Donegal County Council & Fáilte Ireland

Downings Facility Centre for Water Sports Activities, Car Park and Access to the Beach at Crocknamurleog, Na Dúnaibh, Co. Donegal.

CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN

Proposed Watersports Facility Building

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Contents

1.0 Introduction

This Construction and Environmental Management Plan (CEMP) has been prepared in support of a planning application to An Bord Pleanála (ABP) by Donegal County Council, which is seeking permission for the construction of a facility building for watersports activities, adjoining upgrade of the adjoining car park area and access pathway to the beach at Downings, Co Donegal.

The objective of this CEMP is to address and provide mitigation measures to offset any potential negative impacts the project may have on the receiving environment.

The primary areas of concern identified are (1) inadvertent release of sediments and pollutants to the receiving environment causing deterioration in water quality and habitat quality, (2) degradation of Dune habitats in the adjoining SAC and (3) Disturbance /displacement of SCI birds. This report should be read in conjunction with the Natura Impact Statement (NIS).

The plan will be a 'living' document subject to review throughout the project implementation and the relevant guidance and legislation will be consulted accordingly. A list of reference documents and guidance is detailed in section 9.

It is intended that this CEMP will be reviewed and updated as appropriate once planning permission is granted, the construction team has been appointed, and necessary consultations have occurred**.**

The appointed building contractor will be responsible for compliance with all applicable guidelines and legislation. A detailed management plan will be developed by the appointed contractor, to include method statements and standard operating procedures, which will outline the roles and responsibility of staff on site.

Any changes to the CEMP that could affect the above-mentioned Natura 2000 sites will be submitted to ABP prior to commencement of construction on site.

This CEMP outlines the environmental management strategies for the construction of a small facilities building, pathways, car park and access footpath for pedestrians and motor vehicles to an adjoining beach. It aims to minimise adverse environmental impacts, ensure regulatory compliance, and implement best practices for sustainable construction.

2.0 Existing site description

The Project site comprises the existing car park and existing access road onto Downings beach see figure 2.1 – 2.4.A small area of the project site is within Sheephaven SAC where the access path meets the beach, see figure 2.5.

Figure 2.1 Ariel view - site of proposed facility building for water sports outlined in red.

Figure 2.2 Ariel view looking south - site of proposed facility building for water sports outlined in red.

Figure 2.3 Looking east - site of proposed facility building for water sports outlined in red.

Figure 2.4 Looking north along existing beach access toward car park.

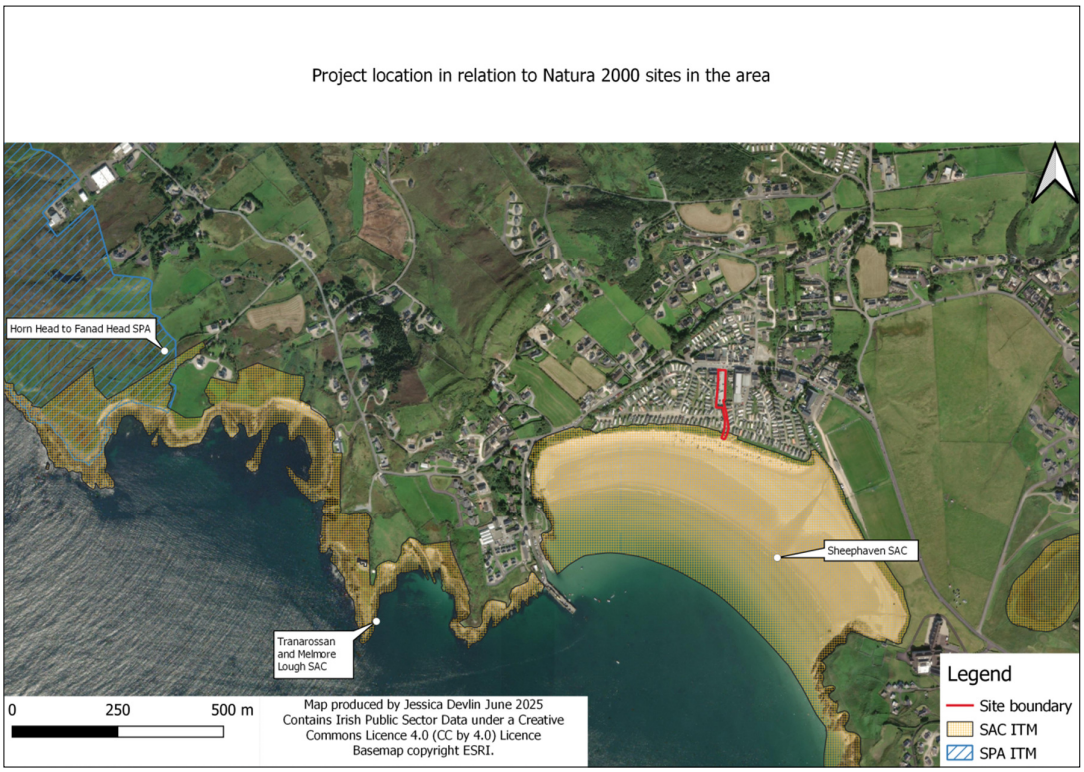

Figure 2.5 Project location in relation to NAtura 2000 sites in the area

The site is located off the main public car park in the centre of Downings which also forms the public roadway access to the beach. This is the primary car park for beach users and closing off this car park and access roadway will cause major disruption to beach users and all efforts should be made to minimise this disruption, especially during the summer months.

The site described as three distinct works areas,

Area 1, the car park and existing toilets to be demolished,

Area 2, the location of the proposed new water sports facility building,

Area 3, the existing vehicular access laneway to the beach.

The existing public toilet building is a single storey flat roof concrete structure located at the entrance to the car park adjoining the Main Street, which is to be demolished and this area is to provide for car additional car parking spaces.

The existing car park is to be upgraded and a defined pedestrian walkway is to be constructed from the Main Street to the Beach with a narrow planted strip to be located between the car parking and the footpath so as to provide safe separation of pedestrians and vehicles.

The area around the new building is to be paved as public realm and a low level wall is to be constructed between the open area in front of the building and the roadway to provide separation of pedestrians and vehicles and to prevent parking on the footpath.

The existing laneway is to be widened so as to provide a separation of vehicles and pedestrians with the provision of widened carriageway and new road surface and gabion basket retaining structures so as to retain the ground on either side

A traffic light stop go system is to be installed so as to control and manage safe traffic movements from the beach to the car park. Railings / fence is to be provided at the top of the

gabion baskets so as to prevent the risk of over falling and to define the boundaries.

3.0 Project description.

Donegal County Council is applying to An Bord Pleanála for permission to construct a development with a number of separate elements as follows:

Demolition of an existing public toilet building and construction of a Fáilte Ireland and Donegal County Council funded facility building for water sports activities which provides for accessible toilet showering and changing facilities for persons using the adjoining beach and popular wind surfing area at Downings with an upgrade of the adjoining car and provision of a separated pedestrian path from the main street to the beach and upgrade of the existing vehicular access roadway form the car park to the beach.

The proposed building is to be located within the existing public car park which will reduce the number of spaces available, but this reduction will be offset by the demolition of the existing public toilets and the provision of new parking spaces on that footprint.

The proposal includes upgrading of the existing sub-standard access pathway to the Beach and to provide an accessible walkway from the road and car park to the beach which may impede slightly on the adjoining caravan parks on both side of the roadway.

Figure 3.1 Overview of proposed works

3.1 Site preparation

Area 1. Demolition of the existing Toilet Building

All mechanical equipment, pipes, cables, sanitary equipment and floor tiles, timber doors and windows are to be removed from the building prior to demolition and recycled where possible.

The structure is to be carefully broken up and removed and disposed of to a DCC approve landfill site.

