



APPENDIX 4-2

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN



Rialtas na hÉireann
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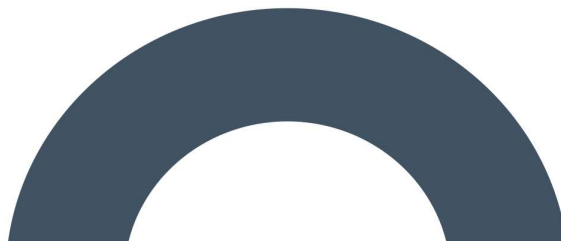
The Hodson Bay Waterfront Park Project is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund



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Construction and Environmental Management Plan

Hodson Bay Waterfront
Park, Co. Roscommon





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1. INTRODUCTION

This Construction and Environmental Management Plan (CEMP) has been prepared by MKO on the behalf of Roscommon County Council (RCC) who intend to apply to An Coimisiún Pleanála (ACP) for permission to redevelop the Hodson Bay waterfront and marina ("Proposed Development") at Barrymore, Co. Roscommon. This CEMP provides the environmental management framework to be adhered to during the pre-commencement and construction phases of the Proposed Development, and it incorporates the mitigating principles to ensure that the work is carried out in a way that minimises the potential for any environmental impacts to occur.

This CEMP has been informed by and takes account of the accompanying documents which have been prepared for the development, including:

- Environmental Impact Assessment Report (EIAR) (MKO, 2026)
- Detailed Flood Risk Assessment (DFRA) (CIVIC, 2026)
- Natura Impact Statement (NIS) (MKO, 2026)
- Transport and Traffic Assessment (TTA) (CIVIC, 2026)

This report is intended as a single, amalgamated document that can be used during the future phases of the Proposed Development, as a single consolidated point of reference relating to all construction, environmental and drainage requirements for the Planning Authority, developer, and contractors alike. The CEMP may evolve over further iterations as the construction works progress, but at all times must meet or exceed the standards and requirements set out in this document. Once a Contractor is appointed, it will be the Contractor's current version of the CEMP, which at any point in time, will guide the construction activities on site and the implementation of which will be audited during construction.

1.1 Scope of the Construction and Environmental Management Plan

This report is presented as a guidance document for the management of construction activities and waste materials generated during the proposed works and following completion. It clearly outlines the mitigation and monitoring measures that are required to be adhered to in order to complete the works in an appropriate manner.

For the purpose of the CEMP:

- Where the 'Proposed Development' is referred to, this relates to all the project components described in detail in Chapter 4 of the EIAR.
- Where 'the site' is referred to, this relates to areas within the planning application boundary where it is proposed to carry out construction works.

The report is divided into nine sections as outlined below:

- **Section 1** provides a brief introduction as to the scope of the report detailing the targets and objectives of the CEMP.
- **Section 2** outlines the site and Proposed Development details, along with providing an overview of construction methodologies that will be adopted throughout the Proposed Development.
- **Section 3** sets out details of the environmental controls on site which looks at noise and dust controls. Site drainage measures and a waste management plan are also included in this section.
- **Section 4** sets out a fully detailed implementation plan for the environmental management of the Proposed Development outlining the roles and responsibilities of the project team.

- **Section 5** outlines the Emergency Response Plan to be adopted in the event of an emergency in terms of site health and safety and environmental protection is also included in this section.
- **Section 6** consists of a summary table of all mitigation proposals to be adhered to during the Proposed Development.
- **Section 7** consists of a summary table of all monitoring requirements and proposals to be adhered to during the Proposed Development.
- **Section 8** sets out a programme for the timing of the works.
- **Section 9** outlines the proposals for reviewing compliance with the provisions of this report.

1.2 Targets and Objectives

The following key targets and objectives will be implemented at the site:

- Adopt a sustainable approach to construction and, ensure sustainable sources for materials supply where possible.
- Correct fuel storage and refuelling procedures to be followed.
- Construction Methods and designs will be altered where it is found there is an adverse effect on the environment.
- Good waste management and housekeeping to be implemented.
- Using recycled materials, if possible, e.g., excavated material used for backfilling.
- Avoidance of vandalism.
- Air and noise pollution prevention to be implemented.
- Monitoring of the works and any adverse effects that it may have on the environment.
- Provide adequate environmental training and awareness for all project personnel.

The key site objectives are as follows.

- Keep impact of construction to a minimum on the local environment and wildlife.
- Ensure construction works and activities are completed in accordance with any planning conditions for the development.
- Ensure construction works and activities have minimal impact/disturbance to local landowners and the local community.
- Ensure construction works and activities have minimal impact on the natural environment.

2. SITE AND PROPOSED DEVELOPMENT DETAILS

2.1 Site Location and Development Description

The Proposed Development site is located within the townland of Barrymore and is approximately 4 Kilometres (km) to the northwest of Athlone, Co. Roscommon. The planning application (red line) boundary area measures approximately 8.7 hectares (ha). The Irish Transverse Mercator (ITM) coordinates for the approximate centre of the site are X 600814, Y 746366. The site location is shown in Figure 2-1. The site is accessed via the L2020 Local Road from the N61 National Road which runs in a northwest-southeast direction to the southwest of the site. The N61 National Road links Athlone town and Roscommon town.

2.2 Site Description

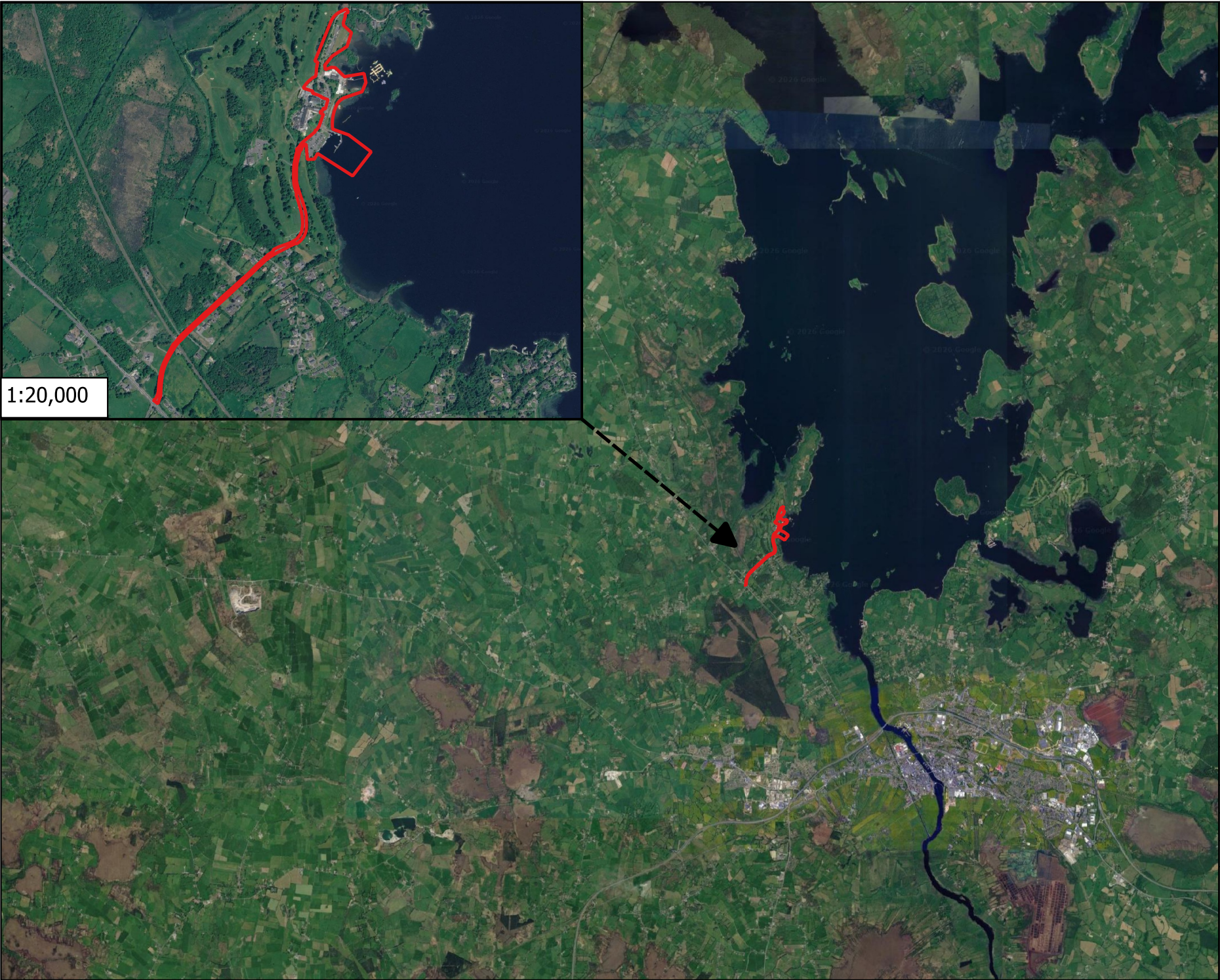
The Proposed Development site currently comprises the existing Waterways Ireland-operated marina facility, the Baysports water sports facility, areas of land currently owned by RCC, Athlone Golf Club and the Hodson Bay Hotel, along with access road, car parking, landscaped public realm space operated and maintained by RCC and an Uisce Éireann pumping station.

The Proposed Development is located within the Upper Shannon hydrological catchment (Catchment 26E), and the Shannon [Upper]_SC_090 hydrological sub-catchment (Sub-Catchment 26E_6). Lough Ree (EU Code IE_SH_26_750a) is located along the eastern boundary of the Proposed Development site.

The Proposed Development is located on the shore of and within the Lough Ree Special Area of Conservation (SAC) and Lough Ree Special Protection Area (SPA). Four European sites were identified as within the likely Zone of Influence (ZoI) of the Proposed Development; within and on the shore of Lough Ree SAC [000440] and Lough Ree SPA [004064], and approximately 6 km northwest of River Shannon Callows SAC [000216] and Middle Shannon Callows SPA [004096].

The nearest Natural Heritage Area (NHA) is Carrickynaghtan Bog NHA, located approximately 6.9 km southeast of the Proposed Development site. The nearest proposed Natural Heritage Area (pNHA) is Lough Ree pNHA, located partially within the Proposed Development site. Lough Ree pNHA [000440] and River Shannon Callows pNHA [000216] (located approximately 6 km southeast of the Proposed Development site) are considered within the likely ZoI of the Proposed Development.

A layout of the Proposed Development is shown in Appendix 1 of the CEMP.



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Map Legend

Application Boundary



Drawing Title

Site Location

Project Title

Hodson Bay Waterfront Park and Marina
Redevelopment, Co. Roscommon

Drawn By

EC

Checked By

FL

Project No.

241220

Drawing No.

Figure 2-1

Scale

1:100,000

Date

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2.3 Proposed Development Description

The Proposed Development will consist of the following:

- **Water Sports Pavilion (WSP) Development:** The demolition of the existing water sports building on site, and temporary relocation of the water sports facility to provide for the construction of a new Water Sports Pavilion;
- **Marina Redevelopment and Extension:** The redevelopment of an existing Waterways operated marina including an upgraded breakwater and jetty to increase marina capacity to approximately 59 berths;
- **Public Realm Upgrades:** Construction of a playground, nature observation space, picnic areas, benches, bicycle storage & service areas, wellness meadow, outdoor changing shelter and events spaces including the development of a continuous promenade pathway along the lakeshore along with secondary connection path;
- **Active Travel and Site Access Improvements:** Alterations and upgrade to the L2020 Local Road to include to provide for a 3 m wide shared cycle / pedestrian pathway along the length of the L2020 from the N61 National Road junction to the Hodson Bay Marina; Implementation of traffic calming measures along the L2020 Local Road accessing the site including vertical deflection ramps & raised crossings at key pedestrian crossing locations. Creation of a pedestrian priority environment resulting in the re-location of 57 no. car parking spaces from the lakefront areas to improve landscape and visual context of the site. Alterations to existing car parking & provision of new carparking at Hodson Bay; and
- The Proposed Development includes for all associated ancillary site development infrastructure including site clearance, boundary treatments, associated public lighting, electrical substation, bin storage, hard and soft landscaping, site drainage upgrades, connections to existing utilities to include foul and surface water drainage, water supply, electrical & telecommunications networks. Boundary treatments involve upgrades to the existing golf course boundary safety netting (between 3 m to 20 m in height) and fencing in sections where the boundary is altered to accommodate the proposed development and maintain public safety.

A full description of the Proposed Development is detailed in Chapter 4 of this EIAR.

2.4 Construction Management

2.4.1 Introduction

The appointed Contractors for the construction of the Proposed Development will be required to comply with this CEMP and any revisions made to this document throughout the construction phase. All measures identified in this CEMP, which will be finalised subsequent to any permission granted and updated prior to construction will include all mitigation measures identified to be adhered to during the pre-commencement and construction phases of the Proposed Development. An overview of the anticipated Construction Methodologies is provided in Section 2.4.2 below. There is potential for slight variations to some elements of the construction methodologies which are set out below in the event that a contractor adopts a different equivalent construction methodology subject to detail design and further site investigation works.

2.4.1.1 Phasing / sequencing of the Works

Phasing will be carefully planned to minimise disruption to all affected stakeholders, particularly given the site's location in relation to Athlone Golf Club and the Hodson Bay Hotel. The Contractor will be required to ensure that any construction works phasing and sequencing shall maintain access for local businesses, residents, and visitors to the area. This approach will help ensure that business entrances, footpaths, and key routes remain accessible throughout the works, while limiting the extent and duration of disruption in any one area over the full construction period.

The following phasing and sequencing framework is indicative and has been prepared to outline a viable strategy for the delivery of the Proposed Development. The appointed Works Contractor will ultimately be responsible for the final planning, phasing, and detailed sequencing of the works.

The construction phase can be divided into specific work elements:

1. *Upgrade and extension of existing parking spaces and site roads- 9 months;*
2. *Pedestrian Active Travel corridor enhancements - 5 months;*
3. *Demolition of existing water sports building and construction of new Water Sports Pavilion Buildings - 21 months;*
4. *Construction of Marina Redevelopment and Extension - 6 months;*
5. *Public Realm upgrades including landscaping - 9 months.*

Note that overlap is expected between the commencement of certain phases. The entirety of the construction phase is expected to take approximately 30 months. The construction phase for the Proposed Development can be broken down into two main phases, 1) enabling works, and 2) construction works. The main task items under each of the two phases are outlined below.

Enabling Works (including demolition of existing structures)

- Ensure that all pre-construction environmental measures are implemented/conducted e.g. implement Archaeological recovery works that may be needed, surface water protection measures (including installation of cofferdam and silt fencing) or any specific pre-construction planning conditions;
- Clear and hardcore areas for temporary construction compounds and site offices. Install same;
- Provide bunded area for oil tanks for refuelling;
- Set up the construction site enclosures. Protective hoarding will be erected around the perimeter;
- Removal of trees and vegetation in areas for construction. This will be carried out outside of breeding bird season from March 1st to August 31st inclusive;
- The demolition of the existing building used by Bay Sports and the adjacent toilet block building will be undertaken. Temporary structures such as existing marquees on site will also be removed;
- Commence site clearance and topsoil stripping;
- Regrade to foundation and road formation levels;
- Installation of utilities and services;
- The proposed surface water drainage network will be installed.
- The proposed foul water collection system will be installed.

Construction Works

- Construct road and footpath upgrades
- Construct parking areas. Removal of waterfront parking spaces, realignment of Marina car park, extension of northern car park;
- Lay foundations;
- Construction of Water Sports Pavilion buildings;
- Construction of Marina extension and Marina services block building;
- Construction of swimming changing shelter;
- Connection to public services – public water supply, sewerage system and electricity network;
- Landscaping and Public Realm upgrade areas completed including installation of lighting scheme;
- Complete all site finishes; and
- Completion of any testing and commission services within the development.

The phasing and scheduling of the main construction task items are outlined in Figure 2-2 below, where an indicative timeline for construction works has been shown. This timeline may be subject to review and changes following the receipt of planning permission.

ID	Task Name	Task Description	Year 1		Year 2				Year 3			
			Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Site Health and Safety	Ongoing health, safety, environmental and quality management throughout construction										
2	Site Compounds	Establishment of contractor compounds, welfare facilities, temporary services, site access and security measures										
3	Enabling Works and Site Preparation	Demolition, site clearance, vegetation removal, utility diversions, earthworks, and preparation for construction activities										
4	Pedestrian Active Travel Works	Footway widening, signage, and associated works for active travel route along L2020										
5	Drainage and Utilities	Installation of drainage networks, utility services, ducting and service connections.										
6	Building Foundations and Substructure	Construction of foundations, retaining structures and associated below-ground works for the pavilion.										
7	Water Sports Pavilion	Construction of Water Sports Pavilion buildings, building frames, cladding, glazing										
8	Marina Extension	In-water piling works and installation of breakwater and pontoons strictly carried out between July-September										
9	Car Parks and Site Roads	Construction of car parking areas, site roads, traffic calming measures, drainage, lighting and associated infrastructure.										
11	Public Realm and Landscaping	Site reinstatement, landscaping, lighting and tree planting, public realm installations constructed										
12	Commissioning and Testing	Preparation for Operational Readiness										

Figure 2-2 Hodson Bay Waterfront Redevelopment Indicative Construction Timeline

2.4.1.2 Working hours

Construction operations on site will generally be carried out in accordance with the conditions of the planning permission, RCC requirements and any associated regulatory requirements. Standard working hours will be observed to minimise impacts on residents, businesses, and road users, and to ensure compliance with noise, traffic, and environmental management conditions.

Material deliveries to the site are generally scheduled as follows:

- Monday to Friday: 07:00 to 19:00
- Saturdays: 08:00 to 17:00
- Sundays and Bank Holidays: No deliveries

However, in exceptional circumstances, certain construction activities may need to be undertaken outside these standard working hours. For example, deliveries of oversized or heavy loads may be restricted to off-peak periods, such as early mornings, evenings, or weekends, to minimise disruption to the surrounding transport network and maintain safety for other road users. Any such operations will be carefully coordinated, approved in advance by the Resident Engineer and RCC, and communicated to relevant stakeholders, including local authorities, emergency services, and affected residents or businesses.

All out-of-hours activities will be subject to strict safety, traffic management, and monitoring measures, including the implementation of additional signage, traffic control personnel required, and coordination with other construction works in the area. These measures will ensure that exceptional operations are conducted safely and efficiently, while maintaining compliance with regulatory requirements and minimizing impacts on the surrounding community.

2.4.2 Overview of the Proposed Construction Methodology

The proposed anticipated construction methodology is summarised under the following main headings:

- Site Establishment
- Temporary Construction Compound
- Perimeter Fencing
- Cofferdam Installation
- Demolition of Existing Buildings
- Tree and Vegetation Removal
- Soil Stripping & Temporary Stockpiling
- WSP Buildings
- Active Travel Improvement Works
- Car Parking Areas
- Marina Redevelopment and Extension
- Public Realm Upgrade Works
- Excavation and Services Installation
- Electrical Substation
- Ball Stop Netting

2.4.3 Site Establishment

The site will be accessed via the L2020 Local Road from the N61 National Road. A parking area for construction worker's vehicles will be provided within the confines of the site. There will be no parking permitted for any vehicles associated with the Proposed Development on the public road during the construction phase of the development unless agreed beforehand with the local authority. Two designated sections of the site will be marked out as the primary and secondary temporary site compounds.

Due to the nature and location of the proposed works, appropriate site signage will be installed on site to alert pedestrians of the construction activities and associated traffic movements. The appointed Contractor will be responsible for implementing the following site management measures:

- Enforce strict access restrictions to the construction zone to prevent unauthorised entry.
- Conduct a comprehensive site induction for all site personnel prior to commencing work.
- Ensure all site staff possess valid and up-to-date Safe Pass certification.
- Install secure access control measures, including gated entry points for authorised personnel.
- A traffic management plan will be produced, if required, to facilitate the works outlined in the sections below on the Proposed Development site.

2.4.4 Temporary Construction Compound

Temporary construction compounds will be used for temporary storage of some construction materials, prior to their delivery to the required area of the site. Any materials with high potential to cause contamination will be stored in the primary construction compound to minimise potential for runoff or pollution to Lough Ree.

Primary Construction Compound

The primary construction compound area will incorporate temporary site offices, staff facilities and car-parking areas and will be located to the north of the Hodson Bay Hotel. Tree and vegetation removal will be required to allow the primary construction compound to be prepared. This location is intended as the main management and welfare hub for the Proposed Development. It will house site offices, canteen facilities, and primary tool storage. Its central position allows for efficient management of the works while remaining within existing hardstanding areas.

A dedicated waste management area will be located within the primary construction compound, with waste to be sorted and collected from site by permitted collectors. The primary construction compound will also contain a dedicated temporary stockpiling area (as shown in Figure 2-3) which will be used for the temporary storage of topsoil if necessary. Temporary lighting will be installed for the construction compounds. Lighting will not shine directly on Lough Ree to ensure disturbance to biodiversity is minimised.

Secondary Construction Compound

A secondary construction compound location will be required during the preparation of the primary construction compound and at various times throughout the construction phase as works progress. Its location in the existing northern parking area is designed to remove heavy logistical activity from the primary visitor and hotel interfaces.

Designated Refuelling Area

A specific refuelling zone has been identified at the maximum practicable distance from the lakeshore (greater than 30 m). This strategic placement is a mandatory mitigation measure to protect the water quality of Lough Ree and the surrounding reedbeds from any potential hydrocarbon contamination.

Site Welfare

These site welfare facilities will include a canteen, toilet block, and drying room for all staff and workers. Wastewater from staff toilets will be directed to a sealed storage tank, with all wastewaters being tankered off site by permitted waste collector to wastewater treatment plants

All arrangements will comply with relevant public health and environmental regulations, ensuring that on-site sanitary and hygiene facilities are managed safely and efficiently throughout the duration of the construction works.



Map Legend

- Application Boundary
- Construction Compound
- Temporary Stockpile Area

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Drawing Title
Dedicated Temporary Stockpile Areas

Project Title
Hodson Bay Waterfront Park and Marina Redevelopment, Co. Roscommon

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Project No. 241220	Drawing No. Figure 2-3
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2.4.5 Perimeter Fencing

Perimeter hoarding will be provided around the site, where required. This will be in the form of Heras fencing or hoarding panels, to provide a barrier against unauthorised access from the public areas. The Main Contractor will be responsible for ensuring site security and restricting access to authorised personnel only. A controlled access point in the form of a site entrance will be kept locked outside of normal working hours.

The fencing and hoarding will be maintained and managed for the duration of the construction works, painted or covered with graphics portraying project information, to effectively deter unauthorised access and minimise the visual impact of the development. Where deemed necessary by the Main Contractor, additional security measures such as routine security patrols and/or Closed-Circuit Television (CCTV) systems may be implemented to further enhance site security. Due to the nature of the works, appropriate signage will be provided along relevant footpaths and site entrances to alert pedestrians to the traffic exiting/entering the site. Likewise, appropriate signage will be installed within and outside the site to alert drivers of the pedestrians crossing ahead. The Contractor will be required to undertake the following.

- A site-specific Health and Safety Plan will be in place for the proposed site. All site staff will be made aware of and adhere to the Health and Safety Plan.
- Operate a Site Induction Process for all site staff.
- Ensure all site staff will have current Construction Skills Certification Scheme (CSCS) training or 'Safe Pass' cards.
- Site hoarding will include Health and Safety warnings at appropriate intervals.
- Fire extinguishers and first aid supplies to be available in the work area.
- All adjacent roadways will be maintained in clean condition at all times.
- Appropriate Personal Protective Equipment (PPE) to be worn at all times.

2.4.6 Cofferdam Installation

A key mitigation measure to avoid water quality impacts during the approximately 18-month construction phase of the WSP will include the installation of sheet piled cofferdam around the lake edge following the boundary of the existing concrete hardstand at the Baysports facility.

