

# CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN FOR THE DEMOLITION OF AGRICULTURAL STRUCTURES AND THE DEVELOPMENT OF A MATERIALS RECOVERY FACILITY AT DERRYARKIN, RHODE, CO. OFFALY

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## CONSTRUCTION AND ENVIRONMENTAL PLAN

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Prepared for: **Oxigen Environmental Unlimited Company**



**Date:** September 2022

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## CONSTRUCTION AND ENVIRONMENTAL PLAN

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**Abstract:** This document is the Construction and Environmental Management Plan (CEMP) for the demolition of agricultural structures and the development of a materials recovery facility at a development site Derryarkin, Rhode, Co. Offaly. It sets out the key construction and environmental management issues associated with the construction of the proposed development. This plan will be developed further at the construction stage, by the client and on the appointment of the Contractor to the project. This document should be read in conjunction with the EIAR that accompanies the planning application for the development.

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## 1 EIA SCOPING, CONSULTATION AND KEY ISSUES

### 1.1 General Introduction and Purpose

This document is the Construction and Environmental Management Plan (CEMP) for the proposed demolition of agricultural structures and the development of a Materials Recovery Facility at Derryarkin, Rhode, Co. Offaly and has been prepared for Oxigen Environmental Unlimited Company to accompany the planning application for the proposed development.

This document sets out the construction and environmental management concerns associated with the proposed development. This plan will be developed further to reflect input during the consenting stage and at the post-planning and construction stages, by the developer and the appointment of the Contractor to the project. Any adjustments to the CEMP will be carried out on the basis that they do not increase the impacts as addressed in the EIAR, NIS and AA.

This document should be read in conjunction with the EIAR prepared for the proposed development, along with other relevant drawings and documentation. In the case of any ambiguity or contradiction between this CEMP and the EIAR, the EIAR shall take precedence.

This CEMP sets out the key environmental management concerns associated with the construction of the proposed development, to ensure that during this phase of the development, the environment is protected and impacts on the environment are minimised.

The document is divided into six sections:

- Section 1:** *Introduction:* this section provides details on the existing site and the proposed development.
- Section 2:** *Existing Site Environmental Conditions:* this section provides details of the existing geological, hydrological, ecological and archaeological, architectural and cultural heritage conditions on proposed site. These conditions are to be considered by the Contractor in the construction phase of this proposed development.
- Section 3:** *Overview of Construction Works:* this section provides an overview of the construction works proposed.
- Section 4:** *Environmental Management Plan (EMP):* this section outlines the main requirements of the EMP, the project obligations, the Environmental Management System (EMS) and outlines the environmental mitigation measures for the protection of the environment including noise and dust minimisation, the management of excavated peat, surface water management, archaeology, architectural and cultural heritage management and construction waste and traffic management.
- Section 5:** *Safety & Health Management Plan:* this section defines the work practices, procedures and management responsibilities relating to the management of safety and health during the design and construction of the proposed development.
- Section 6:** *Emergency Response Plan:* this section contains predetermined guidelines and procedures to ensure the health, safety and welfare of everybody involved in the project and to protect the environment during the construction phase of proposed facility.



## 1.2 The Applicant

The applicant for the proposed development is Oxigen Environmental Unlimited Company, which is hereafter referred to as 'The Applicant.'

The applicant is one of Ireland's leading integrated waste management and recovery/recycling company's.

## 1.3 The Site

The proposed development site is located in the townland of Derryarkin, Rhode, Co. Offaly. The development site is 0.8 ha in size. The site is located 4 km south-south-east of Rochfortbridge, Co. Westmeath and 5.5 km north-west of Rhode, Co. Offaly. The site is 3 km south of the M6 motorway and approximately 2.2 km west of the R400. A site location map is presented in Figure 1-1.

The site was previously developed and used as an agricultural facility and is in a state of disuse. Several derelict agricultural structures are present on-site.

The site is located in a largely rural/agricultural setting with some industrial/commercial activity in the wider area.

A piggery operated by Skeagh Farms under an Industrial Emission Licence from the EPA (Licence Reference: P0938) is located immediately north/north-west of the development site. Access to this pig farm is via private access road which bounds the development site to the east and north.

An active quarry / concrete batching facility / C&D / soil recovery facility is located c.80m west of the site (at its closest point). This facility is operated by Kilmurray Pre-Cast Concrete Ltd. Kilmurray Pre-cast Concrete Ltd were recently granted permission to expand quarrying operations at this facility.

The Yellow River Windfarm project, which has been granted planning consent, will be constructed in the local area, with construction expected to commence in late 2022. SSE Renewables are responsible for the construction and operation of this wind farm. The wind farm will consist of 32 wind turbines across a number of townlands, some of which will be located in relatively close proximity to the proposed site in the townland of Derryarkin to the north, west and south east.

The wider area surrounding the site is characterized by peatland and agricultural land in all cardinal directions. The agricultural land is a patchwork of small to large sized fields divided by hedgerows, which are used for both tillage and crop production and animal grazing. Areas of forestry are also found in the in the study area, with significant amounts of land forested by Bord na Móna to the north east of the development (the other side of the R400 regional road). Bord na Móna's Drumman timber storage, seasoning and chipping facility is situated ca. 1.5 km north east of the development site. A significant portion of surrounding lands also consist of peatlands which have been subject to peat extraction undertaken by Bord na Móna. Derryarkin Motocross Track is situated ca. 1.8 km north of the site at its nearest point.

The site is accessed via a site access road that connects to the R400 Regional Road ca. 2.2 km west of the site. The R400 connects to the M6 Motorway, 2.9 km north of the site.

The site is remote from sensitive receptors. The nearest sensitive receptor is a one-off dwelling located ca. 755 metres to the south of the proposed development site. Other one-off dwellings are located ca. 760 metres to the south west, 770 metres to the south and ca. 890 metres to the south west. There are no other sensitive receptors within 1 km of the proposed development site.







## 1.4 Overview of the Proposed Development

The development will consist of the demolition of existing agricultural sheds and structures on-site and the construction and operation of a Materials Recovery Facility for the acceptance and processing of up to 90,000 tonnes per annum of household, commercial and industrial (C&I), and construction and demolition (C&D) waste.

Elements of the proposed development include the following. (1) The demolition of all existing site agricultural sheds and structures on-site (which cover an area of 1,417 m<sup>2</sup>). (2) The construction and operation of a Materials Recovery Facility, comprising: (a) A site entrance, (b) A weighbridge, (c) Trucking set down and parking areas, (d) Staff parking, comprising 24 parking spaces including disabled parking and EV charging, (e) A concrete yard area, (f) A fuel storage area, (g) External waste storage bays, (h) Skip / bin storage areas, (i) A perimeter boundary wall (4 m in height) and perimeter fencing (2.1 m in height), (j) A stormwater drainage and attenuation system, (k) An administration two-storey building (with an overall floor area of c. 396m<sup>2</sup> and c.7.35m in height), (l) A single storey Materials Recovery Facility (with an overall floor area of c. 2,850m<sup>2</sup> to a maximum height of c.13m), (m) A truck loading bay, (n) An on-site wastewater treatment system, associated percolation area and ancillary services, (o) An on-site ESB sub-station and adjoining electrical room (with a combined floor area of 61 m<sup>2</sup> and 2.175 m in height), (p) Solar panels (covering a total area of 737 m<sup>2</sup>) mounted atop the proposed Administration and Materials Recovery Facility buildings. The application is accompanied by an Environmental Impact Assessment Report and Natura Impact Statement.

The proposed development will accept up to 50,000 tonnes of waste per annum and operate under a Waste Facility Permit from Offaly County Council during Phase 1 of operations. The proposed development will accept up to 90,000 tonnes of waste per annum and operate under an Industrial Emissions licence from the Environmental Protection Agency during Phase 2 of operations.







## 2 EXISTING SITE ENVIRONMENTAL CONDITIONS

This section of the CEMP describes the existing sites environmental conditions. The information contained in this section is an abridged version of the text contained in the EIAR. The EIAR should be consulted for a more extensive description of the existing site.

### 2.1 Geological Conditions

The subsoils present at the proposed development site were taken from the GSI 1:50,000 Quaternary Geology of Ireland map (GSI, 2021) and comprise of 'cut over raised peat' (Cut). Other deposits in the study area include 'gravels derived from limestones' (GLs) west and southwest of the proposed development site and 'till derived from limestones' (TLs) northeast of the proposed development site.

The GSI 1:100,000 scale bedrock geology map (GSI, 2021) shows the proposed development site is underlain by the Lucan Formation, which is described as dark grey to black, fine-grained, occasionally cherty, micritic limestones.

The GSI Online Irish Geological Heritage database (GSI, 2021) indicates that the proposed development is not located in an area of specific geological heritage interest, including NHAs and CGS. The nearest site of significant geological heritage feature to the proposed development site is Croghan Hill (Site Name: OY014). The geological feature is described by the GSI as 'a prominent hill rising from an otherwise flat landscape of midland raised bogs and low-lying pasture'. The hill is the remains of an extinct volcano which erupted during the Carboniferous Period. The feature is located approximately 3.1km south of proposed development sites in Offaly townlands Croghanhill, Cannakill and Ballybeg.

Further details on the geology conditions of the site are provided in Chapter 9 Soils, Geology and Hydrogeology of the EIAR.

### 2.2 Hydrological Conditions

The proposed development is located within the Athboy Groundwater Body (GWB).

The aquifer type within the Athboy GWB is mostly (ca. 97%) classified as LI - Locally important bedrock aquifer which is moderately productive only in local zones. There are small amounts of PI - Poor aquifer, generally unproductive except for local zones (ca. 1.2%) and Lm - Locally important aquifer, generally moderately productive (ca. 2%) in the GWB.

The Groundwater Vulnerability is classified by the GSI as 'Moderate' at the proposed development site due to the presence of low permeability deposits (peat). GSI mapping indicates a total thickness of overburden of 5 to 10 metres (GSI, 2021).

The site of the proposed development is situated within the Boyne waterbody catchment (Catchment ID - 07\_11). It encompasses 66% of Co. Meath with small areas of Co. Cavan and Co. Louth to the north, Co. Westmeath to the west, Co. Offaly and Co. Kildare to the south. The total catchment area is estimated at 2,693 km<sup>2</sup> with a main channel length of 113km.





The proposed development site is within the Yellow River sub-catchment and comprises:

- Sub catchment Yellow (Castlejordan) River SC\_010;
- River Sub-basin Castlejordan\_020 (Code: IE\_EA\_07C040100) and Yellow (Castlejordan)\_020 (Code: IE\_EA\_07Y020100);
- River Sub-basin is Castlejordan\_020 (Code: IE\_EA\_07C040100).

The Yellow River drains an estimated catchment area of 44.5 km<sup>2</sup> in Co. Offaly to the west of Edenderry which includes Rhode and Castlejordan. This catchment includes the area drained by the Yellow River and all streams entering between its confluence with the River Boyne approximately 4.6 km north-west of Edenderry town. The Yellow River / Boyne confluence delineates the county boundaries between Offaly, Meath and Kildare.

The WFD risk status of the Yellow River waterbody is “At Risk”. The water quality is Poor due to less than Good biological status and elevated phosphate and ammonia. Peat extraction significant impacts water quality throughout this subcatchment. In addition, urban wastewater treatment and urban diffuse pollution is likely to be also impacting Yellow (Castlejordan) sub-catchment<sup>1</sup>.

Further details on the hydrology conditions of the site are provided in Chapter 10 Hydrology and Surface Water Quality of the EIAR.

## 2.3 Ecological Conditions

There are four European sites within a 15km radius of the proposed development:

- Raheenmore Bog SAC (000582);
- Split Hills And Long Hill Esker SAC (001831);
- Lough Ennell SAC (000685);
- Lough Ennell SPA (004044).