All ground floor slabs and foundations are to be removed and ground grubbed up ready for stone fill.

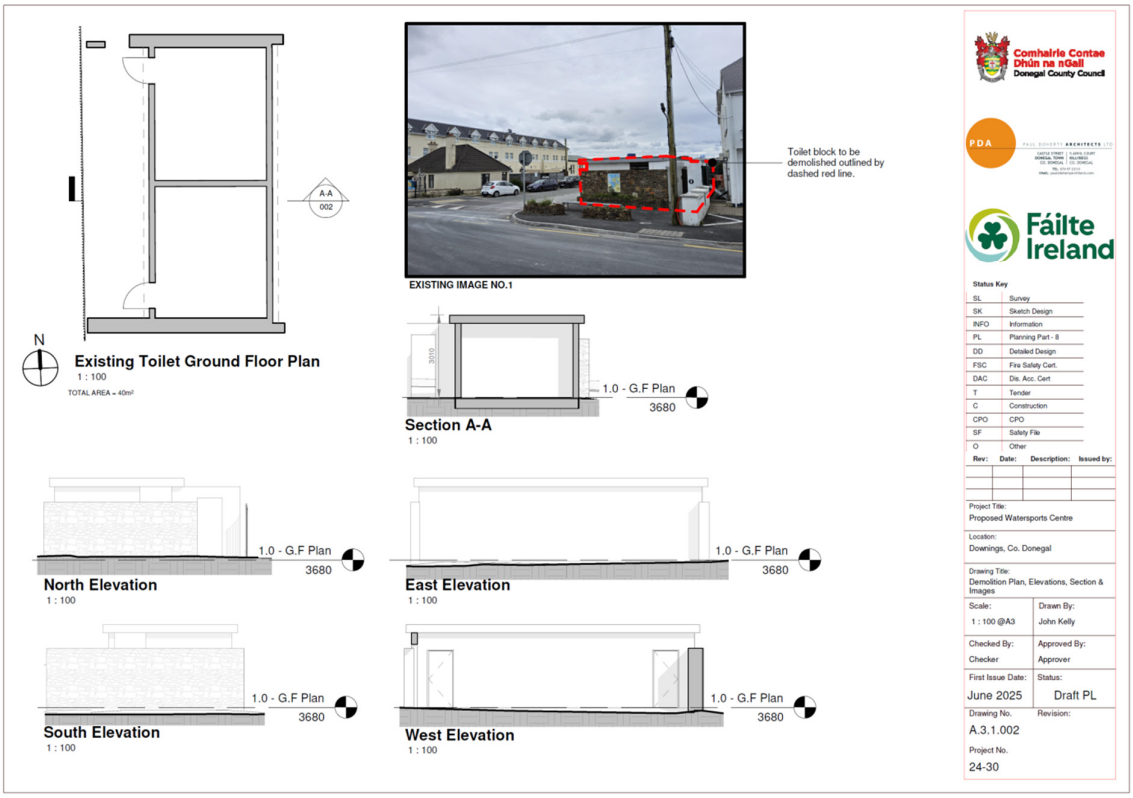

Figure 3.2 Existing Toilet Building to be demolished

Area 2. Facility Building for Water Sports

The ground conditions in this area are primarily a layer of tar on hardcore on a stone base forming the base of the car parking area on a sand formation level,

The groundworks will include the removal of the existing car park surface and sub strata of stone and the re-levelling of the area and filling with clause 804 grade stone layers on the sand sub strata and the stoning of same to provide for the car parking area and public realm area and laying of a concrete raft foundation for the building.

Installation of infrastructure for services i.e. surface water drainage, foul water drainage, water mains and electricity supply etc.

Construction of concrete base raft foundations and construction thereafter of cast in situ / precast concrete frame and single pitch roof building and plant room.

Area 3. Pedestrian Walkway & Vehicular Access from the public Car Park to the Beach

Works in this area require the construction of a widened access roadway and accessible pathway to the beach, meeting all accessibility requirements, the footpath will be set at a slightly higher level than the access roadway to prevent crossing of pedestrians and vehicle traffic in this narrow roadway.

As clear vision lines are not available from one end of the access roadway to the other it is proposed to provide a traffic light stop / go system so as to manage the traffic movements to and from the car park to the beach.

This area will be constructed by removing the existing gabion baskets and widening the roadway and providing a new rock armour wall to both sides to maintain existing levels and to ensure the stability of the side walls to the road and the footpath.

It is proposed to install a railing / fence at the top of the baskets to prevent falling and to fill clay / sand to the top of the baskets to enable the planting of appropriate plants at the top of the baskets to prevent sand scouring at the junction of the hard and soft materials.

3.2 Construction

Area 1. Car Park & Pedestrian Walkway

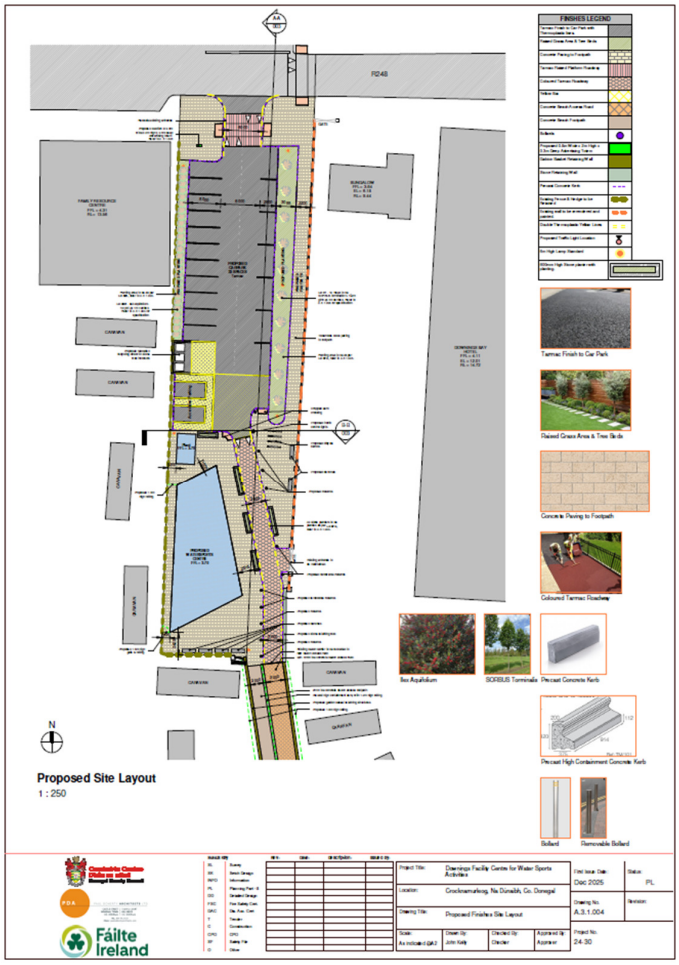

Figure 3.3 Layout of carpark and pedestrian walkway

Area 2. Facility Building.

Excavation of trenches and foundations and the installation of service pipe network, and pumping station and installation of electrical and telecom services from the adjoining road to the building.

Pouring of concrete foundations and installation of cast in situ or precast structural columns posts and roof and building completion to include the installation of toilets, showers, plant room and all necessary utilities and services.

Hard landscaping to the public realm area to include provision of seating, paving, way signage for the building (to include a standalone totem sign) and any necessary boundary treatments.

