that predicted impacts are temporary, localised and are limited to short-term behavioural disturbance, with no significant risk of injury anticipated, mitigation follows a precautionary approach consistent with established best practice in Irish waters.

22.1.1.1.1 MMO Programme

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

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

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

22.1.1.1.2 Pre-Start Monitoring and Delay Procedure

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

Prior to the commencement of dredging:

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

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

22.1.1.1.3 Good Practice Vessel Management

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

- Vessel speeds will be reduced where safe and practicable

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	• Vessel masters will remain vigilant for marine mammals • Sudden changes in direction or speed will be avoided where possible Given the already high level of vessel traffic within the port, and the implementation of the above measures, the Project will not result in a significant increase in risk to marine mammals. **22.1.1.1.4 Sediment Control Measures** To minimise effects associated with suspended sediments, standard sediment control measures will be implemented: • Silt curtains will be utilised around the dredger during dredging operations to minimise the dispersion of suspended sediments • A contingency bubble curtain will be available and may be deployed across the entrance to Alexandra Basin West in the event of silt curtain breach • Environmental buckets will be used for dredging to reduce sediment disturbance and release at source These measures will minimise the spatial extent and duration of sediment plumes and reduce the potential for impact on marine mammals.
Chapter 8 Land, Soils, Geology and Hydrogeology	
Dredging of Alexandra Basin West	The dredging methodology will be the same as that undertaken for the ABR Project dredging, which will comprise the use of a floating pontoon with an excavator mounted environmental bucket adapted for environmental dredging. This will minimise the disturbance and escape of material at the seabed and during removal through the water column. A silt curtain will be used around the dredger whilst the dredging of contaminated material is ongoing. A contingency bubble curtain will be available and may be deployed across the entrance to Alexandra Basin West. This bubble curtain will only be utilised in the event of a breach of the silt curtain around the dredger. No overtopping of barges will be permitted when transporting the dredged sediment to the treatment area and spill plates will be utilised to prevent spillage during offloading operations.
Treatment of contaminated dredged sediment material	Best practice industry techniques (utilising Best Available Technology (BAT)) will be used to treat the contaminated material arising from the dredging of Alexandra Basin West.
Industrial Emissions Licence	The operation of the treatment works will be undertaken in accordance with the EPA issued IE Licence P1022-02. Following the completion of the treatment and infilling works, the treatment infrastructure will be decommissioned in accordance with the IE Licence.
Chapter 9 Water Quality and Flood Risk Assessment	

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
Water Quality	

Construction Phase Best Practice Measures	Mitigation measures will be implemented by the contractor and will include the requirements for best practice and adherence to the following relevant Irish guidelines and recognised international guidelines:
	• Good practice guidelines on the control of water pollution from construction sites developed by the Construction Industry Research and Information Association (CIRIA, 2001);
	• NetRegs Guidance for Pollution Prevention series (GPP) series in relation to a variety of activities developed by the Scottish Environmental Protection Agency (SEPA), Natural Resources Wales (NRW) and the Northern Ireland Environment Agency (NIEA);
	  ○ GPP2: Above-ground oil storage tanks
	  ○ GPP3: Use and design of oil separators in surface water drainage
	  ○ GPP5: Works and maintenance in or near water
	  ○ GPP6: Working at construction and demolition sites
	  ○ GPP8: Safe Storage and disposal of used oils
	  ○ GPP13: Vehicle washing and cleaning
	  ○ GPP20: Dewatering underground ducts and chambers
	  ○ GPP21: Pollution incident response planning
	  ○ GPP22: Dealing with spills
	• Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (Inland Fisheries Ireland, 2016);
	• International Convention for the Prevention of Pollution From Ships, 1973, as modified by the Protocol of 1978 (MARPOL) for domestic waste discharges to the environment;
	• International Marine Organisation guidelines; and
	• Control of Substances Hazardous to Health (COSHH) Handling of Hazardous Materials.

Mobilisation of contaminated sediment containing heavy metals / Accidental spillages of dredge spoil	A Dredging Management Plan was developed for the MP2 Project and is set out in the *MP2 Project Construction Environmental Management Plan (CEMP) Rev B, April 2025*. The mitigation for dredging operations in the ABR2 Project has been informed by the MP2 Project and the ABR Project monitoring and experience working in the same locations. The following key relevant mitigation measures will apply to each dredging campaign in the ABR2 Project (and will minimise accidental spillages of dredge spoil): • Loading will be carried out by a backhoe dredger. • The backhoe will have a clamshell bucket adapted for environmental dredging when working in Alexandra Basin West. • A silt curtain is to be utilised around the dredger whilst the dredging of contaminated material is ongoing.

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	• Material dredged in Alexandra Basin West is to be treated and reused for reclamation within the Port as far as practicable, specifically as infill for Berths 52/53. • A contingency bubble curtain will be available and may be installed across the entrance to Alexandra Basin West which will be utilised in the event of a breach of the silt curtain around the dredger. • Dredged material will be transported to the proposed treatment facility by barge and treated under the terms of the existing IE licence P1022-02, or as may otherwise be agreed with the EPA during a licence review to account for amendments to the licence which may be required to accommodate the works as outlined in the ABR2 Project. • No overtopping of barges is permitted, and spill plates are to be utilised to prevent spillage during offloading operations. • Full-time monitoring of Marine Mammals within 500m of dredging operations will be undertaken in accordance with the measures contained in the Guidance to Manage the Risk to Marine Mammals from Man-Made Sound Sources in Irish Waters (NPWS, 2014). • A documented Accident Prevention Procedure will be put in place prior to commencement. • A documented Emergency Response Procedure will be put in place prior to commencement. • A full record of loading locations and a record of the material being treated will be maintained for each trip. • When any dredging is scheduled to take place within a 500m radius of power station intakes, the relevant stakeholders will be notified so that precautionary measures can be taken if deemed necessary.
Release of contaminated surface water drainage	Sediments arising from Alexandra Basin West will be subjected to temporary storage in stockpiles and potentially soil washing techniques appropriate to the concentrations of contaminants. All contaminated water will be managed and directed through the wastewater treatment system prior to discharge under the requirements of the IE licence. Dredged sediments will be stored in bunded areas, stockpiles will not exceed the heights applicable to the material being stored at North Wall Quay Extension to ensure that the loading of materials onto the structure do not exceed service loading, or at Berth 49 and Riverside Berth 52 West will not exceed the height of a stockpile placed at the natural angle of repose of the sediments within the footprints of the storage areas. Precipitation falling on the stockpiled dredge material within the three treatment areas will be collected within a bund surrounding the contaminated material and then subsequently pumped to the wastewater treatment works for treatment. Therefore, the surface water generated in the stockpiled contaminated dredge areas will be contained within the bund and then treated in the wastewater treatment plant. Clean surface water generated in the treatment areas will drain to the existing drainage network. The treatment of soil and sediment washing allows the recovery of the inert fraction with coarser particle size (sands and gravels) for reuse on site. It is expected that this form of treatment will be applied to c. 120,000m^3 of dredge sediment arising from Alexandra Basin West. The mitigation and control measures to address the impact from suspended sediments associated with these activities will follow sound