However, to avoid any impacts on alluvial woodland, alternative water quality protection solutions are required in this area. Sheet piling works are not proposed in areas of alluvial woodland, and instead an earth bund structure will be installed in the vicinity of the alluvial woodland. Works will take place outside of the identified root protection zone, as advised by an arboriculturist. In order to avoid disturbance of root structures, the dam structure will be constructed above ground, with an earth bund installed on top of the existing concrete hardstand. The earth bund will connect to the sheet piling at a point outside of the identified areas of alluvial woodland. The top-level of the cofferdam will be installed to a minimum of 37.5 metres above ordnance datum (mAOD) to ensure that the cofferdam is not breached during flooding. As with the cofferdam, the top-level of the bund will be installed to a minimum of 37.5 mAOD to ensure that the bund is not breached during flooding (Section 8.3.5 of Chapter 8 of the EIAR).

Concrete removal under the earth bund will be undertaken in a sensitive manner using hand tools where practical to ensure no tree roots are damaged. Concrete removal in this area will be conducted in the dry. Around the areas of concrete removal and prior to the commencement of works, a sandbag dam will be instated with an impermeable geomembrane to minimise any potential lake water penetration. Should any water penetrate the sandbag dam, water will be pumped from the area to the surface water drainage system (Section 8.5.3.2 of Chapter 8 of the EIAR). Weather and flood forecasting will be continuously monitored, with concrete removal in this area taking place only during periods of dry weather and low lake levels. Silt curtains will be installed in front of areas of reed bed within the lake, to the north of the existing Baysports facility.

Similarly, concrete pouring will be carried out during periods of dry weather and low lake levels, using water-tight shuttering and form works. Impermeable geomembrane sealing, sandbags and silt curtains will all be retained for the duration of concrete pouring and will be removed following the completion of

works. Should rain be forecasted, or lake levels anticipated to rise, any concrete removal or concrete reinstatement works will cease until rain stops and lake levels return to a suitable level.

Sheet piling and concrete removal works will be undertaken in August-September (inclusive) to avoid the main breeding and winter bird seasons, and to coincide with a time when water levels are at their lowest.

Dewatering will be provided as relevant to specific requirements with dewatered discharge pumped using a pump equipped with a silt bag on the discharge outlet. The pumped water will be discharged to either the existing surface water drainage system or to a suitably vegetated area within the site boundary. Where discharge to a vegetated area is required, the area will be enclosed with silt fencing, as necessary, to prevent sediment-laden runoff and ensure compliance with best practice environmental controls.

2.4.7 Demolition of Existing Buildings

As part of the Proposed Development, 2 no. existing buildings on the site which are owned by RCC will be demolished. The water sports building currently used by Baysports water sports providers and the adjacent toilet block building will be demolished. Temporary structures such as existing marquees on site will also be removed. The existing concreted area around the buildings will also be demolished as part of the development.

Service Disconnections

Prior to commencement of the demolition works the location of services likely to be affected by the works will be ascertained. Arrangements will be made by the Main Contractor with service providers for all services to be disconnected and/or terminated as required. The demolitions Contractor will confirm terminations & disconnections in advance of works commencing liable to affect same. Services to the areas of the site where demolitions are proposed which may need to be disconnected or terminated would be electricity and water.

Soft Strip

This will consist of the removal of remaining furniture, loose rubbish from the individual buildings or rooms to provide a clear working area. The buildings/rooms will then be stripped of all built in units, doors, flooring, skirting, framework, plasterboard etc. Removal of any temporary structures such as marquees and removal of water sports equipment will also take place.

Demolitions

Once the above steps have been carried out, demolition of the external structures of the 2 no. buildings for demolition will comprise using kango/demolition hammers and appropriately sized excavators to remove the structures. It is anticipated that some masonry/concrete generated during the demolition works will be reused at the site for backfilling. Old materials, if considered suitable, may subsequently be re-used. Demolition waste, not able to be reused, will be removed from the site for appropriate disposal by an appropriately licensed Contractor.

Details on the environmental controls to be implemented for the demolition works are provided in Section 3 of this CEMP.

2.4.8 Tree and Vegetation Removal

The Proposed Development will result in the removal of approximately 239 no. trees throughout the site. A total of 240 trees will be planted as part of the replanting scheme, with all trees replanted being native species. The removal of all trees and scrub vegetation on site will take place outside of the breeding bird season from March 1st to August 31st inclusive. No removal of mapped Annex I alluvial woodland is proposed as part of the Proposed Development.

2.4.9 Soil Stripping & Temporary Stockpiling

The excavation and stripping of soils and subsoils will be required across much of the site, and this soil will need to be redistributed and temporarily stockpiled around the site as the Proposed Development progresses. Prior to the construction phase of the Proposed Development, site levelling will be undertaken. During these works, topsoil from the development area of the site will be stripped and stored in a designated storage area, as shown in Figure 2-3 above, for reuse. Where these works occur, the following will apply:

- The area where excavations are planned will be surveyed and all existing services will be identified.
- All relevant bodies i.e. ESB, Bord Gáis, Eircom, RCC etc. will be contacted and all drawings for all existing services sought.
- All plant operators and general operatives will be inducted and informed as to the location of any services.
- All plant operators and general operatives will be inducted and informed as to the identification of invasive species.
- A tracked 360-degree excavator will be used to strip the topsoil, and a dumper will be used to move the excavated materials to the temporary stockpile location.
- All excavated material which is not required for future landscaping works or for backfill of excavations will be removed to an authorised waste recovery facility. This will also apply to material which is not suitable for reuse on site.
- All stockpiles will be damped down or covered in a sheet of polythene, as required, which will prevent the creation of nuisance dust, and will also prevent sediment runoff in times of heavy precipitation.
- Silt fencing will be installed around these stockpiles, if required.
- Trenches will be backfilled as soon as possible after excavation. When practically possible, excavation depths and volumes will be kept to a minimum.

2.4.10 Water Sports Pavilion Buildings

Foundations

The WSP buildings and associated structures will be constructed on a reinforced concrete foundation which will be formed on competent strata (i.e. bedrock or subsoil of sufficient load bearing capacity) which will be determined by the Project Design Engineers. The three primary buildings will sit on a concrete plinth. Foundations will be shallow pads, expected to be founded at 1 m below ground level. Ground investigation will be completed prior to final designs to confirm the depth and strength of the bearing strata. A cofferdam, as detailed in Section 2.4.6 above, will be used to create a works area for the construction works.

Overburden and material excavated to create the working area will be stripped off the foundation area to a suitable formation using a 360-degree excavator and will be stored locally for later reuse in backfilling or site reinstatement. This material will be stored in the temporary stockpile area within the primary construction compound for later reuse. The excavated material will be sealed using the back of the excavator bucket and surrounded by silt fences to ensure sediment-laden run-off does not occur further details of which are discussed in Chapter 4 and Chapter 8 of this EIAR and within this CEMP.

The basement structure will be formed with concrete. The formation material will have to be approved by an engineer as meeting the design specification. If the formation level is reached at a depth greater than the depth of the foundation, the ground level will have to be raised with approved hardcore material, compacted in 250 millimetres (mm) layers, with sufficient compacted effort (i.e. compacted with seven passes using 12 tonne roller). Exact depths and compaction will be confirmed by the Project Engineer.

The formwork and reinforcing steel cage will be installed on completion of all preliminary ground works. Formwork to concrete bases will be propped/supported sufficiently to prevent failure. Concrete for bases will be poured using a concrete pump. Each base will be poured in three stages. Stage 1 will see the concrete being poured and vibrated in the centre of the anchor cage to bring the concrete up to the

required level inside the cage. Stage 2 will see the centre of the steel foundation being poured and vibrated to the required level. Stage 3 will see the remaining concrete being poured around the steel foundation to bring it up to the required finished level. After a period when the concrete has set sufficiently the top surface of the concrete surface is to be finished.

Once the base has sufficient curing time it will be backfilled with suitable fill up to existing ground level and finished with the original material that was excavated.

Structural Frame

The structure of the WSP buildings and Plaza Canopy will be formed with a modular steel frame, or similar, which will be installed on the concrete foundation. The frame will be fabricated off site and imported to site in sequence and installed by an experienced erection crew using a combination of lifting equipment such as cranes and hydraulic lifting equipment. The frame will provide a series of columns and beams which will be installed as per the structural frame design. The flooring above ground level will be reinforced concrete and will be installed as the frame installation develops.

The temporary marquees will be constructed with timber-clad walls and tensile canvas roofs, or similar. The demountable marquees will be lightweight steel and fabric. They will be mounted on the concrete plaza to reinforced concrete foundations.

External Finishes

The external finishes proposed for the WSP buildings and structures are presented in the HB-RKD-ZZ-ZZ-DR-A-1300 drawing series and the Architectural Design Statement.

As with the structural frame components, the cladding and glazing will be prefabricated off site and delivered to site via Heavy Goods Vehicles (HGVs) and various transport solution as discussed in Chapter 14 of the ELAR.

Both the cladding and glazing installation will be completed by specialist contractors using the necessary lifting and access equipment. As with the steel frame also, there is no invasive element to the installation of the external cladding and glazing finishes as all material will be installed in pre-prepared areas.

Building Services

The site is already serviced with both foul and storm sewage networks to which the Proposed Development will connect, subject to confirmation from providers. The Engineering Drawings provide details of the internal networks for both foul and storm water export to the public network.

All utility infrastructure will be laid underground within the Proposed Development site. This will be carried out using the following methodologies:

- The area where excavations are planned will be surveyed and all existing services will be identified.
- All relevant bodies i.e. ESB, Gas Networks Ireland, Eir, RCC etc. will be contacted and all drawings for all existing services sought.
- A Traffic Management Plan will be produced if required for connection works to the existing service network.
- A road opening licence will be obtained where required for connection to existing services.
- All plant operators and general operatives will be inducted and informed as to the location of any services.
- A tracked 360-degree excavator or similar will be used to excavate the trench to the required dimensions.
- All excavated material will be removed to an authorised waste recovery facility or, if suitable, stockpiled and reused for backfilling and landscaping where appropriate.

- Once the trench has been excavated the ducting/pipework will then be placed in the trench as per specification.
- Once the service ducts/pipework has been installed couplers will be fitted as required and capped to prevent any dirt etc. entering the ducts/pipes.
- The as-built location of the ducting/pipework will be surveyed using a total station/GPS.
- Backfill material will be carefully placed so as not to displace the ducting/pipework within the trench.
- The appropriate warning/marker tape will be installed above the ducts/pipes at the appropriate depths.
- The surface will be reinstated as per original specification or to the requirements of the site layout/Local Authority as appropriate.

2.4.11 Active Travel Improvement Works

The L2020 Local Road which provides access to the Proposed Development site will be narrowed to between 5.5 m and 6.0 m to facilitate space for a 3.0 m wide shared cycle / pedestrian pathway as part of the Active Travel upgrades. The upgrades to the L2020 Local Road and pathway will involve two elements.

Southern Section of the L2020

Involves a widening of approximately 900 m of the existing footpath to at least 3.0 m wide along the western side of the L2020 Local Road between the junction with the N61 National Road and the golf crossing at the southern end of Athlone Golf Club lands. The footpath widening in this section will be achieved by narrowing approximately 900 m of the L2020 carriageway to between 5.5 m and 6.0 m. No land acquisition is required in this section.

Northern Section of the L2020

The Active Travel route crosses the L2020 Local Road at the existing golf crossing at the southern end of Athlone Golf Club lands and the existing footpath along the eastern side of the L2020 Local Road will be widened to 3.0 m along an approximately 415 m section between the golf crossing and the Hodson Bay Marina. The existing carriageway widths in this section will be retained, and land acquisition from Athlone Golf Club is required to widen the footway. An embankment at a 1:2 slope will be provided at the edge of the proposed 3.0 m wide shared path, to tie back into the golf club levels.

While the active travel corridor will be continuous, it will require crossing of the L2020 Local Road at an existing pedestrian crossing which will be upgraded as part of the works. Raised tables are proposed at all pedestrian crossings along the L2020 to prioritise pedestrians. The Proposed Development will also see the implementation of traffic calming measures along the L2020 Local Road accessing the site including 10 no. speed humps/speed tables at approximately 150 m spacings.

The construction methodology for the works along the L2020 Local Road is outlined as follows:

Southern Section of the L2020

- Works will be undertaken under phased traffic management arrangements including lane narrowing, temporary traffic signals/stop-go control, reduced speed limits and pedestrian management measures to maintain local access throughout the works.
- Existing road markings will be removed by hydroblasting prior to commencement of pavement works.
- A new kerbline will be constructed along the revised carriageway edge, including:
 - Excavation into the existing carriageway;
 - Installation of kerbs on concrete bedding and haunching;
 - Adjustment of utility covers and ironwork where required.

- Excavation within the carriageway for the new kerblines and drainage works will be reinstated in layers to provide a strong structural tie-in with the retained pavement. Reinstatement will comprise:
 - Granular sub-base;
 - Bituminous binder/base layers;
 - Surface course surfacing;
 - Tack coat application and sealing of longitudinal joints.
- The existing footway will be widened to provide a minimum 3.0 m shared pedestrian/cycle route, including:
 - Excavation to formation level;
 - Installation and compaction of sub-base material;
 - Construction of asphalt footway layers;
 - Resurfacing across the full footway width to provide a consistent finish tied into existing surfaces.
- A total of 21 existing gullies along the western side of the carriageway will be relocated to align with the proposed kerblines. Works will include:
 - Saw cutting and excavation of existing pavement;
 - Removal of existing gullies and pipework connections;
 - Installation of new gullies and drainage connections;
 - Tie-in to the existing drainage network;
 - Backfilling and reinstatement using compacted granular and bituminous pavement layers.
- All driveway crossings and accesses along the route will be reconstructed with dropped/vehicle entry kerbs and strengthened pavement construction where required.
- Traffic calming measures comprising speed humps and raised pedestrian crossings will be installed at approximately 150 m intervals. Works will include:
 - Saw cutting and planing of existing carriageway surfacing;
 - Localised excavation and pavement build-up;
 - Construction of asphalt raised tables and ramps;
 - Installation of tactile paving and anti-skid surfacing where required;
 - Reinstatement of associated signage and road markings.
- Following completion of the civil works, final surfacing, repainting of road markings and general reinstatement works will be completed.

Northern Section of the L2020

- The existing carriageway width, kerblines and gullies will be retained throughout this section.
- Works will be undertaken under phased traffic management arrangements including lane narrowing, temporary traffic control and pedestrian management measures to maintain safe access throughout construction.
- Footway widening works will include:
 - Vegetation clearance and topsoil stripping;
 - Excavation to formation level;
 - Installation and compaction of granular sub-base;
 - Construction of asphalt pavement layers;
 - Resurfacing across the full footway width to provide a continuous and consistent finish.
- A 1:2 earth embankment will be formed along the outer edge of the widened footway to tie into existing golf course levels, including:
 - Placement and compaction of suitable fill material;
 - Grading to required slope profile;
 - Topsoiling and reinstatement of disturbed areas and trees.
- Ball stop fencing will be installed along the footway edge adjacent to the golf course, including:
 - Excavation and concreting of fence post foundations;
 - Installation of fence posts and mesh/netting systems.
- 10 no. lighting columns will be relocated to the opposite side of the proposed fence line, including:

- Electrical isolation and disconnection;
- Removal of existing columns;
- Installation of new ducting, cabling and foundations;
- Installation and commissioning of relocated lighting columns.
- Traffic calming measures comprising speed humps and raised pedestrian crossings will be installed at approximately 150 m intervals. Works will include:
 - Carriageway planing and saw cutting;
 - Asphalt build-up and surfacing works;
 - Installation of tactile paving;
 - Reinstatement of signage and road markings.
- Existing road markings throughout the section will be refreshed or repainted following completion of the works, with all disturbed verges and surfaces reinstated on completion.

2.4.12 Car Parking Areas

There are three parking areas proposed. Existing parking areas being retained will keep existing asphalt surfacing. New parking areas will be constructed using a porous asphalt to assist with site SuDS. The car parking areas will be constructed using the following methodology:

- Establish alignment of the parking areas from the construction drawings and mark out the boundaries with ranging rods or timber posts;
- All drainage measures prescribed in the detailed drainage design for the Proposed Development will be implemented around the works area;
- All excavated material will be managed on-site. Some topsoil will be temporarily stockpiled locally for reuse for landscaping purposes;
- The subsoil will be excavated down to a suitable formation layer of either firm clay or bedrock and managed on-site in the temporary stockpile areas;
- The car park will be constructed using well-graded imported granular fill, spread and compacted in layers typically of 200 mm and a suitable capping layer to provide a homogeneous running surface. The thickness of layers and amount of compaction required will be subject to detailed design by Project Engineer in consultation with the Construction Manager based on the characteristics of the material and the compaction plant to be used;
- The car parking areas will be constructed with the necessary gradient to promote drainage;
- Car parking areas will be finished with porous asphalt;
- The parking lines will then be painted; and
- Any updated or new signage will be installed

Other hardstand/paved areas will be installed using the same methodology as that outlined for carparking areas with the only key difference being the paving or finished applied to each area.

2.4.13 Marina Redevelopment and Extension

The marina redevelopment and extension will provide approximately 29 no. additional boat berths, ensuring that the extended marina will be capable of hosting approximately 59 no. berths for cruisers and visiting watercraft. The redevelopment will also include for the provision of services for boat users including potable water, electricity and foul water pump-out facilities. A new marina service block building covering an area of 74 m² will be constructed as part of the Proposed Development adjacent to the marina which will provide shower and toilet facilities for marina users. The marina service block building will be constructed with concrete and steel and finished with concrete terracotta tiles similar to the Water Sports Pavilion buildings.

The marina redevelopment and extension will include the following installations;

- Approximately 42 no. steel piles driven into lakebed;
- Floating breakwater;

- > Floating jetties;
- > Gangways to connect to the existing marina;
- > Canoe step;
- > Marina service block building; and
- > Provision of services including electricity, potable water and foul water pump-out throughout the marina.

The construction crew will begin by pushing a floating pontoon with 36-tonne excavator and Movax on board into position using the Inis Muilinn workboat for the location of the first pile to be installed (see Plate 2-1 below). Pile locations will be set out using Global Positioning System (GPS). A silt curtain will be installed around the location of where this pile will be installed and connected back to the pontoon, weights will be used to ensure the silt curtain sits on the bed of the lake.

The 36-tonne excavator using the Movax will then lift the steel pile and vibrate the pile into the lakebed to the required depth. The floating pontoon will then be moved to the next pile position and the process repeated until all the piles have been installed.

Mooring anchors of the floating pontoons will be placed precisely on the lakebed and not dragged, to avoid disturbance to lakebed habitat. Pre-defined access routes will be used by the floating pontoon and Movax for the installation of piles and all other floating marina components, to limit the area of lakebed disturbance. Total works duration for the marina redevelopment and extension is anticipated to take approx. 6 months (including the 4–6 weeks of piling), with all in-lake works (piling works) to be undertaken between August–September (months inclusive) during periods of lower lake water levels and outside of ecological sensitive time periods (e.g., core breeding bird season, core wintering bird season).

Once the piles have been installed, the Contractor supplying the jetties and breakwater will lift the floating jetties and breakwater into the water, push them into position using workboats and connect them to the relevant steel piles and other section of jetties/breakwater. The canoe step will then be pushed into place and connected. The gangways will then be lifted into place using the 36-tonne excavator on the floating pontoon and bolted to concrete on the existing breakwater.

The in-water construction elements of the marina and breakwater extension (piling) will be undertaken between the months of August to September as per Section 4 of the 2016 Inland Fisheries Ireland guidance document *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*².

The marina service block building will be constructed with concrete and steel and finished with concrete terracotta tiles similar to the WSP buildings. Services including electricity, potable water and foul water pump-out will then be installed on the new sections of jetties.

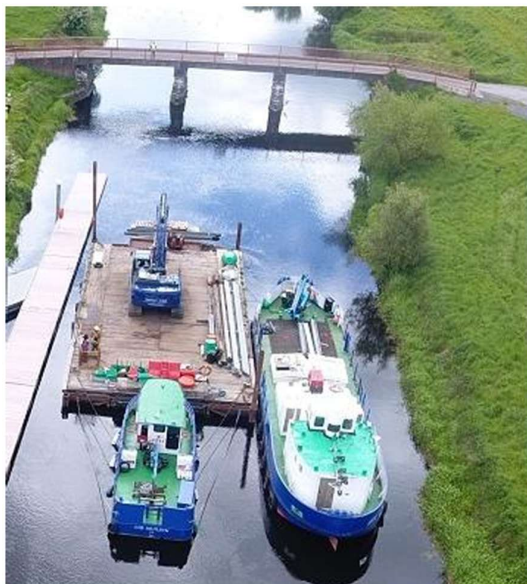


Plate 2-1 Coill an Eo, Inis Muilinn workboats and Pontoon Raft with 36-tonne excavator

2.4.14 Public Realm Upgrade Works

Prior to completion of works on the development site, the Public Realm Upgrade works will be carried out. The finishes include areas of amenity grassland, a wellness meadow, nature trails, footpaths, playground, changing shelter for wild swimmers, several benches, tree planting. These works will involve the use of plant and machinery in order to carry out tasks such as earth moving. Materials which have been stockpiled for the task will be used as much as possible, and material will only be imported where it is required. Where topsoil is stripped prior to excavation, this material will be retained on site for use in landscaping. Hoarding will be erected around the construction site boundary for the duration of the Public Realm Upgrade construction works.

A detailed Tree Replanting Scheme will comprise a key element of the Public Realm Upgrade works (see Figure 2-4 below). 240 no. trees and shrubs will be replanted across the site, all of which will be native species. The Tree Replanting Scheme incorporates a significant number of mature trees (10 years or older) to compensate for the removal of a number of mature trees for the construction of the Proposed Development.

The proposed Public Realm Upgrades will also include upgrades to the lighting scheme throughout the site. Lighting design and specification throughout the Proposed Development site has been carefully considered to ensure minimisation of ecological disturbance is balanced with ensuring the safety of those visiting the Hodson Bay area is not compromised. A detailed Lighting Plan and accompanying report with specifications sheets has been included in the planning application documents.

The Northern Swimming Changing Canopy will be constructed of in-situ concrete on a reinforced concrete foundation.

2.4.15 Excavation and Services Installation

Where excavations and installations of any new services are required on the Proposed Development site, the same methodology as set out in Section 2.4.10 Building Services above will apply.

2.4.15.1 Existing Underground Services

Any underground services encountered during the works will be surveyed for level and where possible will be left in place. If there is a requirement to move the service, then the appropriate body (ESB, Gas Networks Ireland, etc.) will be contacted, and the appropriate procedure put in place. Back fill around any utility services will be with dead sand/pea shingle where appropriate. All works will be in compliance with required specifications.

2.4.16 Electrical Substation

The proposed substation will be constructed by the following methodology:

- The area of the onsite substation will be marked out using ranging rods or wooden posts and the soil and overburden stripped and removed to nearby temporary storage area for later use in landscaping. Any excess material will be disposed/recovered offsite at an appropriately licensed facility;
- The dimensions of the substation area have been designed to meet the current requirements of the ESB;
- The required level platform will be established and finished with well-graded imported granular fill, compacted in layers and finished with a suitable capping layer to the desired level;
- The ESB substation will have oil-less equipment within.
- The foundations will be excavated down to the level indicated by the designer and appropriately shuttered reinforced concrete will be laid over it.;
- The block work walls will be built up from the footings to damp proof course level and the floor slab constructed, having first located any ducts or trenches required by the follow on mechanical and electrical contractors;
- The block work will then be raised to wall plate level and the gables & internal partition walls formed. Scaffold will be erected around the outside of the buildings for this operation;
- Concrete roof slabs will be used over the ESB Substation section only and will be lifted into position using an adequately sized mobile crane;
- The timber roof trusses over the complete substation will then be lifted into position using a telescopic load all or mobile crane depending on site conditions. The roof trusses will then be felted, battened, tiled and sealed against the weather;
- The substation plinths will be shuttered and poured with reinforced concrete.;
- The electrical equipment will be installed on the concrete plinths and commissioned.

2.4.17 Ball Stop Netting

Ball stop netting will be installed along the footway edge adjacent to the golf course, and will be constructed as follows:

- Excavation and concreting of fence post foundations;
- Installation of fence posts and mesh/netting systems.