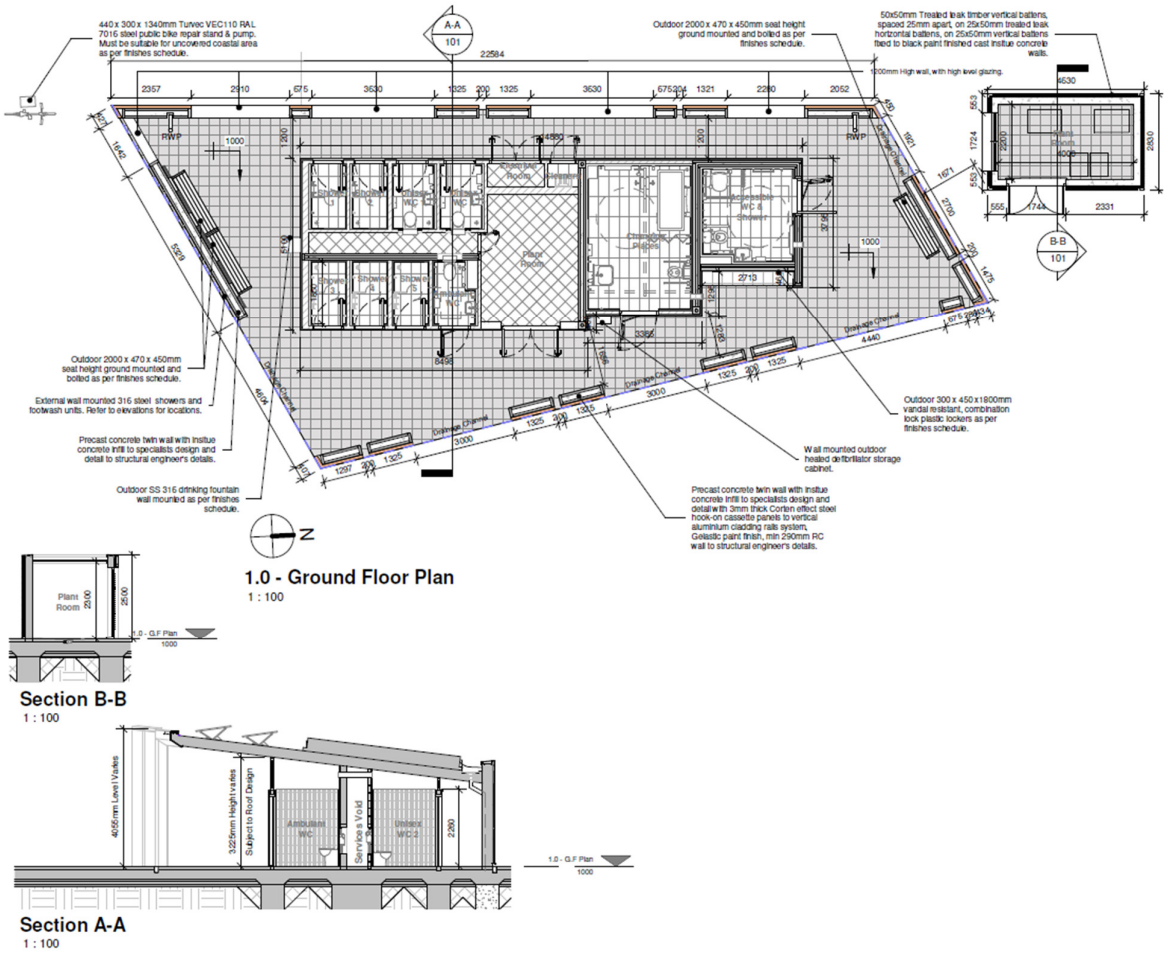

Figure 3.4 Drawing of facility building

Area 3. Pedestrian Walkway & Vehicular Access from the public Car Park to the Beach

IAPS plan to be completed prior to works.

Installation of new gabion basket structures to both sides, the installation of a new hard surfaced roadway and raised pedestrian footpath with a safety railing along the edge of the footpath.

Installation of services, wayfinding and safety signage and a traffic light system with traffic lights

at both ends of the roadway.

Methodology: The proposed beach access road will follow the general plan line of the existing access track. It will be wider to accommodate a footpath and a road and will incorporate a flatter gradient. The western gabion wall will need to be constructed first. This will require removal of the existing gabion basket / rock armour structures and cutting back to the sides of the existing roadway so as to widen the roadway.

Excavation will be done by machine and excavated materials / sand stored on site for reuse. Rigid gabion baskets will be placed and filled by hand to give a uniform appearance and good structural performance. Excavated materials / sand will be used as fill behind the wall as each line of gabions is completed. The eastern gabion wall will be constructed next using the same methodology, incorporating the duct for the traffic management system in the sand fill. When both the gabion walls are complete the formation for the road and footpath will be prepared and compacted using sand from the site. Precast concrete kerbing will be placed and insitu concrete road and footpath constructed. Permanent fencing will then be installed and finishes in the temporary site extent reinstated before handing back to the current occupiers. Any contaminated sand encountered in the course of the works will be removed from site to an approved waste management facility. Excess clean sand will be placed on the beach around the end of the road and footpath. All Annex I dune areas on the beach will be reinstated and split hazel fencing installed around the entrance to define access point and aid recovery of the dunes. Guidance will be followed to ensure no run off or contamination of Sheephaven SAC.

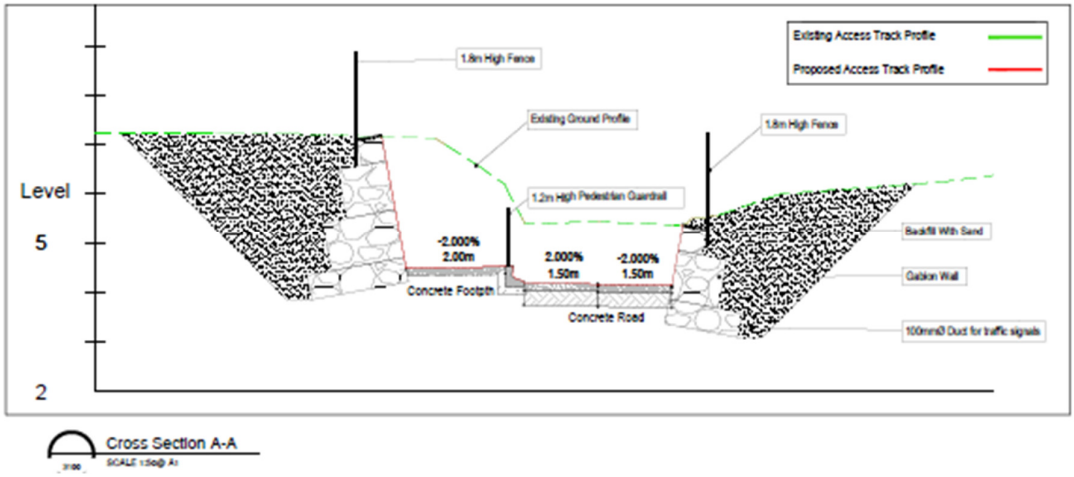

Figure 3.5 Cross section of access path by Jennings O'Donovan and Partners Ltd. (not to scale).

3.3 Operation (Construction Phase)

The proposed site offices, storage compounds, staff facilities, such as canteen and toilets are to be located in Works Area 1 in areas B, C and D as set out on the attached layout map.

This location will minimise disruption to the public road and will provide adequate safe working area for the operatives and machinery on a stone based area of the site which will eventually be finished off as a car park and therefore will not lead to any unnecessary disturbance and stoning of ground.

The materials storage compound will be fitted with a drainage facility to drain into a petrol grit oil

interceptor so as to minimise the discharge of any hazardous waste into the receiving environment.

Oil storage will be bunded, and hazardous materials will be stored in a locked container with access available to the site manager inside four men only.

This site office and storage facility will service the entire work areas 1, 2 & 3.

3.4 Operation (Life Cycle Phase)

During the operation and life cycle period of the building, Donegal County Council will establish a maintenance plan and resource and fund the maintenance and day-to-day operation of the building and surrounding public realm areas.