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	design principles and good working practices as listed in the NetRegs Guidance for Pollution Prevention series. In addition to the requirements of best practice and relevant guidelines, the following mitigation measures will be implemented by the contractor during the construction phase: • Sampling points will be included within the pipe work system of the wastewater treatment system for contaminated water to allow for the collection of water samples from the emission point as per the IE licence. The sampling and testing schedule will be in accordance with Schedule C of the IE licence; • A controlled outlet from Berths 52/53 will be constructed to control water level/flow. A written record of the types and quantities of material recovered at the infill sites will be maintained. Ongoing monitoring of the soil washing and S/S process will also take place during construction and will consist of the following: o Geotechnical tests, e.g. the permeability (hydraulic conductivity) and the compression strength of the stabilised materials after different strength development periods; o Environmental testing, e.g. batch leaching tests and diffusion testing to measure the leaching of contaminants from the treated dredge material as per the IE licence requirements; o An ongoing monitoring programme will be undertaken prior to, during, and post the recovery operation (surface water quality in harbour, monitoring of pore water in the construction, sediment samples from the harbour, water levels and groundwater quality) as per the IE licence requirements; and o A Quality Assurance/Quality Control (QA/QC) programme will be established. • Where preferential surface flow paths occur, silt fencing or other suitable barriers will be used to ensure silt-laden or contaminated surface runoff from the site does not discharge directly to a water body or surface water drain. • In the event that dewatering of foundations or drainage trenches is required during construction and/or discharge of surface water from sumps, a treatment system prior to the discharge will be used; silt traps, settlement skips, etc. This measure will allow additional settlement of any suspended solids within stormwater arising from the construction areas.
General construction works	The risk of water quality impacts associated with works machinery, infrastructure and on-land operations (for example, leakages/spillages of fuels, oils, other chemicals and wastewater) will be controlled through good site management and the adherence to codes and practices which limit the risk to within acceptable levels. The following measures will be implemented during construction: A detailed works-specific CEMP will be prepared, which will meet the minimum requirements of this draft CEMP and will include details in respect of every aspect of the works in order to minimise potential impacts and maximise potential benefits associated with the works; • Management and auditing procedures, including toolbox talks to personnel, will be put in place to ensure that any works which have the potential to impact on the aquatic environment are being carried

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	out in accordance with required permits, licences, certificates and planning permissions; • Existing and proposed surface water drainage and discharge points will be mapped on the Drainage layout. These will be noted on construction site plans and protected accordingly to ensure water bodies are not impacted by sediment and other pollutants using measures to intercept the pathway for such pollutants; • The use of oils and chemicals on-site requires significant care and attention. The following procedures will be followed to reduce the potential risk from oils and chemicals; • Fuel, oil and chemical storage will be sited on an impervious base within a bund and secured. The base and bund walls must be impermeable to the material stored and of adequate capacity. The control measures in GPP2: Above Ground Oil Storage Tanks and GPP 26 “Safe storage – drums and intermediate bulk containers” will be implemented to ensure safe storage of oils and chemicals; • The safe operation of refuelling activities shall be in accordance with GPP 7 “Safe Storage – The safe operation of refuelling facilities”; • Breaking of concrete (associated with structure demolition) has the potential to emit alkaline dust into the receiving environment. A barrier between the dust source and the sensitive receptor (the water body in this case) will be erected to limit the possibility of dust and falling debris from contacting the receptor; • Concrete use and production shall adhere to control measures outlined in Guidance for Pollution Prevention (GPP5): Works and maintenance in or near water. Any on-site concrete production will have the following mitigation measures: a bunded designated concrete washout area; closed-circuit wheel wash and initial siting of any concrete mixing facilities such that there is no production within a minimum of 10m from the aquatic zone; • The use of concrete in close proximity to water bodies requires a great deal of care. Fresh concrete and cement are very alkaline and corrosive and can cause serious pollution in water bodies. It is essential to ensure that the use of wet concrete and cement in or close to any water body is carefully controlled so as to minimise the risk of any material entering the water, from the shuttered structures and cofferdams that will be used to contain the concrete; • Where concrete is to be placed under water or in tidal conditions, a specific fast-setting mix is required to limit segregation and washout of fine material/cement. This will normally be achieved by having either a higher-than-normal fines content, a higher cement content or the use of chemical admixtures; and • Contingency Planning: A project-specific Pollution Incident Response Plan will be prepared consistent with DPC's Environmental Emergency Plan (Appendix A) and will be in accordance with GPP 21 Pollution Incident Response Planning. Whilst a major incident is highly unlikely to occur in circumstances where the mitigation measures are implemented, the finalisation of this draft CEMP is considered to be best practice. The contractor's Environmental Manager and DPC will be notified in a timely manner of all incidents where there has been a breach in agreed environmental management procedures. Suitable training will be provided by the contractor to relevant personnel detailed within the Pollution Incident Response Plan to ensure that appropriate and timely actions are taken.

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
Flood Risk Assessment	
Flood protection during construction phase	22.1.1 Temporary works may be required to prevent coastal waters interacting with works activities throughout the duration of the construction period, particularly the materials handling infrastructure at Berth 52. The temporary works design to ensure flood protection will be the responsibility of the appointed contractor. 22.1.2 Tidal early warning systems will be used by the contractor during the construction phase. Triton and Tidewatch are two tidal flood forecasting and warning systems developed by Dublin City Council that make use of weather and/ or surge forecasts in the Irish Sea to provide future predictions of tide levels, with Tidewatch providing forecasts up to five days in advance and Triton two days in advance. The latest tidal flood warnings and forecasts are available on Dublin City Council's (DCC's) flood forecasting and warning page. The contractor can subscribe to DCC Alerts is which is a free notification service from DCC.
Chapter 10 Air Quality	
Potential for dust generation	The 2024 IAQM Dust Guidance mitigation measures for the Project are detailed below: **Communications** • Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. • Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. • Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real-time PM_{10} continuous monitoring and/or visual inspections. **Site Management** • Record all dust and air quality complaints, identify cause(s), respond appropriately to reduce emissions in a timely manner, and record the measures taken. • Make the complaints log available to the local authority when asked. • Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the logbook. **Preparing and maintaining the site** • Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	• Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period. • Avoid site runoff of water or mud. • Keep site fencing, barriers and scaffolding clean using wet methods. • Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below. • Cover, seed or fence stockpiles to prevent wind whipping. **Operating vehicle/machinery and sustainable travel** • Ensure all vehicles switch off engines when stationary - no idling vehicles. • Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable. **Operations** • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g., suitable local exhaust ventilation systems. • Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate. • Use enclosed chutes and conveyors and covered skips. • Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. • Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. **Waste management** • Avoid bonfires and burning of waste materials. **Demolition** • Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground. • Avoid explosive blasting, using appropriate manual or mechanical alternatives. • Bag and remove any biological debris or damp down such material before demolition. **Earthworks** • Only remove the cover in small areas during work and not all at once. **Construction**

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	• Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. • For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. **Trackout** • Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. • Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). **Overall, the key considerations are:** • Site roads/site entrances with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions. • Material handling systems and material storage areas will be designed and laid out to minimise exposure to wind. • Water misting will be utilised on-site as required to mitigate dust in dry weather conditions. • The transport of road stone or other material, which has significant potential to generate dust, will be undertaken in tarpaulin-covered vehicles where necessary. • Inspection of construction sites to examine dust measures and their effectiveness.
Chapter 11 Climate	
Direct Greenhouse Gas Emissions	The requirement to mitigate against projected emissions from the construction phase of the Project is clearly signalled in national policy such as CAP25 (3.5.1 Specify low carbon construction methods and low carbon cement material as far as practicable for directly procured or supported construction projects from 2023). The Project will investigate and use low carbon solutions if suitable. This commitment will be tracked through a Project Carbon Management Plan (PCMP) which has been developed in accordance with PAS 2080 (Carbon Management in Infrastructure) (refer to Appendix B of the draft CEMP). The PCMP is used to monitor and report on the above committed carbon management measures and all other measures adopted during the design, procurement and construction phases. In addition to the above mitigation regarding material choices, there are a series of additional construction mitigation measures that will also be adopted as follows: • All aggregates required imported shall be secondary aggregates. Virgin aggregates shall only be employed where it is demonstrated