The ball stop netting will range between 3 m to 20 m in height.

3. ENVIRONMENTAL MANAGEMENT

3.1 Introduction

This CEMP includes all best practice measures required during construction of the Proposed Development, including the demolition works. The following sections give an overview of the drainage design, dust and noise control measures and a waste management plan for the site.

3.2 Health and Safety Requirements

Works at the site are to be carried out in accordance with all relevant Health and Safety legislation including the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013).

The Contractor shall comply with all relevant Statutory requirements such as the 2005 Safety Health and Welfare at Work Act, The Construction Regulations (SI 291 of 2013), the General Application Regulations (SI 299 of 2007), etc. (and any amendments thereof).

The Contractor shall also comply with all the reasonable safety requirements of the Client, the Project Supervisor for the Design Process and the Project Supervisor for the Construction Stage.

Additionally, the burning of any materials or the lighting of fires on-site is strictly prohibited.

3.3 Protecting Water Quality

3.3.1 Existing Water Environment

The closest river to the site has been temporarily named 'TEMP_26N58' by EPA (WFD code: IE_SH_26S021660), which originates to the west of the site and flows northward for approximately 0.8 km before discharging to Lough Ree; this river is upstream of the site, via Lough Ree. The Lough 'Ree' lake waterbody (WFD code: IE_SH_26_750a, Lough Ree, overlies and bounds the northern section of the site. The lake covers approximately 100 km². The continuation of the River Shannon [Upper] is mapped by the EPA approximately 3.6 km southeast of the site, draining Lough Ree towards Athlone.

The Proposed Development is located within the Upper Shannon WFD Catchment (Catchment ID: 26E) and within the Funshinagh Groundwater body (WFD Code: IE_SH_G_091) which has a good water quality status and is not at risk.

Prior to the commencement of any subsequent construction activities, the necessary mitigation measures will be put in place to ensure that no silt laden water runoff generated at the site will flow to nearby watercourses or drains thus ensuring the protection of surface water during the works. This will involve confirming the location of all existing services and delineating between drainage systems.

Particular emphasis will also be placed on hazardous materials entering the surface water management system as well as spill or leaks of fuel oils. Section 1 below provides an Emergency Response Plan for dealing with spillages which may result in adverse environmental effects.

3.3.2 Prevention Pollution Control Measures

The following measures will be put in place to prevent the transportation of silt laden water or pollutants from entering any of the wider environments including watercourses/drains within or near the site:

- The site boundary will be fenced off with Heras fencing (or similar) prior to works commencing to protect adjacent habitats and to prevent any egress of machinery outside of the site during construction activities.

- There are no watercourses on site and surface water will not be directly discharged into any external water bodies, surrounding land, or adjacent roadways. Any run-off generated on-site will undergo the necessary filtration process as previously outlined.
- The works will be managed to ensure there will be no silt-laden run-off beyond the site boundary. This will be achieved through the use of appropriate excavation techniques during the initial construction works. Where necessary, silt fencing will be installed downslope of the construction areas, particularly where drains or drainage pathways are present. These measures will serve as a protective measure to contain silt material within the site.
- Any requirement for temporary fills or stockpiles will be damped down or covered with polyethylene sheeting as required to avoid sediment release associated with heavy rainfall.
- Excavations will be carried out using a suitably sized excavator and, in all circumstances, excavation depths and volumes will be minimised.
- Excavated spoil will be stockpiled and contained entirely within the confines of the site boundaries. Material stockpiles will be kept at least 10 m from any manholes. Depending on the nature of the excavated material, the stockpiles of excavated materials will be sealed with a digger bucket to reduce the potential for sediment runoff. These areas will be surrounded with silt fencing, if deemed necessary to prevent runoff.
- The minimum number of soil/subsoils and bedrock material should be removed from site. Soil may be reused for landscaping elsewhere on the site. However, any excess construction material shall be removed from the area and sent to an authorized waste recovery facility
- Works shall not take place at periods of high rainfall and shall be scaled back if or suspended if heavy rain is forecast during excavation works.
- High rainfall¹ is defined as follows:
 - >10 mm/hr (i.e. high intensity local rainfall events);
 - >25 mm in a 24-hour period (heavy frontal rainfall lasting most of the day);
 - Rainfall total greater than monthly average recorded in 7 consecutive days (prolonged heavy rainfall over a week).
- Stockpiles will also be covered with plastic sheeting during high rainfall to prevent runoff.
- In the event of encountering groundwaters during excavation, groundwater will be pumped out of the excavation using a pump equipped with a silt bag on the discharge pipe, if necessary, to capture any silty material prior to subsequent natural percolation to ground. The area surrounding the silt bag will be surrounded by silt fencing if deemed necessary.
- No wastewater will be treated or discharged on-site during the construction phase.
- Good construction practices will be implemented at the site. This will ensure minimal risk. The Construction Industry Research and Information Association (CIRIA) provides guidance on the control and management of water pollution from construction sites, as outlined in 'Control of Water Pollution from Construction Sites, guidance for consultants and contractors'.¹ This guidance will be adhered to throughout the construction phase to ensure that surface water generated on site contains minimum sediment.

Details of control measures which will be implemented at the site, if required, are included in the Plates below.

¹ Construction Industry Research and Information Association (CIRIA) (2001) *Control of Water Pollution from Construction Sites, guidance for consultants and contractors*. Available at: <https://www.ciria.org/CIRIA/productexcerpts/c532.aspx>



Plate 3-1 Silt Bag with water being pumped through.



Plate 3-2. Silt Bag under inspection.

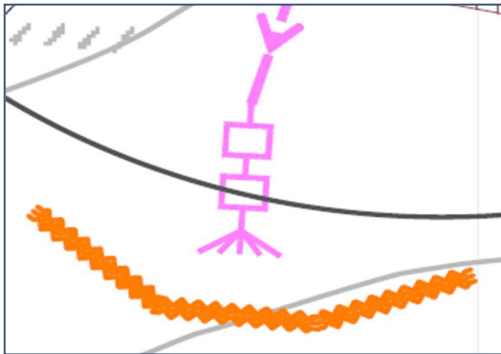


Plate 3-3 Silt Fence surrounding the discharge from Silt Bag.



Plate 3-4 Embedded Silt Fence.

3.3.3 Sediment Control Measures

The following measures will be put in place to protect Lough Ree from the uncontrolled release of suspended sediments:

Works will be completed between August and September (inclusive) aligning with Inland Fisheries Ireland guidelines (2016)² of sensitive periods for fish spawning, avoiding the main breeding and winter bird seasons, and coinciding with a time when water levels are at their lowest. A double-lined, floating silt curtain will be installed around the main works area (the WSP) before any near-shore or in-water works commence.

Non-intrusive or low-intrusive cofferdam systems are encouraged if possible. However, sheet piling is the likely method of cofferdam installation. Differing sheet piling techniques cause differing levels of ground disturbance and pulverised drill spoil. Accordingly, percussive hammers will be minimised, and vibrative hammers will be utilised when installing sheet piles.

Disturbance of lake-substrate will be minimized through careful positioning of plant and adoption of low-impact construction methodologies. Equipment will not be dragged across the lakebed; this will avoid any

² Inland Fisheries Ireland (IFI) (2016) *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*. Available at: <https://www.fisheriesireland.ie/sites/default/files/migrated/docman/2016/Guidelines%20Report%202016.pdf>

additional sediment disturbance. Piles will not be advanced into bedrock to avoid any potential bridging to the karstified aquifer below the lakebed.

The top-level of the cofferdam will be installed to a minimum of 37.5 mAOD to ensure that the cofferdam is not breached during flooding.

The silt curtain will remain in place after cofferdam installation, and for the duration of the construction stage, and will only be removed once monitored suspended solids concentrations are observed at baseline levels. The silt curtain will be inspected regularly for defects and adjusted as necessary.

Water quality measures during construction, including cofferdam and earth bund installation, concrete removal/pouring protocols, and timing restrictions to protect Lough Ree, are set out in full in Section 2.4.6.

The following measures will be in place to mitigate against any potential increase in suspended sediment load due to piling activities:

A double-lined, floating silt curtain will be installed around the works area before any works commence, i.e. the silt curtain will encompass as a whole, the 42 no. piling locations.

Differing drilling techniques cause differing levels of ground disturbance and pulverised drill spoil.

Accordingly, percussive hammers will be minimised, and vibrative hammers will be utilised when drilling. Disturbance of lake-substrate will be minimized through careful positioning of plant and adoption of low-impact construction methodologies. Equipment will not be dragged across the lakebed; this will avoid any additional sediment disturbance.

Following completion of piling works, disturbed sediments will be allowed to consolidate under natural hydrological conditions. The silt curtain will be inspected regularly for defects and adjusted as necessary, will remain in place for the duration of the works, and will only be removed once monitored suspended solids concentrations are observed at baseline levels.

3.3.4 Cement Based Products Control Measures

The complete washing out of concrete trucks will not be permitted at the site during the construction phase. Suppliers will be directed back to their own facility to complete the washout process. However, a washout area for chute cleaning will be provided at the primary and secondary temporary construction compound.

The following mitigation measures are proposed to avoid release of cement leachate from the site:

Mitigation by Avoidance:

- Concrete will be delivered in sealed concrete delivery trucks. Batching of wet-cement products will not occur on-site.
- Ready-mixed supply of wet concrete products and emplacement of pre-cast elements will take place.
- Pre-cast elements for cofferdams, pile foundations, culverts, and concrete works will be used.
- Concrete trucks will not be washed out on-site but will be directed back to their batching plant for washout.

Mitigation Measures by Design:

- Where concrete is delivered on-site, only the chute will be cleaned, using the smallest volume of water practicable. No discharge of cement-contaminated waters to the construction stage drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water will be undertaken at lined washout areas.
- Where temporary lined impermeable containment areas are used, such containment areas are built using straw bales and lined with an impermeable membrane. These are covered when not in use to prevent rainwater collecting.
- Pour sites of cement will be kept free of standing water, and plastic covers will be ready in case of sudden rainfall events.

Risks of pollution will be further reduced as follows:

- Concrete will not be transported around the site in open trailers or dumpers so as to avoid spillage while in transport.
- All concrete used in the construction will be pumped directly into the shuttered formwork from the delivery truck. If this is not practical, the concrete will be pumped from the delivery truck into a hydraulic concrete pump or into the bucket of an excavator, which will transfer the concrete locally to the location where it is needed.
- Arrangements for concrete deliveries to the site will be discussed with suppliers before work starts, confirming routes, prohibiting on-site washout and discussing emergency procedures.
- Clearly visible signage will be placed in prominent locations close to concrete pour areas specifically stating washout of concrete lorries is not permitted on the site.
- Weather forecasting will be used to assist in planning large concrete pours and large pours will be avoided where prolonged periods of heavy rain is forecast.
- Concrete pumps and machine buckets from slewing over watercourses will be restricted while placing concrete.
- Excavations will be sufficiently dewatered before concreting begins and dewatering will continue while concrete sets.
- Covers will be available for freshly placed concrete to avoid the surface washing away in heavy rain.
- Any potential, small surplus of concrete remaining after completion of a pour will be disposed at a suitable off-site facility.

3.3.5 Refuelling, Fuel and Hazardous Materials Storage

The following measures are proposed to avoid the release of hydrocarbons at the site:

- All refuelling of construction vehicles and plant on site will be carried out in the dedicated refuelling area located adjacent to the primary construction compound at least 30 m from watercourses or surface water features.
- Vehicles will never be left unattended during refuelling. Only dedicated trained and competent personnel will carry out refuelling operations and plant refuelling procedures shall be detailed in the contractor's method statements.
- Fuels, lubricants and hydraulic fluids for equipment used on the site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment.
- Storage bunds/trays, if required will be constructed of an impermeable membrane (high density polyethylene (HDPE) plastic and will have the adequate capacity to contain the volume of the liquids contained therein, if a leak/spillage does occur from one of the storage vessels.
- All plant will be inspected at the beginning of each day prior to use. Defective plant shall not be used until the defect is satisfactorily fixed. All repair and maintenance operations will take place off site.
- Spill kits will be used to deal with any accidental spillage in and outside the refuelling area.

3.3.6 Drainage and surface water discharge routes control

Management of surface runoff and subsequent treatment prior to release will be undertaken during construction work as follows:

- Source controls include the covering work areas, staging areas, and stockpiles, as well as the prioritisation of small working areas and cessation of works during heavy rainfall and inclement weather. Methods that will be employed are diversion drains, flume pipes, sand bags, oyster bags filled with gravel, and filter fabrics. A cofferdam and earth bund will be installed to minimise sediment mobilisation into Lough Ree. Flexibility to adapt methods will be required based on location-specific conditions, as judged by supervising engineers from visual inspection.
- In-line controls involve settling of suspended sediments with the use of silt fences, straw bales, sand or oyster bags, weirs, baffles, and check dams. Flow limiters and sump

- pumping systems may be employed where needs arise in order to maintain the hydraulic functioning of the existing drain system.
 - Treatment systems involve sediment traps and temporary sumps/attenuation ponds.

Adjacent drainage systems/groundwater need to be protected from sedimentation and direct surface water runoff generated onsite during the construction stage. Discharge from site will be managed and controlled within the Site boundary for the duration of the construction works. There will be no temporary uncontrolled discharges to surface water from the Site during the construction stage.

As construction advances there may be a requirement to collect and treat surface water within the Site. This will be completed using perimeter filter drains around the construction areas and discharged to the existing oil separator/petrol interceptor, which in turns discharges to Lough Ree. Sumps can be installed periodically along the perimeter filter drains to allow for collection of sediments. All works shall be undertaken in accordance with the CIRIA document¹, 'Control of Water Pollution from Construction Sites', guidance for consultants and contractors. All stockpiles will be damped down or covered, as required, which will prevent the creation of nuisance dust, and will also prevent sediment runoff in times of heavy precipitation. Silt fencing will be installed around these stockpiles. Material stockpiles will be kept at least 10 m from any manholes and >50 m from lake shore where possible.

It should be noted for this site, that a network of stormwater drains already exists, and these will be integrated and enhanced as required and used within the Site drainage system. The main elements of interaction with existing drains will be as follows:

- Apart from interceptor drains, which will convey clean runoff water to the downstream drainage system there will be no direct discharge (without treatment for sediment reduction, and attenuation for flow management) of runoff from the proposed Site drainage into the existing drainage network where possible. This will reduce the potential for any increased risk of downstream flooding or sediment transport/erosion.
- Drains running parallel to the existing roads requiring widening will be upgraded. Velocity and silt control measures such as check dams, sand bags, oyster bags, silt fences will be used during the upgrade construction works. Regular buffered outfalls will also be added to these drains to protect downstream surface waters;
- Silt fences will be emplaced within drains downgradient of all construction areas. Silt fences are effective at removing heavy settleable solids. This will act to prevent entry to watercourses of sand and gravel sized sediment, released from the excavation of subsoils, and entrained in surface water runoff. Inspection and maintenance of these structures during construction stage is critical to their functioning to stated purpose. They will remain in place throughout the entire construction stage. Double silt fences will be emplaced within drains downgradient of all construction areas; and
- Silt bags will be used where small to medium volumes of water need to be pumped from excavations. As water is pumped through the bag, most of the sediment is retained by the geotextile fabric allowing filtered water to pass through. Silt bags will be used with natural vegetation filters.

Airborne dust will be generated from excavation and concrete cutting across the Site. The most efficient method of reducing dust particles is to remove at source. Accordingly, all excavation and cutting sites will require the suppression of dust through the use of water and sprinkler systems at each excavation/cutting site.

A double-lined, floating silt curtain will be installed around the works area before any near-shore or in-water works commence. This will allow residual dust particles to be captured and settle out within the silt curtained area of Lough Ree, close to the Site.

Excavation spoil may be deposited on road surfaces via the wheels of construction vehicles. To minimise the amount of excavation material leaving the Site in this way, wheel washes will be installed at the exit of each work area and temporary construction compound. Residual material from wheels and airborne dust may still become deposited on the Site road network, potentially impacting the water quality of the stormwater drainage network or allowing for airborne dust to be mobilised from here in dry conditions. Therefore, dust suppression vehicles will be used throughout the year during the construction stage,

routinely traversing the Site road network as required; this may be continuous during the summer months.

Management of excavation seepages and subsequent treatment prior to discharge into the site drainage network will be undertaken. An upslope interceptor drain will be established upslope of the excavation area to prevent greenfield runoff into the excavations. Berms will also be used, as necessary.

The following design measures will be implemented on the site:

- Dewatering will be provided as relevant to specific requirements with de-watered discharge pumped using a pump equipped with a silt bag on the discharge outlet. As the water pass through the silt bags, the majority of sediment and organic matter is retained by geotextile fabric. The silt bags will be used with natural vegetation filters or sedimats. The sedimats will be secured to the ground surface using stakes/pegs. They will extend to the full width of the outfall to ensure that all water passes through this treatment measure.
- The pumped water will be discharged to either the existing stormwater drainage system or to a suitably vegetated area within the Site boundary. Where discharge to a vegetated area is required, level spreaders will be installed for each outfall, and the area will be enclosed with silt fencing to prevent sediment-laden runoff and ensure compliance with best practice environmental controls. Prior to the outset of works a silt fence will be erected along the lakeshore perimeter of the proposed construction area to prevent run-off to potentially floodable areas and into Lough Ree at the boundaries of the development site.

3.3.7 Accidental Spills, Leaks or Other Releases

The following design measures will be in place to mitigate accidental spills, leaks or other releases:

- Highest standards of site management will be maintained, with the utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the Site and surrounding environment during construction.
- An Emergency Response Plan for accidental spillages is set out in Section 1 below, all construction staff will be familiar with the emergency procedures and the use of the relevant equipment,
- To provide fuel for plant and equipment on site, a certified double-skinned metal fuel tank, equipped with an integrated pump, delivery hose, meter, filter, and locking mechanism, will be installed within a secure, bunded area on the construction site. The tank will be certified for lifting when full to facilitate safe relocation if required.
- To mitigate the risk of fuel spills, sand piles and emergency spill kits will be readily available on site. A dedicated hazardous waste bin will be provided for the disposal of contaminated materials, such as spent sand or soak pads.
- Fuel for small plant equipment will be transported around the site using new metal jerrycans fitted with appropriate pouring nozzles. Drip trays will always be used under small plant to capture any leaks or drips. Waste oils and other fluids collected in drip trays or within the bunded area will be transferred into a designated waste oil drum, which will be stored within the bund to prevent contamination. Refuelling of construction machinery will take place using drip trays at all times.
- All metal jerrycans and other fuel containers will be stored in certified metal bunded cabinets. Gas cylinders will be stored in a secure, caged area on site and will be properly secured at the point of use. These measures ensure compliance with environmental and safety regulations while minimising the risk of fuel-related incidents.
- On-site refuelling will be undertaken using a double skinned bowser.
- Fuels stored on-site will be minimised. Storage areas, where required, will be bunded appropriately for 110% of the fuel storage volume for the time period of construction and fitted with a storm drainage system and an appropriate oil interceptor.
- All waste tar material arising from the potential chipping and resurfacing of roads will be removed off-site and taken to a licenced waste facility; and
- Appropriate erosion, sediment and pollution control measures will be implemented throughout the construction stage in accordance with this CEMP and relevant industry guidance.

3.4 Dust Control

Construction dust can be generated from many on-site activities such as excavation and backfilling. The extent of dust generation will depend on the type of activity undertaken, the location, the nature of the dust, i.e., soil, sand, etc and the weather. In addition, dust dispersion is influenced by external factors such as wind speed and direction and/or periods of dry weather. Construction traffic movements also have the potential to generate dust as they travel along the public road. The measures below will also prevent construction debris arising on the public road network.

Proposed measures to control dust include:

- The designated public roads outside the site and along the main transport routes to the site will be regularly inspected by Site Management for cleanliness and cleaned, as necessary.
- Material handling systems and waste storage areas will be designed and laid out to minimise exposure to wind. Double handling of materials with potential to generate dust will be minimised.
- Any hardstanding areas/site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- A water tanker will be maintained on-site to dampen exposed soils, unpaved haul routes, and active work areas.
- Water sprays will be used as required during transfer and loading activities, during dry and/or windy conditions.
- The transport of crushed concrete or other material, which has significant potential to cause dust, will be undertaken in tarpaulin-covered vehicles where necessary. Any rubble that has potential to generate dust will also be dampened down as necessary.
- Regular Toolbox Talks (TBTs) will be carried out with operatives by site management to reinforce the need for all operatives to be aware of and responsive to conditions or activities that could generate dust.
- Stockpiles on-site will be located in the temporary construction compounds and will be covered with plastic sheeting to prevent dust generation during dry conditions. If plastic sheeting is not feasible, stockpiles will be dampened down when necessary.
- All plant and machinery will be maintained in good operational order while onsite.
- Vehicle speeds on-site will be restricted to 15 km/h.
- All internal access roads will be surfaced using suitable materials; the use of mud stone, clay stone, or shale stone is explicitly prohibited to prevent the generation of additional fine dust particles
- All trucks exiting the site carrying fine dry loads shall be covered and all other loads sprayed with water prior to exiting the site
- A wheel wash facility will be provided to clean HGV traffic leaving the site to minimise dust and dirt soiling on the L2020.

3.5 Noise Control

The following measures are proposed to control noise include:

- Construction operations will in general be confined to 0700–1900 h Monday-Friday and 0800-1700 h Saturday.
- Any works outside these hours, if required, will be limited to quieter operations, and will be agreed in advance with the planning authority.
- Drivers of plant and vehicles will be instructed to avoid hooting onsite at all times.
- Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced.
- Queuing of trucks on public roads near receptors will be prohibited.
- Machinery not in active use will be shut down.

- Driver training will be provided to ensure smooth machinery operation, to minimise unnecessary noise generation.
- A site representative will be appointed as a liaison officer with the local community. Prior to road improvement works along the L2020 Local Road, notification will be given to the residents along this road via letter drop.
- Any complaints of noise received during the construction phase will be logged in a register and investigated immediately. Details of follow-up action will be included in the register.
- Where it is proposed to import potentially noisy plant to the site, the potential impact of noise emissions will be assessed in advance.
- Guidance set out in BS 5228-1:2009 with respect to noise control will be applied throughout the construction phase.

The hours of working should be planned, and account should be taken of the effects of noise upon persons in areas surrounding site operations and upon persons working on site, taking into account the nature of land use in the areas concerned, the duration of work and the likely consequence of any lengthening of work periods. Deviation from these times will only be allowed in exceptional circumstances where written approval has been received from the Planning Authority.

3.6 Vibration Control

It is proposed to carry out construction phase vibration monitoring at the hotel and at any other structure while vibro-rolling is undertaken within 100 m. The following is proposed:

- Vibration monitoring in accordance with *Measurement and assessment of groundborne noise and vibration* (Association of Noise Consultants, 2012).
- Measurement using a calibration vibrograph with tri-axial transducer.
- Measurement of Peak Particle Velocity (PPV) levels, frequency and displacement.
- Measurement at nearest point of hotel to vibro-rolling area.
- Measurement for duration of vibro-rolling.
- Prior agreement with hotel management.
- Alert system to notify where PPV levels exceed 10 mm/s.

3.7 Invasive Species Management

Third Schedule Invasive Species were recorded within the site boundary. Starry stonewort (*Nitellopsis obtusa*) was found throughout aquatic drone transects and grapnel throws within the existing marina, often in conjunction with Quagga mussel (*Dreissena rostriformis bugensis*). Both Quagga mussel and Zebra mussel (*Dreissena polymorpha*) are listed on the First Schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374 of 2024) and Third Schedule of the European Communities (Birds and Natural Habitats) Regulations (S.I. 477 of 2011). The First and Third Schedule Nuttall's waterweed (*Elodea nuttallii*) and Third Schedule Canadian waterweed (*Elodea canadensis*) were recorded in macrophyte transects within and adjacent to the Proposed Development Site. No other invasive species listed on the First or Third Schedule were recorded within the Proposed Development Site.