In addition to the day to day cleaning, upkeep and general maintenance of the building the following items will require a regular monitoring schedule and funding pot to maintain safe operational standards.

Discharge of wastewater and surface storm water and management of same.

Utility services to include Irish water mains water supply and discharge of foul sewerage to a existing gravity public sewer at Main Street.

4.0 Flood risk

There are no records or local knowledge of flooding in the car park area. Works area 1, 2 & 3 are at a slightly lower level than the main street and there is in theory a possibility of sea water entering the car park area on a high tide storm surge in very high tide conditions. The levels of the access roadway will rise to a high point along the centre point of the laneway to provide a natural barrier to any sea tide surges, however this may create scouring of sand and the changing of the sand depths at the entrance to the footpath and roadway will require maintenance to remove excess sand off the roadway and footpath.

The stormwater drainage system around the building and in the car park with discharge into the existing combined sewer pipes at the Main St and any sea water will quickly discharge into this system and reduce the possibility of flooding of the building.

While there is no local knowledge of the car park ever flooding the possibility of future stormwater surges up the roadway from the beach has been taken into account by the structural engineers and their design of the roadway and landing point onto the beach. Donegal County Council who have knowledge of these situations from other walkways provided across dunes onto beaches throughout county will have a management and maintenance plan in place to clear sand from the footpath & roadway.

5.0 Impact of the construction phase on the environment

Development is proposed over 1 phase. Although the construction phase of the project is small scale and short-term compared with the permanent works that are being built, there are risks to the Natura 2000 sites in the vicinity of works. A NIS has been prepared and the following potential impacts identified.

Potential effects were identified as:

Habitat degradation due to hydrological impacts via surface water: Deterioration of water quality

and coastal habitats caused by run-off and pollution, during construction, that may lead to Sheephaven Bay.
Habitat loss and degradation - Dune Habitats due to construction works and trampling
Habitat degradation due to Invasive species – Sea buckthorn and spread to the dune habitats
Habitat degradation due to noise and disturbance: Some of the listed waterbird species may at times use habitats situated within the immediate hinterland of Horn Head to Fanad Head SPA or in areas ecologically connected to it.
Reduction in species density due to pollution, invasive species, disturbance.
In combination effects
Tables 7.1 and 7.2 detail the preconstruction surveys required and the mitigation measures proposed to protect the receptor in the sequence namely:
Sheephaven Bay SAC resulting in effects on:
[1140] Tidal Mudflats and Sandflats and
[2110] Embryonic Shifting Dunes and
Horn Head to Fanad Head SPA resulting in effects on marine and coastal habitats.
Particular care must be take in the area closes to the SAC and within designated habitats to ensure that reinstatement and recovery can occur.

5.1 Invasive Alien Plant Species (IAPS)and Bio Security.

Planting, dispersing, or allowing/causing the dispersal, spread or growth of certain non- native plant species is controlled under Article 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011; and refers to plant or animal species listed on the Third Schedule of those regulations. When importing materials from outside a site there is always a risk of importing unwanted elements such as seed or spores from invasive plants for example, Japanese knotweed or Rhododendron. Every effort will be made to ensure imported material is clear of contaminants and comes from a known reliable source.

The accidental spread of non-native invasive plant species as a result of construction works has the potential to impact upon terrestrial habitats within and immediately adjacent to the proposed development boundary; potentially affecting plant species composition, diversity and abundance over the long-term. Sea buckthorn a third schedule plant has been recorded on site

5.2 Pollution

Donegal generally experiences a high annual rainfall within the Republic of Ireland. This is an important pollution consideration for construction works as rainfall combined with construction activities increases the risk of pollution and potential damage to the water environment.

Rainfall and associated surface water run-off during construction works can mobilise and transport pollutants such as sediment, oils, chemicals and other building materials into the water environment causing harm to plants and animals. Heavy rainfall can also flood excavations and other work areas which subsequently require draining or dewatering.

Pollution from sediment and other pollutants can come from a number of sources within construction sites.

Potential sources of pollution from construction sites:
Run-off from exposed ground and material stockpiles.
Run-off from roads and haul routes.
Plant washing/washing areas.
Fuel and chemical storage / refueling areas. Leaking

and vandalised equipment.
Dust and emissions may arise from delivering material and other goods to the site and storing material on the site.

Effects of pollution:

Sediment pollution can smother important habitats.

Pollution from fuels and other chemicals can have a variety of effects on water ecology and can lead to fish and invertebrates being killed, and bird plumage being affected.

Cement pollution of waters results in high alkalinity and raises pH, which can be toxic to aquatic life.

Most pollution incidents are avoidable and the risk of pollution and damage to the water environment can be reduced by careful planning.

Using the Source - Pathway - Receptor model, if one of these parameters is eliminated from the sequence then the risk is removed. In this case the source is construction phase including the soils, sediments and pollutants associated with it. The pathway for transporting emissions from the development site is via storm/surface water runoff both during construction and operation. If this pathway is eliminated then this risk is reduced significantly. Other pollutants that could enter the system via percolation through soils or groundwater would require careful site management, in particular hydrocarbon, fuel, chemicals and any other hazardous materials on site.

Physical disturbance of the site during site preparation and building also requires care and attention to minimize and remove effects on ecological receptors.

NPWS will be contacted prior to any works in or near the SAC take place.

water protection bunds to ensure cement laden water or accidental spill will be contained in a managed fashion so that it can be collected and removed safely from the environment.

The storage and use of cement-based material such as concrete in this area is to be carefully controlled and all operatives are to be inducted into the safe storage / usage methods and so as to minimise any accidental spillage into the adjoining environment.

5.3 Lighting

Bright construction lights can sometimes inadvertently attract birds to the area and can disorientate them causing them to stray from their normal routes. Lighting pollution in general can cause impacts to birds, bats and other wildlife and should be kept to a minimum.

5.4 Dune protection

Sand dunes are hills of wind-blown sand that have become progressively more stabilised by a cover of vegetation. In general, most sites display a progression through strandline, foredunes, mobile dunes and fixed dunes. Where the sandy substrate is decalcified, fixed dunes may give way to dune heath. Wet hollows, or dune slacks, occur where the dunes have been eroded down to the level of the water table. Transitional communities can occur between dune habitats and they may also form mosaics with each other. Dune systems are in a constant state of change and maintaining this natural dynamism is essential to ensure that all of the habitats present at a site achieve favourable conservation condition.

The vegetation on dunes is an essential feature in maintaining stability of the dune system. Damage to this vegetation caused by beach users treading a common path is sufficient to cause extensive instability over a large area due to the creation of vulnerable erosion routes. This loss of sand reduces the overall mass of the beach and sand dune system which acts as a buffer to the sea. Pedestrian traffic resulting in the trampling of vegetation is the most widespread form of damage to dune systems caused by human activities. Sand dunes that are subjected to unmanaged access can experience severe vegetation damage followed by soil and sediment erosion.

6.0 Construction management phase on site works.

It is the contractors responsibility to follow the most up to date guidance and site management practices.

A full suite of mitigation measure can be seen in tables 7.1 and 7.2.

Site access and management

Works will be overseen by a qualified engineer/ architect and a Clerk of Works will be appointed.

All mitigation measures will be incorporated into method statements of the appointed contractor.

Screening and ecological protection measures will be installed and sensitive habitats cordoned off and signposted, training will be provided by the Clerk of Works.

Signage will be erected at access points to the site stating ‘construction work ahead’ and containing site safety rules.

A competent signaler (banksman) will be available for duration of the works to guide machinery and deliveries.

A common sense approach will be taken. Works will not proceed during heavy rain events.