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	that secondary aggregates are unsuitable for structural reasons and/or they are unavailable. • Wherever available, the contractor shall secure construction materials from local/regional sources or sources within the State to minimise material transport emissions and reduce life cycle carbon emissions associated with the construction materials. • For electricity generation at the construction compounds, hydrogen generators or electrified plant shall be utilised over traditional diesel generators. This shall also apply to lower powered mobile plant, as appropriate. • A regular maintenance schedule for all construction plant machinery shall be undertaken to maintain optimum machinery efficiency. • Engines will be turned off when machinery is not in use. • The use of private vehicles by construction staff to access the site will be minimised through the encouragement of use of public transport, encouragement of car sharing, and maximising use of local labour to reduce transport emissions. To implement this, a draft Mobility Management Plan has been prepared (refer to Appendix 15-1) for site staff.
Chapter 12 Terrestrial Noise and Vibration	
Noise impacts from construction on nearest noise sensitive properties	British Standard BS5228:2009+A1:2014 – Noise and vibration control on construction and open sites: Part 1 - Noise outlines a range of measures that can be used to reduce the impact of construction phase noise on the nearest noise sensitive receptors. These measures should be applied by the contractor where appropriate during the construction phase of the ABR2 Project. Examples of some of the best practice measures included in BS5228:2009+A1:2014 are listed below: • Ensuring that mechanical plant and equipment used for the purpose of the works are fitted with effective exhaust silencers and are maintained in good working order; • Careful selection of quiet plant and machinery to undertake the required work where available; • All major compressors should be 'sound reduced' models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use; • Any ancillary pneumatic percussive tools should be fitted with mufflers or silencers of the type recommended by the manufacturers; • Machines in intermittent use should be shut down in the intervening periods between work; • Ancillary plant such as generators, compressors and pumps should be placed behind existing physical barriers, and the direction of noise emissions from plant including exhausts or engines should be placed away from sensitive locations, in order to cause minimum noise disturbance. • Handling of all materials should take place in a manner which minimises noise emissions; and • Audible warning systems should be switched to the minimum setting required by the Health & Safety Authority. The finalised CEMP will be prepared in advance of the construction and will detail all aspects of controlling noise emissions at the nearest noise sensitive properties to the ABR2 Project. The finalised CEMP will include

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	various sub-plans which will address specific environmental disciplines, including a Noise Management Plan (NMP). The NMP will be an iterative document, which will be updated on an ongoing basis in consultation with DCC. The document will detail the requirements for compliance noise monitoring to be completed during each stage of the construction process. A complaints procedure should continue to be operated by the Contractor throughout the construction phase, and all efforts should be made to address any noise issues at the nearest noise sensitive properties.
General Noise Considerations	• All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise. • Good Quality site hoarding should be erected to maximise the reduction in noise levels. • The contact details of the contractor and site manager shall be displayed to the public, together with the permitted operating hours, including any special permissions given for out of hours work. • The site entrance shall be located to minimise disturbance to noise sensitive receptors. • Internal haul routes shall be maintained and steep gradients shall be avoided. • Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours is for traffic management (i.e. road closure) or health and reasons (application must be made to DCC a minimum of 4 days prior to proposed works). • Use rubber linings in chutes, dumpers and hoppers to reduce impact noise. • Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements.
Mitigation for noise generated by plant	• Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC. • Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer. • Use all plant and equipment only for the tasks for which it has been designed. • Shut down all plant and equipment in intermittent use in the intervening periods between work or throttle down to a minimum. • Power all plant by mains electricity where possible rather than generators. • Maximise screening from existing features or structures and employ the use of partial or full enclosures for plant. • Locate movable plant away from noise sensitive receptors.
Mitigation for noise from vehicle activity	• Ensure all vehicle movements (on site) occur within normal working hours. (Other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons).

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	• Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public roads. If unavoidable engines should be turned off. • Minimise the opening and closing of the site access through good coordination of deliveries and vehicle movements. • Plan the site layout to ensure that reversing is kept to a minimum. • Where reversing is required, use broadband reverse sirens or where it is safe to do so disengage all sirens and use banksmen. • Rubber/neoprene or similar non-metal lining material matting to line the inside of material transportation vehicles to avoid first drop high noise levels.
Mitigation for noise from demolition activities	• Employ the use of acoustic screening; this can include planning the demolition sequence to utilise screening afforded by buildings to be demolished. • If working out of hours for Health and Safety reasons (following approval by DCC) limit demolition activities to low level noise activity unless absolutely unavoidable. • Use low impact demolition methods such as non-percussive plant where practicable. • Use rotary drills and 'bursters' activated by hydraulic or electrical power or chemically based expansion compounds to facilitate fragmentation and excavation of hard material. • Avoid the transfer of noise and vibration from demolition activities to adjoining occupied buildings through cutting any vibration transmission path or by structural separation of buildings. • Consider the removal of larger sections by lifting them out and breaking them down either in an area away from sensitive receptors or off site.

Monitoring recommendations for noise generation incorporating mitigation	• Establish pre-existing levels of ambient noise by baseline monitoring or use of the noise maps.
	• Carry out regular on-site observation monitoring and checks/audits to ensure that BPM is being used at all times. Such checks shall include;
	  ○ Hours of work
	  ○ Presence of mitigation measures
	  ○ Number and type of plant
	  ○ Construction methods
	• Site reviews must be recorded and made available for inspection.
	• Monitor noise and vibration continuously during demolition, piling, excavation and sub and superstructure works at agreed locations and report to DCC at agreed intervals and in an agreed format. To comply with this, the following must take place.
	  ○ The monitoring locations for existing sites as agreed with officers of DCC must remain in situ. If additional monitoring is required this will be provided and the new locations will be agreed with DCC. For all new sites the monitoring locations must be agreed with DCC.

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	○ The results of the monitoring must be forwarded to officers of the Air Quality Monitoring and Noise Control Unit every two weeks in the following format: ○ Provide the construction noise level as defined in British Standard 5228 and the peak particle velocity readings for the hours of operation of the site. This will include the construction noise level for any overtime period worked outside of normal working hours. Provide a report detailing and discussing the noise and vibration levels over the reporting period. If a breach is recorded the follow up action that took place to prevent any further breaches must be included in the report. ○ This information must be provided in electronic format. If results are required owing to complaints the results will be provided as soon as possible by the contractor to DCC. • Appraise and review working methods, processes and procedures on a regular basis to ensure continuous development of BPM. • The 'ABC' Method detailed in Paragraph E.3.2 of BS 5228-1:2009 shall be used to determine acceptable noise levels for day, evening and night time work. • Vibration levels must be kept below 1.0 mm/sec (PPV) where possible. Where levels are expected to exceed this value, residents must be warned and an explanation given. • Contact details for the site manager and liaison officer should be displayed prominently on the site hoarding. • All staff should be briefed on the complaint procedure and the mitigation requirement and their responsibilities to register and escalate complaints received. • Send regular updates at appropriate intervals to all identified affected neighbours/businesses via a newsletter and post relevant information on the site hoarding. Also make the information available via email/website including weekly noise monitoring reports. • Arrange regular community liaison meetings at appropriate intervals including prior to commencement of the project. • Meet regularly with neighbouring construction sites to ensure activities are coordinated to minimise any potential cumulative issues.
Chapter 13 Underwater Noise and Vibration	
	No specific mitigation measures are suggested for the construction phase in respect of underwater noise and vibration, as non percussive equipment will be used. Furthermore, there are generally negligible impact ranges for AUD INJ (<10m) and the fact that noise similar to noise from the Project is common in the port and vessels with demolition equipment are not sudden onset sound sources, giving animals time to react and evade.
Chapter 14 Coastal Processes	