The medium impact species Butterfly bush (*Buddleia davidii*), Snowberry (*Symphoricarpos albus*) were recorded within the Proposed Development site. Spanish Blubell (*Hyacinthoides hispanica*), which is a First and Third Schedule listed species, was recorded outside the Proposed Development Site within Athlone Golf Club.

Measures to prevent the further spread of invasive species are detailed in Section 3.7.1 below.

3.7.1 Site Management and Biosecurity Measures

The following list of guidelines, which is not exhaustive, shall be followed by all on-site personnel. Only those who have been inducted into biosecurity measures on-site may enter the contaminated zones within the works areas. The following best practice measures will be implemented during the construction phases of the Proposed Development:

- Prior to the commencement of any construction activities, all equipment must be cleaned, disinfected and dried prior to entering the Proposed Development Site Footprint.
- A dedicated biosecurity point shall be established within the Proposed Development Site Footprint for the disinfection and cleaning of all equipment, plant machinery or vehicles used during construction phases.
 - All machinery and plant, including the floating pontoon boat and Movax, will be subject to Check-Clean-Dry protocol, and inspected regularly:
 - Check: Inspect all equipment for plant material, mud, mussels
 - Clean: Pressure wash with hot water (>60°C where possible)
 - Dry: Allow to dry completely before reuse elsewhere
- A tool-box talk will be given by the onsite Ecological Clerk of Works (ECoW) to notify the contractors of the presence of any terrestrial or aquatic invasive species, how to identify invasive species the biosecurity measures that will be followed to prevent further spread of invasives.
- Clear signage should be erected around the Proposed Development site to alert and remind all works of the presence of invasive species and the importance of biosecurity measures
- During periods of in-lake works, silt curtains and fragment barriers should be used around areas of marina extension, in order to limit the spread of invasive species
- Where any removal of invasive plant species is necessary, cut-and-collect systems should be used, with deployment of collection booms down-current of the works area.
 - Any removed invasive plant material should be removed from Lough Ree immediately.
- Where invasive mussel management is required from infrastructure, boats or machinery, mussels or mussel fragments should be removed mechanically via scraping or pressure washing
- Any removed invasive species should be transported to a designated disposal area located away from Lough Ree, surface water, groundwater or any drainage pathways.
- Anti-fouling coatings should be applied to infrastructure where appropriate
- Large-scale sediment and existing invasive mussel disturbance should be avoided throughout periods of in-lake works
- Machinery, including the floating pontoon and Movax, will follow designated navigation channels to avoid high-density areas of invasive species, including within the existing marina.
- Where possible, fixed moorings should be used for the floating pontoon boat and Movax, as opposed to dragging anchors and disturbing sediment and vegetation beds which include invasive species.
- Mooring chains and anchors should be inspected regularly and will be subject to Check-Clean-Dry protocol.

Evidence of cleaning and disinfection of all equipment will be fully logged and recorded, with the designated ECoW ensuring biosecurity compliance on site each day.

3.8 Ecological Protection Measures

3.8.1 Wet Willow-Alder-Ash Woodland Habitat and Fraxinus Excelsior Woodland Protection Measures

The Proposed Development, including site layout and construction phasing, was designed specifically to avoid areas of alluvial forest habitat identified along the shoreline of Lough Ree, both within and adjacent to the Proposed Development Site. Section 2.4.6 of this CEMP details the construction methodologies in place to protect Wet Willow-Alder-Ash Woodland Habitat and Fraxinus Excelsior Woodland.

In order to protect areas of alluvial forest habitat, all areas of woodland will be fenced off with Heras fencing (or similar) to prevent access of machinery or unauthorised access from public areas, thus

preventing disturbance and direct degradation of this habitat. All fencing will remain in place for the duration of construction phase.

3.8.2 Eutrophic Lake Protection Measures

Mitigation to protect area of lake habitat in the vicinity of the proposed marina extension will include the following:

- Works to the lakebed will be limited to the driving of 42 steel piles, with the attachment of a floating breakwater, floating jetties and gangways connected to the shoreline which will not interact directly with the lakebed or macrophyte communities present there. No in-lake vegetation removal is proposed as part of the marina redevelopment and extension phase of the Proposed Development.
- Silt curtains will be installed around each of the pile locations prior to the commencement of pile installation, in order to limit siltation impacts on lakebed vegetation in the wider vicinity. Silt curtains will be connected to the floating construction pontoon, with weights used to ensure the silt curtain sits flush to and remains on the lakebed around each of the pre-specified piling locations. Piles will be installed using vibration piling, with this lower-impact piling technique anticipated to help limit sediment disturbance and suspension on the lakebed, preventing additional siltation throughout macrophyte communities which are already subject to high levels of siltation.
- Piles will be installed in stages (sequentially one after another using a floating pontoon), with installation of steel piles anticipated to take 4–6 weeks. Floating jetties, breakwaters, gangway and canoe step will be installed following piling, with these components constructed off-site to minimise in-lake works duration. Installation of these floating components will occur via floating pontoon. Mooring anchors of the floating pontoon will be placed precisely on the lakebed and not dragged, to avoid disturbance to lakebed habitat. Pre-defined access routes will be used by the floating pontoon and Movax for the installation of piles and all other floating marina components, to limit the area of lakebed disturbance. Total works duration for the marina redevelopment and extension is anticipated to take approx. 6 months (including the 4–6 weeks of piling), with all in-lake works (piling works) to be undertaken between August–September (months inclusive) during periods of lower lake water levels and outside of ecological sensitive time periods (e.g., core breeding bird season, core wintering bird season).
- Marina redevelopment and extension works will be temporary in duration, phased in nature and isolated in area, taking place in the immediate vicinity of the existing marina, around which, lakebed habitat is already subject to high levels of disturbance.

Mitigation to protect areas of lake habitat in the vicinity of the proposed WSP will include the following:

The cofferdam and earth bund location has been designed to minimise interaction with lake waters and marginal habitats of Lough Ree. An isolated, linear area of reed bed fringing the existing Baysports facility concrete hardstand will be temporarily disturbed during the installation of the sheet piled cofferdam around this area. Linear areas of reedbed fringing the existing hardstand area will naturally reinstate following the completion of construction works, with no permanent net loss of this habitat.

3.8.3 Otter Protection Measures

Aside from all other mitigation set out in this document, the following pre-commencement measures will be implemented to ensure no disturbance to otters. The following measures are in line with ‘Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes’³.

- A pre-commencement survey for otter will be carried out prior to the commencement of any works. No holts or couches were recorded during ecological surveys conducted in March 2025. If evidence of a newly established breeding holt or other otter breeding signs

³TII (2006) *Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes*. Available at: <https://cdn.tii.ie/publications/CC-ENV-01104-01.pdf>

is recorded during pre-commencement surveys, construction works will not proceed until a derogation license is obtained from National Parks and Wildlife Service (NPWS).

- A tool-box talk will be given by the onsite ECoW to notify the contractors of the presence of any other signs and outline the mitigation measures that will be followed to prevent disturbance to the species.
- Operating machinery will be restricted to the Proposed Development Site.
- Compressors will be of the “sound reduced” models, fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
- All construction plant used on-site will be required to comply with maximum sound power levels set out in Directive 2000/14/EC of the European Parliament and of the Council of 8 May 2000 on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors, implemented in Ireland by the European Communities (Noise Emission by Equipment For Use Outdoors) Regulations, 2001 (S.I. 632 of 2001), as amended by the European Communities (Noise Emission by Equipment for Use Outdoors) (Amendment) Regulations, 2006 (S.I. 241 of 2006).
- All plant and equipment for use will comply with Statutory Instrument No. 359 of 1996 “European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996” to minimise disturbance via noise emissions.
- Where reasonably practicable, low vibration working methods should be employed. Consideration should be given to use of the most suitable plant, reasonable hours of working for operations which might give rise to perceptible vibrations, and economy and speed of operations.
- Vibration should be controlled at source, and the spread of vibration should be limited.
- Where reasonably practicable, plant and/or methods of work causing significant levels of vibration at sensitive premises should be replaced by other less intrusive plant and/or methods of working.
- Off-site fabrication of construction components should be utilised wherever possible to limit vibration levels.
- Best practice vibration control measures will be employed by the contractor, as outlined in the following documents:
 - British Standard BS 7385: 1993: Evaluation and Measurement for Vibration in Buildings Part 2: Guide to Damage Levels from Ground Borne Vibration.
 - British Standard BS 5228: 2009+A1 2014: Code of Practice for Noise and Vibration Control on Construction and Open Sites - Part 2: Vibration .
 - A designated member of staff will be appointed as the point of contact for any queries or complaints from nearby local residents.

Any construction phase lighting associated with the Proposed Development will avoid illuminating fringing lake habitats e.g. lake waters, reedbeds, woodland, etc.

- All lighting should include the following specifications
 - 2700 Kelvins (K) (warm white)
 - Directional attachments to prevent upward light spill, as well as to prevent light spill on any sensitive habitats (e.g., light shields in the vicinity of woodland (alluvial or otherwise), reedbed, lakes shore, lake waters, and treelines).
 - Where possible, lighting should include timing options, either through motion sensor lighting or dimming. Construction phase lighting will only remain on during the outlined hours of construction.
 - Any construction phase light spill from lighting will fall below 1 lux on hedgerow, woodland or lake habitat (including marina lighting).
- In line with the following guidance that is provided in the Dark Sky Ireland Lighting Recommendations:
 - Every light needs to be justifiable,
 - Limit the use of light to when it is needed,
 - Direct the light to where it is needed,
 - Reduce the light intensity to the minimum needed,
 - Use light spectra adapted to the environment,

- When using white light, use sources with a “warm” colour temperature (less than 2700K).

3.8.4 Bird Protection and Special Conservation Interest Species of SPAs Protection Measures

Aside from all the other measures set out in this document, the following mitigations will be implemented to ensure no disturbance to birds and Special Conservation Interest Species of SPAs.

- All in-lake works including marina extension construction and erection of cofferdam adjacent to reedbed habitat will take place outside the breeding season (March – July) and wintering season (October – March) for waterbirds and will therefore be limited to the months August - September of any given year.
- The cofferdam once installed will provide a screening buffer between the construction area and retained reedbed habitat. This will aid in minimising disturbance effects to birds throughout the duration of the Water Sports Pavilion construction phase.
- All vegetation clearance works throughout the Proposed Development Site and works in the vicinity of sensitive habitats for breeding waterbirds (i.e. reedbeds) will be conducted outside of the breeding bird season (1st March – 31st August, dates inclusive) where possible. If works must be carried out that continue into the breeding bird season, then these works will commence at a minimum in the weeks prior to 1st March. This will allow for existing levels of disturbance arising from construction works commencing prior to the breeding bird season to act as a disturbance buffer to ensure that waterbird species do not build nests within the Proposed Development Site, but prioritise sites within the wider vicinity, of which there are significant suitable areas to the north and south of the Proposed Development. This would be done to prevent nest abandonment by waterbirds.
- Vegetation removal (trees, scrub) should take place outside of the bird nesting season. Where removal cannot be avoided during this season, it will be preceded by an inspection of any vegetation to be removed by a qualified ecologist. If any nests are identified during these surveys, then works will halt until nesting has concluded.

3.8.5 Bat Protection Measures

Aside from all other mitigation set out in this document, the following measures will be implemented to ensure no disturbance to bats.

Mitigation measures regarding impacts to roosting bats

A bat derogation licence has been sought from the NPWS for the exclusion and removal of the roost of 6 no. soprano pipistrelle identified in the existing Baysports building. This derogation license was received from NPWS on the 22.07.2026.

The below measures have been included in order to address any impacts to roosting bats as a result of the Proposed Development, primarily in relation to the small roosting population of soprano pipistrelle bats identified within the Baysports main building:

Pre-Commencement Surveys

- A pre-commencement survey of the Baysports main building will be undertaken by a suitably licenced ecologist to identify any changes in baseline conditions since the previous surveys (conducted between May-September 2025). This will include a detailed inspection of the building proposed for demolition to confirm the presence/absence of bats immediately prior to works. If required, an emergence survey will also be carried out.
- A mature ash tree located within the Proposed Development Site is part of the cohort of trees to be removed to facilitate the Proposed Development. The tree was inspected at

height, with Potential Roost Features (PRF) inspected for the presence of bats. No signs of bats were identified during surveys of this tree, therefore a derogation license is not required. However, as this tree was assessed as having PRF-I features, a pre-commencement survey will be carried out on it. The requirement for a pre-commencement survey is in line with best practice, and does not present a lacuna in the survey effort.

- If any further bat roosts are identified during pre-commencement surveys, another bat derogation licence will be obtained from the NPWS prior to felling. Once a bat derogation licence is obtained, tree felling activity will be supervised by a qualified ecologist. The ecologist will provide further recommendations on felling methodology and timing, as necessary.

Ecological Oversight of Works/ Supervision

- A toolbox talk will be delivered to all site personnel to ensure awareness of legal protections, identification of bats, and procedures to follow should bats be encountered.
- Roof removal works around the roost entrance will be undertaken under ecological supervision, where required, to ensure appropriate safeguards are implemented.
- In the event that bats are encountered during works, activities will cease and the licensed ecologist will advise on appropriate actions.

Timing of works

- Demolition works will be scheduled outside of the main bat activity period (May-September), unless otherwise agreed with the licensed ecologist.

Provision of Alternative Roosting Habitat

- Prior to the commencement of demolition, at least one bat box/ replacement roost feature will be installed to provide an immediate alternative roosting option if required. Compensatory roosting features will be provided within the site in accordance with best practice (Marnell et al., 2022; TH, 2006; Collins, 2023).
- A minimum of one Rocket bat box will be installed, with additional boxes incorporated where feasible to enhance roosting opportunities for local bat populations.
- Rocket bat boxes and other bat boxes will be:
 - Installed at a height of ≥ 3 m above ground level;
 - Oriented south to southeast where possible;
 - Located away from artificial lighting;
 - Positioned adjacent to linear features such as treelines or woodland edge to maintain connectivity with existing commuting routes.
 - Located as close as possible to the existing bat roost to be removed.
- Final locations of replacement/ compensatory bat roosting features will be agreed in consultation with a licenced ecologist.
- The installed Rocket box structure and any other bat boxes will be subject to post-installation inspection by the appointed ECoW (or Project Ecologist) to confirm correct placement and suitability. The condition of the boxes will subsequently be reviewed as part of ongoing site maintenance to ensure their integrity is maintained and that they remain fit for purpose.

Monitoring of the compensatory roost feature

Monitoring of the compensatory roosting features will be undertaken on an annual basis (by a suitably licenced individual) for a minimum period to be agreed with NPWS, in order to assess their uptake and effectiveness. Monitoring will be carried out by a suitably qualified ecologist using a combination of appropriate and non-intrusive techniques, including:

- Visual inspection for signs of use (e.g. staining, droppings, or moisture);
- Inspection using an endoscope, where access allows;
- Use of thermal imaging or emergence surveys, where appropriate;

- DNA analysis of droppings, if required to confirm species presence.

The results of monitoring will be used to evaluate the success of the mitigation measures and to inform any adaptive management required. Confirmation of compensatory roost feature usage and monitoring outcomes will be reported to NPWS in accordance with licence conditions.

Measures to mitigate loss of Foraging/Commuting Habitat

The Proposed Development was designed specifically to retain individual trees and treelines within the Proposed Development site where possible.

239 trees are proposed for removal, with a total of 240 trees proposed to be replanted and will vary in maturity. Tree species replanting has been designed with consideration for maintaining connectivity throughout the Proposed Development. Where trees cannot be replanted within the vicinity of where they were removed, they will instead be replanted to enhance connectivity (i.e. replanted in the northern area of the site and along the L2020 road).

- The longest area of treeline removal where replanting is not proposed is the non-native Leyland treeline located to the north of the Proposed Development Site. However, due to the presence of another treeline within the Athlone Golf Club, located closely west of the treeline to be removed and running parallel to the Leyland treeline, no loss of overall commuting connectivity is anticipated. In addition, trees will be planted within the north of the Site in areas of existing amenity grassland which will enhance connectivity and foraging potential of this northern area over baseline conditions.
- The planting scheme will use native tree species to strengthen ecological value in accordance with the All-Ireland Pollinator Plan. By incorporating a carefully designed mix of native trees, the design and development will enhance existing habitats and replace removed non-native treeline habitat and trees for commuting and foraging bats. Retained trees throughout the Proposed Development Site Footprint will be protected during construction in full accordance with BS:5837 (Trees in Relation to Construction).

3.9 Cultural Heritage Protection Measures

The following mitigation measures proposed are subject to approval by the National Monuments Service and the planning authority.

- A suitably qualified archaeological consultant under licence, will monitor sub-surface groundworks in green areas only during the construction phase. This will target sub-surface groundworks in green areas which were not the subject of the preceding test excavation under Licence Number 26E0466.
- Should any archaeological material be encountered during archaeological monitoring and archaeological testing, the extent of such features/deposits will be determined, a GPS location of the site will be established and works at this location will cease. A strategy will be proposed to the Local Authority and National Monuments Service to preserve the site in situ, where possible. Where preservation in situ cannot be achieved, either in whole or in part, then a programme of full archaeological excavation will be proposed, to ensure the preservation by record of the portion of the site that will be directly impacted upon. This work should be carried out by a suitably qualified archaeologist under license and in accordance with the provisions of the National Monuments Acts 1930-2014.
- In line with the recommendation of the wade survey (Mizen Archaeology, Licence Nos. 26R0326 and 26D0085), should any dredging works associated with the Proposed Development be pursued, archaeological monitoring of such works shall be carried out by an experienced underwater archaeologist under licence from the National Monuments Service. Should archaeological material, wreckage, timbers or other artefacts be recorded in the course of monitoring, the archaeologist will be empowered to suspend further dredging in that area to recover and record the material.

3.10 Resource Waste Management Plan

This section of the CEMP provides a Resource Waste Management Plan (RWMP) which outlines the best practice procedures during the construction phases of the Proposed Development. This RWMP has been compiled based on the Environmental Protection Agency (EPA) 2021 document, *Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects*⁴.

The plan is based on the European waste hierarchy which sets out the most to least preferred options for waste management. Waste prevention and re-use are viewed as the most desirable options for managing wastes with the least desirable option considered being disposal to a licensed landfill.

This plan has key objectives as outlined below:

- To set out management prescriptions that adhere to the waste management hierarchy.
- To outline the roles and responsibilities of the appointed Waste Manager.

3.10.1 Legislation

The Waste Management Acts 1996 (Act) as amended provide measures to improve performance in relation to waste management, recycling and recovery. The Act also provides a regulatory framework for meeting higher environmental standards set out by other national and EU legislation.

The Act requires that any waste related activity has to have all necessary licenses and authorisations. It will be the duty of the Waste Manager on the site of the Proposed Development to ensure that all contractors hired to remove waste from the site have valid Waste Collection Permits. It will then be necessary to ensure that the waste is delivered to a licensed or permitted waste facility. The hired waste contractors and subsequent receiving facilities must adhere to the conditions set out in their respective permits and authorisations.

3.10.1.1 Waste Management Hierarchy

The waste management hierarchy sets out the most efficient way of managing in the following order:

Prevention and Minimisation:

The primary aim of the RWMP will be to prevent and thereby reduce the amount of waste generated at each stage of the Proposed Development. The prevention and minimisation of waste of this development will be developed by implementing effective on-site materials management in terms of both material acquisition and storage on site.

Reuse of Waste

Reusing as much of the waste generated on site as possible will reduce the quantities of waste that will have to be transported off site to waste recovery facilities or landfill. Site management will be required to encourage the appropriate reuse of materials where possible as well as identify re-use opportunities to achieve ultimate goal of waste reduction.

⁴ Environmental Protection Agency (EPA) (2021) *Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects*: <https://www.epa.ie/publications/circular-economy/resources/CDWasteGuidelines.pdf>

Recycling of Waste

There are a number of established markets available for the beneficial use of construction waste such as using waste concrete as fill for new roads. A designated Waste Storage Area (WSA) will be maintained on site which will cater for segregation and recycling of various waste streams.

At all times during the implementation of the RWMP, disposal of waste to landfill will be considered only as a last resort.

3.10.2 Construction and Demolition Waste Management

Waste generated post excavation on site will be managed in the WSA where the various waste components will be segregated into a number of waste categories in accordance with a general waste segregation policy and placed into individual skips. The categories for segregation will include timber, metal, cardboard and plastics. This material will be removed by authorised waste collection contractors for recycling and recovery at appropriately licensed facilities. The remaining volume of waste material which cannot be allocated to any of these four waste streams will be disposed of in a general waste skip.

This waste material will be transferred to an appropriately licensed waste disposal/recovery facility by a fully licensed waste contractor where the waste will be further sorted into individual waste streams for recycling, recovery or disposal. This general waste will be subject to constant monitoring by site management to ensure that potential reusable and recyclable material is not being disposed of therein. Other waste mitigation measures which will be implemented at the site are as follows;

- All construction phase waste will be collected and disposed of as appropriate, and the site will be kept tidy and free of debris at all times.
- Waste oils and hydraulic fluids will be collected in leak proof containers and removed from the site for disposal or recycling. It is also essential that all empty oil containers and other hazardous wastes will be disposed of in accordance with the requirements of the Waste Management Act, 1996 as amended.
- All construction waste materials will be stored within the confines of the site, prior to removal from the site to an appropriately licensed waste facility.
- A self-contained port-a-loo with an integrated waste holding tank will be used within the confines of the site. This unit will be maintained by the providing contractor and removed from site upon completion of the construction works.
- No wastewater will be discharged on-site during the construction phase

Demolition Waste Management

The new upgraded WSP buildings will re-use materials from the demolished structure, where feasible. The main waste streams anticipated to arise from the demolition of the existing Water Sports building and toilet block, including the individual European list of waste (LoW) codes, are shown in Table 3-1 below.

Table 3-1 Expected waste types arising from the Demolition Phase

Materials type	Example	LoW Code
Cables	Electrical wiring	17 04 11
Concrete	Surfacing, flooring material	17 01 01
Tiles & Ceramics	Floor and wall tiles	17 01 03
Metals	Steel supports, roof and wall coverings, utility piping.	17 04 07
Mixture of inert material	Sand, stones, plaster, brick, rock	17 01 07

Materials type	Example	LoW Code
Plastic	PVC frames, pipework and electrical fittings	17 02 03
Wood	Rafters, frames, doors	17 02 01
Gypsum Materials	Roof tiles/slate	17 08 02
Glass	Windows and glazed doors	17 02 02
Bituminous mixtures, coal tar and tarred products	Felt or roof coverings	17 03 01 *, 02 & 03 *
Mixed C&D waste	General Waste	17 09 04
Electrical and electronic components	WEEE	20 01 35 & 36 *
Batteries	Batteries from power tools etc	20 01 33 *
Liquid Fuels	Fuels	13 07 01 - 03 *
Chemicals	Solvents, paints, pesticides etc	20 01 13 *, 20 01 27-30 *
Insulation Materials	Waste fibreglass	17 06 04
Organic Food Waste	Canteen Waste	20 01 08

**Individual waste type may contain hazardous substances*

Construction Waste Management

The expected wastes arising from the construction works including the individual LoW codes are outlined in Table 3-2.

Table 3-2 Expected waste types arising from the Construction Phase

Material Type	Example	LOW Code
Cables	Electrical wiring and cabling	17 04 11
Soil and stones containing hazardous substances	Any contaminated soils that might be encountered during construction	17-05-03 *
Soil and stones not containing hazardous substances	Excavated material	17-05-04
Inert materials	Sand, stones, plaster, rock, blocks.	17 01 07
Biodegradable Waste	Tree cutting, grass cuttings	20-02-01
Soils and Stones	Excavated material	20-02-02
Other non-biodegradable waste	Non-biodegradable garden and park waste	20-02-03
Mixed municipal waste	Daily waste from workers, miscellaneous.	20 03 01

Material Type	Example	LOW Code
Asphalt, Tar and Tar products	Old road surfaces	17 03 02
Plastic packaging	Packaging with new materials	15 01 02
Mixed materials	Mixed C&D waste	17 09 04
Tiles and ceramics	Slates and Wall and floor tiles	17 01 03
Steel and other metal	Steelwork, reinforcing bars, other metal waste	17-04-05, 17-04-07
Wood	Roof trusses, frames, and doors	17 02 01
Concrete	Surfacing, flooring material	17 01 01
Hazardous liquids	Oils, hydraulic oils, others from construction equipment	13 01 10*, 13 02 04*, 13 02 05*, 13 02 08*
Insulation Materials	Waste fibreglass, Cavity & Floor Insulation	17 06 04

Wastes arising for the Proposed Development will be segregated, identified and classified by the Contractor in accordance with the EPA *Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects* (EPA, 2021). Wastes shall not be removed from the site until properly classified, assigned a correct LoW code and all appropriate tracking and disposal documentation is in place.