There are a further nine European sites beyond a 15km radius of the proposed development with potential connectivity (hydrological or mobile species) to the proposed development:

- River Boyne And River Blackwater SAC (002299);
- River Boyne And River Blackwater SPA (004232);
- Lough Derravaragh SPA (004043);
- Lough Iron SPA (004046);
- Glen Lough SPA (004045);
- Lough Ree SPA (004064);
- Middle Shannon Callows SPA (004096);
- Boyne Coast and Estuary SAC (001957);
- Boyne Estuary SPA (004080).

<sup>1</sup> EPA Sub-Catchment Assessment: Sub catchment Yellow [Castlejordan]\_SC\_010 (2018)



Sites of National Importance in Ireland are termed Natural Heritage Areas (NHA) and proposed Natural Heritage Areas (pNHA).

In 1995, Proposed Natural Heritage Areas were published on a non-statutory basis but have not since been statutorily proposed or designated but are recognised for their ecological value by planning and licencing authorities and are subject to limited protection<sup>2</sup>. For the purposes of this assessment pNHA's have been considered as fully designated sites. There are five NHA's and eight pNHA's within a 15km radius of the proposed development:

- Raheenmore Bog (000582);
- Grand Canal (002104);
- Cloncrow Bog (New Forest) NHA (000677);
- Milltownpass Bog NHA (002323);
- Rahugh Ridge (Kiltober Esker) (000918);
- Black Castle Bog NHA (000570);
- Daingean Bog NHA (002033);
- Split Hills And Long Hill Esker (001831);
- Lough Ennell (000685);
- Ardan Wood (001711);
- Murphy's Bridge Esker (001775);
- Nure Bog NHA (001725);
- Royal Canal (002103).

There is one nature reserve within a 15km radius of the site: Raheenmore Bog SAC 000582. There are no other nature reserves or other designated sites within 15km of the proposed development.

A total of six habitats and habitat mosaics have been identified within the proposed development planning boundary:

- agricultural grassland / neutral grassland (GA1 / GS1),
- recolonised bare ground (ED3),
- earth bank (BL2),
- buildings and artificial surfaces (BL3),
- treeline (WL2), and
- dry meadow and grassy verges / drainage ditch (GS2 / FW4).



<sup>2</sup> Agri-environmental farm planning schemes such as Rural Environment Protection Scheme (REPS 3 and 4) and Agri Environmental Options Scheme (AEOS) continue to support the objective of maintaining and enhancing the conservation status of pNHAs. Forest Service requirement for NPWS approval before they will pay afforestation grants on pNHA lands.



No Flora (Protection) Order (2022) species or red listed species were identified during surveys of the study area. Species identified present are common and widespread. Appendix 8.4 *Species List*, in Volume 3 of this EIAR lists flora species identified during the survey.

Four non-native invasive flora species have been recorded within the 10 km grid square N43 (Biodiversity Ireland online database). These species are listed as both high and moderate impact non-native invasive species as identified by Biodiversity Ireland and Kelly et al (2013):

- Cherry Laurel (*Prunus laurocerasus*)
- Japanese Knotweed (*Fallopia japonica*)
- Rhododendron (*Rhododendron ponticum*)
- Sycamore (*Acer pseudoplatanus*)

Japanese Knotweed is a schedule III species, non-native species subject to restrictions under Regulations 49 and 50, Part 1 plants, the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011), as amended. Which makes it an offence to cause the spread of plant species listed on the Schedule.

Schedule III invasive flora species pose a risk to economic, agricultural and/ or natural environments.

None of the species identified in the desk study, and no other invasive flora species were identified within the study area during the surveys undertaken on 17<sup>th</sup> June 2021.

The riparian habitat along the drainage ditch is suitable for otter and the earth banks along the northern boundary have limited suitability for badger. The treeline has limited suitability for red squirrel and pine marten and the overgrown scrub ground flora has limited suitability for hedgehog. The treeline undergrowth and grassland have suitable foraging grounds for pygmy shrew.

No mammal evidence or sightings were recorded during the survey undertaken on 17<sup>th</sup> June 2021.

During site surveys invasive species identified within the desk study were not observed within or nearby the study area, however, they are likely to be in the general area. These species are all invasive mammal species and as such they negatively impact biodiversity.

The structures within the proposed development did not comprise suitable roosting features for bats. No evidence of bat presence was found / observed during the survey. Therefore, all structures within the proposed development were assessed as being of negligible suitability for roosting bats.

During the winter VP surveys, a total of 11 species were observed. These species include four BoCCI red-listed lapwing, kestrel, golden plover and curlew; four amber-listed whooper swan, teal, mute swan and black-headed gull (*Chroicocephalus ridibundus*); two green listed little grebe and little egret (*Egretta garzetta*) (Gilbert *et al.*, 2021); great white egret (*Ardea alba*) are not listed in Ireland. Of these, four species (whooper swan, golden plover, little egret and great white egret) are also Annex I species.

No signs or sightings of any of the fauna were recorded during the survey undertaken on 17<sup>th</sup> June 2021.

Further details on the ecological conditions of the site are provided in Chapter 8 Biodiversity of the EIAR, Appropriate Assessment Report and Natura Impact Statement.





## 2.4 Archaeology, Architectural and Cultural Heritage Conditions

There are no Recorded Monuments within the proposed development site. There are two Recorded Monuments within the 1 km study area of the development site ([www.archaeology.ie](http://www.archaeology.ie)). The closest Recorded Monument (RMP OF003-033) is located approximately 500 m northeast of the proposed development location and takes the form of a class 1 togher (road).

Reference to Summary Accounts of Archaeological Excavations in Ireland ([www.excavations.ie](http://www.excavations.ie)) has shown that three fieldwork programmes have been carried out in Derryarkin townland. Two of these programmes involved construction stage archaeological monitoring of development works (archaeological licence numbers 01E1126 and 06E1064), and one comprised an archaeological survey. Derryarkin Bog, which includes Bunsallagh, Derrycoffey, Derryarkin and Derrygreenagh townlands, was surveyed by the Irish Archaeological Wetland Unit in 2002 (Licence Number 02E0942). This survey identified 38 archaeological sightings, representing 29 archaeological sites and artefacts consisting of one primary togher, three secondary toghers, four tertiary toghers, 13 worked wood *in situ*, and four unworked wood *in situ*. Three lithics and two additional possible lithics were recovered during this survey. The majority of the archaeological sites identified in the survey were situated in Bunsallagh townland, approximately 1.5km to the west of the proposed development site. None of the archaeological sites identified during this survey are located within the proposed development area.

There are three known artefacts from Derryarkin Bog recorded in the Topographical Files of the National Museum of Ireland. One of these artefacts is from Derryarkin townland; a stone adze-head (NMI Reference 1969:863). The other artefacts from Derryarkin Bog have been identified as a bronze spearhead (NMI Reference: 1937:3666) and a bronze spearhead (NMI Reference R1951:51). Also, a wooden shovel (NMI Reference 1987:40) was recovered from the field boundary between Derryarkin and Ballybeg townlands.

Reference to cartographic sources failed to identify any archaeological or architectural features within the proposed development area and the surrounding environment is generally recorded as rough pasture on all editions of the Ordnance Survey maps. The Yellow River is depicted immediately south of the proposed development area on both the First Edition 1:10,560 map (1840) and the First Edition 1:2,500 map (1908 - 1910).

There was no evidence of any archaeological, architectural or cultural heritage features recorded on aerial photographs within the proposed development sites or their surrounding landscape.

There are no Recorded Monuments within the proposed development site. There are two Recorded Monuments within the 1 km study area of the development site. The closest Recorded Monument (RMP OF003-033) is located approximately 500 m northeast of the proposed development location and is identified in the RMP as a class 1 togher (road).

There are no National Monuments in State Care within the proposed development site or the wider 1 km study area.

There are no sites with Preservation Orders or Temporary Preservation Orders within the proposed development site or the wider 1 km study area.

There are no World Heritage Sites or sites included in the Tentative List as consideration for nomination to the World Heritage List within the proposed development site or the wider 1 km study area.

Detailed information on the archaeological and historical background of the landscape surrounding the proposed development sites is provided in Chapter 14 Cultural Heritage of this EIAR.



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## 3 OVERVIEW OF CONSTRUCTION WORKS

An overview of the construction works that will be undertaken at the proposed development site is outlined below.

### 3.1 Site Layout

A Proposed Site Layout Plan showing the infrastructural elements broadly on-site is provided in Volume 4 of this EIAR (Drawing Ref: P2344-0100-0005).

### 3.2 Construction Period

It is expected that construction phase will be approximately 12 months in duration.

Site preparatory and demolition and clearance works will be carried out during the first month of the construction phase. This stage will include removal of demolition related waste from the site.

It is expected site excavation works, construction material importation, concrete laying, and sub-structure and superstructure development will then be carried out over a 5-month period.

The first 6 months will be the most intensive period of construction given the need for waste removal from the site and material importation to the site.

It is then expected cladding, roofing, solar panel installation, processing and ancillary plant and equipment installation, building fit outs, and site clean-up and commissioning will then be carried out over the final 6 months of the construction period.

Upon appointment of a contractor for the works, a more detailed programme will be developed.

### 3.3 Overview of the Construction Sequence

The key construction elements (listed in chronological construction order) are as follows:

- Advance Works and Installation of Temporary Construction Site Compound;
- Re-routing of Existing ESB Lines traversing the site;
- Demolition of Existing Structures On-site and Site Clearance;
- Construction of the Materials Recovery Facility;
- Junction Upgrade to Accommodate the Proposed Development;
- Development of On-site Wastewater Treatment System and Associated Percolation Area;
- Development of an On-site ESB Sub-station;
- Installation of Roof Mounted Solar Panels.





### 3.3.1 Advance Works and Installation of Temporary Construction Site Compound

Advanced site works will be required prior to full site mobilisation and will include preliminary clearance of the site, removal of vegetation and trees, development of a temporary construction compound and establishment of construction stage site services (E.g. generators, temporary potable water supplies and storage area).

A temporary site compound and parking area will be developed to facilitate the construction works on-site. The compound will consist of a hardcore area surrounded by secure fencing, and will comprise a site office, canteen, temporary toilet facilities, storeroom, and staff parking areas. Fuel/oil storage areas will be banded in accordance with best practice. The compound will move around the site appropriate as construction progresses to accommodate the various phases of construction. A temporary wheel wash will be provided on-site during construction.

Temporary lighting will be provided on-site as appropriate. Temporary toilet facilities will be required for construction workers. These will consist of temporary 'portaloo' type chemical toilets located within the construction site compound.

Advanced site works will be completed using track excavator for preliminary clearance and formation of hardcore areas for the construction compound and storage area. Truck mounted cranes will be used for unloading site containers and support infrastructure, plant and equipment.

### 3.3.2 Re-routing of Existing ESB Lines traversing the site



The re-routing of existing ESB electricity lines traversing the site will need to be undertaken during the initial stages of the construction phase so as to allow for the safe carrying out of proposed construction and operational activities on-site.

Overhead power lines run along the western boundary of the site and adjacent to the piggery access road to the east of the site. A power line traverses the south eastern section of the site. One electricity pole is situated on-site to the south east of the site.

A plan showing the proposed re-routing to take place is contained in Volume 4 of the EIAR accompanying this planning application (Drawing Ref: P2344-0100-0006). The following is proposed:

- ESP Pole / EP1, EP3, EP4, EP5 & EP8 (as denoted the adjoining plan drawing) will remain in place;
- EP2 & E 7 (as denoted the adjoining plan drawing) will be removed;
- EP6 (as denoted the adjoining plan drawing) will be relocated away from boundary corner;
- An underground duct / cable will be installed from EP1 to the proposed sub-station and then to EP3. Existing overhead wires connecting these points will be removed;
- An underground duct /cable will be installed from EP8 to EP6. Existing overhead wires connecting these points will be removed.