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
Dredging Mitigation Measures	• Dredging mitigation measures will include the use of an environmental bucket to minimise sediment losses, no overtopping of barges is permitted with the use of spill plates to minimise losses. • A silt curtain will be deployed during dredge operations to further limit the dispersion of sediment. • To underpin the effectiveness of the silt curtain, a dredge management protocol will also be implemented. This will entail agreeing appropriately scheduled dredging paths, areas and windows in conjunction with Port operations through close liaison with the harbour master. This will minimize silt curtain redeployment and movement, improving the efficiency and efficacy of this mitigating measure. • A bubble curtain will be available and will be deployed in the event of a sediment breach.
Chapter 15 Material Assets – Traffic and Transportation	
Construction Traffic	A Mobility Management Plan (MMP) has been drafted (refer to Appendix 15-1). In addition to the MMP, a Construction Traffic Management Plan (CTMP) will be developed prior to commencement of the Project.
Chapter 16 Material Assets – Services	
Water Network	Regarding the existing water network, the following mitigation measures will be taken: • Early engagement with water asset owners: Obtain statements of capacity and any written requirements from the water utility authority prior to construction works commencing. This can include confirmation of allowable abstraction rates and pressure thresholds for the temporary requirements for site offices and welfare facilities. • Supply Strategy: Preparation of a water supply plan for both temporary requirements for site offices and welfare facilities and during the construction process. This will prioritise the use of on-site water sources where feasible such as the reuse of effluent water from the waste treatment and recovery processes following suitable settlement/treatment or the use of harvested rainwater for dust suppression. • Provision of a back-up supply: Consideration should be given to ensure that water requirements for both potable water and non-potable water include a back-up supply, either through the use of suitable storage tanks on site for several days' worth of supply or through provisions available for the importation of water on-site using bowsers. • Implement a Phased Demand Management: Schedule any high-demand activities to avoid coinciding with known peak local demands, this may involve the implementation of demand-management controls and daily water use monitoring. • Protection of existing buried assets: Carry out utility surveys to mark and protect existing mains/sewerage networks. Provision of an

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	Emergency Response Plan should pipe strikes occur such as provision of isolation valves and standby repair crews. • Water quality controls: Installation of silt traps, settlement tanks and appropriate discharge controls for processing of dewatered dredged waters and infilled waters to prevent pollution of nearby surface waters. Contractors must comply with abstraction licensing and water quality consent conditions. • With regard to the treatment of dredged material, the existing IE licence includes Condition 9 whereby should local wells indicate that the construction works are having a significant adverse impact on the quantity or quality of water supply, that this shall be considered as an emergency with a requirement for the licensee to provide an alternative source of water for those affected, this will ensure that no adverse effects arise as a result of the construction process on other users. The wastewater generated during the treatment of dredge material is also subject to further conditions under the existing IE licence whereby sampling points will be included within the pipe work system to allow for the collection of water samples from emission point as per the IE licence. The sampling and testing schedule will be in accordance with Schedule C of the IE licence, and this will ensure that no adverse effects arise regarding the water discharges from the wastewater process to the River Liffey, should this indicate issues, steps to address this must be made with a cessation of discharge until it is rectified.
Electricity Network	Regarding the existing electricity network, the following mitigation measures will be taken: • Early engagement with electricity network owners: Obtain connection requirements and approval from electricity network operators (ESB networks) and agree routing, protection and metering for temporary requirements for site offices and welfare facilities. For treatment process requirements, a submission should be made for temporary works application and connection to the network. • Design of temporary connection: The temporary supply should be designed with the appropriate capacity margin and use of suitable protective devices. Use of back-up generators should be available to avoid electrical failures should an outage occur. Ensure that the design of any electrical supply meets national safety standards such as earthing. • Implement a Phased Demand Management: Schedule any high-demand activities to avoid coinciding with known peak local demands, this may involve the implementation of demand-management controls and advance notice of other users. During the connection process for the site construction facilities and for the wastewater treatment plants, further mitigation measures may be implemented to prevent disruption to other users, this may include the use of back-up generators to ensure that power supply continues, ensure advance notice is giving should shut off be required of the main network or the possibility of implementing the temporary connection process during the night-time to minimise effects upon other users. There is potential for the cable upgrading work on the Poolbeg to North Wall section to coincide with construction activities taking place under the ABR2 Project, this can be avoided through the careful co-ordination between contractors during construction activities.

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	Dredging within Alexandra Basin West has been considered in respect of the cooling water intakes used by the Ringsend and Poolbeg Blocks (and Encyclis) should dredging activities compromise water quality or flow conditions within these intakes. Turbidity, suspended sediments and contaminants must be suitably mitigated and monitored to prevent operational impacts upon the power stations, however as the dredging is confined within Alexandra Basin West and the basin is located c.1km away from the cooling water intake, there is no potential pathway for effects. As noted in Chapter 5 Project Description, a series of mitigation measures are in place regarding dredging including the following; Usage of a backhoe dredger with an environmental bucket to minimise sediment losses, installation of a silt curtain around the dredger, no overtopping of barges is permitted, and spill plates must be implemented for the transportation of dredged materials and deployment of a bubble curtain (stored on-site) across Alexandra Basin West should a sediment contamination event occur to contain sediment within the basin. The above mitigation measures aim to minimise the potential for sediment contamination occurring downstream of the dredging area. Should a contamination event occur, shutdown of dredging operations is recommended.
Telecommunications	Access shall be maintained to facilitate the operation of the infrastructure, and consideration should be given to any guidance published by the operators regarding working in the vicinity of such infrastructure.
Services consented under the MP2 Project	To mitigate against the potential for future excavation works required within the infilled area of Berth 52/53 to deliver the services and utilities infrastructure consented under the MP2 Project, during construction the use of mitigation by avoidance through the use of detailed design information on the dredge amounts and void infilling calculations has been undertaken to ensure that the void infilling considers the space required in respect to the finished surface levels of the MP2 project to accommodate the required services and utilities. Furthermore, as noted in Chapter 16 Section 16.3.7 of the EIAR (under separate cover), areas where the installation of services and utilities is proposed to occur for delivery of the UFT, these areas will only include either clean imported material or material which has been subject to a treatment process whereby the efficacy of this is unaffected by future excavation works to prevent the release of contaminants. Should the volume of treated dredge material exceed the void space at the Berth 52/53 basin, export to an external facility for reuse or disposal may be required to ensure that available space below the finished surface levels of Terminal 5 can accommodate the services and utilities consented under the MP2 Project.
Chapter 17 Cultural Heritage	
Pre-construction phase mitigation	22.1.3 Cultural Heritage inputs prior to construction will comprise an archaeological assessment and survey of the eastern end of the North Wall Quay Extension, including the North Wall Quay Lighthouse, should this location be utilised for the processing and treatment facility to enable the Capital Dredging of Alexandra Basin West. The survey will comply with Policy 5 (Policies relating to intervention and development affecting significant cultural heritage) of the *Dublin Port Heritage Conservation Strategy*. Such an archaeological survey will include metrically-accurate

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	laser-scan survey, and will ensure a detailed record of the treatment facility footprint and adjacent features prior to works commencing. 22.1.4 In compliance with the National Monuments Acts, a Section 12 Notification Form will be completed in advance of works commencing should the NQWE be selected for the location of the processing and treatment facility. 22.1.5 The cultural heritage team will advise DPC on the measures required to ensure that interventions are reversible and will avoid impacts on the historic fabric during construction. The cultural heritage team will also advise on inputs to the design of the treatment plant separation barriers and compound fencing.
Minimising potential impacts on cultural heritage	The following archaeological monitoring and management measures will be undertaken: • Retaining a project archaeologist/s: An archaeologist experienced in maritime archaeology will be retained by DPC for the duration of the relevant works. • Retaining a Grade 1 Conservation architect: A RIAI Grade 1 (or equivalent), Conservation architect experienced in industrial and maritime architectural heritage will be retained by DPC for the duration of the relevant works, to advise specifically in relation to works associated with the use of NWQE for the treatment and processing plant. • Retaining a conservation engineer: A conservation engineer experienced in industrial and maritime architectural heritage will be retained by DPC for the duration of the relevant works, to advise specifically in relation to works associated with the use of NWQE for the treatment and processing plant. • Archaeological licences: will be required to conduct the on-site archaeological works. Licence applications require the inclusion of detailed method statements that outline the rationale for the works and the means by which the works will be resolved. Licence applications take a minimum of four weeks to process through the DHLGH, and advance planning is required to ensure that the necessary permits are in place before site works commence. It is anticipated that the following licence types will be required: Excavation, to cover monitoring and investigation works; Detection, to cover the use of metal-detectors; and Dive Survey, to cover the possibility of having to conduct underwater inspections. Since 2017, excavation licence applications must be accompanied by a letter from the client on their letterhead that follows a prescribed format to confirm that sufficient funds and other facilities are available to the archaeologist to complete the archaeological excavation, post-excavation, and preliminary and final reports (including specialist reports). It is confirmed that DPC has confirmed that sufficient funds and other facilities as required will be made available to the project archaeologist to complete all reports required. • An Archaeology Management Plan reflecting current guidelines will be prepared by the archaeologist to prepare the protocols that ensure proper management and response to archaeological monitoring, recording and resolution that will be required in the course of the project. • Archaeological monitoring will be carried out by suitably qualified and experienced maritime archaeological personnel licensed by the