All personnel from the site manager to engineers, foremen, plant operatives, subcontractors’ tradesmen and laborers will have a part play in preventing environmental impacts during construction. It is proposed that each member of the site staff will be trained and made aware of the potential impact of their activities and will be equipped with knowledge of how to eliminate or reduce that impact, it is proposed that good practice guidance will be implemented throughout the construction process so as to minimise any pollution run-off into the existing watercourse..

6.1 Invasive Alien Plant Species measures

An outline Invasive species plan has been developed

Outline Plan -Eradication of Sea-Buckthorn

A preconstruction survey to confirm extent of species is required.

A small area of sea buckthorn has been identified along the access route. It is proposed to remove part of this bank as part of the road access proposals. Prior to any earth works sea buck thorn will be mapped out and removed before any other work on site is undertaken.

Grubbing up of plants using an excavator is a recognized and successful method in most cases.

Root material as well as stems and branches should be removed for disposal, preferably by burning or incineration. Some of the larger stands may also be cut and the stumps painted with Glyphosate herbicide. This method has variable results the area should be monitored for regrowth. Smaller plants and seedlings can be pulled manually.

The treatment of invasive species on site will be undertaken by an IAPS specialist contractor, with appropriate licensing with regards to removal of materials and use of herbicides.

If burning is to be carried out the appropriate licenses should be obtained. Otherwise removal of contaminated material to a licensed landfill is required.

The area will be monitored for invasive species on an ongoing basis.

Prevention of introduction or further spread of IAPS and biosecurity measures

IAPS can spread by the re-growth of cut plant fragments or root material. If a plant is broken up or disturbed during site clearance or other earthworks, it can readily re-grow in new areas where material is transported to. The spread of IAPS to uninfested areas would increase the future cost and effort required to control the species.

Where possible, all stands of IAPS will be eradicated prior to construction works taking place. The following measures will be implemented across the proposed development site during construction prior to, during and after the management of invasive species:

- Prior to any works taking place, specific training will be given to all relevant site personnel to ensure they are aware of the location of IAPS on site, the impacts of the species and associated risks.
- Posters outlining the key features of IAPS will be displayed in communal areas on-site to ensure all site personnel are aware of this species and the associated risks.
- Any plant or machines to be used in the project area will be washed down at a designated offsite location prior to mobilising. All machinery, equipment, footwear should be inspected for attached plant material before entering or leaving. If found, it should be removed before entering the area, and disposed of carefully and should not be discarded in or around the site.
- When importing materials from outside a site there is always a risk of importing unwanted elements such as seed or spores from invasive plants for example, Japanese knotweed or Rhododendron. Every effort will be made to ensure imported material is clear of contaminants and comes from a known reliable source. It is recommended that the contractor obtains documentation from suppliers that the material is free from Japanese knotweed and other invasive species.
- No new materials will be stored adjacent to stands of IAPS on site.
- All IAPS affected areas will be clearly demarcated by fencing/tape, prior to and during construction, to avoid any disturbance and to exclude access by plant and machinery. Signs will be erected on fencing to inform contractors of any risks posed. Stockpiles of soil that are or may be contaminated with IAPS must be clearly marked.
- Designated control measures will be implemented at the earliest possible stage to reduce the risk of spread of IAPS.
- Efforts will be made to reduce the risk of material transfer by enforcing appropriate controls on the movement of machinery, soils and materials in the infected area, i.e. by implementing strict and appropriate biosecurity measures on site.

- A systematic approach will be taken in the removal and control of IAPS, ensuring that the use of tracked machinery is limited in infested areas and vehicles and equipment are cleaned before moving around the site. All vehicles and equipment that have been used in IAPS control operations must be thoroughly cleaned and checked before they leave the works site and once work in that area has been completed. This also includes footwear, personal protective equipment (PPE), tools, and other light equipment. These measures will minimise the risk of introducing or reintroducing contaminated materials, seeds or plant fragments into areas that is already treated or developed.
- Excavated infested soils will be transported (if required) in vehicles that are deemed to be biosecure (i.e. sealed so that no soil can escape) shall be used to transport contaminated soil and all must be thoroughly pressure-washed in a designated wash-down area before exiting the infested area
- Designated and clearly marked cleaning and/or disinfection stations will be strategically placed within the work site for use by staff, vehicles and machinery. All potentially contaminated wash material will be securely contained and disposed with the other IAPS material, or to a licensed facility, if required.
- Following control of IAPS, subsequent disturbance of the soil may give rise to a flush of seedling germination or revitalised rhizome growth. To avoid this, bare soil should be mulched (covered with a natural or synthetic barrier, such as wood chip, straw, geo-textile, or other appropriate material) and planted at the earliest opportunity with appropriate native replacement vegetation to stabilize the soil and deter subsequent re-invasion.
- When the treatment and eradication programme has been implemented regular monitoring of the site, over a number of years, is required and maintenance contractors must remain vigilant in their management of the site to prevent the establishment and spread of IAPS and to protect native biodiversity.
- Areas that have been treated in the past will be mapped and marked out on site.

6.2 Pollution control measures

During the construction stage, best practice construction methods as set out in CIRIA Guidance C741 “Environmental Good Practice on Site” and CIRIA guidance note Control of Water Pollution from Construction Sites (CIRIA, 2001) will be implemented in order to prevent alteration and/or contamination of the soils and geology. This will include proper site management during construction, to ensure that all necessary measures are taken to prevent run-off/pollutants from entering any watercourse in the vicinity. All works will adhere to IFI ‘Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters’ (IFI, 2016).

6.3 Noise and vibration measures.

There is a high level of activity and noise on a construction site. Sources include noise and activity from excavation machinery, increased human activity during construction processes and increased heavy traffic to and from site.

Construction activity on site will not however be permanent and activity levels will vary greatly during the construction period. Disturbance events are therefore temporary in nature.

All construction activities that have the potential to generate excessive noise or vibration shall be carried out during permitted hours.

6.4 Lighting measures during construction

The building site will be screened by the lay of the land which will reduce the possibility of effects. While many lighting solutions are possible, the following ideals should be adhered to:
Lighting will be directional toward the site and will be kept to the minimum required for health and safety. The avoidance of direct lighting on trees, hedges shrubs, wildlife corridors such as stone walls.

6.5 Dune management measures

The dune habitat at Downings covers a small strip between the Caravan parks and the beach. They are listed as Embryonic dunes however they are quite stable in areas with binding vegetation showing elements of marram and some fixed dune evident. The construction works have the potential to damage the dune system at the entrance to the beach. The existing walkway has embryonic shifting dunes on both sides as it ends at the beach. During works disruption to this area will be kept to a minimum however some temporary localised loss and disturbance will occur.

The existing access route has been established for many years. To carry out the improvement works temporary disturbance of dunes at the entrance to the beach will be required. This material will be stockpiled and reused to reinstate the dunes on both sides of the access when works are complete. The beach leading to the access route will be fenced using split hazel fencing; this will have a dual purpose of guiding pedestrians away from the dunes into the designated access route and also to trap sand and reduce wind erosion, thereby encouraging dune recovery. Planting of appropriate species will be undertaken as necessary and in consultation with NPWS

6.6 Site access management during construction works.

All site access during the construction works and the access to site offices and facilities and off street car parking area will be from the main street. Work vehicles will not be parked on the public roadway or car parking bays.

The contractor will be required to schedule deliveries in such a way that construction activities and deliveries activities do not occur during peak traffic flows or run concurrently with other deliveries/activities.

To reduce impacts on local communities and residents adjacent to the site, it is proposed that:

The contractor will liaise with the management of other construction projects and the local authority to co-ordinate deliveries.

The contractor will schedule deliveries in such a way that construction activities and deliveries do not occur during peak traffic flows or run concurrently, e.g., avoid pouring of concrete on the same day as large material deliveries and during peak holiday times to avoid conflict.