The Applicant engaged with ESB Networks on the proposed electricity line re-routing to take place on-site. An on-site meeting between the Applicant's engineering team and Tara Hanrahan, Engineering Officer of ESB Networks, who is responsible for managing the electricity network in the jurisdiction where the development site is located, regarding re-routing proposals was undertaken in June 2021. The proposed re-routing was agreed in principle during this meeting, and it was agreed that the Applicant submit a re-routing application to ESB networks upon completion of detailed design for the proposals.



It is planned that these works are undertaken by the ESB, however it may be the case that the laying of the ducting to carry the underground cables will be undertaken by the development construction contractor (with approval from, and under supervision of, the ESB).

### 3.3.3 Demolition of Existing Structures On-site and Site Clearance

The proposed development will include the demolition and removal of all existing above ground structures and infrastructure as described. This will be undertaken in the following manner:

- Existing agricultural buildings and ancillary structures to be demolished and/or removed by specialist demolition contractor;
- All Asbestos Containing Materials (ACM) to be removed by Specialists;
- Existing earth bund to be removed for reuse on site or recovery/disposal elsewhere;
- Existing concrete yard to be broken out and removed offsite for recovery;
- Existing stormwater drainage infrastructure to be excavated and removed.
- Site levelling
- Existing vegetation situated to the south west of the site will be cleared and removed from the site.

A drawing depicting the demolition and site clearance works to be undertaken is contained in Volume 4 of the EIAR accompanying this planning application (Drawing Ref: P2344-0100-0003). Associated demolition / site clearance sections are provided also in Volume 4 of the EIAR accompanying this planning application (Drawing Ref: P2344-0100-0004).

While it is intended to remove foundations and sub-surface, it is possible that structures such as concrete foundations could be left in place and infilled in cases where removal may not be practical.

All Asbestos containing materials will be stripped and removed prior to demolition in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006, and the relevant HSA Guidance documents. A suitably qualified contractor will be procured to carry out these works. Site-specific risk assessments and method statements will be developed for the Asbestos removal works to be undertaken. Asbestos waste material arising during the demolition / site clearance processed will be taken from the site by an appropriately authorized waste collector and will be subject to final disposal in an appropriately authorized destination waste facility.

All inert demolition related waste material generated during this stage of construction will be recycled for reuse as fill on-site and/or removed from the site where necessary and transported to the adjacent Kilmurray Pre-cast Concrete Ltd Construction and Demolition (C&D) / Soil Recovery Facility, also situated in Derryarkin, Rhode, Co. Offaly (WFP References: WFP-OY-19-0204-01).

### 3.3.4 Construction of the Materials Recovery Facility

The following broad steps will be carried out to achieve construction of the proposed facility:

- Excavations work will be undertaken to facilitate the development / installation of proposed foundations, tanks and the drainage network;





- Concrete, steel and other materials required for construction will be imported to the site. All concrete and stone materials will be sourced from the adjoining Kilmurray Pre-cast Concrete Ltd quarry site.
- Excavated areas will be appropriately backfilled where required utilizing a suitable fill material. Where possible excavated material from the site will be reutilized as fill material.
- The stormwater drainage and attenuation network including will be installed.
- The installation of a surface water discharge outfall will take place (this will consist of a pre-cast concrete headwall on 100mm thick bed of lean mix concrete).
- The wastewater drainage network will be installed.
- Existing underground tank void space will be backfilled.
- The foul water and washwater collection network will be installed.
- Building foundations will be constructed. The foundations will be ground bearing reinforced concrete pads/strips on a suitable compacted hardcore stratum/sub-base.
- Sub-base material will be placed on-site and appropriately compacted where necessary. Imported sub-base fill shall be a granular engineered fill, compacted to provide a suitable subgrade for the building floors and hard standing yard areas.
- Hard-standing concrete surfaces and ramps will be laid. These surfaces will consist of steel or fibre reinforced concrete. Slabs will be jointed to control cracking. Slabs will bear on a layer of compacted granular sub-base fill. Services and drainage in the yard area will run underneath the slab. The concrete slabs will be laid to falls, to facilitate the collection of surface water and foul water as required.
- Blockwork walls and reinforced concrete push walls for all buildings, bays and storage areas will be erected. Push walls will be designed to retain the weight of stockpiled material and pushing forces from loading vehicles to an identified height.
- Structural steelwork frames will be erected at buildings on-site. These frames will consist of rolled steel columns and suitably spaced rafters. Cold rolled light gauge steel purlins and cladding rails will be fixed to the main columns and rafters.
- Building cladding and roofing will be installed.
- Roof drainage consisting of gutters and downpipes will be installed at buildings.
- Processing plant will be delivered to the site and installed in-situ.
- Electrical/mechanical equipment, roller doors, emergency access/fire doors and the truck loading bay, and the on-site weighbridge will be installed.
- Buildings will be fitted out to make the space suitable occupation and intended production and administrative uses.
- Site clean-up and commissioning and ancillary construction will take place.

Excess soil and stone material generated on-site during construction will be removed from the site and transported to the adjacent Kilmurray C&D / soil recovery facility, also situated in Derryarkin, Rhode, Co. Offaly (WFP Reference: WFP-OY-19-0204-01). It is envisaged however that the vast majority of soil and stone material generated on-site will be reutilized through infilling on-site.



### 3.3.5 Junction Upgrade to Accommodate the Proposed Development

As part of the proposed development, and in collaboration with Kilmurray Precast Concrete Limited, the applicant proposes upgrading the existing junction between the private access road leading to the site and the R400. The proposed junction will be provided with a visibility splay as well as kerbing, paving, appropriate road markings and signage.

The following works will be carried out when upgrading the junction:

- Vegetation clearance,
- Sub-base laying and compacting,
- Installation of drainage and kerbing,
- Pavement laying,
- Installation of signage and road markings.

The following set of drawings showing the layout of the proposed junction, longitudinal sections, cross-sections, and visibility splays, pavement and kerb design, proposed road marking and signs, and swept path analysis are enclosed with this planning application (See Appendix 13.3 of Volume 4 of this EIAR):

- Drawing Reference: 10884-2000
- Drawing Reference: 10884-2001
- Drawing Reference: 10884-2002
- Drawing Reference: 10884-2003
- Drawing Reference: 10884-2004
- Drawing Reference: 10884-2005
- Drawing Reference: 10884-2006
- Drawing Reference: 10884-2007



A Road Safety Audit (Stage 2) for the proposed junction upgrade has been prepared and is enclosed in Appendix 13.3 of Volume 4 of the EIAR accompanying this planning application. A Letter of Consent from Kilmurray Precast Concrete Ltd granting consent to the applicant for use of these drawings as part of this planning application is contained in Appendix 13.3 also.

### 3.3.6 Development of On-site Wastewater Treatment System and Associated Percolation Area

An on-site wastewater treatment system (WWTS), consisting of a secondary treatment and soil polishing treatment system, and an adjoining percolation area will be developed in the south east corner of the site. Domestic wastewater arising at sanitary facilities situated in the proposed Administrative Building will be directed by a wastewater drain to this WWTS for treatment.

The following steps will be undertaken to ensure the successful construction and installation of the WWTS:

- Excavation work will be undertaken to facilitate placement of the WWTS and adjoining percolation in the sub-surface at the desired locations;



- A bed of compacted hardcore material will be placed on the bottom of the excavation trench where the WWTS will be placed.
- The proprietary WWTS will then be placed in-situ, appropriately affixed and connected to the foul drain coming from the proposed Administrative building.
- The adjoining percolation bed and distribution pipes will be laid, at the same time.
- Backfilling will then take place to sufficiently cover the WWTS and adjoining percolation area.
- The area overlying the system will be levelled before being seeded with grass seed. This area will exist as a kerbed and raised, soft surface area.

### 3.3.7 Development of an On-site ESB Sub-station / Electrical Room

An ESB sub-station and an adjoining Electrical Room will be developed on-site to facilitate the required level of electrical transmission on-site. This sub-station/electrical room will be developed in the south eastern corner of the site, adjacent to the WWTS area, and will have a floor area of 62 m<sup>2</sup>.

This building/unit will be constructed in accordance with the ESB's Construction Specification for Medium Voltage Substation Building.

The following steps will be undertaken ensure the successful construction of sub-station:

- Excavation work will be undertaken to facilitate foundation construction
- Building foundations will be laid on a suitable sub-base
- Steel reinforced concrete floors will be laid. The reinforcing steel will be earthed.
- Blockwork walls will be erected upon foundations
- Building roofing will be installed
- ESB approved doors, external roof drainage pipes, cable duct walls, a copper earthing mat and an oil trap will be installed.
- The ESB will install the required electrical systems within the sub-station. The system will be tested before being commissioned.
- The solar provider will install solar related ancillary equipment within the electrical room of the sub-station.

### 3.3.8 Installation of Roof Mounted Solar Panels

The following steps will be carried to successfully install the proposed solar panels on the MRF and Administration building roofs:

- Solar panels and associated ancillary infrastructure and systems will be imported to the site and securely stored in a temporary storage areas on-site.
- The solar panel provider will carry out the following installation works:
  - Installation of solar panels and associated roof mounted fixings. =,
  - Installation of Inverters,
  - Installation of ancillary cables, breaker and isolator,





- Installation of EGIP controller,
- Installation of access ladders and fall protection.
- The existing local voltage switch board will be extended to facilitate electrical transmission.

### 3.4 Construction Working Hours

Construction work will generally be carried out during daylight hours. Construction work will generally be confined to the following times:

- 07:30 to 18:30 Monday to Saturday

However, to ensure that optimal use is made of fair-weather windows, or at critical periods within the programme, it could occasionally be necessary to work out with these hours. Any such out of hours working would be agreed in advance with Offaly County Council, if required.

Offaly County Council, Planning Dept. - Inspection Purposes Only





## 4 ENVIRONMENTAL MANAGEMENT PLAN

### 4.1 Introduction

This Environmental Management Plan (EMP) defines the project obligations, Environmental Management System (EMS) and environment mitigation measures relating primarily to the construction phase of the proposed development.

This EMP describes how the Contractor for the construction works will implement a site Environmental Management System (EMS) on this project to meet the specified contractual, regulatory and statutory requirements and Environmental Impact Assessment Report (EIAR) mitigation measures. This plan will be further developed and expanded following the grant of planning permission and appointment of the Contractor for the construction works. Please note that some items in this plan can only be finalised with appropriate input from the Contractor who will carry out the construction works and once the planning conditions attached to any grant of planning are known. It is the Contractor's responsibility to implement an effective environmental management system to ensure that the Applicant's **environmental** requirements for the construction of this project are achieved.

All site personnel will be required to be familiar with the environmental management plan's requirements as related to their role on site. The plan describes the project, sets out the environmental procedures that will be adopted on site and outlines the key performance indicators for the site.

- The EMP is a controlled document and will be reviewed and revised as necessary.
- A copy of the EMP will be located at the Contractors site office.
- All employees, suppliers and Contractors whose work activities cause/could cause impacts on the environment will be made aware of the EMP and its contents.

### 4.2 Project Obligations



During the construction of the proposed development several environmental management obligations must be implemented and achieved by the applicant and the Contractor. In addition to statutory obligations, there are several specific obligations set out in the EIAR. These obligations are set out below. When planning is granted, there are also likely to be planning conditions, with which the applicant must comply. The CEMP will be reviewed and updated, if required, following any grant of planning. The Contractor and all of its sub-Contractors will be made fully aware of and be contractually required to adhere to all environmental obligations.