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	DHLGH. Archaeological monitoring is conducted during all terrestrial, inter-tidal/foreshore and seabed disturbances associated with the development. The monitoring will be undertaken in a safe working environment that will facilitate archaeological observation and the retrieval of objects that may be observed and that require consideration during the course of the works. The monitoring will include a finds retrieval strategy that is in compliance with the requirements of the National Museum of Ireland. • The time scale for the construction phase will be made available to the archaeologist, with information on where and when ground disturbances will take place. • Discovery of archaeological material: In the event of archaeologically significant features or material being uncovered during the construction phase, machine work will cease in the immediate area to allow the archaeologist/s to inspect any such material. • Archaeological material: Once the presence of archaeologically significant material is established, full archaeological recording of such material will be recommended. If it is not possible for the construction works to avoid the material, full excavation will be recommended. The extent and duration of excavation will be a matter for discussion between the client and the licensing authorities. • Archaeological team: It is recommended that the core of a suitable archaeological team be on standby to deal with any such rescue excavation. This would be complemented in the event of a full excavation. • Archaeological dive team: It is recommended that an archaeological dive team be retained on standby for the duration of any in-water disturbance works on the basis of a 24 or 48-hour call-out response schedule, to deal with any archaeologically significant/potential material that is identified in the course of the seabed disturbance activities. The dive team and all in-water work will conform to the Port's safety protocols for Diving at Work. • A site office and facilities will be provided by the DPC on site for use by archaeologists. • Secure wet storage facilities will be provided on site by the DPC to facilitate the temporary storage of artefacts that may be recorded during the course of the site work. • Buoying/fencing of any such areas of discovery will be necessary if discovered and during excavation. • Machinery traffic during construction will be restricted to avoid any identified archaeological site/s and their environs. • Spoil will not be dumped on any of the selected sites or their environs. • All site work will be conducted in strict compliance and accord with DPC's Health and Safety requirements. • Post-construction project report and archive. It is a condition of archaeological licensing that a detailed project report is lodged with the DHLGH within 12 months of completion of site works. The reports will be specific to each licence granted. The reports should be to publication standard and should include a full account, suitably illustrated, of all archaeological features, finds and stratigraphy, along with a discussion and specialist reports. Artefacts recovered during

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	the works need to meet the requirements of the National Museum of Ireland in terms of recording, conservation and storage. These measures are subject to the approval of the National Monuments Service at the DHLGH and the offices of the Dublin City Archaeologist and Built Heritage. DPC has and will continue to engage with the DHLGH and the offices of the Dublin City Archaeologist and Built Heritage.
Protection of North Wall Quay Extension	The North Wall Quay Extension will be subject to the following measures should this location be chosen for the treatment of dredged material, allowing it to be returned to its original condition: • The working area will be removed from the quay edge and from the lighthouse, which reduces the possibility of direct impacts on the historic fabric. • The use of spill plates at the quayside handling locations will avoid spillage onto the exposed granite capstones during unloading activities to transfer the sediments from barges to the treatment and handling infrastructure. • The design proposal for sediment handling and processing to be undertaken in designated, bunded areas constructed on a separation liner (geotextile) laid over the existing surface will ensure separation and prevent overspill onto the deck. • The stockpile heights will not exceed the heights applicable to the materials being stored to ensure loading from materials onto the structure of North Wall Quay Extension remains below service loading. This will reduce the potential for loading impact on the quay structure.
Chapter 18 Landscape and Visual	
Landscape and Visual impact	In built mitigation, as specified in Chapter 5 Project Description of the EIAR (under separate cover) associated with the construction phase of the Project includes; • Height restrictions for material storage adjacent to the North Quay Wall Extension to ensure loading from materials onto the structure of the North Wall Quay Extension remain below service loading. • At Berth 49 and Berth 52 West, heights will not exceed the natural angle of repose of the sediments within the footprints of the storage areas.
Chapter 19 Population and Human Health	
Public Health	Public health is by definition preventative in nature. Therefore, mitigation measures adopted as part of the construction and operation of the Project focus on precursors to health and wellbeing outcomes, thereby providing an opportunity for intervention to prevent any adverse impacts. For example, during construction, a Dust Management Plan and a Noise Management Plan will be implemented to manage air quality impacts and control construction noise. Air quality mitigation measures will focus on the effective management of construction activities to minimise dust and emissions at source and will be proportionate to the scale and

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	nature of the works. Noise mitigation will be implemented in accordance with established best practice and relevant guidance to minimise disturbance associated with construction activities. Measures will focus on the appropriate management of plant, equipment and working practices to control noise levels and protect nearby sensitive receptors. Construction traffic will be managed in accordance with the CTMP which will control routing and scheduling of vehicles to minimise disturbance and maintain safety on the surrounding road network. The only monitoring proposed relates to construction noise, which will be carried out as a compliance measure to confirm that noise levels remain within limit values and that mitigation measures are effective. Monitoring locations and procedures will be agreed with Dublin City Council and set out in the Noise Management Plan. On the basis that no significant adverse human health effects are anticipated and embedded mitigation and monitoring measures are designed to be protective of health and wellbeing by targeting precursors to health outcomes, no further health-specific mitigation or monitoring is considered necessary.
Chapter 20 Resource and Waste	
Waste materials will be generated during the construction phase of the works	The mitigation for resource and waste is the development and implementation of the Resource and Waste Management Plan (RWMP). This will be updated post-consent to cover the Pre-Construction Phase and will include current practices in line with EPA best practice and DCC policy requirements. The RWMP will include detail that will reduce the risk to human health of pollution or contamination and exposure from the storage, handling or disposal of all waste materials and ensure there is full traceability to the end point of treatment or disposal of all waste streams. Details of all waste types that will be produced from the Construction Phase of the Project will be documented in the RWMP. All construction waste will be managed as part of the RWMP, which will be implemented by the Principal Contractor for the duration of the construction works. The detailed RWMP will contain procedures for the management of waste and related pollution control measures and will be a live document subject to revision throughout the course of the construction works. Specific waste management requirements will include the following: • Strict adherence to waste regulatory requirements for the storage and handling on-site, as detailed in the IE Licence. • No wastes shall be deposited outside the areas permitted under the IE Licence or Project red line boundary, unless it is at a facility that holds a valid environmental permit / licence. • Allocation of space in the temporary construction compound for the storage of waste materials and ensure that storage areas and containers are clearly labelled (appropriate signage) so site workers know which wastes should be put there. • Hazardous waste must be stored separately from non-hazardous wastes to avoid contamination. • Segregation of wastes into specific categories and provide separate containers for dry recyclables, such as paper and cardboard, plastic,