3.10.2.2 Waste Arisings and Proposals for Minimisation, Reuse and Recycling of Construction Waste

Construction waste will arise on the Proposed Development mainly from excavation and unavoidable construction waste including material surpluses and damaged materials and packaging waste.

Appropriate measures will be taken to ensure excess waste is not generated during construction, including;

- Ordering of materials will be on an 'as needed' basis to prevent over supply to site. Co-ordination is required with suppliers enabling them to take/buy back surplus stock.
- All trucks transporting fine or dry materials to and from the site will be securely covered immediately after loading, with tailgates firmly fixed to prevent wind-blown dust and spillages
- Purchase of materials pre-cut to length to avoid excess scrap waste generated on site.
- Request that suppliers use least amount of packaging possible on materials delivered to the site.
- Ensuring correct storage and handling of goods to avoid unnecessary damage that would result in their disposal.
- Ensuring correct sequencing of operations.
- Use reclaimed materials in the construction works.

3.10.2.3 Wastes Arising from Construction Activities

All waste generated on-site will be managed through controlled segregation and regular off-site removal by contractors. Waste will be temporarily stored where necessary, in a designated, labelled containers and will not be allowed to obstruct public areas.

Packaging waste generated from the delivery of materials will be returned to the suppliers where possible or removed off site for transfer to a Materials Recovery Facility (MRF).

Site personnel will be instructed at induction that, under no circumstances, can waste be brought to site for disposal and that the burning of waste material on-site is forbidden.

3.10.3 Implementation

3.10.3.1 Roles and Responsibilities

Prior to the commencement of the Proposed Development a Waste Manager will be appointed. The role of Waste Manager is likely to be fulfilled by the Environmental Manager given the scale of the development and will be responsible for the implementation of the objectives of this plan, ensuring that all hired waste contractors have the necessary authorisations and that the waste management hierarchy is adhered to. The person nominated must have sufficient authority so that they can ensure everyone working on the Proposed Development adheres to the management plan. The waste manager will also be required to conduct regular waste audits throughout the site to ensure that the waste management plan is operating effectively.

3.10.3.2 Training

It is important for the Waste Manager to communicate effectively with colleagues in relation to the aims and objectives of the RWMP. All employees working on site during the construction phases of the Proposed Development will be trained in materials management and thereby, should be able to:

- Distinguish reusable materials from those suitable for recycling.
- Ensure maximum segregation at source.
- Co-operate with site manager on the best locations for stockpiling reusable materials.
- Separate materials for recovery.
- Identify and liaise with waste contractors and waste facility operators.

3.10.3.3 Record Keeping

The RWMP will provide systems that will enable all arisings, movements and treatments of construction waste to be recorded. This system will enable the contractor to measure and record the quantity of waste being generated. It will highlight the areas from which most waste occurs and allows the measurement of arisings against performance targets. The RWMP can then be adapted with changes that are seen through record keeping.

The fully licensed waste contractor employed to remove waste from the site will be required to provide documented records for all waste dispatches leaving the site of the Proposed Development. Each record will contain the following:

- Consignment Reference Number;
- Material Type(s) and LoW Code(s);
- Company Name and Address of Site of Origin;
- Trade Name and Collection Permit Ref. of Waste Carrier;
- Trade Name and Licence Ref. of Destination Facility;
- Date and Time of Waste Dispatch;
- Registration No. of Waste Carrier vehicle;
- Weight of Material;
- Signature of Confirmation of Dispatch detail;
- Date and Time of Waste Arrival at Destination;
- Site Address of Destination Facility.

3.10.4 Resource Waste Management Conclusion

The RWMP will be fully implemented by all personnel involved in the Proposed Development. Its requirements will be clearly communicated during the site induction process. Prior to implementation, a comprehensive waste audit of the site and associated activities will be completed and integrated into the

RWMP. The waste hierarchy will be strictly applied throughout the construction phase to minimise waste generation, with disposal considered only as a last resort. By prioritising the reuse of suitable construction materials, the Proposed Development will reduce the demand for raw materials, resulting in both cost savings and a reduction in overall waste volumes.

3.11 Construction Traffic Management

This section outlines the Construction Traffic Management Plan (CTMP) requirements applicable to all Contractors engaged in demolition and construction activities at Hodson Bay. The Contractor is required to incorporate the provisions of this CTMP into their own site-specific plan and obtain formal agreement from RCC prior to commencement of works on site.

Indicative construction traffic routes are provided for planning purposes and shall be fully developed and finalised by the Contractor at contract stage, in consultation with RCC, to ensure safe, efficient, and compliant site access and egress throughout the construction period.

3.11.1 Management of Construction Traffic around the Site

The Contractor is responsible for the safe and efficient management of construction traffic in and around the Proposed Development site. To ensure compliance with traffic management requirements, the Contractor shall implement the following measures:

- All construction staff and subcontractors shall be clearly informed that they are bound by the restrictions set out in the CTMP. The Contractor shall schedule site traffic in advance to ensure adherence to these restrictions.
- Construction traffic shall be monitored at key points remote from the site to verify compliance with CTMP requirements. Detailed traffic management plans shall be submitted to RCC in advance of construction and incorporated into the overall Construction Management Plan.
- Special permits for the movement of oversized or hazardous loads shall be obtained from RCC and/or An Garda Síochána prior to any such movements.
- Daily construction programmes shall be planned to minimise disruptions to surrounding streets by staggering HGV and delivery movements to avoid site queues. Non-essential vehicle movements shall be minimised during peak traffic hours (08:00–09:00 and 16:30–18:00).
- On-site parking shall be limited to vehicles required for direct participation in the works. Construction vehicles shall follow the road hierarchy, using primary national and regional routes for site access and avoiding local or minor streets where practicable.
- A Traffic Management Coordinator shall be appointed to oversee all traffic safety and management matters and to ensure compliance with the CTMP. Where multiple contractors are working on site, overall traffic coordination shall be implemented, including review and harmonisation of individual CTMPs. An overall CTMP for the entire site shall be prepared and agreed with RCC in advance of works commencement.

3.11.2 Proof of Compliance with Traffic Restrictions

The Contractor shall actively track and manage the movement of construction traffic in and around the site for the duration of the Proposed Development. Traffic control will be implemented through the following procedures:

- Develop a restriction and rule adherence form to be signed by all lorry drivers and site operatives, confirming their understanding and agreement to comply with traffic management requirements. Prior to commencement, all new contractors and personnel must complete and sign the prequalification and restrictions forms.
- All movements of construction traffic to and from the site must be coordinated by the Contractor's Transport Manager in accordance with the approved restrictions. A

certified Flagman will be stationed at the site entrance to safely direct and manage traffic entering and leaving the site.

- An appointed person at the site entrance will issue traffic dockets and maintain a record of all vehicles entering and leaving the site. The site manager will periodically review these records to ensure compliance with traffic management procedures and to identify any opportunities for operational improvement.

3.11.3 Construction Traffic Access to Sites

3.11.3.1 Traffic Management Procedures / Generation

All deliveries to the site shall be pre-booked at least one day in advance. Drivers are required to contact the site gate attendant 15 minutes prior to arrival to ensure smooth coordination and minimise waiting times.

- All construction traffic will access the site via the main access roads, entering from the N61. Deliveries must be off-loaded promptly using the most appropriate method, and vehicles should be escorted off-site immediately to prevent congestion.
- The site gate attendant will be responsible for preventing any conflicts between pedestrians and vehicles entering or exiting the site. Temporary pedestrian routes and controls must be maintained at all times to ensure the safe movement of the public and the uninterrupted operation of businesses within the Proposed Development boundary.
- Some private car use by construction personnel is expected during periods of peak construction activity. Site working hours are anticipated to be 07:00–19:00 from Monday to Friday and 08:00–17:00 on Saturdays, meaning that the peak site movements are likely to occur outside of the usual AM and PM rush hours, thereby minimising disruption to local traffic.

HGV Movements:

For rigid HGVs transporting materials from the site, the total turnaround time—from arriving at the site entrance to travelling to the loading area, completing loading operations, and exiting—is estimated to be approximately 15 minutes per vehicle. Wherever practicable, HGV movements should be scheduled outside peak traffic periods. The Contractor must also prepare detailed traffic management plans for project stages that will generate high volumes of HGV activity, such as site clearance and regrading works, with particular attention given to temporary pedestrian management and ensuring safe access to neighbouring properties and businesses.

3.11.3.2 Traffic Management – Internal Site Extents

Contractor, Subcontractor, and Supplier Parking & Traffic Management

- Contractor, subcontractor, and supplier vehicles are not permitted to park on local access routes, and all site parking must be accommodated within the site boundaries as outlined in the Contractor's site setup layout strategy. Because of the spatial constraints within the site extents, the availability of on-site parking will be very limited.
- No unloading or blockage of access routes—including those designated for emergency vehicles—is permitted, and any vehicle that obstructs these routes must be instructed to move immediately to ensure that site operations and emergency access are not impeded.
- The Contractor must carry out a vehicle tracking analysis to confirm that all construction vehicles have sufficient turning space. This analysis should demonstrate safe entry and exit manoeuvres for every vehicle, with the goal of minimising—or, where possible, eliminating—the need for reversing.
- The Contractor shall ensure that all traffic management requirements outlined in this CTMP are fully implemented and adhered to throughout the duration of the Proposed Development.

- The Contractor shall undertake monthly logistics coordination meetings to review and update the traffic management strategy. These meetings will:
 - Discuss and agree on traffic management coordination measures.
 - Review the implementation of any required temporary traffic management schemes.
 - Identify any potential conflicts or operational issues and agree on corrective actions.
 - Ensure alignment between all contractors, subcontractors, and stakeholders regarding traffic management requirements.

3.11.3.3 Loading/Unloading Locations

All loading and unloading activities must be carried out entirely within the defined site area, meaning within the defined site boundary or red line. Contractors are strictly prohibited from conducting any loading or unloading on the public roadway. This requirement is in place to:

- Reduce risk to the public.
- Minimise congestion.
- Limit disruption or potential hazards to passing vehicles and other road users.

All deliveries and collections must be overseen and managed by a nominated competent person appointed by the Contractor. In addition, Contractors are required to assess and clearly outline the measures they will implement to manage impacts on cyclists, pedestrians, other road users, and any affected roadway infrastructure, ensuring the safety and continuity of public access around the site.

3.11.3.4 Emergency Access

Access for emergency vehicles via the designated primary haul roads must be maintained at all times throughout the construction period. The Contractor must ensure that no works, parking, or material storage obstruct these routes and that emergency access remains clear and immediately available in the event of an incident. To support this, the Contractor shall establish procedures to coordinate site activities so that emergency vehicle access is never compromised under any circumstances.

3.11.3.5 Asset Protection

The Contractor is required to take all necessary precautions to prevent damage to roads, footpaths, grass margins, walls (including protected walls), structures (including protected structures) and their curtilage, as well as trees, lighting fixtures, and all other street furniture both within and outside the site boundary. The Contractor is fully liable for the cost of repairing or replacing any such damage caused by its operations, and all remedial work must meet the satisfaction of RCC.

Precautions must also be taken to prevent any spillage of hydrocarbons, contaminated water, solvents, or other hazardous materials. Should any damage or contamination occur, it must be rectified at the Contractor's expense, and the Contractor may additionally be held responsible for breaches of related planning conditions.

The use of tracked plant on road surfaces outside the site is strictly prohibited unless approved protective measures are in place to safeguard the integrity of these surfaces.

The Contractor's Construction Management Plan must specify the required quality of temporary reinstatements of roads, pavements, and other affected surfaces, as well as the timeline for completing permanent reinstatements to ensure that all affected areas are restored promptly and to the required standard.

3.11.4 Traffic Management Proposals

Additional traffic management measures are provided in Chapter 14 Material Assets. These measures are outlined in this section. Please note that this is not an exhaustive list, and it will be updated accordingly by the appointed Contractor in consultation with the local authority.

A number of design measures are proposed to mitigate construction phase traffic impacts, these include:

- Phasing of construction activities to maintain access to existing facilities;
- Maintaining access to the hotel, marina, businesses and adjacent properties throughout construction;
- Locating construction compounds within the development site;
- Scheduling major deliveries to avoid periods of peak visitor demand where possible;
- Maintaining pedestrian and cyclist routes through temporary traffic management;
- Minimising the duration of temporary traffic management arrangements.

Preliminary traffic management measures for the construction of the Proposed Development are set out below:

- **Construction and Delivery Programme** – a programme of construction and deliveries will be submitted to RCC in advance of deliveries of material to the site. Liaison with the relevant local authorities and TII will be carried out where required.
- **A Pre and Post Construction Condition Survey** – A pre-condition survey of roads associated with the transportation of materials to and from the Proposed Development site will be carried out immediately prior to construction commencement to record an accurate condition of the road network at the time. A post construction survey will be carried out after works are completed to ensure that any remediation works are carried out to a satisfactory standard. The timing of these surveys will be agreed with the local authority. All road surfaces and boundaries will be re-instated to pre-development condition, as agreed with the local authority engineers.
- **Liaison with the roads department of RCC** Once the surveys have been carried out and “prior to commencement” status of the relevant roads established, the Roads section will be informed of the name and contact number of the Project Supervisor of the construction stage as well as the Site Environmental Manager.
- **Information to locals** – Locals in the area will be informed of any upcoming traffic related matters via letter drops and posters in public places. Information will include the contact details of the Contract Project Co-ordinator, who will be the main point of contact for all queries from the public or local authority during normal working hours. An “out of hours” emergency number will also be provided. Local access to all properties located within the proximity of the proposed works will be maintained at all times.
- **Identification of delivery routes** – The delivery routes for the transportation of all materials will be agreed and adhered to by all contractors.
- **Temporary traffic signs** – As part of the traffic management measures temporary traffic signs will be put in place at the location where works are being undertaken. All measures will be in accordance with the ‘Traffic Signs Manual, Section 8 – Temporary Traffic Measures and Signs for Road Works’ (Department of Transport (DoT), 2019) and ‘Guidance for the Control and Management of Traffic at Roadworks’ (DoT). A member of construction staff (flagman) will be present at each construction site location along the route.
- **Additional measures** - Various additional measures will be put in place in order to minimise the effects of the construction traffic on the surrounding road network including wheel washing facilities at the entrance to the site and sweeping/cleaning of local roads as required.
- **Road Opening Licence** – All roads’ works will be undertaken in line with the requirements of a road opening licence as agreed with RCC

4. ENVIRONMENTAL MANAGEMENT IMPLEMENTATION AND EMERGENCY RESPONSE

4.1 Construction Manager/Site Manager

The Construction Manager/Site Manager will have overall responsibility for the organisation and execution of all related environmental activities as appropriate, in accordance with regulatory and project environmental requirements. The duties and responsibilities of the Site Manager will include:

Ensure that all works are completed safely and with minimal environmental risk; Approve and implement the CEMP and supporting environmental documentation, and ensure that all environmental standards are achieved during the construction phase of the Proposed Development;

- Take advice from the site Environmental Manager on legislation, codes of practice, guidance notes and good environmental working practice relevant to their work;
- Ensure compliance through audits and management site visits;
- Ensure timely notification of environmental incidents;
- Monitor the impact of construction traffic on local traffic conditions;
- Ensure that all construction activities are planned and performed such that minimal risk to the environment is introduced;
- Provide full and adequate supervision and site administration during the progress of the works; and
- Appoint suitably qualified foreman, craftsman, domestic subcontractors, and specialists.

4.2 Engineering Staff and Public Liaison Officer

Resident engineering staff will be on site to oversee the works of the Main Contractor and to liaise with local businesses, residents and other stakeholders. The Main Contractor will also have provide a Public Liaison Officer whose role will include the following:

- Liaison with all resident and businesses within the vicinity of the Proposed Development site for the duration of the works.
- Keeping all residents and businesses within the vicinity of the Proposed Development site informed with regards progress of the works and any possible restrictions to movement of vehicles, pedestrians and / or cyclists.
- General point of contact for queries from members of the public / businesses.
- Attend progress meetings and present information.

4.3 Environmental Manager

The Main Contractor appointed to carry out the works on site will be required to provide a level of supervision on site in the form of an Environmental Manager who will also fulfil the role of Waste Manager. Due to the scale of activity proposed for the site, this role can be adopted by a Site Manager/Foreman as part of their duties. In general, this Environmental Manager will maintain responsibility for monitoring the works and Contractors/Sub-contractors from an environmental perspective. The Environmental Manager will act as the regulatory interface on environmental matters by reporting directly to the client and liaising with the relevant local authority and other statutory bodies as required. The duties of the appointed Environmental Manager are summarised as follows:

- Vegetation removal (trees, scrub) should take place outside of the bird nesting season. Where removal cannot be avoided during this season, it will be preceded by an inspection

of any vegetation to be removed by a qualified ecologist. If any nests are identified during these surveys, then works will halt until nesting has concluded.

- Maintain and update as required the CEMP and supporting environmental documentation and review/approval of contractor method statements.
- Undertake inspections and reviews to ensure the works are carried out in compliance with the CEMP.
- Monitor the implementation of the CEMP, particularly all proposed/required environmental mitigation measures.
- Ensure proper mitigation measures are initiated and adhered to during the construction phase.
- Ensure adequate arrangements are in place for site personnel to identify potential environmental incidents.
- Ensure that details of environmental incidents are communicated in a timely manner to the relevant regulatory authorities, initially by phone and followed up as soon as is practicable by email.
- Support the investigation of incidents of significant, potential or actual environmental damage, and ensure corrective actions are carried out, recommend means to prevent recurrence and communicate incident findings to relevant parties.
- Identify environmental training requirements and arrange relevant training for all levels of site-based staff/workers; and
- Fulfil the role of Waste Manager and implement the objectives of the Resource Waste Management Plan as set out in Section 3.10 above.

4.4 Ecological Clerk of Works

The duties of the appointed ECoW are summarised as follows:

- A tool-box talk will be given by the onsite ECoW to notify the contractors of the presence of any terrestrial or aquatic invasive species, how to identify invasive species, and the biosecurity measures that will be followed to prevent further spread of invasives and to notify the contractors of the presence of any other signs and outline the mitigation measures that will be followed to prevent disturbance to the species.
- Evidence of cleaning and disinfection of all equipment will be fully logged and recorded, with the designated ECoW ensuring biosecurity compliance on site each day.
- The installed bat box structure and any other bat boxes will be subject to post-installation inspection by the appointed ECoW to confirm correct placement and suitability. The condition of the boxes will subsequently be reviewed as part of ongoing site maintenance to ensure their integrity is maintained and that they remain fit for purpose.

4.5 Environmental Awareness Training

4.5.1 Environmental Induction

The Environmental Induction will be integrated into the general site induction on a case-by-case basis for each member of staff employed on-site depending on their assigned roles and responsibilities on-site.

Where necessary, the Environmental Induction will as a minimum include:

- A discussion of the key environmental risks and constraints.
- An outline of the CEMP structure.
- A discussion of the applicable works Method Statement.
- The roles and responsibilities of staff, including contractors, in relation to environmental management.
- An outline of the Environmental Incident Management Procedure.

5. EMERGENCY RESPONSE PLAN

5.1 Emergency Response

The Emergency Response Plan (ERP) is presented in this section of the CEMP. It provides details of procedures to be adopted in the event of an emergency in terms of site health and safety and environmental protection. The site ERP includes details on the response required and the responsibilities of all personnel in the event of an emergency. The ERP will require updating and submissions from the Site Manager and suppliers as the Proposed Development progresses. Where sub-contractors that are contracted on site are governed by their own emergency response procedure a bridging arrangement will be adopted to allow for inclusion of the sub-contractor's ERP within this document.

This is a working document that requires updating throughout the various stages of the Proposed Development construction.

5.1.1 Roles and Responsibilities

The chain of command during an emergency response sets out who is responsible for coordinating the response. The Site Manager will lead the emergency response which makes them responsible for activating and coordinating the emergency response procedure. The other site personnel who can be identified at this time who will be delegated responsibilities during the emergency response are presented in Figure 5-1. In a situation where the Site Manager/Environmental Manager is unavailable or incapable of coordinating the emergency response, the responsibility will be transferred to the next person in the chain of command outlined in Figure 5-1. This will be updated throughout the various stages of the Proposed Development construction.

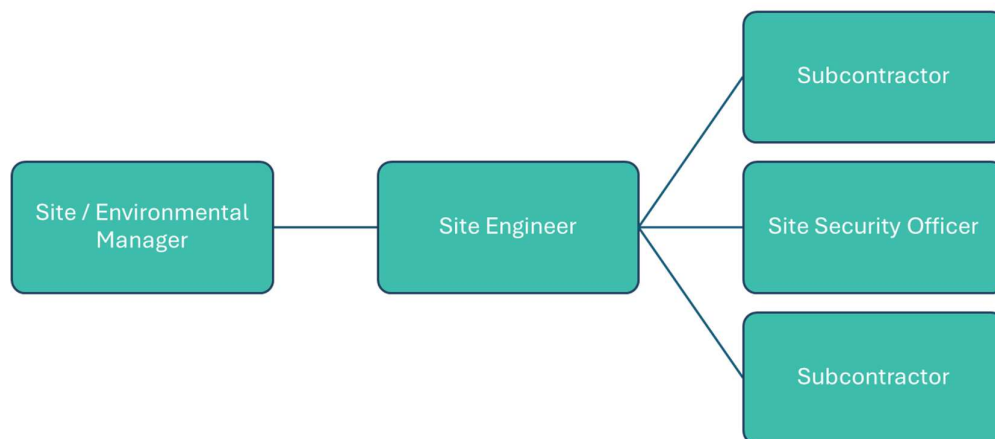


Figure 5-1 Emergency response procedure - chain of command

5.1.2 Initial Steps

In order to establish the type and scale of potential emergencies that may occur, the following hazards have been identified as being potential situations that may require an emergency response in the event of an occurrence.

Table 5-1 Hazards Associated with Potential Emergency Situations

Hazard	Emergency Situation
Construction Vehicles: Dump trucks, tractors, excavators, cranes etc.	Collision or overturn which has resulted in operator or third-party injury.
Abrasive wheels/Portable Tools.	Entanglement, amputation or electrical shock associated with portable tools.
Contact with services.	Electrical shock or gas leak associated with an accidental breach of underground services.
Fire	Injury to operative through exposure to fire.
Falls from heights including falls from scaffold towers, scissor lifts, ladders and roofs.	Injury to operative after a fall from a height.
Sickness	Illness unrelated to site activities of an operative e.g., heart attack, loss of consciousness, seizure.

In the event of an emergency situation associated with, but not restricted to, the hazards outlined in Table 5-1 the Site Manager will carry out the following:

- Establish the scale of the emergency situation and identify the number of personnel, if any, have been injured or are at risk of injury.
- Where necessary, sound the emergency siren/foghorn that activates an emergency evacuation on the site.
- Make safe the area if possible and ensure that there no identifiable risk exists with regard to dealing with the situation e.g., if a machine has turned over, ensure that it is in a safe position so as not to endanger others before assisting the injured.
- Contact the required emergency services or delegate the task to someone if they are unable to do so. If delegating the task, ensure that they follow the procedures for contacting the emergency services set out in Section 5.1.5
- Take any further steps that are deemed necessary to make safe or contain the emergency incident e.g., cordon off an area where an incident associated with electrical issues has occurred.
- Contact any regulatory body or service provider as required e.g., ESB Networks the numbers for which as provided in Section 5.1.5.
- Contact the next of kin of any injured personnel where appropriate.