#### 4.2.2 EIAR Obligations

The EIAR identified mitigation measures that will be put in place to mitigate the potential environmental impacts arising from construction of the project.

#### 4.2.3 Planning Permission Obligations

Should the proposed development be granted planning permission, the conditions of the planning grant issued will be adhered to.



#### 4.2.4 Other Obligations

The contractor will liaise directly with the applicant, Offaly County Council and An Garda Síochána in relation to securing any necessary permits to allow the works to take place including for example (non-exhaustive list):

1. Commencement notice
2. Special Permits in relation to oversized vehicles on public roads, if required

The applicant will continue to liaise closely with the local residents, especially neighbours and landowners in the sturdy area and all reasonable steps will be taken to minimise the impact of the development.

### 4.3 Environmental Management System

The Environmental Management System (EMS) which will be adopted during the construction phase of the proposed development is outlined in the sections below.

#### 4.3.1 Environmental Policy

The Contractor is responsible for preparing and maintaining an Environmental Policy for the site. The policy should be appropriate to the project, commit to continuous improvement and compliance with legal requirements and provide a framework for objectives and targets. This will be communicated to all site personnel and will be available on-site notice boards.

#### 4.3.2 Training, Awareness and Competency

All site personnel will receive environmental awareness information as part of their initial site induction and briefing. The detail of the information should be tailored to the scope of their work on site. The Contractor for the construction works may decide to conduct the environmental awareness training at the same time as health and safety training (often referred to as Site Inductions).

This will ensure that personnel are familiar with the environmental aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures.

The CEMP will be retained in the site management office during the project. The environmental performance at the site will be on the agenda of the monthly project management meetings for the project.

Elements of the CEMP will be discussed at these meetings including objectives and targets, the effectiveness of environmental procedures, etc. Two-way communication will be encouraged by inviting all personnel to offer their comments on environmental performance at the site.



### 4.3.3 Register of Environmental Aspects

The Contractor is responsible for preparing and maintaining a *Register of Environmental Aspects* pertaining to the site. This register will identify the environmental aspects associated with activities onsite and determine which aspects have or can have a significant impact on the environment.

### 4.3.4 Register of Legislation

The Contractor is responsible for preparing and maintaining a register of key environmental legislation pertaining to the site. This register will reference all current environmental legislation and will be inspected, reviewed and updated regularly to ensure compliance.

### 4.3.5 Objectives and Targets

Objectives and targets are required to be set to ensure that the project can be constructed and operated in full accordance with the EIAR, planning conditions and legislative requirements, with minimal impact on the environment.

Environmental objectives are the broad goals that the Contractor must set in order to improve environmental performance. Environmental targets are set performance measurements (key performance indicators or KPI's) that must be met in order to realise a given objective.

The Contractor will set objectives based on each significant environmental impact. Key objectives are likely to include the following:

- To ensure that the drainage channel to the south of the site is not negatively impacted by construction works;
- To ensure that humans are not negatively impacted by dust generated by construction works;
- To ensure that humans are not negatively impacted by noise generated by construction works;
- To ensure that impacts to habitats and wildlife are minimised during works;
- To ensure that a waste management plan for this site will be fully implemented;
- To ensure that the visual impact during the construction work is minimised;
- To ensure that the proposed development is constructed in compliance with the EIAR.

Performance in relation to each of these objectives will be reviewed on a regular basis by means of inspections, audits, monitoring programmes, etc.



#### 4.3.6 Non-Conformance, Corrective and Preventative Action

Non-conformance notices will be issued where there is a situation where limits associated with activities on the project are exceeded, or there is an internal/external complaint associated with environmental performance.

Non-conformance is the situation where essential components of the EMS are absent or dysfunctional, or where there is insufficient control of the activities and processes to the extent that the functionality of the EMS in terms of the policy, objectives, and management programmes, is compromised. A non-conformance register should be controlled by the Contractor.

The EMS and all its components must conform to the EMP, objectives and targets and the requirements of the ISO 14001 management standard.

In the event of non-conformance with any of the above, the following must be undertaken:

- Investigate cause of the non-compliance;
- Develop a plan for correction of the non-compliance;
- Determine preventive measures and ensure they are effective;
- Verify the effectiveness of the correction of the non-compliance;
- Ensure that any procedures affected by the corrective action taken are revised accordingly.

Responsibility must be designated for the investigation, correction, mitigation and prevention of non-conformance.

#### 4.3.7 EMS Documentation

The Contractor is required to keep the following documentation in relation to the environmental management of the project (as a minimum):

- Construction Environmental Management Plan for the proposed development;
- Register of Environmental Impacts;
- Register of Planning Conditions;
- Monitoring Records;
- Minutes of Meetings;
- Training Records;
- Audit and Review Records.

All of these documents and records are to be available for inspection in the site office. The documentation shall be up to date and shall be reviewed on a regular basis with revisions controlled in accordance with the site quality plan.





#### 4.3.8 Control of Documents

The Contractor will establish, implement and maintain a procedure to control EMS documents and records so they are clearly identifiable, organised, current, easily located and revised when necessary.

### 4.4 Environmental Mitigation Measures

The environmental mitigation measures for Population and Human Health; Biodiversity; Soils, Geology and Hydrogeology; Hydrology and Surface Water Quality; Air Quality and Climate; Noise and Vibration; Archaeological, Architectural and Cultural Heritage; Landscape and Visual Impacts; Waste Management Plan and Traffic Management Plan are outlined in the sections below.

#### 4.4.1 Population and Human Health

Mitigation measures defined within the following chapters of the EIAR of the EIAR accompanying this planning application would be applicable in the protection of the environment and human health during the construction phase of the proposed development:

- Chapter 9 Geology and Hydrogeology Measures in relation to water management and spill control are defined within this chapter. These measures will ensure the protection of receiving groundwater bodies utilized by humans in the local area for drinking water.
- Chapter 10 Hydrology and Surface Water Quality – Measures in relation to surface water management and spill control are defined within this chapter. These measures will ensure the protection of receiving surface water body and human users of this surface water body such as anglers, bathers or water sports enthusiasts.
- Chapter 11 Air Quality and Climate – Measures in relation to dust mitigation are defined within this chapter. These measures will ensure the minimization of dust and the prevention of dust nuisance impacting local sensitive receptors such as dwelling or farmlands.
- Chapter 12 Noise and Vibration – measures in relation to noise control/minimization are defined within this chapter. This will reduce the potential for nuisance noise affecting sensitive receptors in the locality.
- Chapter 13 Traffic and Transportation – Measures in relation to traffic management are defined within this chapter. This will reduce the risk of road traffic accidents occurring on or within the vicinity of the site.

##### 4.4.1.1 *Construction Phase Health and Safety Management*

Prior to construction a site-specific Safety and Health Risk Assessment/Management Plan and a Safety Statement will be prepared for the project at the CAR site in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 / 2013), as amended. Where elimination of the risk is not feasible, appropriate mitigation and/or control measures will be established. The contractor will be obliged under the construction contract and current health and safety legislation to adequately provide for all hazards and risks associated with the construction phase of the project. FÁS Safe Pass registration cards are required for all construction, delivery and security staff. Construction operatives will hold a valid Construction Skills Certificate Scheme card where required.





The contractor will be responsible for the implementation of procedures outlined in the Safety & Health Plan. Public safety will be addressed by restricting site access during construction. Appropriate warning signs will be posted, directing all visitors to the site manager.

During the construction phase, access to the site will be restricted to ensure that the public will not come into contact with the construction works.

#### 4.4.2 Biodiversity

Details of the proposed mitigation measures are summarised in the sections below and are also outlined in Chapter 8 Biodiversity of the EIAR accompanying this planning application.

##### 4.4.2.1 *Habitats and Flora*

The area of the proposed works will be kept to the minimum necessary, including all site clearance works. No disturbance to habitats or flora outside the proposed development area will occur (other than the footprint of the proposed drainage outfall). Works will be restricted to the immediate footprint of the development site. Machinery, and equipment will be stored within the site. Access to the site will be primarily via the existing local road R400. HGVs shall approach the site via this road.

The area of Dry Meadow and Grassy Verges temporarily removed during the construction of the surface water outfall point will be reinstated upon completion. The plant machinery use will not encroach on the bank or verge (unless necessary for safety).

##### 4.4.2.2 *Otter*

The construction site will not be lit at night (with the exception of low-level switchable safety lighting). All lighting systems will be designed to minimise nuisance through light spillage. Shielded, downward directed lighting will be used, and all non-essential lighting will be switched off during the hours of darkness. There will be no lighting directed at the drainage ditch.

##### 4.4.2.3 *Avifauna*

The clearance of the site, including the buildings, treeline and vegetation, should only be undertaken outside of the bird breeding season (March 1<sup>st</sup> to August 31<sup>st</sup> inclusive). This will help protect nesting birds. Where this is not possible due to construction program constraints, the buildings, treeline and vegetation will be inspected for nesting birds by a suitably qualified Ecologist no more than 48hrs in advance of the felling / clearance works and advise if bird species are present.

In the event of birds nesting within buildings/ vegetation to be cleared, a species-specific buffer zones (exclusion zone for all works) will be put in place and clearance of the structure / vegetation will only proceed once the birds have fledged.

Construction operations will take place during the hours of daylight for the most part to minimise disturbances to roosting birds or any active crepuscular/nocturnal bird species.





Toolbox talks will be undertaken with construction staff on disturbance to key species during construction. This will help minimise disturbance.

Although the impacts to the Key Ecological Receptors, Black-headed Gull, Kestrel, Curlew, Golden Plover, Mute Swan, Lapwing and Whooper Swan have been determined as not significant in the absence of mitigation, additional measures as detailed in Chapter 12 in Volume 2 of the EIAR accompanying this planning application, have been proposed to reduce impacts related to construction noise and vibration. This will further reduce the potential for impacts on the Key Ecological Receptors bird species.

#### 4.4.2.4 Aquatic Ecology

Construction phase mitigation measures to protect the receiving surface water environment and therefore aquatic ecology present in receiving surface water bodies are comprehensively defined in Section 4.4.4 of this document. These measures will serve to prevent the discharge of silt, hydrocarbons, nutrients and cement based substances to receiving waters, thereby ensuring the protection of aquatic ecology. These measures will ensure effective protection of aquatic ecological interests downstream of the proposed development, particularly the habitats supporting sensitive aquatic species present in the River Boyne and River Blackwater SAC (002299).

#### 4.4.3 Soils, Geology and Hydrogeology

Details of the proposed mitigation measures are summarised in the sections below and are also outlined in Chapter 9 Soils, Geology and Hydrogeology of the EIAR accompanying this planning application.

##### 4.4.3.1 Asbestos Containing Material

All Asbestos containing materials will be stripped and removed prior to demolition in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006, and the relevant HSA Guidance documents. A suitably qualified contractor will be procured to carry out these works. Site-specific risk assessments and method statements will be developed for the Asbestos removal works to be undertaken.

##### 4.4.3.2 Earthworks and Construction Activities

The works will be designed and checked by suitably qualified geotechnical and civil engineers, suitably qualified and experienced in demolition, excavation and earthworks design and construction methodologies. The excavation and construction related works will be subject to a design risk assessment at detailed design stage to evaluate risks posed to the geological and hydrogeological regime from the construction, operation and maintenance of the works. Identified risks will be minimised by the application of principles of avoidance, prevention and protection. Information on residual risks will be recorded and relayed to appropriate parties, e.g. Contractor for the Works.

A method statement for each element of the works will be prepared by the Contractor prior to any element of the work being carried out. The Contract will require programming of the works such that earthworks are not scheduled during severe weather conditions. Where such weather is forecast, suitable measures will be taken to secure the works.