Potential Impact/Mitigation Measure	Summary of Proposed Mitigation
	glass, wood, and metal at welfare facilities within temporary works areas. • All waste materials will be stored in skips or other suitable receptacles in designated areas of the site. The waste storage area(s) will be assigned and all construction staff provided with training regarding the waste management procedures on commencement of the Project. • Confirmation of waste treatment and disposal methods for each of the waste streams and robust application of the waste hierarchy to reuse and recycle specific percentages of the overall quantity generated to minimise wastes disposed of to landfill. • Ensure that all Waste Contractors that remove waste from the site have the appropriate authorisation. • Monitor the actual quantities of wastes produced during construction and management location(s) and update the RWMP to allow comparison with waste arisings estimated prior to construction. • All wastes that are deposited within the Project (as infill) or removed off-site must follow tracking procedures that trace the movement of the waste to the approved management location. • The Principal Contractor will designate staff who are responsible for waste management and ensure that all contractor staff are aware of the appropriate reuse, recovery, or disposal routes for each waste. The implementation of the detailed RWMP will promote sustainable waste management practices by maximising waste prevention, re-use, recycling, and recovery opportunities and will ensure all regulatory requirements are in compliance and DCC policy requirements are implemented.
Monitoring Requirements	Records will be kept of all waste materials that are produced, utilised and leave the Project site during construction, whether for reuse on another site, recovery, recycling or disposal. Further details of the tracking of wastes will be detailed in the RWMP. Details of the sampling of processed sediments to confirm hazardous properties and leachability will be agreed with the EPA and included within the RWMP.

Implementation of Construction Phase Mitigation Measures

DPC intends to appoint a contractor to undertake each phase of the works. The mitigation measures set out in the EIAR have been incorporated into a Draft Construction Environmental Management Plan (CEMP) for the ABR2 Project (under separate cover) which forms part of the ABR2 Project planning application. The draft CEMP sets out the minimum requirements which will be adhered to during the construction phase of the ABR2 Project. The Draft CEMP will form part of the Contract Documents for the construction stage to ensure that the contractor undertakes the works required to implement the mitigation measures.

DPC has an established liaison group for the ABR Project and MP2 Project which includes representatives of DPC, the contractor, Dublin City Council (DCC) and MARA. The group meets at quarterly intervals each year with an agenda and minutes taken of the meetings. It is proposed that this

liaison group will also provide environmental oversight of the construction phase of the ABR2 Project. DPC will appoint a suitably qualified person to the role of Environmental Facilities Manager to monitor the ABR2 Project construction works. The Environmental Facilities Manager will provide monthly reports to the members of the liaison group. The Environmental Facilities Manager will work closely with the contractor's site supervisors to monitor activities and ensure that all relevant environmental legislation is complied with and that the requirements of the CEMP are implemented. The Environmental Facilities Manager will have the authority to review method statements, oversee works and instruct action, as appropriate, including requesting the client for the temporary cessation of works, where necessary.

A number of Environmental Management Plans (EMPs) will be prepared for the construction phase of the ABR2 Project. A suite of EMPs will be prepared in accordance with the mitigation measures outlined in the documentation submitted (**Table 22-2**). These should include, but may not be limited to:

- Construction Traffic Management Plan
- Resource and Waste Management Plan
- Noise Management Plan
- Dust Management Plan
- Marine Mammals Management Plan
- Archaeology Management Plan
- Water Quality Management Plan
- Dredging Management Plan
- Pollution Incident Response Plan

The EMPs will be developed as required prior to the commencement of development and will incorporate the mitigation measures outlined in the documentation submitted with the application for permission and will include any additional requirements pursuant to conditions attached to statutory consents.

A number of EMPs have been drafted for the construction phase of the ABR2 Project:

- A Project Carbon Management Plan (refer to CEMP Appendix B)
- A Mobility Management Plan (refer to CEMP Appendix C)
- A Noise Management Plan (Appendix D)

The draft CEMP is a ‘live’ document and therefore the above draft EMPs will be updated where appropriate prior to construction.

In addition, regular audits of the EMPs will be undertaken during the construction phase of the works by the Environmental Facilities Manager.

A suite of monitoring programmes has also been prepared for the construction phase of the of the ABR2 Project and are presented in the Draft CEMP and summarized in **Table 22-3.**

Table 22-2: Summary of the Construction Environmental Management Plans

Type of Environmental Management Plan	Ongoing Mitigation Required	Ongoing Mitigation Specific Requirements	Ongoing Monitoring/ Auditing Required	Timing of Ongoing Monitoring	Reporting Requirements	Reporting Procedures	Ongoing Liaison Required	Other Specific Requirements
Construction Traffic Management Plan	Yes	Compliance with DCC's HGV Management Strategy	Yes	During Construction	Annual Reports	Report submitted to Planning Authority	Yes	Complaints Procedure
Invasive Alien Species Management Plan	Yes	Precautionary measures to prevent importation and spread	Yes	During Construction	Annual Reports	Report submitted to Planning Authority	Yes	Containment / Treatment required if any Invasive Alien Species are found on the site
Construction Waste Management Plan	Yes	Compliance with the Waste Framework directive (2008/98/EC)	Yes	During Construction	Annual Environmental Report	Report submitted to Planning Authority and EPA	Yes	Complaints Procedure
Resource & Waste Management Plan	Yes	Prepared in line with Best Practice guidelines for the preparation of Resource & Waste Management Plans for construction & demolition projects, EPA 2021.	Yes	During Construction	Annual Environmental Report	Report submitted to Planning Authority and EPA	Yes	Complaints Procedure
Noise Management Plan	Yes	Compliance with NRA Guidelines and BS5228:2009+A1:2014	Yes	Preconstruction and during construction	Monthly Reports, input to Annual Environmental Report	Report submitted to Planning Authority and EPA	Yes	Specific noise limits to be met at nearest noise sensitive receptors, Complaints Procedure

Type of Environmental Management Plan	Ongoing Mitigation Required	Ongoing Mitigation Specific Requirements	Ongoing Monitoring/ Auditing Required	Timing of Ongoing Monitoring	Reporting Requirements	Reporting Procedures	Ongoing Liaison Required	Other Specific Requirements
Dust Management Plan	Yes	Compliance with EPA and BRE Guidelines Construction of Noise Barriers	Yes	Preconstruction and during construction	Monthly Reports, input to Annual Environmental Report	Report submitted to Planning Authority and EPA	Yes	Complaints Procedure
Marine Mammals Management Plan	Yes	Compliance with NPWS Guidelines	Use of MMOs	Preconstruction, during construction	Monthly Reports, input to Annual Environmental Report	Report submitted to Planning Authority and NPWS	Yes	Close liaison required with NPWS
Archaeology and Cultural Heritage Management Plan	Yes	Compliance with DHLGH Guidelines	Monitoring to be undertaken by conservation engineer, Grade 1 Conservation Architect and project archaeologist.	During Construction	Monthly Reports, input to Annual Environmental Report	Report submitted to Planning Authority and DHLGH	Yes	Appropriate Licences required from DHLGH
Water Quality Management Plan	Yes	Compliance with EPA Guidelines etc	Installation of real-time water quality monitoring system	Preconstruction and during construction	Monthly Reports, input to Annual Environmental Report	Report submitted to Planning Authority and EPA	Yes	Complaints Procedure
Dredging and Sediment Management Plan	Yes	Adherence to dredging mitigation measures	Yes	During Construction	Monthly Reports, input to Annual Environmental Report	Report submitted to Planning Authority and EPA	Yes	Complaints Procedure