HGV deliveries to the development site will be suspended on the days of any major events that have the potential to cause larger than normal traffic volumes

The contractor will interact with members of the local community and business operators to ensure that deliveries will not conflict with sensitive events such as festivals or busy holiday periods or times.

Construction activities will be undertaken on a six-day working week, with deliveries being restricted to 10:00-18:00 on weekdays and 10:00-14:00 on Saturdays.

6.7 Excavation and disposal of inert earth material.

It is not proposed to dispose of any material off site, however if this becomes the case then all material will be disposed to a licenced facility and the haul routes will be agreed with the local authority roads engineers in advance and dockets to prove delivery to the licenced facility will be provided to the contractor as proof of safe disposal.

6.8 Material storage on site

The proposed compound location is a dedicated area of hard standing (see figure 6.1). The compound will be developed for the safe storage of materials, including a bunded refueling station, drip trays, impermeable sheeting and spill kits.

The project supervisor construction stage will be responsible for the day-to-day management of the material and fuel storage area.

All hazardous materials will be stored in a locked container and access will be restricted.

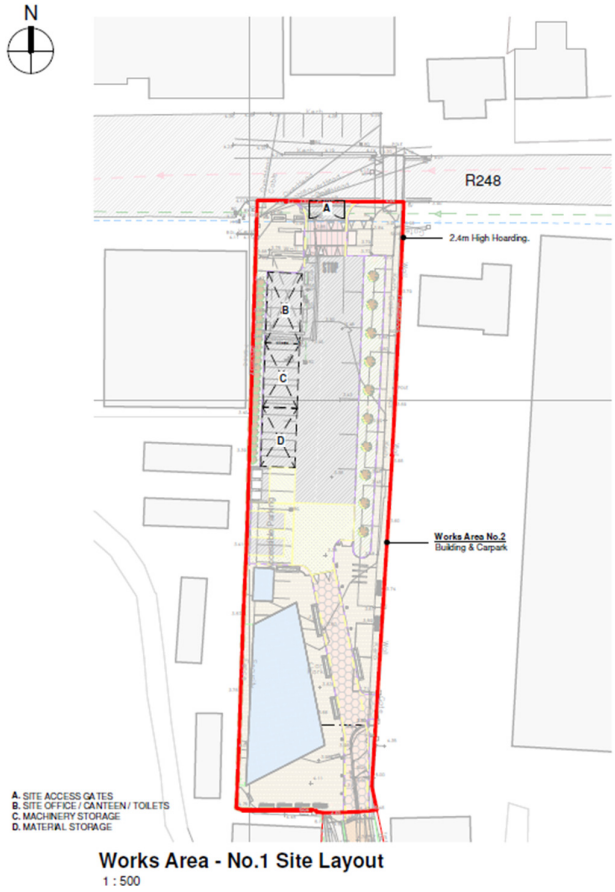

Figure 6.1 Works Area 1 layout

6.9 Traffic congestion

The work areas are located in an area popular with tourists and water sports enthusiasts and can be extremely busy during most periods of the year but particularly during the summer months. The entrance to the site is located in the centre of the town and at the main public access to the beach.

A Temporary public walkway from the Main Street to beach past the site will be set in place for the summer months of June July and August and will be maintained in a safe manner so as to

provide safe pedestrian access from the Main St to the beach along the side of the works areas.

The contractor will put in place a traffic management plan to ensure that traffic associated with the works will have minimum impact on the general flow of traffic on the public road and in the car parking area and works will be phased so as to minimise disruption during busy periods or planned festivals or competitions.

The traffic plan will be agreed with the local roads engineer and will be reviewed on a regular basis to ensure it successful operation particularly in advance of planned busy periods.

Site signage will clearly identify routes for construction traffic and banksman would be available at the entrance and exit to the site during delivery periods.

6.10 Monitoring requirements

Site management and staff will be monitored continuously to ensure erosion, sediment and dune management controls are working effectively.

7.0 Mitigation measures tables

The project has been designed in cognisance of the SAC and SPA adjacent to the site.
NPWS will be consulted prior to implementation of measures and in advance of works commencing.
A full suite of site specific mitigation measures are detailed in tables 1 and 2.
NOTE MITIGATION FOR ALL ECOLOGICAL AND NATURA 2000 aspects have been included in the table to ensure continuity across the project.

The location of the facility and car park is located outside the Natura 2000 network. The path leads on to the beach which is within Sheephaven SAC.

Preconstruction survey	**Location**	**Survey objective**	**Survey timing/seasonality**	**Licence required for survey?**
Invasive Alien Plant Species survey	Entrance to the beach	Determine Extent of Sea Buckthorn	Anytime. Autumn best when berries are visible.	No

Table 7.1 Preconstruction surveys

Source	**Pathway**	**Receptor**	**Mitigation Measure**
Site management	Construction site	Sheephaven SAC Horn Head to fanad Head SPA Waterbirds Marine habitat	Site access and management Works will be overseen by a qualified engineer/ architect and a Clerk of Works will be appointed. All mitigation measures will be incorporated into method statements of the appointed contractor. Training will be provided to all staff Site will be strictly monitored in consultation with NPWS and the appointed contractor. Good practice guidelines must be followed including those for Pollution Prevention (PPGs).
Biosecurity			
Importation of Invasive species	Importing materials	Sheephaven SAC Dune habitat	In order to comply with Regulations 49 and 50 of the European Communities (Birds and Natural Habitat) Regulations (2011), the appointed Contractor will

Source	Pathway	Receptor	Mitigation Measure
			ensure biosecurity measures are implemented throughout the construction phase to ensure the introduction and translocation of invasive species is prevented, see section 6 of CEMP. When importing materials from outside a site there is always a risk of importing unwanted elements such as seed or spores from invasive plants for example, Japanese knotweed or Rhododendron. Every effort will be made to ensure imported material is clear of contaminants and comes from a known reliable source.
			Any plant or machines to be used in the project area will be washed down at a designated offsite location prior to mobilising. All machinery, equipment, footwear should be inspected for attached plant material before entering or leaving. If found, it should be removed before entering the area, and disposed of carefully and should not be discarded in or around the site.
Invasive Alien Plant Species	Transportation of materials within and around the site	Sheephaven SAC Dune Habitats	Sea Buckthorn to be removed and treated from site prior to works commencing. IAPS mitigation measures to be followed and Biosecurity measures implemented see section 6 CEMP/13.3 of NIS.
Construction	Habitat degradation or loss	Sheephaven SAC Dune Habitats	NPWS will be consulted prior to any works taking place within the SAC and proposed methods approved in advance of works. Construction workers will be made aware of the sensitivities in the area and the area will be fenced off as much as is practical during works. Works should be done by hand as much as is practicable. Tracked machinery should not be used in the dune system. Sand removed to permit the access upgrade will be stockpiled for reinstatement of dunes.