To mitigate against erosion of exposed soils, all excavations will be constructed and backfilled as quickly as possible. Excavations will stop during or prior to heavy rainfall events. To mitigate against possible contamination of the exposed soils and bedrock, refuelling of machinery and plant will only occur at designated refuelling areas.

Where necessary, material which is required to be removed from site during demolition site clearance activities and earthworks will be taken to an authorized facility for recovery where required.

To mitigate against possible contamination of the exposed soils, refueling of machinery and plant will only occur at designated refueling areas with drip trays and spill kits available.

All excavations will be carried out such that they are stable or adequately supported. Unstable excavations will not be left unsupported. Where appropriate and necessary, excavations will be protected against the ingress of water or erosion.

#### 4.4.3.3 Control of Sediment Laden Runoff

Control and mitigation measures for the protection of surface water from silt run-off are defined in Section 4.4.4 of this CEMP. These measures will prevent the accidental discharge of polluting material to surface waters in turn impacting groundwater.

#### 4.4.3.4 Measures for Spills



Refuelling of construction vehicles will be carried out from delivery vehicles at designated refuelling areas. Specific mitigation measures relating to the management of hydrocarbons are as follows:

- Any oil containers stored at the temporary site compound will be stored above appropriate bunds (e.g. sump pallets). Bunds will be sized to ensure they can store 110% the volume of the fuel and oil stored within them.
- Appropriately sized drip trays will be utilized on-site to prevent the release of fuels or oils during refuelling operations or other work activities.
- Spill kits containing oil soakage pads and booms will be made available on-site to ensure prompt and adequate clean-up of any accidental fuel or oil spills.
- Waste oils will be collected in leak-proof containers and stored in bunds prior to removal from the site.
- An Emergency / Spill Response Procedure will be prepared, and all construction site operatives will be briefed on the response measures required during the site inductions and routine toolbox talks.
- All site 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 major repair and maintenance operations will take place off-site. Vehicles entering the site will be in good working order, free from leakage of fuel or hydraulic fluid.

#### 4.4.4 Hydrology and Surface Water Quality

Details of the proposed Surface Water Management System and mitigation measures are summarised in the sections below and are also outlined in Chapter 10 Hydrology and Surface Water Quality of the EIAR accompanying this planning application.



The proposed Surface Water Management System shall be finalised in accordance with this document following the appointment of the Contractor for the main construction works.

#### 4.4.4.1 *Mitigation Measures for Earthworks*

The proposed works are designed and checked by suitably qualified a civil engineer, with experience in demolition and site clearance and construction methodologies. The excavation and construction related works will be subject to a design risk assessment at detailed design stage to evaluate risks posed to the hydrological regime from the construction, operation, and maintenance of the works. Identified risks will be minimised by the application of principles of avoidance, prevention, and protection.

A method statement for each element of the works will be prepared by the Contractor prior to any element of the work being carried out. The Contract will require programming of the works such that earthworks are not scheduled during severe weather conditions. Where such weather is forecast, suitable measures will be taken to secure the works.

To mitigate against erosion of exposed soils, all excavations will be constructed and backfilled as quickly as possible. Excavations will stop during or prior to heavy rainfall events. All excavations will be carried out such that they are stable or adequately supported. Unstable excavations will not be left unsupported. Where appropriate and necessary, excavations will be protected against the ingress of water or erosion by using cut-off trenches to minimise the flow of surface water through construction areas. Excavations will be designed in manner that maximizes the percolation of surface water to ground and prevents run-off of surface water to the stream to the south of the site.

To mitigate against possible contamination of the exposed soils and surface runoff, refuelling of machinery and plant will only occur at designated refuelling areas with drip trays and spill kits available.

Material removed from site during site clearance activities and earthworks will be reused on-site, where possible. Residual material will be taken to Kilmurray Soil Recovery site. The Kilmurray C&D / Soil Recovery Facility has a Waste Facility Permit for their Soil Recovery Activity (WFP References: WFP-OY-19-0204-01).

#### 4.4.4.2 *Sediment Control Measures*

The proposed mitigation measures to protect the receiving waters from the potential impacts during the construction phase of the proposed development are outlined below. These measures will prevent sediment becoming entrained in surface water run-off during the construction phase of the proposed development:

- Temporary cut-off trenches and earthen bunds will be used to prevent entry of surface water into excavations, temporary stockpiles, and disturbed working areas, thereby preventing surface waters from being exposed to disturbed soils.
- All temporary stockpiles will be situated to the north of the development as far away from the drainage channel to the south of the site as possible.
- Standing water, which could arise in excavations, has the potential to gradually become affected by an increased concentration of suspended solids as a result of the disturbance to soils. These waters, where they arise, will be pumped from these excavations promptly to prevent this from occurring.
- Good housekeeping will be practiced on-site to prevent discharge of polluting material to the surface water environment (I.e. post work clean down, end of day clean down, visual inspection and maintenance of the site drainage system elements).



#### 4.4.4.3 Measures for Preventing Hydrocarbons Spills

No fuels will be stored on-site during the construction phase. Refuelling of construction vehicles and mobile will be carried out on an ad hoc basis using a mobile on-site re-fuelling truck.

Specific mitigation measures relating to the management of hydrocarbons are as follows:

- Any oil containers stored at the temporary construction compound will be stored above appropriate bunds (e.g. sump pallets). Bunds will be sized to ensure they can store 110% the volume of the fuel and oil stored within them.
- Appropriately sized drip trays will be utilized on-site to prevent the release of fuels or oils during refuelling operations or other work activities.
- Spill kits containing oil soakage pads and booms will be made available on-site to ensure prompt and adequate clean-up of any accidental fuel or oil spills.
- Waste oils will be collected in leak-proof containers and stored in bunds prior to removal from the site.
- An Emergency / Spill Response Procedure will be prepared, and all construction site operatives will be briefed on the response measures required during the site inductions and routine toolbox talks.
- All site 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 major repair and maintenance operations will take place off-site. Vehicles entering the site will be in good working order, free from leakage of fuel or hydraulic fluid.

#### 4.4.4.4 Measure for Preventing the Release of Cement Based Products

The following mitigation measures are proposed to prevent the release of cement-based products to the receiving surface water environment during the construction phase of the proposed development:

- All rubble arising due to demolition will be collected and safely contained in skips / storage containers before immediate dispatch off-site.
- When cast-in-place concrete is required, all work must be done in dry conditions and must be completed isolated from any flowing water which may enter the drainage channel to the south of site.
- No batching of wet-cement products will occur on site. Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements, will take place.
- No washing out of any plant used in concrete transport or concreting operations will be allowed on-site.
- Where concrete is delivered on site, only the chute need be cleaned, using the smallest volume of water possible. No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed.
- A designated impermeable cement washout container should be provided on-site at a designated area for chute cleaning. This washout facility shall be situated away from surface water drains. This area will be effectively isolated from any flowing water which may enter the drainage channel to the south of the site.
- Weather forecasting will be utilized to ensure concrete pours are only undertaken during dry weather conditions.



- Concrete pour sites will be made free of standing water prior to carry out the pour. Plastic covers will be available on-site to prevent entrainment of surface water in poured concrete in the case of sudden rainfall.
- Ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event.
- pH levels in surface water discharges from the site and at receiving surface waters downstream of the site will be regularly monitored to ensure they are within the required pH range of  $\geq 6 \leq 9$ , (I.e. the Environmental Quality Standard for pH in surface water bodies defined in the Surface Water Regulations, as amended).

#### 4.4.4.5 Measures to Prevent Adverse the Discharge of Pollution material during Near and In-Stream Works

The installation of a surface water discharge pipeline from the site to the surface water channel to the south of the site will take place during the construction phase of the proposed development. A discharge outfall to this surface water drainage channel will be constructed. This will consist of a pre-cast concrete headwall on 100mm thick bed of lean mix concrete. Extra precaution will be taken when installing this outfall given its proximity to a receiving surface water body. Some works will need to take place within the drainage channel during headwall construction.

The following mitigation measures will be adopted during outfall installation works.

- These works will only be carried out during the period advised by Inland Fisheries Ireland for 'in-stream' works in their guidance note entitled 'Guidelines on the Protection of Fisheries during Construction Works in and adjacent to Waters,' that is, July to September inclusive. This time period coincides with the period of lowest expected rainfall, and therefore minimum run-off rates. This will minimise the risk of entrainment of polluting material in surface water run-off, and transport via this pathway to the adjacent surface water drainage channel.
- These works will only be carried out after a during a period of dry weather conditions in order to prevent the run-off of polluting material from the working area to the adjacent drainage channel.
- Outfall construction will be undertaken in a careful and precautionary manner, and in accordance with a defined method statement. The working area will be kept as tidy as possible for the duration of the works. All excavated / excess material will be immediately removed from the working area on an ongoing basis as works progress.
- All personnel carrying out outfall construction works will be obliged to read and fully understand the method statement for the proposed works. A toolbox talk regarding the method statement, the carrying out of the works generally, and the need to protect the drainage channel will be carried out immediately prior to the commencement of works.
- Silt fencing will be utilized at along the bank of the drainage channel to prevent the discharge of polluting material to the drainage channel during earthworks associated with outfall construction.
- As an extra precaution, sediment mats will be employed within the drainage channel during outfall construction.
- An inspection of the working area should be undertaken on completion of the outfall construction works to assess and confirm the implementation of the agreed prevention and control measures.
- Any machines working in or around the watercourse must be protected against leakage or spillage of fuels, oils, greases, and hydraulic fluids (e.g. using drip trays).



- Watercourse banks should be left intact insofar possible. Areas along the riverbanks and margins shall be fenced off in order to restrict movement of people and machinery in these and prevent their disturbance.
- The headwall itself will be pre-cast whilst the bed in which the headwall will be situated within will be lean mix concrete, thereby substantially reducing the potential for concrete materials becoming entrained in surface water run-off.

Some works will need to take place within the drainage channel during headwall construction. The surface water drainage channel will need to be temporarily dammed during outfall construction. The stream area adjacent to the outfall working area will be dammed (E.g. Using pea gravel bags and geosynthetic textile during the installation of the outfall). Water arising upstream of the dammed area will be transferred downstream of the dammed area by pump during the course of the headwall construction works. This temporary arrangement will allow outfall construction works (E.g. earthworks, concrete works) to be isolated from flowing water in the drainage channel. These works will occur over a period of one day.

A detailed method statement for the damming and outfall construction works will be developed by the construction contractor. The method statement for these works will be sent to the Eastern Office of Inland Fisheries Ireland (IFI) for their approval, as required by Inland Fisheries Ireland guidelines entitled 'Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites.' Prior to dewatering, the dammed area will be electrofished, as necessary, to temporarily remove fish (under appropriate IFI section 14 or derogation license).

#### 4.4.4.6 Measures for Preventing Nutrient Run-off

Felling of trees present on-site will be undertaken using chainsaw. All brash / felled wood will be removed from the site and sent to an appropriately authorized waste management facility for recovery / recycling. No brash / felled wood will be left on site overnight. This measure will reduce the risk of potential for sediment and nutrient run-off to the drainage channel to the south of the site.

#### 4.4.4.7 Construction Phase Monitoring

A programme of water monitoring will be carried out during the construction phase. The monitoring programme shall include daily checks, weekly inspections and monthly audits to ensure compliance with the CEMP. Such monitoring will be required in order to:

- Demonstrate that the mitigation measures and surface water management plan is performing as designed
- Provide reassurance that the in-place mitigation measures are not having a significant impact upon the environment
- Indicate whether further investigation is required and, where any risks are unacceptable, the need for additional mitigation measures to prevent, reduce or remove any impacts on the water environment.