Type of Environmental Management Plan	Ongoing Mitigation Required	Ongoing Mitigation Specific Requirements	Ongoing Monitoring/ Auditing Required	Timing of Ongoing Monitoring	Reporting Requirements	Reporting Procedures	Ongoing Liaison Required	Other Specific Requirements
Pollution Incident Response Plan	Yes	Adherence to guidelines for rapid and efficient response to minimize environmental impact	Monitoring of pollution events required and records of pollution prevention equipment.	During construction	Detailed record of all pollution events and responses, costs involved and environmental impacts.	Report submitted to Planning Authority and EPA	Yes	Specific training, and debriefing post pollution events to establish causes of events, lessons learned and preventive or corrective action required.
Project Carbon Management Plan	Yes	Aligned with the principles of PAS2080:2023	Yes	During construction	Monthly Reports, input to Annual Environmental Report	Report submitted to Planning Authority	Yes	Close liaison required with Contractor
Mobility Management Plan	Yes	In accordance with the NTA guidance for Workplace Travel Planning	Annual travel survey/audit	During construction	Annual Review	Reported internally	Yes	Promotion of sustainable travel opportunities

Table 22-3: Summary of Environmental Monitoring Programmes

Monitoring Programme	Monitoring Element	Frequency of Monitoring	Location	Parameters Measured	Surveyors / Support	Sampling Constraints	Action Threshold	Monitoring and Reporting	Report / Frequency
BIRD MONITORING	**Census of Black Guillemot Population nesting in Dublin Port[1]**	Annually in period 26 March to 15 May. Two surveys to be carried out on two separate dates.	Quaysides within Dublin Port	Number Black Guillemots on land or sea within 300m of the shore Number of occupied nest sites and associated adults Number of nest boxes occupied	2 / Boat Support	0500 - 0900 BST. Beaufort 4 or less. Calm Sea Conditions	N/A	Bird Specialist	Annually (year ending March) by 31st July each year.
BENTHIC BIODIVERSITY AND FISHERIES	**Fisheries and Environmental Incident Monitoring**	Daily checks for fish mortality within the works areas	Alexandra Basin West and basin of Berths 52/53	Record of fish mortality	As designated by the contractor	Suitable vantage point / on dredging vessels	Fish mortality	Contractor	Any fish mortality will be recorded, reported to the Environmental Facilities Manager and investigate with corrective action taken
MARINE MAMMALS	**Marine Mammal Observation in exclusion zones**	For dredging and demolition operations within the foreshore	Within 500m of dredging / demolition operations.	Presence of marine mammals	1 to 3 as required	Suitable vantage point / on dredging vessels.	Presence of marine mammal in exclusion zone, during pre-watch. Following a completion of the pre-watch, 500m exclusion zone monitoring,	Marine Mammal Observer	NPWS MMO Location and Effort Forms. Completion of MMO report following completion of works.

[1] Wider ongoing long-term monitoring of birds within Dublin Port is occurring through the MP2 Project e.g. surveys of winter wetland birds, sand martins and the census of Common and Arctic Terns nesting within the Port.

Monitoring Programme	Monitoring Element	Frequency of Monitoring	Location	Parameters Measured	Surveyors / Support	Sampling Constraints	Action Threshold	Monitoring and Reporting	Report / Frequency
							once normal dredging operations commence, there is no requirement to halt or discontinue the activity		
WATER QUALITY	**Water quality in lower Liffey in Dublin Port**	High frequency (15min) real time at four stations	4 locations Inner Liffey channel	Dissolved Oxygen (DO), Turbidity, Temperature, Salinity, pH	Regular servicing and calibration of sondes	N/A	DO & Turbidity thresholds to be agreed with EPA in advance of dredging	Environmental Facilities Manager	Monthly Synoptic and Annually (year ending March) by 31st July each year.
WASTEWATER DISCHARGE	**Monitoring of treated water discharged from the site**	Daily or weekly sampling in accordance with IE licence and parameter	Location of wastewater treatment plants	As a minimum: Suspended solids, turbidity, and relevant contaminants	As designated by Contractor	N/A	Exceedance of emission values will halt discharge and corrective actions implemented	Contractor	All results reviewed by Environmental Facilities Manager and reported to EPA in accordance with IE licence.
ATMOSPHERIC NOISE AND DUST	**Dust Deposition**	Continuous over project duration	2 locations: • Poolbeg Marina; • Terminal 4 towards East Wall Road	Dust deposition using Bergerhoff Dust Deposition Gauges	Deposition jars to be replaced monthly	N/A	350mg/m^2/d	Environmental Facilities Manager	Monthly Synoptic and Annually (year ending March) by 31st July each year.

Monitoring Programme	Monitoring Element	Frequency of Monitoring	Location	Parameters Measured	Surveyors / Support	Sampling Constraints	Action Threshold	Monitoring and Reporting	Report / Frequency
	Noise Levels	Continuous for duration of Project	3 locations: • Poolbeg Marina; • Clontarf; • Terminal 4 towards East Wall Road	Equivalent Continuous Sound Pressure Level (Laeq)	Yearly calibration of noise meters	N/A	65 dBA 70 dBA 75 dBA	Environmental Facilities Manager	Weekly to Contractor/DPC Annual AER
ARCHAEOLOGY	**Interaction with protected structures. Restoration works. Monitoring for potential new finds**	Continuous for duration of Project	Capital Dredging	Ground Disturbance Demolition of Structures Capital Dredging	Boat support during capital dredging	N/A	Notification to National Monument Service of significant finds	Archaeology Specialists	Monthly Reporting

Operational Phase Mitigation Measures

The existing land uses within the footprint of the ABR2 Project comprises the manoeuvring and berthing of vessels, the handling of Ro-Ro, Lo-Lo and Bulk cargo, HGV traffic distributing cargo to and from Dublin Port and other activities on relatively short-term leases including site compounds and concrete mixing plant.

The ABR2 Project constitutes the completion of the previously permitted ABR project which aims to complete capital dredging within Alexandra Basin West to deepen the basin to facilitate larger vessels entering and address legacy contamination issues within sediment of the basin. The ABR2 Project is also necessary to facilitate the development of the Unified Ferry Terminal as consented under the MP2 Project through the infilling of the basin of the Berth 52/53 area, improving efficiencies and operational capacities within Dublin Port.

The future land uses within the footprint of the ABR2 Project will therefore not significantly change and consequently operational mitigation measures are largely based on the following:

- Integration of the new port infrastructure with existing operational plans and procedures;
- Integration with port-wide monitoring programmes to establish environmental trends in order to support future initiatives to enhance the environment or take corrective action, if required;
- Integration of the new port infrastructure with future port-wide initiatives such as the development of an over-arching Climate Change Adaption Plan; and
- Integration with the strategic objectives of the Dublin Port Masterplan 2040, reviewed 2018.

Table 22-4 summarises the operational phase mitigation measures recommended within the EIAR. All mitigation measures proposed within the NIS have been included in this EIAR.

Table 22-4: Operational Phase Mitigation measures recommended within the EIAR

Potential Impact	Summary of Proposed Operational Mitigation
Natura Impact Statement (NIS) Mitigation	
Marine Mammal Mitigation Programme	Marine mammal monitoring associated with operational phase activities, including maintenance dredging, is already undertaken as part of DPC's ongoing maintenance dredging programme. This includes the use of MMOs and adherence to NPWS (2014) guidance. No additional project-specific marine mammal monitoring is proposed for the operational phase of the ABR2 Project.
Chapter 6 Risk of Major Accidents and Disasters	
Risk of Major Accident during Operation Phase	The objective of the ABR2 Project is primarily to accommodate the construction of the Unified Ferry Terminal and the relocation of Berths 52/53 under the MP2 Project and therefore, in the context of the risk of major accidents and disasters, the operation phase of the ABR2 Project represents a return to the current (normal) operation of the Port. Therefore, from a major accidents and disasters perspective, Dublin Port Company's normal operating practices – the management of vessel traffic, the management of road traffic, the control over the transport of dangerous goods, and the oversight of the COMAH (and non-COMAH)