Source	Pathway	Receptor	Mitigation Measure
			After access works are complete sand that has been temporarily removed will be reinstated, split hazel fencing will be erected around the edge of the dunes, to encourage recovery and to guide pedestrians into the access path. The access path and split hazel fencing will control visitor movements in and around the site and will deter users from tramping through the dune system by providing them with a direct, safe and accessible route. Any damaged areas will be reinstated and planted with Dune grasses as appropriate e.g. couch grass (*Elytrigia juncea*) and/or lyme grass (*Leymus arenarius*). A clear sign showing the exit from the beach will be erected. Information and education panels will be erected around the project area explaining dune systems, the biodiversity associated with them and their coastal protection benefits. Outside of the project footprint, there are several access paths cutting through the dunes to the beach. Every effort should be made to reduce the number of routes through consultation with local businesses and caravan owners. Choosing an already established route is preferred rather than developing another route. The rest of the dunes should then be fenced off using split hazel fencing. This encourages sand to be trapped at the base of the dunes and will enable the dunes to recover. **Maintenance** The maintenance of suitable sand binding vegetation to support the natural dune building and repair processes to prevent erosion damage is an ongoing effort. This also involves the control of problem plants for example

Source	Pathway	Receptor	Mitigation Measure
			Sea-buckthorn, to eliminate any potential invasive species before they become widespread. After access road works are complete, split hazel fencing will be erected around the edge of the dunes, to encourage recovery and to guide pedestrians into the access path.
Silt fencing	Runoff	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Marine habitat	Silt fences will be constructed using a permeable filter fabric Hy- Tex Terrastop Premium silt fence or similar, and installed as per manufacturers guidelines. Silt fencing to be strictly monitored for tears or breaches especially after periods of wet weather. Sandbags: Sand to use washed non-calcareous sand (washing to occur off site).
Settlement area/ mobile tank	Runoff from installation	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Marine habitat	Works will be carried out in dry weather. Silt fencing will be established around the site for the lagoons. The lagoons will be dug out and lined with an impermeable layer, the excavated earth will be used to create a bund around the silt lagoon.
Compound	Run off and spills	Sheephaven SAC Horn Head to fanad Head SPA Waterbirds Marine habitat	The proposed compound location is a dedicated area of hard standing. The compound will be developed for the safe storage of materials, including a bunded refuelling station (if required), drip trays, impermeable sheeting and spill kits. Silt fencing will be established around the compound area.
Haulage routes, vehicles and construction traffic	Run off from construction site	Sheephaven SAC Horn Head to fanad Head SPA Waterbirds Marine habitat	Designated routes and parking areas are proposed. Speed limit of 10km p/hr. Vehicles carrying loose soil, aggregate and workings will be sheeted at all times. Appropriately designed vehicles for materials handling will be used.

Source	Pathway	Receptor	Mitigation Measure
			All construction plant and equipment will be maintained in good working order and not left running when not in use. Regular inspection and cleaning of local roads and site boundaries to check for dust deposits, and removal as required. All machines shall be suitably maintained to ensure that emissions of engine-generated pollutants shall be kept to a minimum in accordance with 'Measures Against the Emission of Gaseous and Particulate Pollutants from Internal Combustion Engines to be Installed in Non-Road Mobile Machinery' (2002/88/EC) and 'Emissions of Pollutants from Diesel Engines' (2005/21/EC). A self contained wheel wash will be used and contaminated water collected.
Site preparation topsoil removal materials handling and levelling	Run off from construction site	Sheephaven SAC Horn Head to fanad Head SPA Waterbirds Marine habitat	Prior to construction: IAPS plan to be implemented. Erosion control is the first line of defence followed by sedimentation controls. The site substrate will be stabilised around the boundary to prevent any surface run off. This will be done by use of sandbags and silt fencing will then be installed. During demolition and excavation material will be loaded directly into a tipping lorry for removal, or for use or storage as appropriate. There will not be any soil/sand removal from the site, all soil/sand will be reused and stockpiled if required in the construction compound. Disturbed soils/sands will be stabilised as soon as practicable, either temporarily or permanently as required, e.g. sowing, impermeable mats.

Source	Pathway	Receptor	Mitigation Measure
			Excavation works will not be carried out during or following heavy rainfall. Dewatering of excavations shall be avoided where possible. If required, this will be achieved by pumping excess water to settlement tank at the construction site, where the water will be retained for a sufficient length of time to allow particles to settle, before discharge to the drainage system for treatment.
Materials storage, stockpiling.	Run off from construction site	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Marine habitat	Stockpiles of materials will be located in a designated area in the compound. Surface areas of stockpiles will be kept to a minimum to reduce area of surfaces exposed to wind pickup. Where appropriate, windbreak netting/screening will be positioned around material stockpiles and vehicle loading/unloading areas. Stockpiles will be covered during periods of heavy rainfall e.g. impermeable mats (plastic sheeting). During dry or windy weather, material stockpiles and exposed surfaces will be covered. Silt fencing will be established at the toe of stockpiles and around the compound area.
Completions and landscaping	Run off from construction site	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Marine habitat	Disturbed soils/sand will be stabilised as soon as practicable by sowing. Silt fencing will remain until surfaces are stabilised.
Excavation to install drains and levelling access path	Run off from construction site.	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Marine habitat	Large excavation works to be done in dry weather. Excavated material to be loaded onto lorries/dumper truck for immediate reuse or stockpiling in designated area. Drains to be protected with geotextile bund, fixed with sandbags to prevent surface water runoff into the openings.

Source	Pathway	Receptor	Mitigation Measure
			During utility and drainage works, silt traps will be created using sandbags when connecting to the facility infrastructure to ensure no sediment is released down the pipes. Any sediment will be removed manually and relocated on site.
Contaminated water	Run off from construction site. Pollution.	Sheephaven SAC Horn Head to fanad Head SPA Waterbirds Marine habitat	Existing drains will be closed to facilitate construction. Storm water drains will be created and directed to settlement tank and released as required in a controlled manner. Mobile settlement unit will be used to treat water; this will be appropriately sized and designed to cope with a 1 in 10 year storm event of 14hour duration. If dewatering is required the water will be pumped to the settlement tank to allow sediment to settle before water is reused or discharged. Vehicle wash will be connected to the settlement unilt where water will be treated prior to release. All drain inlets that could receive storm water and runoff (outside the site perimeter) from the site will be protected using drain covers, and maintained. During construction the site will be serviced by portaloos. These will be serviced regularly by a licensed contractor. Staff will monitor the system. Ongoing monitoring may indicate the need for additional sediment controls. Location, quantity and method of installation will be agreed in consultation with the site manager and statutory agencies as required.
Contamination from hazardous materials - oils, fuels, chemicals	Run off from construction site, spills and leaks. Pollution.	Sheephaven SAC Horn Head to fanad Head SPA Waterbirds	Refuelling of plant/machinery will be undertaken in designated areas on an impermeable surface within the compound area

Source	Pathway	Receptor	Mitigation Measure
		Marine habitat	Refuelling will always be carried out in a controlled manner with absorbent materials available to clean up any spillages. All machinery/equipment will be well serviced and in good working condition. Machinery/equipment will be inspected daily for leaks of hydrocarbons. Any faulty machinery/equipment will be repaired/replaced immediately. A bunded storage area will be located in a designated area within the compound and will be provided for the duration of the construction period for the storage of oils, fuels, chemical and other hazardous materials. If any oil or fuel is stored in the area, it will be kept in a bunded area (providing 110% capacity of the largest stored unit). Chemicals will have individual separate bunds and storage areas. Associated waste materials will be transported by registered carriers, and disposed of to appropriately licensed sites. Drip trays will be supplied for static machinery. Spill kits will contain terrestrial oil booms (80mm diameter x 1000mm) and a plastic sheet, upon which contaminated soil can be placed to prevent contamination of groundwater. Procedures will be set in place to respond to any emergency incidents which may occur on the Site. All appropriate staff will be trained and made aware of the pollution and spill contingency procedures set in place. In the event of an incident the NPWS, and the Environment Protection Agency will be notified immediately.