Given the proximity of the development to a receiving watercourse, it is considered that the surface water monitoring programme will comprise:

- Weekly visual inspections of surface water management features, such as earthen bunds, cut-off trenches, refuelling areas and receiving watercourses, to identify any obstructions to channels, increased erosion or deposition of sediment and to allow for appropriate maintenance of the drainage regime.
- Daily visual inspections of watercourses, particularly during periods of high rainfall, in order to establish that levels of suspended solids have not been increased by site activities.
- If excessive suspended solids are noted, construction work will be stopped, and remediation measures will be put in place immediately.

A detailed water quality monitoring programme will be implemented on a weekly and monthly basis during the construction phase of the proposed development, in addition to the visual inspections outlined above, to ensure the effective implementation of the proposed mitigation measures. This monitoring will commence prior to the start of work activities to establish the baseline conditions at the development site.

Field measurements and grab samples will be taken at the site discharge point and at suitable upstream and downstream locations at the drainage channel to the south of the development site. The field measurements will be recorded at the site and will include measurement of the following parameters, electrical conductivity ( $\mu\text{s}/\text{cm}$ ), pH, temperature ( $^{\circ}\text{C}$ ) and dissolved oxygen ( $\text{mg}/\text{l}$ ).

The field measurements and sampling will be undertaken on a weekly basis during site clearance, demolition and earthworks stages of construction. Following this stage, it is proposed that the measurements/sampling will be undertaken on a monthly basis during the subsequent stages of construction.

Parameters have been defined based on the baseline surface water quality monitoring results.

All monitoring results will be compared with the baseline surface water monitoring undertaken as part of this assessment, as well as surface water related Environmental Quality Standards defined in the Surface Water Regulations, as amended, to ensure construction phase activities are not having an adverse impact on water quality in the drainage channel to the south of the site.

#### 4.4.5 Air Quality and Climate

Details of the proposed air quality and climate mitigation measures are summarised in the sections below and are also outlined in Chapter 11 Air Quality and Climate of the EIAR accompanying this planning application.

##### 4.4.5.1 *Construction Phase Odour Mitigation*

As construction phase impacts due to odour are predicted to be imperceptible no mitigation is proposed.



#### 4.4.5.2 Construction Phase Air Quality Mitigation

Although there are no sensitive receptors within the study area with respect to dust impacts, a dust minimisation plan will be formulated for the construction phase of the project, as construction activities are likely to generate some dust emissions.

The potential for dust to be emitted depends on the type of construction activity being carried out in conjunction with environmental factors including levels of rainfall, wind speeds and wind direction. The potential for impact from dust depends on the distance to potentially sensitive locations and whether the wind can carry the dust to these locations. The majority of any dust produced will be deposited close to the potential source and any impacts from dust deposition will typically be within 350m of the construction area.

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, the following management plan has been formulated by drawing on best practice guidance from Ireland, the UK (IAQM 2014, BRE 2003, Scottish Office 1996 and UK ODPM 2002) and the USA (USEPA 1997).

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design and effective control strategies. The following measures shall be taken in order to avoid dust nuisance occurring under unfavourable meteorological conditions.

In summary some of the measures which will be implemented will include:

- Prior to demolition blocks will be soft striped inside buildings (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Drop heights from conveyors, loading shovels, hoppers and other loading equipment will be minimised.
- Asbestos on site will be removed by a suitably qualified contractor prior to any demolition taking place in accordance with an Asbestos Management Plan and HAS Guidelines on the management and Disposal of Asbestos defined in their Guidance Document entitled 'Practical Guidelines on ACM Management and Abatement.'
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.
- Any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary.
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.

At all times, these procedures will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust will be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.



As construction phase impacts to air quality traffic emissions are predicted to be imperceptible no mitigation is proposed.

#### 4.4.5.3 Construction Phase Climate Mitigation

To ensure climate impacts are minimised as much as possible during the construction phase of the proposed development, all contractors will ensure that machinery used on site is properly maintained and is switched off when not in use to avoid unnecessary exhaust emissions from construction traffic.

Section 4.4.9 of this CEMP includes a Construction Waste Management Plan. The minimisation of waste will ensure that the construction phase embodied carbon is minimised. This plan will be finalised to take account of relevant conditions attached to any development consent granted.

The embodied carbon due to the transport of excavated spoil material is minimised due to the use of the adjacent Kilmurray infill site rather than an alternative location that is further away. In addition, sourcing other materials such as the concrete, and soil and stone required for the proposed project from this location also reduces transport related emissions. It also has the potential to reduce wastage of concrete loads due to traffic related delays.

#### 4.4.6 Noise and Vibration

The noise impact for construction works traffic will be mitigated by restricting movements along access routes to the standard working hours and exclude Sundays, unless specifically agreed otherwise.

The construction works on-site will be carried out in accordance with the guidance set out in BS 5228:2009+A1:2014, and the noise control measures set out in this document.

Construction contractors will be required to comply with the requirements of the Directive 2000/14/EC of the European Parliament and of the Council that relates to the noise emission in the environment by equipment for use outdoors, the Safety, Health and Welfare at Work (Control of Noise at Work) Regulations, 2007, Chapter 1 of Part 5: Control of Noise at Work, and BS 5228-1&2:2009+A1:2014 (Code of practice for noise and vibration control on construction and open sites).

The hours of construction activity will be limited to avoid unsociable hours. Construction operations shall be restricted to between 07:30 hours and 18:30 hours Monday to Saturday, unless specifically agreed otherwise.

Mitigation measures shall be implemented to reduce impacts related to construction noise and vibration. BS 5228-1:2009+A1:2014 provides a detailed list of mitigation measures to minimise the noise impact from construction activities and these recommendations will be implemented. It is recommended that construction activities shall be carried out during normal working hours. A site representative responsible for matters relating to noise should be appointed.

There are many general measures that will be taken to reduce noise levels:

- Avoid unnecessary revving of engines and switch off equipment when not required;
- A speed restriction of 20 km/hr will be applied on-site;
- Training of site staff in the proper use and maintenance of tools and equipment;





- Machines that could be in intermittent use will be shut down between work periods or will be throttled down to a minimum;
- Plant known to emit noise strongly in one direction will, when possible, be orientated so that the noise is directed away from noise-sensitive locations;
- Select equipment conforming to international standards on noise and vibration;
- Select equipment with quiet and low vibration emissions, and ensure equipment is regularly maintained ensuring it operates in an efficient manner. If possible, all mechanical plant will be fitted with effective exhaust 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; and
- Drop heights for materials such as gravels will be minimised;
- Locate equipment as far away as noise sensitive receivers as possible within constraints of the site.

#### 4.4.7 Archaeological, Architectural and Cultural Heritage

During the construction phase all mitigation measures will be undertaken in compliance with national policy guidelines and statutory provisions for the protection of the archaeological, architectural and cultural heritage.

Attention is drawn to national monuments legislation (1930-2004), which states that in the event of the discovery of archaeological finds or remains, the Heritage and Planning Division of the Department of the Environment, Heritage and Local Government (now the Department of Arts, Heritage and the Gaeltacht) and the National Museum of Ireland shall be notified immediately. If features are revealed, the archaeological finds or remains will need to be investigated, and no further development will take place in that area until the site is fully identified, recorded and excavated or alternatively avoided to the satisfaction of the statutory authorities.

It is proposed that archaeological monitoring of all groundworks at development site be carried out. Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring.

#### 4.4.8 Landscape and Visual Impacts

Due to the distinctively low level of likely visual impacts arising from this proposal, there are no mitigation measures proposed. In addition, the nearest private receptors are more than 750m distance across relatively level topography, the nearest public receptor (the R400) is more than 1.5km. In this regard, the mitigation measures are ‘embedded’ into the siting, design and location of the proposed development, so as to not need any additional mitigation measures.

#### 4.4.9 Construction Waste Management Plan

The construction waste management plan is outlined in the sections below.





#### 4.4.9.1 Assignment of Responsible Personnel

It will be the responsibility of the contractor for the construction works (when appointed) to nominate a suitable site representative such as a Project Manager, Site Manager or Site Engineer as Waste Manager who will have overall responsibility for the management of waste. The waste manager will have responsibility to instruct all site personnel including sub-contractors to comply with on-site requirements.

#### 4.4.9.2 Waste Generated

Any waste materials generated on-site during the construction of the proposed development will be handled and managed in accordance with the requirements of the *Waste Management Act 1996*, as amended, and associated Regulations. All waste will be stored in segregated waste containers at the temporary construction compounds and collected by appropriately licensed waste contractors. All waste materials transferred off-site for disposal or recovery will be taken only to suitably permitted/licensed waste facilities.

The type and quantity of waste materials that will be generated during the construction phase of the proposed development has been estimated and is shown in Table 4.7:

**Table 4.1: Waste Materials generated during the Construction Phase**

Natural Resources	Unit	Quantity	Note
<b>Soil Bund</b>			
Soil	m <sup>3</sup>	430	Estimated Volume
<b>Concrete Yard</b>			
Concrete	m <sup>3</sup>	711	Estimated Depth
Concrete Reinforcement	Tonnes	20	Assumption Single Layer of A393
<b>Existing Sheds</b>			
Wall Foundations	m <sup>3</sup>	177	Estimated Dimensions
Reinforcement to Wall Foundations	tonnes	74	Assumption 150kg/m <sup>2</sup>
Wall Concrete	m <sup>3</sup>	236	Estimated Dimensions
Reinforcement to Concrete Walls	tonnes	35	Assumption 150kg/m <sup>2</sup>
Concrete Floor	m <sup>3</sup>	346	Estimated Depth
Concrete Floor Reinforcement	Tonnes	52	Assumption 150kg/m <sup>2</sup>
<b>Steel Reinforcement</b>			



Natural Resources	Unit	Quantity	Note
Primary Steel	tonnes	48	Assumption 35kg/m <sup>2</sup>
Secondary Steel	tonnes	3	Assumption 2kg/m <sup>2</sup>
<b>Metal Cladding</b>			
Wall Cladding	m <sup>2</sup>	356	Estimated Dimensions
Roof Cladding	m <sup>2</sup>	1,740	Estimated Dimensions
<b>Raised Water Tanks</b>			
Support Steel	Tonnes	1	Estimated
Concrete Tanks	no.	2	
<b>Other</b>			
Pump House	no.	1	
Tank	no.	1	
Trees	no.	8	
Fencing	lin. m	250	Assumed Foundation Construction
Gates	no.	2	Estimated. Depth



The following measures will be adopted for the management of waste from the proposed development:

#### 4.4.9.3 Waste Reduction

- Reduce waste or surplus materials on site by avoiding over-estimation of purchasing requirements, minimising packaging materials and buying environmentally approved and recycled content products;
- Ensure materials are not delivered to site damaged and unusable;
- Where possible, establish a 'take back' system with suppliers;
- Limit the amount of waste going to landfill by reusing and recycling, where possible.

#### 4.4.9.4 Waste Reuse

- Provisions will be made for the re-use or recycling of timber, paper, cardboard, glass and other materials, where appropriate.
- All inert demolition related waste material generated during this stage of construction will be recycled for reuse as fill on-site and/or removed from the site where necessary and transported to the adjacent



Kilmurray Pre-cast Concrete Ltd Construction and Demolition (C&D) / Soil Recovery Facility, also situated in Derryarkin, Rhode, Co. Offaly (WFP References: WFP-OY-19-0204-01).

- Where possible excavated material from the site will be reutilized as fill material.