5.1.3 Site Evacuation/Fire Drill

A site evacuation/fire drill procedure will provide basis for carrying out the immediate evacuation of all site personnel in the event of an emergency. The following steps will be taken:

- Notification of the emergency situation. Provision of a siren or foghorn to notify all personnel of an emergency situation.
- An assembly point will be designated in the construction compound area and will be marked with a sign. All site personnel will assemble at this point.
- A roll call will be carried out by the Site Security Officer to account for all personnel on site.

- The Site Security Officer will inform the Site Manager when all personnel have been accounted for. At this time, the Site Manager will decide the next course of action which will be determined by the situation that exists at that time. The Site Manager will advise all personnel accordingly.

All personnel will be made aware of the evacuation procedure during site induction. The Fire Services Acts of 1981 and 2003 require the holding of fire safety evacuation drills at specified intervals and the keeping of records of such drills.

5.1.4 Environmental Emergency Response Procedure

5.1.4.1 Spill Control Measures

Every effort will be made to prevent an environmental incident during the construction and operational phase of the Proposed Development. Oil/Fuel spillages are one of the main environmental risks that will exist on the site which will require an emergency response procedure. The importance of a swift and effective response in the event of such an incident occurring cannot be over emphasised. The following steps provide the procedure to be followed in the event of such an incident.

- Stop the source of the spill and raise the alarm to alert people working in the vicinity of any potential dangers.
- If applicable, eliminate any sources of ignition in the immediate vicinity of the incident.
- Contain the spill using the spill control materials, track mats or other material as required. Do not spread or flush away the spill.
- If possible, clean up as much as possible using the spill control materials.
- All vehicles will be suitably serviced and maintained to avoid any leaks or spillage of oil, petrol or diesel. All scheduled maintenance will not be carried out on the public highway.
- Contain any used spill control material and dispose of used materials appropriately using a fully licensed waste contractor with the appropriate permits so that further contamination is limited.
- Notify the Environmental Manager immediately giving information on the location, type and extent of the spill so that they can take appropriate action.
- External consultants will inspect the site and ensure the necessary measures are in place to contain and clean up the spill and prevent further spillage from occurring.
- The applicant will notify the appropriate regulatory body if deemed necessary.

Environmental incidents are not limited to just fuel spillages. Therefore, any environmental incident must be investigated in accordance with the following steps:

- The Environmental Manager must be immediately notified.
- If necessary, the Environmental Manager will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident.
- The details of the incident will be recorded on an Environmental Incident Form which will provide information such as the cause, extent, actions and remedial measures that were used following the incident. The form will also include any recommendations made to avoid reoccurrence of the incident.
- If the incident has impacted on an ecologically sensitive receptor, such as a sensitive habitat, protected species or designated conservation site (e.g., SPA or SAC), the Environmental Manager will liaise with an Ecologist.
- If the incident has impacted on a sensitive receptor such as an archaeological feature the Environmental Manager will liaise with an Archaeologist.
- A record of all environmental incidents will be kept on file by the Environmental Manager and the Main Contractor. These records will be made available to the relevant authorities and the EPA if required.

The Environmental Manager will be responsible for any corrective actions required as a result of the incident, e.g., an investigative report, formulation of alternative construction methods or environmental sampling, and will advise the Main Contractor as appropriate.

5.1.5 Contacting the Emergency Services

All staff members will know the address and location of the site as it may be necessary to liaise with the emergency services on the ground in terms of locating the site. This may involve providing an escort from a designated meeting point that may be located more easily by the emergency services.

5.1.5.1 Emergency Communication Procedure

In the event of requiring the assistance of the emergency services the following steps should be taken:

- **Stay calm.** It is important to take a deep breath and not get excited. Any situation that requires 999/112 is, by definition, an emergency. The dispatcher or call-taker knows that and will try to move things along quickly, but under control.
- **Know the location of the emergency and the number you are calling from.** This may be asked and answered a couple of times but do not get frustrated. Even though many emergencies call centres have enhanced capabilities meaning they are able to see your location on the computer screen they are still required to confirm the information. If for some reason you are disconnected, at least emergency crews will know where to go and how to call you back.
- **Wait for the call-taker to ask questions, then answer clearly and calmly.** If you are in danger of assault, the dispatcher or call-taker will still need you to answer quietly, mostly "yes" and "no" questions.
- **If you reach a recording, listen to what it says.** If the recording says your call cannot be completed, hang up and try again. If the recording says all call takers are busy, WAIT. When the next call-taker or dispatcher is available to take the call, it will transfer you.
- **Let the call-taker guide the conversation.** He or she is typing the information into a computer and may seem to be taking forever. There is a good chance, however, that emergency services are already being sent while you are still on the line.
- **Follow all directions.** In some cases, the call-taker will give you directions. Listen carefully, follow each step exactly, and ask for clarification if you do not understand.
- **Keep your eyes open.** You may be asked to describe victims, suspects, vehicles, or other parts of the scene.
- **Do not hang up the call** until directed to do so by the call taker.

All staff members will know the address and location of the site as it may be necessary to liaise with the emergency services on the ground in terms of locating the site. This may involve providing an escort from a designated meeting point that may be located more easily by the emergency services.

5.1.5.2 Contact Details

A list of emergency contacts is presented in Table 5-2.

Table 5-2 Emergency Contacts

Hazard	Emergency Situation
Emergency Services – Ambulance, Fire, Gardaí	999/112
Doctor – Clonbrusk Primary Care Centre	090 6424 840
Hospital – Portlincula University Hospital	090 964 8200
ESB Emergency Services	1850 372 999

Bórd Gais Emergency	1850 20 50 50
Gardaí – Athlone Garda Station	090 6498 550
Health and Safety Coordinator - Health & Safety Services	TBC
Health and Safety Authority	1890 289 389
Project Supervisor Construction Stage (PSCS): TBC	TBC
Project Supervisor Design Stage (PSDS): TBC	TBC
Client – RCC	TBC

5.1.6 Procedures for Personnel Tracking

All operatives on site without any exception will have to undergo a site induction where they will be required to provide personal contact details which will include contact information for the next of kin.

In the event of a site operative becoming involved in an emergency situation where serious injury has occurred, and hospitalisation has taken place, it will be the responsibility of the Site Manager or next in command if unavailable to contact the next of kin to inform them of the situation that exists.

5.1.6.1 Induction Checklist

Table 5-3 provides a list of items highlighted in this ERP which must be included or obtained during the mandatory site induction of all personnel that will work on the site. This will be updated throughout the various stages of the Proposed Development construction.

Table 5-3 Emergency Response Plan Items Applicable to the Site Induction process

ERP Items to be included in the Site Induction	Status
All personnel will be made aware of the evacuation procedure during site induction.	
In the case of remote sites, it may be necessary to liaise with and assist the emergency services on the ground in terms of locating the site. This may involve providing an escort from a designated meeting point that may be located more easily by the emergency services. This should form part of the site induction to make new personnel and sub-contractors aware of any such arrangement or requirement if applicable.	
All operatives on-site without any exception will have to undergo a site induction where they will be required to provide personal contact details which will include contact information for the next of kin.	

6. **MITIGATION PROPOSALS**

The mitigation measures which will be implemented are presented in this section of the CEMP. The CEMP will be finalised subsequent to any permission granted by An Coimisiún Pleanála and will be updated prior to construction to include, inter alia, any additional requirements pursuant to relevant planning conditions imposed.

By presenting the mitigation proposals in the below format, it is intended to provide an easy to audit list that can be reviewed and reported on during the future phases of the Proposed Development.

Table 6-1 Mitigation Measures for the Pre-commencement and Construction Phases

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
Pre-Commencement Phase				
Traffic Management				
MM1	CEMP Section 3.11.4, EIAR Chapter 14 Material Assets	➤ A Pre Construction Condition Survey – A pre-condition survey of roads associated with the transportation of materials to and from the Proposed Development site will be carried out immediately prior to construction commencement to record an accurate condition of the road network at the time. ➤ Liaison with the roads department of RCC Once the surveys have been carried out and “prior to commencement” status of the relevant roads established, the Roads section will be informed of the name and contact number of the Project Supervisor of the construction stage as well as the Site Environmental Manager.		
Site Management and Biosecurity				
MM2	CEMP Section 3.7, EIAR Chapter 6 Biodiversity	Prior to the commencement of any construction activities, all equipment must be cleaned, disinfected and dried prior to entering the Proposed Development Site Footprint.		
Otter Protection				
MM3	CEMP Section 3.8.4, EIAR Chapter 6 Biodiversity	A pre-commencement survey for otter will be carried out prior to the commencement of any works. No holts or couches were recorded during ecological surveys conducted in March 2025. If evidence of a newly established breeding holt or other otter breeding signs is recorded during pre-commencement surveys, construction works will not proceed until a derogation license is obtained from NPWS.		
Bat Protection				

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
MM4	CEMP Section 3.8.5, EIAR Chapter 6 Biodiversity	Pre-Commencement Surveys > A pre-commencement survey of the Baysports main building will be undertaken by a suitably licenced ecologist to identify any changes in baseline conditions since the previous surveys (conducted between May-September 2025). This will include a detailed inspection of the building proposed for demolition to confirm the presence/absence of bats immediately prior to works. If required, an emergence survey will also be carried out. > A mature ash tree located within the Proposed Development Site is part of the cohort of trees to be removed to facilitate the Proposed Development. The tree was inspected at height, with PRFs inspected for the presence of bats. No signs of bats were identified during surveys of this tree, therefore a derogation license is not required. However, as this tree was assessed as having PRF-I features, a pre-commencement survey will be carried out on it. The requirement for a pre-commencement survey is in line with best practice, and does not present a lacuna in the survey effort. > If any further bat roosts are identified during pre-commencement surveys, another bat derogation licence will be obtained from the NPWS prior to felling. Once a bat derogation licence is obtained, tree felling activity will be supervised by a qualified ecologist. The ecologist will provide further recommendations on felling methodology and timing, as necessary.		
Construction Phase				
Health and Safety				
MM5	CEMP Section 3.2	The following health and safety measures will apply during the course of the Proposed Development: > Works at the site are to be carried out in accordance with all relevant Health and Safety legislation including the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013).		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		> The Contractor shall comply with all relevant Statutory requirements such as the 2005 Safety Health and Welfare at Work Act, The Construction Regulations (SI 291 of 2013), the General Application Regulations (SI 299 of 2007), etc. (and any amendments thereof). > The Contractor shall also comply with all the reasonable safety requirements of the Client, the Project Supervisor for the Design Process and the Project Supervisor for the Construction Stage. > Additionally, the burning of any materials or the lighting of fires on-site is strictly prohibited.		
Prevention Pollution Control				
MM6	CEMP Section 3.3	The following measures will be put in place to prevent the transportation of silt laden water or pollutants from entering any of the wider environments including watercourses/drains within or near the site: > The site boundary will be fenced off with Heras fencing (or similar) prior to works commencing to protect adjacent habitats and to prevent any egress of machinery outside of the site during construction activities. > There are no watercourses on site and surface water will not be directly discharged into any external water bodies, surrounding land, or adjacent roadways. Any run-off generated on-site will undergo the necessary filtration process as previously outlined. > The works will be managed to ensure there will be no silt-laden run-off beyond the site boundary. This will be achieved through the use of appropriate excavation techniques during the initial construction works. Where necessary, silt fencing will be installed downslope of the construction areas, particularly where drains or drainage pathways are present. These measures will serve as a protective measure to contain silt material within the site. > Any requirement for temporary fills or stockpiles will be damped down or covered with polyethylene sheeting as required to avoid sediment release associated with heavy rainfall.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ Excavations will be carried out using a suitably sized excavator and, in all circumstances, excavation depths and volumes will be minimised. ➤ Excavated spoil will be stockpiled and contained entirely within the confines of the site boundaries. Material stockpiles will be kept at least 10 m from any manholes. Depending on the nature of the excavated material, the stockpiles of excavated materials will be sealed with a digger bucket to reduce the potential for sediment runoff. These areas will be surrounded with silt fencing, if deemed necessary to prevent runoff. ➤ The minimum number of soil/subsoils and bedrock material should be removed from site. Soil may be reused for landscaping elsewhere on the site. However, any excess construction material shall be removed from the area and sent to an authorized waste recovery facility ➤ Works shall not take place at periods of high rainfall and shall be scaled back if or suspended if heavy rain is forecast during excavation works. ➤ High rainfall' is defined as follows: ➤ >10 mm/hr (i.e. high intensity local rainfall events); ➤ >25 mm in a 24-hour period (heavy frontal rainfall lasting most of the day); ➤ Rainfall total greater than monthly average recorded in 7 consecutive days (prolonged heavy rainfall over a week). ➤ Stockpiles will also be covered with plastic sheeting during high rainfall to prevent runoff. ➤ In the event of encountering groundwaters during excavation, groundwater will be pumped out of the excavation using a pump equipped with a silt bag on the discharge pipe, if necessary, to capture any silty material prior to subsequent natural percolation to ground. The area surrounding the silt bag will be surrounded by silt fencing if deemed necessary. ➤ No wastewater will be treated or discharged on-site during the construction phase. ➤ Good construction practices will be implemented at the site. This will ensure minimal risk. The CIRIA provides guidance on the control and management of water pollution from construction sites, as outlined in <i>Control of Water Pollution from Construction Sites, guidance for consultants and contractors</i>¹.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		This guidance will be adhered to throughout the construction phase to ensure that surface water generated on site contains minimum sediment.		
Sediment Control Measures				
MM7	CEMP Section 3.3, EIAR Chapter 8 Hydrology and Hydrogeology	The following measures will be put in place to protect Lough Ree from the uncontrolled release of suspended sediments: ➤ Works will be completed between August and September (inclusive) aligning with IFI guidelines (2016)⁵ of sensitive periods for fish spawning, avoiding the main breeding and winter bird seasons, and coinciding with a time when water levels are at their lowest. A double-lined, floating silt curtain will be installed around the main works area (the WSP) before any near-shore or in-water works commence. ➤ Non-intrusive or low-intrusive cofferdam systems are encouraged if possible. However, sheet piling is the likely method of cofferdam installation. Differing sheet piling techniques cause differing levels of ground disturbance and pulverised drill spoil. Accordingly, percussive hammers will be minimised, and vibrative hammers will be utilised when installing sheet piles. ➤ Disturbance of lake-substrate will be minimized through careful positioning of plant and adoption of low-impact construction methodologies. Equipment will not be dragged across the lakebed; this will avoid any additional sediment disturbance. Piles will not be advanced into bedrock to avoid any potential bridging to the karstified aquifer below the lakebed. ➤ The top-level of the cofferdam will be installed to a minimum of 37.5 mAOD to ensure that the cofferdam is not breached during flooding. ➤ The silt curtain will remain in place after cofferdam installation, and for the duration of the construction stage, and will only be removed once monitored suspended solids concentrations are observed at baseline levels. The silt curtain will be inspected regularly for defects and adjusted as necessary.		

⁵ Inland Fisheries Ireland (IFI) (2016) *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*. Available at: <https://www.fisheriesireland.ie/sites/default/files/migrated/docman/2016/Guidelines%20Report%202016.pdf>

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		The following measures will be in place to mitigate against any potential increase in suspended sediment load due to piling activities: ➤ A double-lined, floating silt curtain will be installed around the works area before any works commence, i.e. the silt curtain will encompass as a whole, the 42 no. piling locations. ➤ Differing drilling techniques cause differing levels of ground disturbance and pulverised drill spoil. Accordingly, percussive hammers will be minimised, and vibrative hammers will be utilised when drilling. ➤ Disturbance of lake-substrate will be minimized through careful positioning of plant and adoption of low-impact construction methodologies. Equipment will not be dragged across the lakebed; this will avoid any additional sediment disturbance. ➤ Following completion of piling works, disturbed sediments will be allowed to consolidate under natural hydrological conditions. The silt curtain will be inspected regularly for defects and adjusted as necessary, will remain in place for the duration of the works, and will only be removed once monitored suspended solids concentrations are observed at baseline levels.		
Cement Based Products Control Measures				
MM9	CEMP Section 3.3, EIAR Chapter 8 Hydrology and Hydrogeology	The complete washing out of concrete trucks will not be permitted at the site during the construction phase. Suppliers will be directed back to their own facility to complete the washout process. However, a washout area for chute cleaning will be provided at the primary and secondary temporary construction compound. The following mitigation measures are proposed to avoid release of cement leachate from the site: Mitigation by Avoidance:		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ Concrete will be delivered in sealed concrete delivery trucks. Batching of wet-cement products will not occur on-site. ➤ Ready-mixed supply of wet concrete products and emplacement of pre-cast elements will take place. ➤ Pre-cast elements for cofferdams, pile foundations, culverts, and concrete works will be used. ➤ Concrete trucks will not be washed out on-site but will be directed back to their batching plant for washout. Mitigation Measures by Design: ➤ Where concrete is delivered on-site, only the chute will be cleaned, using the smallest volume of water practicable. No discharge of cement-contaminated waters to the construction stage drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water will be undertaken at lined washout areas. ➤ Where temporary lined impermeable containment areas are used, such containment areas are built using straw bales and lined with an impermeable membrane. These are covered when not in use to prevent rainwater collecting. ➤ Pour sites of cement will be kept free of standing water, and plastic covers will be ready in case of sudden rainfall events. Risks of pollution will be further reduced as follows: ➤ Concrete will not be transported around the site in open trailers or dumpers so as to avoid spillage while in transport. ➤ All concrete used in the construction will be pumped directly into the shuttered formwork from the delivery truck. If this is not practical, the concrete will be pumped from the delivery truck into a hydraulic concrete pump or into the bucket of an excavator, which will transfer the concrete locally to the location where it is needed.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ Arrangements for concrete deliveries to the site will be discussed with suppliers before work starts, confirming routes, prohibiting on-site washout and discussing emergency procedures. ➤ Clearly visible signage will be placed in prominent locations close to concrete pour areas specifically stating washout of concrete lorries is not permitted on the site. ➤ Weather forecasting will be used to assist in planning large concrete pours and large pours will be avoided where prolonged periods of heavy rain is forecast. ➤ Concrete pumps and machine buckets from slewing over watercourses will be restricted while placing concrete. ➤ Excavations will be sufficiently dewatered before concreting begins and dewatering will continue while concrete sets. ➤ Covers will be available for freshly placed concrete to avoid the surface washing away in heavy rain. ➤ Any potential, small surplus of concrete remaining after completion of a pour will be disposed at a suitable off-site facility.		
Refuelling, Fuel and Hazardous Materials Storage				
MM10	CEMP Section 3.3.5	The following measures are proposed to avoid release of hydrocarbons at the site: ➤ All refuelling of construction vehicles and plant on site will be carried out in the dedicated refuelling area located adjacent to the primary construction compound at least 30 m from watercourses or surface water features. ➤ Vehicles will never be left unattended during refuelling. Only dedicated trained and competent personnel will carry out refuelling operations and plant refuelling procedures shall be detailed in the contractor's method statements. ➤ Fuels, lubricants and hydraulic fluids for equipment used on the site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment. ➤ Storage bunds/trays, if required will be constructed of an impermeable membrane (HDPC) plastic and will have the adequate capacity to contain the		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		volume of the liquids contained therein, if a leak/spillage does occur from one of the storage vessels. ➤ All plant will be inspected at the beginning of each day prior to use. Defective plant shall not be used until the defect is satisfactorily fixed. All repair and maintenance operations will take place off site. ➤ Spill kits will be used to deal with any accidental spillage in and outside the refuelling area.		
Drainage and surface water discharge routes control				
MM11	CEMP Section 3.3.6, EIAR Chapter 8 Hydrology and Hydrogeology	Management of surface runoff and subsequent treatment prior to release will be undertaken during construction work as follows: ➤ Source controls include the covering work areas, staging areas, and stockpiles, as well as the prioritisation of small working areas and cessation of works during heavy rainfall and inclement weather. Methods that will be employed are diversion drains, flume pipes, sand bags, oyster bags filled with gravel, and filter fabrics. A cofferdam will be installed to minimise sediment mobilisation into Lough Ree. Flexibility to adapt methods will be required based on location-specific conditions, as judged by supervising engineers from visual inspection. ➤ In-line controls involve settling of suspended sediments with the use of silt fences, straw bales, sand or oyster bags, weirs, baffles, and check dams. Flow limiters and sump pumping systems may be employed where needs arise in order to maintain the hydraulic functioning of the existing drain system. ➤ Treatment systems involve sediment traps and temporary sumps/attenuation ponds. Adjacent drainage systems/groundwater need to be protected from sedimentation and direct surface water runoff generated onsite during the construction stage. Discharge from site will be managed and controlled within the Site boundary for the duration of the construction works. There will be no temporary uncontrolled discharges to surface water from the Site during the construction stage.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		As construction advances there may be a requirement to collect and treat surface water within the Site. This will be completed using perimeter swales at low points around the construction areas, and if required water will be pumped from the swales into sediment bags prior to overland discharge allowing water to percolate naturally to ground at a suitable area. All works shall be undertaken in accordance with the CIRIA document¹, 'Control of Water Pollution from Construction Sites', guidance for consultants and contractors. All stockpiles will be damped down or covered, as required, which will prevent the creation of nuisance dust, and will also prevent sediment runoff in times of heavy precipitation. Silt fencing will be installed around these stockpiles. Material stockpiles will be kept at least 10 m from any manholes and >50 m from lake shore where possible. It should be noted for this site, that a network of stormwater drains already exists, and these will be integrated and enhanced as required and used within the Site drainage system. The main elements of interaction with existing drains will be as follows: ➤ Apart from interceptor drains, which will convey clean runoff water to the downstream drainage system there will be no direct discharge (without treatment for sediment reduction, and attenuation for flow management) of runoff from the proposed Site drainage into the existing drainage network where possible. This will reduce the potential for any increased risk of downstream flooding or sediment transport/erosion. ➤ Drains running parallel to the existing roads requiring widening will be upgraded. Velocity and silt control measures such as check dams, sand bags, oyster bags, silt fences will be used during the upgrade construction works. Regular buffered outfalls will also be added to these drains to protect downstream surface waters; ➤ Silt fences will be emplaced within drains downgradient of all construction areas. Silt fences are effective at removing heavy settleable solids. This will act to		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		prevent entry to watercourses of sand and gravel sized sediment, released from the excavation of subsoils, and entrained in surface water runoff. Inspection and maintenance of these structures during construction stage is critical to their functioning to stated purpose. They will remain in place throughout the entire construction stage. Double silt fences will be emplaced within drains downgradient of all construction areas; and ➤ Silt bags will be used where small to medium volumes of water need to be pumped from excavations. As water is pumped through the bag, most of the sediment is retained by the geotextile fabric allowing filtered water to pass through. Silt bags will be used with natural vegetation filters. Airborne dust will be generated from excavation and concrete cutting across the Site. The most efficient method of reducing dust particles is to remove at source. Accordingly, all excavation and cutting sites will require the suppression of dust through the use of water and sprinkler systems at each excavation/cutting site. A double-lined, floating silt curtain will be installed around the works area before any near-shore or in-water works commence. This will allow residual dust particles to be captured and settle out within the silt curtained area of Lough Ree, close to the Site. Excavation spoil may be deposited on road surfaces via the wheels of construction vehicles. To minimise the amount of excavation material leaving the Site in this way, wheel washes will be installed at the exit of each work area and temporary construction compound. Residual material from wheels and airborne dust may still become deposited on the Site road network, potentially impacting the water quality of the stormwater drainage network or allowing for airborne dust to be mobilised from here in dry conditions. Therefore, dust suppression vehicles will be used throughout the year during the construction stage, routinely traversing the Site road network as required; this may be continuous during the summer months. Management of excavation seepages and subsequent treatment prior to discharge into the site drainage network will be undertaken. An upslope interceptor drain will be established upslope of the excavation area to prevent greenfield runoff into the excavations. Berms will also be used, as necessary.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		The following design measures will be implemented on the site: ➤ Dewatering will be provided as relevant to specific requirements with de-watered discharge pumped using a pump equipped with a silt bag on the discharge outlet. As the water pass through the silt bags, the majority of sediment and organic matter is retained by geotextile fabric. The silt bags will be used with natural vegetation filters or sedimats. The sedimats will be secured to the ground surface using stakes/pegs. They will extend to the full width of the outfall to ensure that all water passes through this treatment measure. The pumped water will be discharged to either the existing stormwater drainage system or to a suitably vegetated area within the Site boundary. Where discharge to a vegetated area is required, level spreaders will be installed for each outfall, and the area will be enclosed with silt fencing to prevent sediment-laden runoff and ensure compliance with best practice environmental controls. Prior to the outset of works a silt fence will be erected along the lakeshore perimeter of the proposed construction area to prevent run-off to potentially floodable		
Accidental spills, leaks or other releases controls				
MM13	CEMP Section 3.3.7, EIAR Chapter 7 Land, Soils, and Geology	The following design measures will be in place to mitigate accidental spills, leaks or other releases: ➤ Highest standards of site management will be maintained, with the utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the Site and surrounding environment during construction. ➤ An Emergency Response Plan for accidental spillages is set out in Section 5 below, all construction staff will be familiar with the emergency procedures and the use of the relevant equipment, ➤ To provide fuel for plant and equipment on site, a certified double-skinned metal fuel tank, equipped with an integrated pump, delivery hose, meter, filter, and locking mechanism, will be installed within a secure, bunded area on the		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		construction site. The tank will be certified for lifting when full to facilitate safe relocation if required. ➤ To mitigate the risk of fuel spills, sand piles and emergency spill kits will be readily available on site. A dedicated hazardous waste bin will be provided for the disposal of contaminated materials, such as spent sand or soak pads. ➤ Fuel for small plant equipment will be transported around the site using new metal jerrycans fitted with appropriate pouring nozzles. Drip trays will always be used under small plant to capture any leaks or drips. Waste oils and other fluids collected in drip trays or within the bunded area will be transferred into a designated waste oil drum, which will be stored within the bund to prevent contamination. Refuelling of construction machinery will take place using drip trays at all times. ➤ All metal jerrycans and other fuel containers will be stored in certified metal bunded cabinets. Gas cylinders will be stored in a secure, caged area on site and will be properly secured at the point of use. These measures ensure compliance with environmental and safety regulations while minimising the risk of fuel-related incidents. ➤ On-site refuelling will be undertaken using a double skinned bowser. ➤ Fuels stored on-site will be minimised. Storage areas, where required, will be bunded appropriately for 110% of the fuel storage volume for the time period of construction and fitted with a storm drainage system and an appropriate oil interceptor. ➤ All waste tar material arising from the potential chipping and resurfacing of roads will be removed off-site and taken to a licenced waste facility; and		
Wastewater Management				
MM14	EIAR Chapter 8 Hydrology and Hydrogeology	The following measures will be put in place to mitigate against any potential impact on groundwater and surface water quality from wastewater: ➤ Self-contained portable toilets within portacabins with an integrated waste holding tank will be used at the Site compounds, maintained by the providing Contractor, and removed from site on completion of the construction works.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ Portable toilets will be numerous and located conveniently for site workers. ➤ Wastewater will not be treated or disposed of onsite.		
Dust Control				
MM15	CEMP Section 3.4, EIAR Chapter 9 Air Quality	Proposed measures to control dust include: ➤ The designated public roads outside the site and along the main transport routes to the site will be regularly inspected by Site Management for cleanliness and cleaned, as necessary. ➤ Material handling systems and waste storage areas will be designed and laid out to minimise exposure to wind. Double handling of materials with potential to generate dust will be minimised. ➤ Any hardstanding areas/site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions. ➤ A water tanker will be maintained on-site to dampen exposed soils, unpaved haul routes, and active work areas. ➤ Water sprays will be used as required during transfer and loading activities, during dry and/or windy conditions. ➤ The transport of crushed concrete or other material, which has significant potential to cause dust, will be undertaken in tarpaulin-covered vehicles where necessary. Any rubble that has potential to generate dust will also be dampened down as necessary. ➤ Regular Toolbox Talks (TBTs) will be carried out with operatives by site management to reinforce the need for all operatives to be aware of and responsive to conditions or activities that could generate dust. ➤ Stockpiles on-site will be located in the temporary construction compounds and will be covered with plastic sheeting to prevent dust generation during dry conditions. If plastic sheeting is not feasible, stockpiles will be dampened down when necessary. ➤ All plant and machinery will be maintained in good operational order while onsite. ➤ Vehicle speeds on-site will be strictly restricted to 15 km/h.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		> All internal access roads will be surfaced using suitable materials; the use of mud stone, clay stone, or shale stone is explicitly prohibited to prevent the generation of additional fine dust particles > All trucks exiting the site carrying fine dry loads shall be covered and all other loads sprayed with water prior to exiting the site > A wheel wash facility will be provided to clean HGV traffic leaving the site to minimise dust and dirt soiling on the L2020.		
Noise Control				
MM16	CEMP Section 3.5, EIAR Chapter 11 Noise and Vibration	Proposed measures to control noise include: > Construction operations will in general be confined to 0700–1900 h Monday-Friday and 0800-1700 h Saturday. > Any works outside these hours, if required, will be limited to quieter operations, and will be agreed in advance with the planning authority. > Drivers of plant and vehicles will be instructed to avoid hooting onsite at all times. > Plant used onsite during the construction phase will be maintained in a satisfactory condition and in accordance with manufacturer recommendations. In particular, exhaust silencers will be fitted and operating correctly at all times. Defective silencers will be immediately replaced. > Queuing of trucks on public roads near receptors will be prohibited. > Machinery not in active use will be shut down. > Driver training will be provided to ensure smooth machinery operation, to minimise unnecessary noise generation. > A site representative will be appointed as a liaison officer with the local community. Prior to road improvement works along the L2020 Local Road, notification will be given to the residents along this road via letter drop. > Any complaints of noise received during the construction phase will be logged in a register and investigated immediately. Details of follow-up action will be included in the register.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ Where it is proposed to import potentially noisy plant to the site, the potential impact of noise emissions will be assessed in advance. ➤ Guidance set out in BS 5228-1:2009 with respect to noise control will be applied throughout the construction phase. The hours of working should be planned, and account should be taken of the effects of noise upon persons in areas surrounding site operations and upon persons working on site, taking into account the nature of land use in the areas concerned, the duration of work and the likely consequence of any lengthening of work periods. Deviation from these times will only be allowed in exceptional circumstances where written approval has been received from the Planning Authority.		
Invasive Species Management				
MM17	CEMP Section 3.7.1, EIAR Chapter 6 Biodiversity	The following best practice measures will be implemented during the construction phases of the Proposed Development: ➤ A dedicated biosecurity point shall be established within the Proposed Development Site Footprint for the disinfection and cleaning of all equipment, plant machinery or vehicles used during construction phases. ➤ All machinery and plant, including the floating pontoon boat and Movax, will be subject to Check-Clean-Dry protocol, and inspected regularly: ➤ Check: Inspect all equipment for plant material, mud, mussels ➤ Clean: Pressure wash with hot water (>60°C where possible) ➤ Dry: Allow to dry completely before reuse elsewhere ➤ A tool-box talk will be given by the onsite ECoW to notify the Contractors of the presence of any terrestrial or aquatic invasive species, how to identify invasive species the biosecurity measures that will be followed to prevent further spread of invasives. ➤ Clear signage should be erected around the Proposed Development site to alert and remind all works of the presence of invasive species and the importance of biosecurity measures		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ During periods of in-lake works, silt curtains and fragment barriers should be used around areas of marina extension, in order to limit the spread of invasive species ➤ Where any removal of invasive plant species is necessary, cut-and-collect systems should be used, with deployment of collection booms down-current of the works area. ➤ Any removed invasive plant material should be removed from Lough Ree immediately. ➤ Where invasive mussel management is required from infrastructure, boats or machinery, mussels or mussel fragments should be removed mechanically via scraping or pressure washing ➤ Any removed invasive species should be transported to a designated disposal area located away from Lough Ree, surface water, groundwater or any drainage pathways. ➤ Anti-fouling coatings should be applied to infrastructure where appropriate ➤ Large-scale sediment and existing invasive mussel disturbance should be avoided throughout periods of in-lake works ➤ Machinery, including the floating pontoon and Movax, will follow designated navigation channels to avoid high-density areas of invasive species, including within the existing marina. ➤ Where possible, fixed moorings should be used for the floating pontoon boat and Movax, as opposed to dragging anchors and disturbing sediment and vegetation beds which include invasive species. ➤ Mooring chains and anchors should be inspected regularly and will be subject to Check-Clean-Dry protocol Evidence of cleaning and disinfection of all equipment will be fully logged and recorded, with the designated ECoW ensuring biosecurity compliance on site each day.		
Wet Willow-Alder-Ash Woodland Habitat and Fraxinus Excelsior Woodland Protection Measures				