	establishments without the Port Estate constitute the mitigation measures relevant to the operation phase of the ABR2 Project.
Chapter 7 Biodiversity, Flora and Fauna	
Terrestrial Biodiversity and Ornithology	
	No specific operational phase mitigation measures with regard to terrestrial biodiversity and ornithology are required.
Benthic Biodiversity and Fisheries	
	No specific operational phase mitigation measures with regard to benthic biodiversity and fisheries are required.
Marine Mammals	
Marine Mammal Mitigation Programme	Marine mammal monitoring associated with operational phase activities, including maintenance dredging, is already undertaken as part of DPC's ongoing maintenance dredging programme. This includes the use of MMOs and adherence to NPWS (2014) guidance. No additional project-specific marine mammal monitoring is proposed for the operational phase of the ABR2 Project.
Chapter 8 Land, Soils, Geology and Hydrogeology	
	No specific operational phase mitigation measures with regard to land, soils, geology and hydrogeology
Chapter 9 Water Quality and Flood Risk Assessment	
Water Quality	
Routine Maintenance Dredging	Any maintenance dredging which may be required in the longer term will likely be carried out as part of DPC's regular maintenance dredging programme. The material generated would likely be disposed of at sea at a licensed disposal site (subject to further chemical testing), as agreed in accordance with DPC's maintenance dredging licence. This has been standard practice in the Port for decades. Maintenance dredging will implement comprehensive mitigation measures as set out below: Loading will be carried out by a backhoe dredger or trailing suction hopper dredger (TSHD). No over-spilling from the vessel will be permitted while the dredging activity is being carried out within the inner Liffey Channel. The TSHD pumps will be switched off while the drag head is being lifted and returned to the bottom as the dredger turns between successive lines of dredging to minimise the risk of fish entrainment. The dredger's hopper will be filled to a maximum of 4,100 cubic metres (including entrained water) to control suspended. This is equivalent to a maximum quantity per trip of 2,030 tonnes (wet weight). Full-time monitoring of Marine Mammals within 500m of dredging operations will be undertaken in accordance with the measures contained in the Guidance to Manage the Risk to Marine Mammals from Man-Made Sound Sources in Irish Waters (NPWS, 2014). A documented Accident Prevention Procedure will be put in place prior to commencement. A documented Emergency Response Procedure will be put in place prior to commencement.

	A full record of loading and dumping tracks and a record of the material being dumped will be maintained for each trip. Dumping will be carried out through the vessel's hull.
Environmental Management System	The ABR2 Project, when complete, will be subject to the Port's existing Environmental Management System (EMS), which is accredited to the Port Environmental Review System (PERS), which has gained Dublin Port designation as an 'Ecoport' at the European level. The EMS comprehensively identifies environmental aspects and impacts relating to Dublin Port, including Tenant operations. Regular review of environmental aspects is required and will facilitate incorporation of any ABR2 Project-specific issues that may arise with implementation of mitigation, as necessary. The EMS is supported by a comprehensive suite of Standard Operating Procedures (SOPs) providing mitigation of all environmental aspects identified and mechanisms to ensure effective implementation. SOPs have been prepared for oil and chemical spill responses, mineral oil handling, waste handling, monitoring and maintenance of surface water interceptors and handling of drain cleaning waste. Controls are in place for transport, handling and storage of hazardous materials, ship cargo, dry bulk material, surface water runoff, fuelling and bunkering of vessels and ship discharges. Site audits promote best practice and ensure compliance with the EMS requirements.
Flood Risk Assessment	
Flood Risk Assessment	No specific operational phase mitigation measures with regard to flood risk are required.
Chapter 10 Air Quality	
	No specific operational phase mitigation measures with regard to air are required.
Chapter 11 Climate	
Indirect Road Traffic Impacts	In terms of mitigation of the indirect road transport impacts, this is typically at national policy level, and the following mitigation is committed to in CAP25 specifically in relation to road traffic emissions from freight, therefore the ABR2 project will align with these policies: Ireland's Road Haulage Strategy (published December 2022) provides a roadmap as to how the Irish Government will support the Road Freight sector to decarbonise and meet the targets set out in CAP. CAP23 included a new target for the sector following Ireland becoming a signatory in November 2022 to the Global Memorandum of Understanding on Zero Emission Medium- and Heavy-Duty vehicles. This non-binding agreement targets 30% of sales of new Medium- and Heavy-duty vehicles (trucks and buses) to be zero emission by 2030, increasing to 100% of new sales in 2040. This has not been updated in CAP25. Ireland's Road Haulage Strategy 2022-2031 mandates a structural scale-up from standard B7 diesel (which contains up to 7% biodiesel) to a B20 blend (containing 20% biodiesel equivalent) by 2030, a move which will help to significantly reduce emissions from the Road Freight sector. Eco-Driver training, which trains drivers to operate vehicles in a safer and more eco-friendly manner, will be important in promoting decarbonisation in the road freight sector. The All-Island Strategic Rail Review has been published for public consultation and sets out further recommendations to increase the level of ambition for rail freight on the island, thereby contributing to the decarbonisation of the sector. These include recommendations to develop sustainable solutions for first/last mile rail freight access for Dublin Port, reduce Track Access Charges for freight services; strengthen rail

	connectivity to the island's busiest ports; and to develop a network of inland terminals close to major cities on the rail network.
Indirect Shipping Impacts	A number of EU Directives and the requirements of the Marpol Convention regulate the fuels and emissions employed in the shipping industry. Since January 2024, the ETS has been extended to cover GHG emissions from all large ships (of 5,000 gross tonnage and above) entering EU ports, regardless of the flag they fly. The system covers: • 50% of emissions from voyages starting or ending outside of the EU (allowing the third country to decide on appropriate action for the remaining share of emissions); and • 100% of emissions that occur between two EU ports and when ships are within EU ports. In July 2023, the IMO adopted a revised version of its GHG emissions strategy, which targets emissions from international shipping to reach net-zero by or around 2050 (compared to the 2018 strategy target of a 50% reduction in emissions with respect to 2008 levels). Member states agreed to 'indicative checkpoints' that call for reducing total GHG emissions by 20% and striving for 30% by 2030 and 70% and striving for 80% by 2040, both relative to 2008. Emissions will now be considered on a life-cycle (or well-to-wake) basis. The next steps will be to agree on mid-term measures to meet the revised objectives, such as GHG intensity standards or a fuel levy/reward. In March 2023, the European Council and the European Parliament reached another provisional agreement on the FuelEU Maritime initiative, which imposes constraints on the average annual GHG intensity (on a well-to wake basis) of onboard energy used by ships. These limits become stricter over time, starting at a 2% reduction in 2025, rising to 6% in 2030 and up to 80% in 2050, relative to the 2020 GHG intensity. These requirements will remain in practice throughout the operation of the Project and may be replaced with more stringent emission limits as further legislation driven mitigation.
Chapter 12 Terrestrial Noise and Vibration	
	No specific operational phase mitigation measures with regard to terrestrial noise and vibration are required.
Chapter 13 Underwater Noise and Vibration	
	No specific operational phase mitigation measures with regard to underwater noise and vibration are required.
Chapter 14 Coastal Processes	
	No specific operational phase mitigation measures with regard to coastal processes are required.
Chapter 15 Material Assets – Traffic and Transportation	
	No specific operational phase mitigation measures with regard to traffic and transportation are required.
Chapter 16 Material Assets – Services	
	No specific operational phase mitigation measures with regard to services are required.
Chapter 17 Cultural Heritage	

	No specific operational phase mitigation measures with regard to cultural heritage are required.
Chapter 18 Landscape and Visual	
	No specific operational phase mitigation measures with regard to landscape and visual are required.
Chapter 19 Population and Human Health	
	No specific operational phase mitigation measures with regard to population and human health are required.
Chapter 20 Resource and Waste	
	No specific operational phase mitigation measures with regard to resource and waste are required.