#### 4.4.9.5 Waste Disposal

- All waste (materials that cannot be reused or recycled) from the site will be removed off site by a suitably approved and licensed waste contractor to a licensed waste facility.
- Excess soil and stone material and inert demolition related waste material generated on-site during construction will be removed from the site and transported to the adjacent Kilmurray C&D / soil recovery facility, also situated in Derryarkin, Rhode, Co. Offaly (WFP Reference: WFP-OY-19-0204-01).

#### 4.4.9.6 Training

Copies of the waste management plan will be made available to all relevant personnel on site. All site personnel and sub-contractors will be instructed about the objectives of the Project Waste Management Plan and informed of the responsibilities that fall upon them as a consequence of its provisions.

It will be the responsibility of the Contractors' appointed Waste Manager to ensure that all personnel are made aware of their responsibilities under the plan via a toolbox talk or otherwise.

#### 4.4.10 Construction Traffic Management Plan

The Construction Traffic Management Plan (CTMP) shall be finalised in accordance with this Plan following the appointment of the Contractor for the construction works.

Please note that some items in this plan can only be finalised with appropriate input from the Contractor who will actually carry out and schedule the works. Furthermore, it is appropriate that the Project Supervisor Construction Stage (PSCS), when appointed, should have an active role in the preparation/review of the Construction Traffic Management Plan.

The Contractor is required to prepare a Construction Traffic Management Plan prior to the construction works commencing.

As with any construction development project, the transport of materials onto the site will give rise to increased traffic and associated impacts. However, due to the very nature of construction these impacts will be temporary.

Public perception of the construction phase will be influenced primarily from the impact of traffic movements. The degree of traffic disturbance caused by the construction phase depends on the volume of material imported/exported, the associated civil engineering requirements and the length of the construction period.

This CTMP deals with the traffic generated during the construction of the proposed development. It concentrates on the traffic arising from each element of the works which includes the site clearance works and the building construction works.

Construction traffic will require regular access to the site at varying times throughout the construction phase.



The aim of this CTMP is to put in place procedures to manage traffic effectively on site and in the immediate vicinity of the development, to ensure the continued movement of traffic on the public roads and to minimise disturbance during transportation of materials. The correct implementation of this CTMP will ensure that appropriate procedures are in place to minimise any effects on the safety and movement of the general public.

Prior to the commencement of construction, the CTMP will be reviewed by the Contractor (and any sub-contractors) and will be updated as necessary.

The development site is located along a private access road some distance from the public road. All concrete and stone input materials will be sourced from the adjoining Kilmurray quarry site. All inert demolition related waste material generated during construction will be removed from the site and transported to the adjacent Kilmurray Construction and Demolition (C&D) / Soil Recovery Facility. The transportation of construction materials and commuting of construction staff will not have a significant impact upon the operation or capacity of the receiving public road network. Given the distance of the development site from the public road there is unlikely to be any direct impacts arising from the deposition of debris, nevertheless it is the intention of the Applicant to comply with Local Authority policy on maintaining the roads serving the site clean of dirt and debris associated with the development of the site. If further detail regarding the control of the construction project and specifically the control of construction traffic is required by the Local Authority, it is suggested that a brief Construction Traffic Management Plan can be prepared as a condition of planning. Appropriate signing will be included in proposed measures to improve the existing junction of the access road and R400 prior to commencement of the proposed development.

#### 4.4.10.1 Construction Staging

In terms of traffic impacts, it is proposed to carry out the project in a single phase, with an overall construction programme expected of approximately 12 months. The first 6 months will be the most intensive period of construction given the need for waste removal from the site and material importation to the site.

Construction operations shall generally be restricted to between 07:30 to 18:30 Monday to Saturday.

Construction commencement dates are yet to be confirmed at this stage; these will be made known to the Offaly County Council by way of a formal Commencement Notice.

#### 4.4.10.2 Construction Plant and Vehicles

The typical construction plant and vehicles accessing the development site may include:

- Site personnel driving to the work site and site compounds (by car, van and 4x4);
- Delivery of plant (e.g. conveyors, screens, etc.), cladding materials, structural and re-enforcing steel and other construction materials by van and HGV;
- Movement of construction equipment and refuelling trucks to and around the site;
- Import of fill material and concrete.

It should be noted however that final selection of construction plant and vehicles may vary depending on suitability, availability, contractor's choice, etc.





Plant operators will be responsible for the upkeep and maintenance of construction plant and vehicles, ensuring good working order prior to use. Should emergency maintenance need to be carried out on site, this will be carried out at a designated area away from sensitive receptors and it will be ensured that a spill kit is nearby.

Parking for all site staff vehicles during the Construction phase will be provided adjacent to the construction compound. Parking of construction related vehicles (or queuing) will not be permitted outside the facility gate. This will be achieved using a combination of signage, suitable bollards (if required) and enforcement by site management.

#### 4.4.10.3 Consultation and Notification

##### Traffic Management Co-ordinator

The Contractor will appoint a dedicated competent Traffic Management Coordinator for the duration of this project and this person will be the main point of contact for all matters relating to traffic management on the project.

##### Induction

Prior to the works commencing, the Traffic Management Coordinator will carry out an induction for the materials haulage contractor staff to inform them of the traffic requirements in relation to vehicle movements. Traffic consideration shall form part of the induction process for all site staff also.

##### An Garda Síochána

Following the appointment of the successful Contractor for the main construction works for this project, this CTMP shall be finalised. The Traffic Management Coordinator will liaise directly with An Garda Síochána in relation to the plan and any concerns/requirements they have will be incorporated in to the plan. The necessary permits (including approved route permits) will be applied for and obtained from An Garda Síochána, if required.

##### Offaly County Council

The Contractor will liaise directly with Offaly County Council Roads Department in relation to the plan and any necessary permits (including standard permits) will be applied for and obtained from the Roads Department.





## 5 SAFETY & HEALTH MANAGEMENT PLAN

### 5.1 Introduction

This Safety and Health Management Plan (SHMP) defines the work practices, procedures and management responsibilities relating to the management of health and safety during the design, construction and operation of the proposed development and shall be read in conjunction with the Preliminary Safety & Health Plan prepared for the project by the Project Supervisor for the Design Process. The Safety and Health Management Plan shall be finalised in accordance with this plan following the appointment of the contractor for the construction works.

This SHMP describes how the contractor for the construction works will implement a site safety management system (SMS) on this project to meet the specified contractual, regulatory and statutory requirements, environmental impact statement mitigation measures and planning conditions. It is the contractor's responsibility to implement an effective safety management system to ensure that the developer's safety requirements for the construction of this project are met.

All site personnel will be required to be familiar with the requirements of the safety management plan as related to their role on site. The plan describes the project organisation and sets out the health and safety procedures that will be adopted on site:

- The Safety and Health Plan is a controlled document and will be reviewed and revised as necessary;
- A copy of the Safety and Health Plan will be located on/near the site H&S notice board;
- All employees, suppliers and contractors whose work activities cause/could cause impacts on the environment will be made aware of the SHMP and its contents.

### 5.2 Project Obligations with Respect to Health and Safety

The construction of the proposed development will impose numerous safety management obligations on the developer, designer and contractor. These obligations are set out below. The contractor for the construction works and all of its sub-contractors are to ensure that they are fully aware of and in compliance with these safety obligations.

#### 5.2.1 Statutory Obligations

The Safety, Health and Welfare at Work Act 2005 and the Safety, Health and Welfare at Work (Construction) Regulations 2013 place a responsibility on the Developer as the "Client", the Designer, the Project Supervisors and the Contractor.

The Developer/ Employer must:

- Appoint a competent and adequately resourced Project Supervisor for the Design Phase (PSDP);
- Appoint a competent and adequately resourced Supervisor for the Construction Stage (PSCS);
- Be satisfied that each designer and contractor appointed has adequate training, knowledge, experience and resources for the work to be performed;





- Co-operate with the project supervisor and supply necessary information;
- Keep and make available the safety file for the completed structure;
- Provide a copy of the safety and health plan prepared by the PSDP to every person tendering for the project;
- Notify the Authority of the appointment of the PSDP.

Designers must:

- Identify any hazards that their design may present during construction and subsequent maintenance;
- Eliminate the hazards or reduce the risk;
- Communicate necessary control measures, design assumptions or remaining risks to the PSDP so they can be dealt with in the safety and health plan;
- Co-operate with other designers and the PSDP or PSCP;
- Take account of any existing safety and health plan or safety file;
- Comply with directions issued by the PSDP or PSCS.



The PSDP must:

- Identify hazards arising from the design or from the technical, organisational, planning or time related aspects of the project;
- Where possible, eliminate the hazards or reduce the risks;
- Communicate necessary control measure, design assumptions or remaining risks to the PSCS so they can be dealt with in the safety and health plan;
- Ensure that the work of designers is coordinated to ensure safety;
- Organise co-operation between designers;
- Prepare a written safety and health plan for any project and deliver it to the client prior to tender;
- Prepare a safety file for the completed structure and give it to the client.

The PSCS must:

- Co-ordinate the identification of hazards, the elimination of the hazards or the reduction of risks during construction;
- Develop the Safety and Health Plan initially prepared by the PSDP before construction commences;
- Co-ordinate the implementation of the construction regulations by contractors;
- Organise cooperation between contractors and the provision of information;
- Co-ordinate the reporting of accidents to the Authority;
- Notify the Authority before construction commences;
- Provide information to the site safety representative;



- Co-ordinate the checking of stage working procedures;
- Co-ordinate measures to restrict entry on to the site;
- Co-ordinate the provision and maintenance of welfare facilities;
- Co-ordinate arrangements to ensure that craft, general construction workers and security workers have a Safety Awareness card, e.g. Safe Pass and a Construction Skills card where required;
- Co-ordinate the appointment of a site safety representative where there are more than 20 persons on site;
- Appoint a safety adviser where there are more than 100 on site;
- Provide all necessary safety file information to the PSDP;
- Monitor the compliance of contractors and others and take corrective action where necessary;
- Notify the Authority and the client of non-compliance with any written directions issued.

The Contractor must:

- Co-operate with the PSCS;
- Promptly provide the PSCS with information required for the safety file;
- Comply with directions of the project supervisors;
- Report accidents to the Authority and to the PSCS where an employee cannot perform their normal work for more than 3 days;
- Comply with site rules and the safety and health plan and ensure that your employees comply;
- Identify hazards, eliminate the hazards or reduce risks during construction;
- Facilitate the site safety representative;
- Ensure that relevant workers have a safety awareness card and a construction skills card where required;
- Provide workers with site specific induction;
- Appoint a safety officer where there are more than 20 on site or 30 employed;
- Consult workers with site specific induction;
- Monitor compliance and take corrective action.



Consequently, at all stages of the project there are statutory requirements for the management of safety, health and welfare of all involved in or affected by the development. As previously outlined, this CEMP and specifically the Safety and Health Management Plan addresses key construction management issues associated with the proposed development. This plan will be developed further at the construction stage, on the appointment of the Contractor for the main construction works.

### 5.2.2 The Preliminary Safety and Health Plan

In accordance with the requirements of the Safety, Health & Welfare at Work (Construction) Regulations 2013, a Preliminary Safety & Health Plan will be required as part of the design process.



This plan will be further developed by the PSCS on appointment and maintained as a live document during construction and commissioning of the proposed development.

The safety and health plan is required to include the following information:

- A general description of the project;
- Details of other work activities taking place on site;
- Works involving particular risks;
- The timescale for the project and the basis on which the time frame was established;
- Conclusions drawn by designers and the PSDP having taken into account the General Principles of Prevention and any relevant Safety and Health Plan or Safety File; and
- The location of electricity, water and sewage connections so as to facilitate early establishment of welfare facilities.