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
MM18	CEMP Section 3.8.1, EIAR Chapter 6 Biodiversity	The Proposed Development, including site layout and construction phasing, was designed specifically to avoid areas of alluvial forest habitat identified along the shoreline of Lough Ree, both within and adjacent to the Proposed Development Site. In order to protect areas of alluvial forest habitat, all areas of woodland will be fenced off with Heras fencing (or similar) to prevent access of machinery or unauthorised access from public areas, thus preventing disturbance and direct degradation of this habitat. All fencing will remain in place for the duration of construction phase. In order to avoid any impacts on alluvial forest, additional/ alternative water quality protection solutions are required in this area. Sheet piling works are not proposed in areas of alluvial forest, and instead an earth bund structure will be installed in the vicinity of the alluvial forest. Works will take place outside of the identified root protection zone, as advised by an arboriculturist. In order to avoid disturbance of root structures, the dam structure will be constructed above ground, with an earth bund installed on top of the existing concrete hardstand in the vicinity of the alluvial forest habitat. The earth bund will connect to the sheet piling at a point outside of the identified areas of alluvial forest. The top-level of the cofferdam will be installed to a minimum of 37.5 mAOD to ensure that the cofferdam is not breached during flooding. As with the cofferdam, the top-level of the bund will be installed to a minimum of 37.5 mAOD to ensure that the bund is not breached during flooding Concrete removal in areas bordering alluvial forest habitat will be undertaken in a sensitive manner using hand tools where practical to ensure no tree roots are damaged. Concrete removal in this area will be conducted in the dry. Around the areas of concrete removal and prior to the commencement of works, a sandbag dam will be installed with an impermeable geomembrane to minimise any potential lake water penetration. Should any water penetrate the sandbag dam, water will be pumped from the area to the surface water drainage system Weather and flood forecasting will be continuously monitored, with concrete removal in this area taking place only during periods of dry weather and low lake		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		levels. Silt curtains will be installed in front of areas of reed bed within the lake, to the north of the existing Baysports facility. Similarly, concrete pouring will be carried out during periods of dry weather and low lake levels, using water-tight shuttering and form works. Impermeable geomembrane sealing, sandbags and silt curtains will all be retained for the duration of concrete pouring and will be removed following the completion of works. Should rain be forecasted, or lake levels anticipated to rise, any concrete removal or concrete reinstatement works will cease until rain stops and lake levels return to a suitable level. Sheet piling and concrete removal works will be undertaken in August - September (inclusive) to avoid the main breeding and winter bird seasons, to be within the suitable season for works in water (August-September, IFI 2016)⁶, and to coincide with a time when water levels are at their lowest.		
Eutrophic Lake Protection Measures				
MM19	CEMP Section 3.8.2, EIAR Chapter 6 Biodiversity	Mitigation to protect area of lake habitat in the vicinity of the proposed marina extension will include the following: ➤ Works to the lakebed will be limited to the driving of 42 steel piles, with the attachment of a floating breakwater, floating jetties and gangways connected to the shoreline which will not interact directly with the lakebed or macrophyte communities present there. No in-lake vegetation removal is proposed as part of the marina redevelopment and extension phase of the Proposed Development. ➤ Silt curtains will be installed around each of the pile locations prior to the commencement of pile installation, in order to limit siltation impacts on lakebed vegetation in the wider vicinity. Silt curtains will be connected to the floating construction pontoon, with weights used to ensure the silt curtain sits flush to		

⁶ Inland Fisheries Ireland (IFI) (2016) *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*. Available at: <https://www.fisheriesireland.ie/sites/default/files/migrated/docman/2016/Guidelines%20Report%202016.pdf>

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		and remains on the lakebed around each of the pre-specified piling locations. Piles will be installed using vibration piling, with this lower-impact piling technique anticipated to help limit sediment disturbance and suspension on the lakebed, preventing additional siltation throughout macrophyte communities which are already subject to high levels of siltation. ➤ Piles will be installed in stages (sequentially one after another using a floating pontoon), with installation of steel piles anticipated to take 4–6 weeks. Floating jetties, breakwaters, gangway and canoe step will be installed following piling, with these components constructed off-site to minimise in-lake works duration. Installation of these floating components will occur via floating pontoon. Mooring anchors of the floating pontoon will be placed precisely on the lakebed and not dragged, to avoid disturbance to lakebed habitat. Pre-defined access routes will be used by the floating pontoon and Movax for the installation of piles and all other floating marina components, to limit the area of lakebed disturbance. Total works duration for the marina redevelopment and extension is anticipated to take approx. 6 months (including the 4–6 weeks of piling), with all in-lake works (piling works) to be undertaken between August–September (months inclusive) during periods of lower lake water levels and outside of ecological sensitive time periods (e.g., core breeding bird season, core wintering bird season). ➤ Marina redevelopment and extension works will be temporary in duration, phased in nature and isolated in area, taking place in the immediate vicinity of the existing marina, around which, lakebed habitat is already subject to high levels of disturbance. Mitigation to protect areas of lake habitat in the vicinity of the proposed WSP will include the following: The cofferdam location has been designed to minimise interaction with lake waters and marginal habitats of Lough Ree. An isolated, linear area of reed bed fringing the existing Baysports facility concrete hardstand will be temporarily disturbed during the installation of the sheet piled cofferdam around this area. Linear areas of reedbed fringing the existing hardstand area will naturally reinstate following the completion of construction works, with no permanent net loss of this habitat.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
Otter Protection Measures				
MM21	CEMP Section 3.8.3, EIAR Chapter 6 Biodiversity	Prior to the commencement of construction works associated within the Proposed Development Site, the following measures will be undertaken for the avoidance of disturbance to otter which utilise Lough Ree in the vicinity of the proposed construction areas. The following measures are in line with ‘Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes’. ➤ Works will be carried out in accordance with ‘Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes’ (TII 2006)³. ➤ A tool-box talk will be given by the onsite ECoW to notify the Contractors of the presence of any otter signs and outline the mitigation measures that will be followed to prevent disturbance to the species. ➤ All plant and equipment for use will comply with Statutory Instrument No. 359 of 1996 “European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996” to minimise disturbance via noise emissions. ➤ Operating machinery will be restricted to the Proposed Development Site. ➤ Work will be completed during daylight hours. ➤ Regular maintenance of plant will be carried out in order to minimise noise emissions. Particular attention will be paid to the lubrication of bearings and the integrity of silencers. ➤ Compressors will be of the “sound reduced” models, fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers. ➤ Machines which are used intermittently will be shut down during periods when they are not in use. ➤ All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the works. ➤ Plant and machinery with low inherent potential for generation of noise and/or vibration will be selected. ➤ Equipment not in active use will be shut down.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ Use of horns will be prohibited on-site. Communication between operators (e.g. between excavator and dumper operators) will be by visual methods only. ➤ Training will be provided by the Site Management to drivers to ensure smooth machinery operation/driving, and to minimise unnecessary noise generation - HGV drivers will be instructed to extend care and courtesy to other road users, and to avoid unnecessary revving of engines. ➤ All construction plant used on-site will be required to comply with maximum sound power levels set out in Directive 2000/14/EC of the European Parliament and of the Council of 8 May 2000 on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors, implemented in Ireland by the European Communities (Noise Emission by Equipment For Use Outdoors) Regulations, 2001 (S.I. 632 of 2001), as amended by the European Communities (Noise Emission by Equipment for Use Outdoors) (Amendment) Regulations, 2006 (S.I. 241 of 2006). ➤ All plant and equipment for use will comply with Statutory Instrument No. 359 of 1996 "European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations 1996" to minimise disturbance via noise emissions. ➤ Where reasonably practicable, low vibration working methods should be employed. Consideration should be given to use of the most suitable plant, reasonable hours of working for operations which might give rise to perceptible vibrations, and economy and speed of operations. ➤ Vibration should be controlled at source, and the spread of vibration should be limited. ➤ Where reasonably practicable, plant and/or methods of work causing significant levels of vibration at sensitive premises should be replaced by other less intrusive plant and/or methods of working. ➤ Off-site fabrication of construction components should be utilised wherever possible to limit vibration levels. ➤ Best practice vibration control measures will be employed by the Contractor, as outlined in the following documents:		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		Operating machinery will be restricted within the Proposed Construction Areas only. Given the largely crepuscular nature of otter, all work associated with the Proposed Development will be completed during daylight hours or as outlined below. The proposed construction working hours are as follows: ➤ 07:00 – 19:00 Monday to Friday. ➤ 08.00 – 17.00 Saturday ➤ Closed Sundays and public holidays. Any construction phase lighting associated with the Proposed Development will avoid illuminating fringing lake habitats e.g. lake waters, reedbeds, woodland, etc. ➤ British Standard BS 7385: 1993: Evaluation and Measurement for Vibration in Buildings Part 2: Guide to Damage Levels from Ground Borne Vibration. ➤ British Standard BS 5228: 2009+A1 2014: Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 2: Vibration . ➤ A designated member of staff will be appointed as the point of contact for any queries or complaints from nearby local residents. All lighting should include the following specifications ➤ 2700 K (warm white) ➤ Directional attachments to prevent upward light spill, as well as to prevent light spill on any sensitive habitats (e.g., light shields in the vicinity of woodland (alluvial or otherwise), reedbed, lakes shore, lake waters, and treelines). ➤ Where possible, lighting should include timing options, either through motion sensor lighting or dimming. Construction phase lighting will only remain on during the outlined hours of construction. ➤ Any construction phase light spill from lighting will fall below 1 lux on hedgerow, woodland or lake habitat (including marina lighting). ➤ In line with the following guidance that is provided in the Dark Sky Ireland Lighting Recommendations: ➤ Every light needs to be justifiable, ➤ Limit the use of light to when it is needed,		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		> Direct the light to where it is needed, > Reduce the light intensity to the minimum needed, > Use light spectra adapted to the environment, > When using white light, use sources with a “warm” colour temperature (less than 2700K).		
Bird and SCI Species of SPAs Protection Measures				
MM22	CEMP Section 3.8.4, EIAR Chapter 6 Biodiversity	Aside from all the other measures set out in this document, the following mitigations will be implemented to ensure no disturbance to birds and Special Conservation Interest Species of SPAs. > All in-lake works including marina extension construction and erection of cofferdam adjacent to reedbed habitat will take place outside the breeding season (March – July) and wintering season (October – March) for waterbirds and will therefore be limited to the months August - September of any given year. > The cofferdam once installed will provide a screening buffer between the construction area and retained reedbed habitat. This will aid in minimising disturbance effects to birds throughout the duration of the Water Sports Pavilion construction phase. > All vegetation clearance works throughout the Proposed Development Site and works in the vicinity of sensitive habitats for breeding waterbirds (i.e. reedbeds) will be conducted outside of the breeding bird season (1st March – 31st August, dates inclusive) where possible. If works must be carried out that continue into the breeding bird season, then these works will commence at a minimum in the weeks prior to 1st March. This will allow for existing levels of disturbance arising from construction works commencing prior to the breeding bird season to act as a disturbance buffer to ensure that waterbird species do not build nests within the Proposed Development Site, but prioritise sites within the wider vicinity, of which there are significant suitable areas to the north and south of the Proposed Development. This would be done to prevent nest abandonment by waterbirds.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ Vegetation removal (trees, scrub) should take place outside of the bird nesting season. Where removal cannot be avoided during this season, it will be preceded by an inspection of any vegetation to be removed by a qualified ecologist. If any nests are identified during these surveys, then works will halt until nesting has concluded.		
Bat Protection Measures				
MM24	CEMP Section 3.8.5, EIAR Chapter 6 Biodiversity	Aside from all other mitigation set out in this document, the following measures will be implemented to ensure no disturbance to bats. Timing of works ➤ Demolition works will be scheduled outside of the main bat activity period (May–September), unless otherwise agreed with the licensed ecologist. Provision of Alternative Roosting Habitat ➤ Prior to the commencement of demolition, at least one bat box/ replacement roost feature will be installed to provide an immediate alternative roosting option if required. Compensatory roosting features will be provided within the site in accordance with best practice (Marnell et al., 2022; TII, 2006; Collins, 2023). ➤ A minimum of one Rocket bat box will be installed, with additional boxes incorporated where feasible to enhance roosting opportunities for local bat populations. ➤ Rocket bat boxes and other bat boxes will be: ○ Installed at a height of ≥ 3 m above ground level; ○ Oriented south to southeast where possible; ○ Located away from artificial lighting;		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		○ Positioned adjacent to linear features such as treelines or woodland edge to maintain connectivity with existing commuting routes. ○ Located as close as possible to the existing bat roost to be removed. ➤ Final locations of replacement/ compensatory bat roosting features will be agreed in consultation with a licenced ecologist. ➤ The installed Rocket box structure and any other bat boxes will be subject to post-installation inspection by the appointed ECoW (or Project Ecologist) to confirm correct placement and suitability. The condition of the boxes will subsequently be reviewed as part of ongoing site maintenance to ensure their integrity is maintained and that they remain fit for purpose. Monitoring of the compensatory roost feature Monitoring of the compensatory roosting features will be undertaken on an annual basis (by a suitably licenced individual) for a minimum period to be agreed with NPWS, in order to assess their uptake and effectiveness. Monitoring will be carried out by a suitably qualified ecologist using a combination of appropriate and non-intrusive techniques, including: ➤ Visual inspection for signs of use (e.g. staining, droppings, or moisture); ➤ Inspection using an endoscope, where access allows; ➤ Use of thermal imaging or emergence surveys, where appropriate; ➤ DNA analysis of droppings, if required to confirm species presence. The results of monitoring will be used to evaluate the success of the mitigation measures and to inform any adaptive management required. Confirmation of compensatory roost feature usage and monitoring outcomes will be reported to NPWS in accordance with licence conditions.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		Measures to mitigate loss of Foraging/Commuting Habitat The Proposed Development was designed specifically to retain individual trees and treelines within the Proposed Development Site where possible. 239 trees proposed for removal, with a total of 240 trees are proposed to be replanted and will vary in maturity. Tree species replanting has been designed with consideration for maintaining connectivity throughout the Proposed Development. Where trees cannot be replanted within the vicinity of where they were removed, they will instead be replanted to enhance connectivity (i.e. replanted in the northern area of the site and along the L2020 road). > The longest area of treeline removal where replanting is not proposed is the non-native Leyland treeline located to the north of the Proposed Development Site. However, due to the presence of another treeline within the Athlone Golf Club, located closely west of the treeline to be removed and running parallel to the Leyland treeline, no loss of overall commuting connectivity is anticipated. In addition, trees will be planted within the north of the Site in areas of existing amenity grassland which will enhance connectivity and foraging potential of this northern area over baseline conditions. > The planting scheme will use native tree species to strengthen ecological value in accordance with the All-Ireland Pollinator Plan. By incorporating a carefully designed mix of native trees, the design and development will enhance existing habitats and replace removed non-native treeline habitat and trees for commuting and foraging bats. Retained trees throughout the Proposed Development Site Footprint will be protected during construction in full accordance with BS:5837 (Trees in Relation to Construction).		
Cultural Heritage Protection Measures				
MM25	CEMP Section 3.9, EIAR	The following mitigation measures proposed are subject to approval by the National Monuments Service and the planning authority.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
	Chapter 12 Cultural Heritage	➤ Should any archaeological material be encountered during archaeological monitoring and archaeological testing, the extent of such features/deposits will be determined, a GPS location of the site will be established and works at this location will cease. A strategy will be proposed to the Local Authority and National Monuments Service to preserve the site in situ, where possible. Where preservation in situ cannot be achieved, either in whole or in part, then a programme of full archaeological excavation will be proposed, to ensure the preservation by record of the portion of the site that will be directly impacted upon. This work should be carried out by a suitably qualified archaeologist under license and in accordance with the provisions of the National Monuments Acts 1930-2014.		
Resource Waste Management				
MM26	CEMP Section 3.10.2	➤ All construction phase waste will be collected in skips and the site will be kept tidy and free of debris at all times. ➤ Waste oils and hydraulic fluids will be collected in leak proof containers and removed from the site for disposal or recycling. It is also essential that all empty oil containers and other hazardous wastes will be disposed of in accordance with the requirements of the Waste Management Act, 1996 as amended. ➤ All construction waste materials will be stored within the confines of the site, prior to removal from the site to an appropriately licensed waste facility. ➤ A self-contained port-a-loo with an integrated waste holding tank will be used within the confines of the site. This unit will be maintained by the providing Contractor and removed from site upon completion of the construction works. ➤ No wastewater will be discharged on-site during the construction phase		
MM27	CEMP Section 3.10.2.2	➤ Ordering of materials will be on an 'as needed' basis to prevent over supply to site. Co-ordination is required with suppliers enabling them to take/buy back surplus stock.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		> All trucks transporting fine or dry materials to and from the site will be securely covered immediately after loading, with tailgates firmly fixed to prevent wind-blown dust and spillages > Purchase of materials pre-cut to length to avoid excess scrap waste generated on site. > Request that suppliers use least amount of packaging possible on materials delivered to the site. > Ensuring correct storage and handling of goods to avoid unnecessary damage that would result in their disposal. > Ensuring correct sequencing of operations. > Use reclaimed materials in the construction works.		
Traffic Management				
MM28	CEMP Section 3.11.1	To ensure compliance with traffic management requirements, the Contractor shall implement the following measures: > All construction staff and subcontractors shall be clearly informed that they are bound by the restrictions set out in the CTMP. The Contractor shall schedule site traffic in advance to ensure adherence to these restrictions. > Special permits for the movement of oversized or hazardous loads shall be obtained from RCC and/or An Garda Síochána prior to any such movements. > Daily construction programmes shall be planned to minimise disruptions to surrounding streets by staggering HGV and delivery movements to avoid site queues. Non-essential vehicle movements shall be minimised during peak traffic hours (08:00–09:00 and 16:30–18:00). > On-site parking shall be limited to vehicles required for direct participation in the works. Construction vehicles shall follow the road hierarchy, using primary national and regional routes for site access and avoiding local or minor streets where practicable. A Traffic Management Coordinator shall be appointed to oversee all traffic safety and management matters and to ensure compliance with the CTMP. Where		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		multiple contractors are working on site, overall traffic coordination shall be implemented, including review and harmonisation of individual CTMPs. An overall CTMP for the entire site shall be prepared and agreed with RCC in advance of works commencement.		
MM29	CEMP Section 3.11	Traffic control will be implemented through the following procedures: ➤ Develop a restriction and rule adherence form to be signed by all lorry drivers and site operatives, confirming their understanding and agreement to comply with traffic management requirements. Prior to commencement, all new contractors and personnel must complete and sign the prequalification and restrictions forms. ➤ All movements of construction traffic to and from the site must be coordinated by the Contractor's Transport Manager in accordance with the approved restrictions. A certified Flagman will be stationed at the site entrance to safely direct and manage traffic entering and leaving the site. ➤ An appointed person at the site entrance will issue traffic dockets and maintain a record of all vehicles entering and leaving the site. The site manager will periodically review these records to ensure compliance with traffic management procedures and to identify any opportunities for operational improvement.		
MM30	CEMP Section 3.11.3	➤ All construction traffic will access the site via the main access roads, entering from the N61. Deliveries must be off-loaded promptly using the most appropriate method, and vehicles should be escorted off-site immediately to prevent congestion. ➤ The site gate attendant will be responsible for preventing any conflicts between pedestrians and vehicles entering or exiting the site. Temporary pedestrian routes and controls must be maintained at all times to ensure the safe movement of the public and the uninterrupted operation of businesses within the Proposed Development boundary.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ Some private car use by construction personnel is expected during periods of peak construction activity. Site working hours are anticipated to be 08:00–19:00 from Monday to Friday and 08:00–17:00 on Saturdays, meaning that the peak site movements are likely to occur outside of the usual AM and PM rush hours, thereby minimising disruption to local traffic. HGV Movements: For rigid HGVs transporting materials from the site, the total turnaround time—from arriving at the site entrance to travelling to the loading area, completing loading operations, and exiting—is estimated to be approximately 15 minutes per vehicle. Wherever practicable, HGV movements should be scheduled outside peak traffic periods. The Contractor must also prepare detailed traffic management plans for project stages that will generate high volumes of HGV activity, such as site clearance and regrading works, with particular attention given to temporary pedestrian management and ensuring safe access to neighbouring properties and businesses.		
MM31	CEMP Section 3.11.3	➤ Contractor, subcontractor, and supplier vehicles are not permitted to park on local access routes, and all site parking must be accommodated within the site boundaries as outlined in the Contractor’s site setup layout strategy. Because of the spatial constraints within the site extents, the availability of on-site parking will be very limited. ➤ No unloading or blockage of access routes—including those designated for emergency vehicles—is permitted, and any vehicle that obstructs these routes must be instructed to move immediately to ensure that site operations and emergency access are not impeded. ➤ The Contractor must carry out a vehicle tracking analysis to confirm that all construction vehicles have sufficient turning space. This analysis should demonstrate safe entry and exit manoeuvres for every vehicle, with the goal of minimising—or, where possible, eliminating—the need for reversing. ➤ The Contractor shall ensure that all traffic management requirements outlined in this CTMP are fully implemented and adhered to throughout the duration of the Proposed Development.		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
MM32	CEMP Section 3.11.3.2	The Contractor shall undertake monthly logistics coordination meetings to review and update the traffic management strategy. These meetings will: ➤ Discuss and agree on traffic management coordination measures. ➤ Review the implementation of any required temporary traffic management schemes. ➤ Identify any potential conflicts or operational issues and agree on corrective actions. ➤ Ensure alignment between all Contractors, subcontractors, and stakeholders regarding traffic management requirements.		
MM33	CEMP Section 3.11.3.3	All loading and unloading activities must be carried out entirely within the demised site area, meaning within the defined site boundary or red line. Contractors are strictly prohibited from conducting any loading or unloading on the public roadway. This requirement is in place to: ➤ Reduce risk to the public ➤ Minimise congestion ➤ Limit disruption or potential hazards to passing vehicles and other road users All deliveries and collections must be overseen and managed by a nominated competent person appointed by the Contractor. In addition, Contractors are required to assess and clearly outline the measures they will implement to manage impacts on cyclists, pedestrians, other road users, and any affected roadway infrastructure, ensuring the safety and continuity of public access around the site.		
MM34	CEMP Section 3.11.3.4	➤ Access for emergency vehicles via the designated primary haul roads must be maintained at all times throughout the construction period. The Contractor must ensure that no works, parking, or material storage obstruct these routes and that emergency access remains clear and immediately available in the event of an incident. To support this, the Contractor shall establish procedures to		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		coordinate site activities so that emergency vehicle access is never compromised under any circumstances.		
MM35	CEMP Section 3.11.3.5	➤ The Contractor is required to take all necessary precautions to prevent damage to roads, footpaths, grass margins, walls (including protected walls), structures (including protected structures) and their curtilage, as well as trees, lighting fixtures, and all other street furniture both within and outside the site boundary. The Contractor is fully liable for the cost of repairing or replacing any such damage caused by its operations, and all remedial work must meet the satisfaction of RCC. ➤ Precautions must also be taken to prevent any spillage of diesel, contaminated water, solvents, or other hazardous materials. Should any damage or contamination occur, it must be rectified at the Contractor's expense, and the Contractor may additionally be held responsible for breaches of related planning conditions. ➤ The use of tracked plant on road surfaces outside the site is strictly prohibited unless approved protective measures are in place to safeguard the integrity of these surfaces. ➤ The Contractor's Construction Management Plan must specify the required quality of temporary reinstatements of roads, pavements, and other affected surfaces, as well as the timeline for completing permanent reinstatements to ensure that all affected areas are restored promptly and to the required standard.		
MM36	CEMP Section 3.11.4, EIAR Chapter 14 Material Assets	A number of design measures are proposed to mitigate construction phase traffic impacts, these include: ➤ Phasing of construction activities to maintain access to existing facilities; ➤ Maintaining access to the hotel, marina, businesses and adjacent properties throughout construction; ➤ Locating construction compounds within the development site; ➤ Scheduling major deliveries to avoid periods of peak visitor demand where possible;		

Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
		➤ Maintaining pedestrian and cyclist routes through temporary traffic management; ➤ Minimising the duration of temporary traffic management arrangements. Preliminary traffic management measures for the construction of the Proposed Development are set out below: ➤ Construction and Delivery Programme - a programme of construction and deliveries will be submitted to RCC in advance of deliveries of material to the site. Liaison with the relevant local authorities and TII will be carried out where required. ➤ Information to locals - Locals in the area will be informed of any upcoming traffic related matters via letter drops and posters in public places. Information will include the contact details of the Contract Project Co-ordinator, who will be the main point of contact for all queries from the public or local authority during normal working hours. An "out of hours" emergency number will also be provided. Local access to all properties located within the proximity of the proposed works will be maintained at all times. ➤ Identification of delivery routes - The delivery routes for the transportation of all materials will be agreed and adhered to by all Contractors. ➤ Temporary traffic signs - As part of the traffic management measures temporary traffic signs will be put in place at the location where works are being undertaken. All measures will be in accordance with the 'Traffic Signs Manual, Section 8 - Temporary Traffic Measures and Signs for Road Works' (DoT, 2019) and 'Guidance for the Control and Management of Traffic at Roadworks' (DoT). A member of construction staff (flagman) will be present at each construction site location along the route. ➤ Additional measures - Various additional measures will be put in place in order to minimise the effects of the construction traffic on the surrounding road network including wheel washing facilities at the entrance to the site and sweeping/cleaning of local roads as required. ➤ Road Opening Licence - All roads' works will be undertaken in line with the requirements of a road opening licence as agreed with RCC.		



Mitigation Measure	Reference Location	Mitigation Measure	Audit Result	Action Required
MM37				

7. **MONITORING PROPOSALS**

The Monitoring Proposals to be implemented are presented in Table 7-1 below. A monitoring plan will be implemented and carried out by the ECoW and Environmental Manager. This CEMP will be updated to incorporate auditing and reporting requirements, including frequency, in coordination with the Contractor. The proposed monitoring framework is designed to provide a structured, easily auditable format, ensuring efficient review and reporting throughout future Proposed Development phases.

Table 7-1 Monitoring Measures

Monitoring Measure	Reference Location	Monitoring Measure	Audit Result	Action Required
Field Monitoring				
MX 1	EIAR Chapter 8 Hydrology and Hydrogeology	During the construction stage, a field monitoring campaign will be undertaken in Lough Ree. Monitoring will involve visual checks of drains, swales, settlement ponds and streams, and measurements of field water quality parameters (temperature, pH, specific electrical conductivity, alkalinity and turbidity). The field measurements will be taken at locations upstream and downstream of the construction activity. Frequency of measurement will be judged in the field by the resident/supervising engineer but will be done at least on a weekly basis (potentially more frequently during storm events). The field measurement campaign will begin two weeks prior to the proposed commencement of works and will cease up to four weeks after the proposed works are completed, unless observations dictate that measurements should continue. Regular inspections of all installed drainage components will be undertaken, especially after heavy rainfall, to check for blockages, and ensure there is no build-up of standing water in parts of the systems where it is not intended. If visible impact occurs, works will be suspended at the discretion of the resident/supervising engineer, in which case the problem will be identified and corrective action taken before recommencing works. Surface water samples will also be collected to monitor for effects and any shifts in baseline conditions. The sampling locations proposed are the ones presented in included in Appendix 8-2; SW01, SW02, SW03, and SW04. The samples will be collected on a monthly schedule during construction. The Environmental Manager will be responsible for sample collection. Periodic review will determine the need for, or recommended amendments to, the monitoring		

Monitoring Measure	Reference Location	Monitoring Measure	Audit Result	Action Required
		programme in line with principles of adaptive monitoring (guided by the data review and findings). The monthly samples will be analysed for general physico-chemical parameters, nutrients, dissolved organic carbon, true colour, and suspended solids and screened against environmental quality standards (EQS) for surface waters. Adaptive monitoring will be practiced, whereby analytes and frequency of monitoring may change based on periodic review of results. All sampling events will be accompanied by field measurements of water temperature, pH, SEC, alkalinity and turbidity. The broader purpose of the proposed monitoring is to track baseline conditions and how these might evolve under prevailing conditions. The baseline monitoring will begin three months prior to commencement of the construction stage. The data will be periodically reviewed to assess whether changes (trends) to water quality are occurring.		
Vibration Monitoring				
MX 2	CEMP Section 3.6, EIAR Chapter 11 Noise and Vibration	It is proposed to carry out construction phase vibration monitoring at the hotel and at any other structure while vibro-rolling is undertaken within 100 m. The following is proposed: ➤ Vibration monitoring in accordance with <i>Measurement and assessment of groundborne noise and vibration</i> (Association of Noise Consultants, 2012). ➤ Measurement using a calibration vibrograph with tri-axial transducer. ➤ Measurement of PPV levels, frequency and displacement. ➤ Measurement at nearest point of hotel to vibro-rolling area. ➤ Measurement for duration of vibro-rolling. ➤ Prior agreement with hotel management. Alert system to notify where PPV levels exceed 10 mm/s.		
Ecological Monitoring				

Monitoring Measure	Reference Location	Monitoring Measure	Audit Result	Action Required
MX3	CEMP Section 3.8.5, EIAR Chapter 6 Biodiversity	Ecological Oversight of Works/ Supervision > A toolbox talk will be delivered to all site personnel to ensure awareness of legal protections, identification of bats, and procedures to follow should bats be encountered. > Roof removal works around the bat roost entrance will be undertaken under ecological supervision, where required, to ensure appropriate safeguards are implemented. > In the event that bats are encountered during works, activities will cease and the licensed ecologist will advise on appropriate actions.		
Archaeological Monitoring				
MX4	CEMP Section 3.9, EIAR Chapter 12 Cultural Heritage	The following mitigation measures proposed are subject to approval by the National Monuments Service and the planning authority. > A suitably qualified archaeological consultant under licence, will monitor sub-surface groundworks in green areas only during the construction phase. This will target sub-surface groundworks in green areas which were not the subject of the preceding test excavation under Licence Number 26E0466. > Should any archaeological material be encountered during archaeological monitoring and archaeological testing, the extent of such features/deposits will be determined, a GPS location of the site will be established and works at this location will cease. A strategy will be proposed to the Local Authority and National Monuments Service to preserve the site in situ, where possible. Where preservation in situ cannot be achieved, either in whole or in part, then a programme of full archaeological excavation will be proposed, to ensure the preservation by record of the portion of the site that will be directly impacted upon. This work should be carried out by a suitably qualified archaeologist under license and in accordance with the provisions of the National Monuments Acts 1930-2014.		

Monitoring Measure	Reference Location	Monitoring Measure	Audit Result	Action Required
Weather Conditions				
MX5	CEMP Section 3.1	Continuous monitoring of weather conditions and regular communication with local stakeholders (including the Hodson Bay Hotel and local residents) will be maintained to ensure the estimated 30-month construction phase does not cause a nuisance.		
Environmental Monitoring and Audits				
MX6	CEMP Section 4.1	The duties of the Site Manager will include the following: ➤ Ensure that all works are completed safely and with minimal environmental risk; Approve and implement the CEMP and supporting environmental documentation, and ensure that all environmental standards are achieved during the construction phase of the Proposed Development; ➤ Take advice from the site Environmental Manager on legislation, codes of practice, guidance notes and good environmental working practice relevant to their work; ➤ Ensure compliance through audits and management site visits; ➤ Ensure timely notification of environmental incidents; ➤ Monitor the impact of construction traffic on local traffic conditions; ➤ Ensure that all construction activities are planned and performed such that minimal risk to the environment is introduced; ➤ Provide full and adequate supervision and site administration during the progress of the works; and ➤ Appoint suitably qualified foreman, craftsman, domestic subcontractors, and specialists.		
MX6	CEMP Section 4.3	The duties of the appointed Environmental Manager are summarised as follows: ➤ Maintain and update as required the CEMP and supporting environmental documentation and review/approval of contractor method statements.		

Monitoring Measure	Reference Location	Monitoring Measure	Audit Result	Action Required
		➤ Undertake inspections and reviews to ensure the works are carried out in compliance with the CEMP. ➤ Monitor the implementation of the CEMP, particularly all proposed/required environmental mitigation measures. ➤ Ensure proper mitigation measures are initiated and adhered to during the construction phase. ➤ Ensure adequate arrangements are in place for site personnel to identify potential environmental incidents. ➤ Ensure that details of environmental incidents are communicated in a timely manner to the relevant regulatory authorities, initially by phone and followed up as soon as is practicable by email. ➤ Support the investigation of incidents of significant, potential or actual environmental damage, and ensure corrective actions are carried out, recommend means to prevent recurrence and communicate incident findings to relevant parties. ➤ Identify environmental training requirements and arrange relevant training for all levels of site-based staff/workers; and ➤ Fulfil the role of Waste Manager and implement the objectives of the Resource Waste Management Plan as set out in Section 3.9 above.		
Traffic and Transport Monitoring				
MX7	CEMP Section 3.11.2	An appointed person at the site entrance will issue traffic dockets and maintain a record of all vehicles entering and leaving the site. The site manager will periodically review these records to ensure compliance with traffic management procedures and to identify any opportunities for operational improvement.		
MX8	CEMP Section 3.11.1	Construction traffic shall be monitored at key points remote from the site to verify compliance with CTMP requirements. Detailed traffic management plans shall be submitted to RCC in advance of construction and incorporated into the overall Construction Management Plan.		

8. PROGRAMME OF WORKS

8.1 Construction Programme

The construction phase will take approximately 30 months to complete. This is typically broken down into several phases. The indicative construction timeline for construction of the Proposed Development is outlined in Figure 2-3 above.

It is estimated that the construction phase of the Proposed Development will take approximately 30 months to complete. In the interest of minimising disturbance to breeding birds, construction will not commence during the bird breeding season which runs from the 1st of March to the 31st of August inclusive.

The construction schedule for the project will primarily depend on the availability of financial resources, with the assumption that full funding will be secured for the timeframe specified by RCC. Given the sensitive nature of the site and its importance as a tourist attraction, it is expected that the construction works will be undertaken in a phased approach.

The construction phase can be divided into specific work elements:

1. Upgrade and extension of existing parking spaces and site roads- 9 months;
2. Pedestrian Active Travel corridor enhancements - 5 months;
3. Demolition of existing water sports building and construction of new Water Sports Pavilion Buildings - 21 months;
4. Construction of Marina Redevelopment and Extension - 6 months;
5. Public Realm upgrades including landscaping - 9 months.

Note that overlap is expected between the commencement of certain phases.

The construction programme will be finalised on the appointment of a Contractor before commencement of works.

9. COMPLIANCE AND REVIEW

9.1 Site Inspections and Environmental Audits

Routine inspections of activities will be carried out on a daily and weekly basis by the Site Environmental Manager/Site Manager as appointed by the applicant to ensure all controls to prevent environmental impact, relevant to the construction activities taking place at the time, are in place.

Environmental inspections will ensure that the works are undertaken in compliance with this CEMP. Environmental site inspections will be carried out by suitably trained staff.

9.2 Environmental Compliance

The following definitions shall apply in relation to the classification of Environmental Occurrences during the infilling works:

Environmental Near Miss

An occurrence which if not controlled or due to its nature could lead to an Environmental Incident.

Environmental Incident

Any occurrence which has potential, due to its scale and nature, to migrate from source and have an environmental impact beyond the site boundary.

Environmental Non-Compliance

Non-fulfilment of a requirement and includes any deviations from established procedures, programs and other arrangements related to the CEMP.

A corrective action is implemented to rectify an environmental issue on-site. Corrective actions will be implemented by the Site Manager, as advised by the Environmental Manager. Corrective actions may be required as a result of the following.

- Environmental Audits.
- Environmental Inspections and Reviews.
- Environmental Incidents; and,
- Environmental Complaints.

9.3 Corrective Action Procedure

A Corrective Action Notice will be used to communicate the details of the action required to the main Contractor. A Corrective Action Notice is a form that describes the cause and effect of an environmental problem on site and the recommended corrective action that is required. The Corrective Action Notice, when completed, will include details of close out and follow up actions.

If an environmental problem occurs on site that requires immediate attention direct communications between the Site Manager and the Environmental Manager will be conducted. This in turn will be passed down to the site staff involved. A Corrective Action Notice will be completed at a later date.



APPENDIX 1

SITE LAYOUT DRAWINGS



Rialtas na hÉireann
Government of Ireland



Arna chomhchastú ag
an Aontas Eorpach
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Tionól Reigiúnach
Oirthir agus Láir-Tíre
Eastern and Midland
Regional Assembly



Fáilte
Ireland



Comhaltas Contae
Ros Comáin
County Council



The Hodson Bay Waterfront Park Project is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund

1. Water Sports Pavilion
2. Café Pavilion
3. Permanent Marquee
4. Temporary Marquee
5. Maintenance store
6. ESB Substations + Intake Room
7. Swimming Changing Pavilion
8. Marina Pavilion

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[illegible]

REV	DATE	CHANGED BY	DESCRIPTION
STATUS: PLANNING			
PROJECT: Hodson Bay Waterfront Park			
PROJECT ADDRESS: Hodson Bay, Co. Roscommon			
DRAW TITLE: Proposed Site Layout Plan B			
DRAW NO: HB-RKD-ZZ-JZ-DR-A-1021			

P1	25012	1:500
DATE	JULY 2006	CHK SR
		CHK HB
		
The Eagle Building, 8 Newmarket, The Liberties, Dublin 8, D08 T2T4		+353 1 684 1000 mail@rkd.ie rkd@rkd.ie

Site Boundary
 66m 66273
 (6.6273ha)

1. Water Sports Pavilion
2. Cafe Pavilion
3. Permanent Marquee
4. Temporary Marquee
5. Maintenance store
6. ESB Substations + Intake Room
7. Swimming Changing Pavilion
8. Marina Pavilion



Riadas na hÉireann
 Government of Ireland

Any development is an Active Element
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 Oifigeirí Lár-Teo
 Eastern and Midland
 Regional Assembly

Fáilte
 Ireland

ROS
 MOUN
 Community Centre
 Ros Common
 Roscommon County Council

Waterways
 Ireland

The Hudson Bay Waterfront Park
 Project is co-funded by the
 Government of Ireland and the
 European Union through the EU
 Just Transition Fund

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PLANNING

Hudson Bay Waterfront Park
 Hudson Bay, Co. Roscommon

Proposed Site Layout Plan C
 HB-RKD-ZZ-22-DR-A-1022

Project No. 22012
 P1
 JULY 2020 1st SR 1st HB

1:500

RKD

89273
(8.9273ha)

1. Water Sports Pavilion
2. Café Pavilion
3. Permanent Marquee
4. Temporary Marquee
5. Maintenance store
6. ESB Substations + Intake Room
7. Swimming Changing Pavilion
8. Marina Pavilion

Key Plan



The Hodson Bay Waterfront Park Project is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund

[illegible]

PL	21.07.20	HB	Planning Submission
REV	DATE	CHK BY	DESCRIPTION
STATUS			
PLANNING			

PROJECT	Hodson Bay Waterfront Park
PROJECT ADDRESS	Hodson Bay, Co. Roscommon
DWG TITLE	Proposed Site Layout Plan

HB-RKD-ZZ-ZZ-DR-A-1023		
REV P1	PROJECT NO 25012	SCALE 1:500

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