Source	Pathway	Receptor	Mitigation Measure
Concrete	Run off from construction site. Pollution.	Sheephaven SAC Horn Head to fanad Head SPA Waterbirds al and Marine habitats	Pouring concrete will not be carried out during periods of heavy rainfall. k concrete lorries will deliver all concrete to site, which will be pumped directly into the required area. Vehicles will leave immediately after delivery. y no washing of concrete premix lorries will be permitted on site.
Dirty vehicles and equipment	Run off from construction site. Pollution.	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Coastal and Marine habitats	A designated area will be allocated for the washing of vehicles and other equipment; the dirty water from same will be contained and redirected to the settlement unit.
Waste management	Construction site	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Coastal and Marine habitats	Waste will be removed from the site and disposed of by an approved waste contractor in accordance with prevailing waste management regulations. On completion of the works, all apparatus, plant, tools, offices, sheds, surplus materials, rubbish and temporary erections or works of any kind will be removed from the site.
Completions and landscaping	Run off from construction site.	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Coastal and Marine habitats	Disturbed soils will be stabilised as soon as practicable by sowing. Silt fencing will remain until soils are stabilised.
Emergency Event	Run off from construction site, Spills, damage to equipment	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Marine habitat	All operatives pre, during and post construction will be made fully aware of the environmental sensitivities in the area and the procedures to follow in the event of an emergency or pollution incident. If an emergency event should arise (e.g. an extreme weather event), with the capability of generating additional erosion and sediment laden runoff the

Source	Pathway	Receptor	Mitigation Measure
			necessary equipment required in responding to this event will be stored on site. Staff will be trained in the use and application of these temporary emergency measures which may involve: Impermeable matting, silt fences, mulching and portable settlement tanks. In the event of an incident the NPWS and the Environment Protection Agency will be notified immediately.
Operation			
Surface water runoff/wastewater	Run off from site Malfunction of waste water treatment facilities	Sheephaven SAC Horn Head to Fanad Head SPA Waterbirds Coastal and Marine habitats	Surface water, grey water and waste water will be pumped to the existing treatment facility. The pumping facility will have a back up and alarm system to alert operators of any malfunction.
Lighting	Light spillage Birds Bats and other wildlife	Sheephaven SAC Horn Head to Fanad Head SPA Sea / Waterbirds Birds Bats and other wildlife	The avoidance of direct lighting on trees, hedges shrubs, wildlife corridors such as stone walls. All lights should lack UV elements. Low-pressure sodium lights will be used in preference to high pressure sodium lights or mercury lamps. If mercury lamps are to be used, ultraviolet (UV) filters will be fitted. Directional lighting – that is, lighting only at the intensity and direction it is needed Cowled lighting will be used throughout, to direct light spill away from habitat. Height of lighting columns – The lower the light column, the less light spillage. Height of light masts will be minimised; masts should be preferably below 3 m high. Duration of lighting – Lights should only be on when in use or for health and safety purposes. The use of timers and sensors are ways of controlling this. Motion sensitive lighting where appropriate will be used.
Clearing of vegetation **Construction near nesting sites**	Damage to habitat, habitat loss, injury, mortality	Nesting habitat –Birds	There is a limited area of vegetation along the access route, works along the access road may disturb nesting birds

Source	Pathway	Receptor	Mitigation Measure
			• If it is not possible to adhere to the Wildlife act restrictions a preconstruction survey will be undertaken by a suitably qualified ecologist prior to removal of vegetation Where surveys determine no nests are present, works must proceed within 72 hours or further surveys will be required. • If a nest is found, it should be clearly marked and a buffer zone established around it, and left until fledglings have left. • Alternatively if the nest has to be removed a derogation licence will be required from NPWS.
Visitor management	Damage to Habitat	Dune system	The dune area around the new path and along the beach will be fenced with split hazel fencing to deter movement from the beach through the dunes. The fencing should extend along the beach and around the entrance to the beach to encourage visitors to use one route only. The exit from the beach should be clearly marked. Consultation with other activity providers at Downings will aim to reduce potential impacts on the dune system. Damaged areas of dune will be planted with appropriate dune grasses e.g. couch grass (*Elytrigia juncea*) and/or lyme grass (*Leymus arenarius*). Prior consultation with NPWS is required. Information and Education panels will be installed at several locations to encourage the dissemination of information about the ecological value and sensitivities of the dune system, Waterbirds and other ecological features at Downings.

Table 7.2 Mitigation Measures for Downings PFG Project

8.0 Emergency procedures

An emergency plan will be established and held on site, within the safety plan for the site.

This plan will include mitigation measures should emergencies arise during the construction works and will include for the following:
Pollution incidents:
Spillages
Failure of temporary works
Vandalism
Fire damage
Extreme weather events- heavy rainfall, flooding, severe frost and snow.

An emergency response plan will be put in place on the site with the procedure for dealing with emergencies and this procedure shall be communicated to all staff at site induction.

Site staff responsible for taking actions on emergencies will be aware of their responsibilities, trained using equipment such as spill control equipment and shut off valves.

See Appendix 1 for Draft Emergency Plan.

Report prepared by;

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9.0 References & sources of further information.

The CEMP has been developed using the following guidance (list not exhaustive)

BPGCS005: Oil Storage Guidelines.

BS 5228 (2009 +A1 2014) Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2.

CIRIA C532: Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (Masters-Williams et al., 2001).

CIRIA C692: Environmental Good Practice on Site, (Audus *et al*. 2010).

CIRIA Guidance C741 "Environmental Good Practice on Site"

CIRIA C648: Control of Water Pollution from Linear Construction Projects: Technical Guidance (Murnane et al. 2006a).

Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters (IFI, 2016).

Scottish Environment Protection Agency. 2009 Engineering and The Water Environment Good Practice Guide, Temporary Construction Methods.

BRE (1991) Soakaway Design (revised 2003) Digest 365.

Environment agency, SEPA and environmental and heritage service pollution prevention guidelines.

PPG 2: Above ground or oil storage tanks.
PPG 5: Works and maintenance in water

Appendix 1 Draft Emergency Procedures

The main priority is to avoid sediment release, spillages and emergency situations. This should be achieved through minimising the risk of erosion, sedimentation, runoff and spillage at source through management of materials on site and avoiding the use of polluting materials where possible. Where the use of polluting materials is unavoidable, then suitable containment in a sensible location is essential.

In addition, pathways for pollution to escape will be removed and/or easily intercepted. This can be achieved through isolating polluting materials from drainage infrastructure and ensuring that there are appropriate methods for intervention and containment e.g. Spill kits and drain covers.

If an emergency event should arise (e.g. an extreme weather event), with the capability of generating additional erosion and sediment laden runoff, the necessary equipment required for responding to this event will be stored on site. Staff will be trained in the use and application of these temporary emergency measures which may involve: Impermeable matting, silt fences, use of mulch.

Spill kits will be clearly marked and sign-posted, sited close to the area where materials are stored and handled. All staff will be trained in the use of spill kits and the correct disposal of used spill control material. Spill kits may include absorbent granules, drain covers and shovels.

The spill kits should be subject to periodic inspection to ensure they contain appropriate equipment in sufficient quantities.

In the event a spill occurs, the following actions will be taken:

- Stop the source of the spill by up righting the container, blocking leaks (using compound in spill kit) or shutting off valves;
- Inform foreman immediately;
- Block access to all local drains using spill containment materials, booms or drain blockers.
- Clean up spill using spill clean-up materials;
- If the spill has entered the drainage system, a watercourse, or an area of porous ground/non- hard standing and the site are dealing with the incident themselves it must be reported to Environmental Agency and the Site Manager immediately; and
- In the event of major or complicated spills, the Site Manager will assess the incident and if appropriate request a specialist spill contractor to attend the Site.
- Any spillage should be recorded and investigated. Appropriate corrective and preventive actions should be implemented and recorded to reduce the likelihood of such events reoccurring.

Phone numbers for the Local Authority and the relevant statutory agencies can be found below:

- Donegal County Council 074 91 53900
- Fire Brigade 999 OR 112
- Inland Regional Fisheries Ballyshannon 071 98 51435

- NPWS District Conservation Officer 071 966 6709
- EPA (Monaghan) 047 77600