In accordance with the PSDP's procedures, the Preliminary Safety & Health Plan for the proposed development should include the following sections and subsections to ensure that the PSCS is aware of the health and safety issues at tender stage and enable them to price accordingly:

Preamble:

- 1 General Project Information:
  - 1.1 Title
  - 1.2 Description of Project
  - 1.3 Employer
  - 1.4 Designers/Other Consultants
  - 1.5 Project Supervisor Design Process
  - 1.6 Drawings, Specifications and Other Documents
  - 1.7 Intended Contract Commencement Date
  - 1.8 Intended Contract Completion Date
  - 1.9 Basis for Contract Duration
  - 1.10 Restrictions on Working Hours
  - 1.11 Notification of Project
  - 1.12 Termination of the PSCS Appointment
- 2 The Existing Environment:
  - 2.1 Site Location
  - 2.2 Relevant Adjoining Land Uses
  - 2.3 Site Restrictions
  - 2.4 Restrictions on Access
  - 2.5 Hazardous Area Classification
  - 2.6 Existing Services
  - 2.7 Ground Conditions
  - 2.8 Existing Hazards
  - 2.9 Liaison with Statutory Bodies





- 3 Other Work Activities:
  - 3.1 Other Contracts Which May Affect Work
  - 3.2 Occupation of Site
  - 3.3 Building Activities
  - 3.4 Other Work Activities
  - 3.5 Emergency Procedures in Place on Site
  
- 4 Particular and Residual Risks:
  - 4.1 Works Which Puts Persons at Work at Risk
  - 4.2 Work Which Puts Persons at Risk from Chemical or Biological Substances
  - 4.3 Work with Ionising Radiation
  - 4.4 Work near High Voltage Power Lines
  - 4.5 Work Exposing Persons at Work to the Risk of Drowning
  - 4.6 Work on Wells, Underground Earthworks and Tunnels
  - 4.7 Work Carried Out by Divers at Work Having a System of Air Supply
  - 4.8 Work Carried Out in a Caisson with a Compressed Air Atmosphere
  - 4.9 Work Involving the Use of Explosives
  - 4.10 Work Involving the Assembly or Dismantling of Heavy Prefabricated Components
  - 4.11 Work Involving Hazardous Material
  - 4.12 Residual Risks
  
- 5 Additional Information:
  - 5.1 Existing Documents
  - 5.2 Site Possession
  - 5.3 Site Rules
  - 5.4 Site Specific Safety Objectives
  - 5.5 Phasing of Works
  - 5.6 Permits/Authorisation Required
  - 5.7 Maintenance
  - 5.8 Continuing Liaison
  - 5.9 Specific Recommendations
  
- 6 Information Required for Safety File:
  - 6.1 Information Required for Safety File from PSCS



### 5.2.3 The Management of Health and Safety during the Construction Phase

The selection criteria for the Contractor for the works will be based on the ability to construct the works in a manner that will not endanger the safety, health and welfare of any parties and competence to fulfil the role of PSCS.

The contract will be awarded on the basis of assessment of the candidates against relevant health and safety criteria including experience of similar projects, knowledge of the construction processes involved and training of their management and staff who will be involved in carrying out the works.



#### 5.2.4 The Construction Stage Safety and Health Plan

In accordance with the requirements of the Safety, Health & Welfare at Work (Construction) Regulations 2013, the preliminary Safety & Health Plan prepared by the PSDP will be further developed by the PSCS before the commencement of the construction work and updated on a regular basis during the construction phase of the project.

The document will include the following sections and subsections to ensure the management of health and safety during the construction phase of the project:

1. Description of Project:

- project description and programme details
- details of client, PSDP and PSCS, designers
- contractor and other consultants
- extent and location of existing records and plans
- arrangements for communicating with Contractors, PSDP and others as appropriate

2. Communication and Management of the Work:

- management structure and responsibilities
- safety and health goals for the project and arrangements for monitoring and review of safety and health performance
- arrangements for:
  - regular liaison between parties on site
  - consultation with the workforce
  - the exchange of design information between the Client, Designers, Project Supervisor for the Design Process, Project Supervisor Construction Stage and Contractors on site
  - handling design changes during the project
  - the selection and control of contractors
  - the exchange of safety and health information between contractors
  - security, site induction, and on-site training
  - welfare facilities and first aid
  - the production and approval of risk assessments and method statements
  - the reporting and investigation of accidents and other incidents (including near misses)
- site rules
- fire and emergency procedures

3. Arrangements for Controlling Significant Site Risks:

- safety risks:
  - services, including temporary electrical installations
  - preventing falls
  - work with or near fragile materials





- control of lifting operations
  - dealing with services (water, electricity and gas)
  - the maintenance of plant and equipment
  - poor ground conditions
  - traffic routes and segregation of vehicles and pedestrians
  - storage of hazardous materials
  - dealing with existing unstable structures
  - accommodating adjacent land use
  - other significant safety risks
- health risks:
    - dealing with contaminated land
    - manual handling
    - use of hazardous substances
    - reducing noise and vibration
    - other significant health risks

The construction stage safety and health plan will be maintained on site by the PSCS and will be communicated to all relevant parties on an ongoing basis through inductions, site safety meetings and tool box talks etc. as required.

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## 6 EMERGENCY RESPONSE PLAN

### 6.1 Introduction

This chapter of the CEMP presents an Emergency Response Plan for the proposed development. The Emergency Response Plan shall be finalised in accordance with this outline plan following the appointment of the contractor for the construction works and following detailed design development.

This Emergency Response Plan contains predetermined guidelines and procedures to ensure the safety, health and welfare of everybody involved in the project and to protect the environment during the construction phase of the proposed development. This plan outlines the immediate response to an emergency or disaster situation and will be developed by the construction works contractor and PSCS as part of their construction stage Safety and Health Plan.

An emergency is any disruptive or harmful event that endangers people, environment, property or assets. Emergencies can be small, as in a fire contained by employees using firefighting equipment or large, as in a disaster resulting from a storm.

In the context of the proposed development, examples of Emergency Response Plan emergency events are:

- medical emergency;
- overheated equipment;
- chemical and fuel spill;
- fire;
- loss of power;
- vehicle incidents.

Example sources of emergency or disaster events are:

- unstable/inappropriate stockpiles on site;
- faulty or incorrect use of equipment;
- falls from height;
- smoking;
- storm/adverse weather;
- power failure;
- fuel spill;
- road failure;
- serious vehicle collisions or overturning.





## 6.2 Emergency Response Plan

An emergency response plan deals with the immediate physical effects of a disaster and outlines the initial response.

### 6.2.1 Emergency Response Liaison

The contractor/PSCS will designate an individual to serve as the Emergency Response Liaison for this project. The emergency response liaison will coordinate the emergency response for the duration of any emergency at or nearby the project site.

Offaly County Council, An Garda Síochána and the HSE Ambulance Co-ordinator will be provided with the construction programme and the onsite contact information from the Emergency Response Liaison prior to construction.

The Emergency Response Liaison will be immediately reachable at all times during project construction. The Liaison will coordinate with the above agencies to establish emergency procedures for access to and within the site in the event of an emergency.

### 6.2.2 Reporting Emergencies

In the event of fire, storm, flood, serious injury or other emergency, contact:

**ALL ON SITE EMERGENCIES DIAL 112 or 999**



### 6.2.3 Designated Responder

A map depicting the location with the emergency meeting point will be furnished to Offaly County Council Fire Department and HSE ambulance co-ordinators.

Upon arrival on the scene, the senior EMS Officer will set up the incident command structure. The Emergency Response Liaison and all contractor's personnel will cooperate with directions of the incident commander and assist as directed.

The nearest emergency services, ambulance and Accident & Emergency (A&E) facilities are:

Service:	Contact Details:	
Accident & Emergency (A&E)	Midland Regional Hospital, Mullingar	(044) 934 0221
Ambulance Service	Dial 112 or 999	
Fire Services	Dial 112 or 999	
Garda Station	Rochfortbridge Garda Station	(044) 922 2102



Each member of the contractor's site team who are First-Aid and Cardiopulmonary Resuscitation (CPR) trained personnel will be identifiable with a hard hat sticker indicating their training.

#### 6.2.4 Emergency Alarm

The emergency alarm will be raised on site as soon as an emergency situation is detected, the alarm will be identified (contractor to check those that apply):

Air Horn		Radio		Voice		Hand Signals		Siren	
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#### 6.2.5 Emergency Reporting

In the event of an emergency the nearest supervisor with radio equipment/mobile phone will be notified. The degree of emergency will be reported to the Emergency Response Liaison who will contact the Emergency Services and request the appropriate emergency service.

#### 6.2.6 Medical Protocol

In the event of a major medical emergency, the emergency centre (999) will be notified and an ambulance and emergency medical team will respond to the scene. All major medical cases require professional (ambulance) transportation. In the event of a minor medical case, the affected employee can be transported via company vehicle in the escort of a foreman or site engineer (with first aid training).

#### 6.2.7 Emergency Response

Upon notification, the Emergency Response Liaison will respond to the emergency scene and manage emergency operations:

**1. Assess hazards and make the area safe** – If you cannot enter the area without risking your safety, don't do it, call the Emergency Services immediately and wait for them. If you think you can safely enter the area, look around the emergency scene for anything that can be dangerous or hazardous to you, the casualty, or anyone else at the scene. Bystanders can help with making the area safe. First aid kits will be available on site. Operators that have been first aid/CPR/AED trained will be listed on site and easily identifiable by a hard hat sticker.

**2. Take charge of the situation** – if you are the first-aid provider on the scene act fast. If someone is already in charge, briefly introduce yourself and see if that person needs any help. If there is any chance the casualty could have a head or spinal injury, tell them not to move.

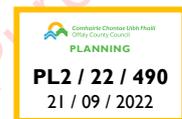
**3. Get Consent** – always identify yourself as a first-aid provider and offer to help. Always ask for consent before touching a conscious adult casualty and always ask for consent from a parent or guardian before touching an unconscious or conscious child or infant. With an unconscious adult casualty consent is implied as it is generally accepted that most people want to live. Remember to protect yourself first by wearing gloves and eye protection.



**4. Assess Responsiveness** – is the casualty conscious or unconscious? Note their response while you are asking them for their consent. If they respond, continue with the primary survey, and if they don't respond, be aware that an unconscious casualty is or has the potential of being a breathing emergency.

**5. Call out for help** – this will attract bystanders. Help is always useful in an emergency situation. Someone can be called over the phone for medical help. Others can bring blankets if needed, get water, etc. A bystander can help with any of the following:

- Make the area safe;
- Find all the casualties;
- Find the first aid kit, or any useful medical supplies;
- Control the crowd;
- Call for medical help;
- Help give first aid, under your direction;
- Gather and protect the casualty's belongings;
- Take notes, gather information, be a witness;
- Reassure the casualty's relatives;
- Lead the ambulance attendants to the scene of the emergency;
- Notify Emergency Services as soon as you can. Either send a bystander or call yourself.



In the event of a major medical emergency, the Emergency Response Liaison, as the person-in-charge of the emergency scene, will dispatch someone to the site access point nearest the emergency scene to direct and lead arriving outside responders to the emergency scene. The designated meeting point will be agreed prior to the commencement of construction. Emergency personnel will be met at this meeting point which has been communicated by management during the 999 call. The emergency personnel escort will use the hazard lights on their vehicle so they are easily identified.

#### 6.2.8 Escape and Evacuation Procedure

Dependent upon the degree of the emergency and if safe to do so, employees will evacuate to the designated assembly area where the designated wardens shall account for all employees and determine if anyone still remains within the emergency scene.

Should a wild land fire or peat slippage occur, and the designated assembly area is compromised, other locations will be designated as secondary assembly areas.

#### 6.2.9 Prevention of Illness/Injury due to Weather/Elements

1. All employees will have access to shelter and heat in the event of inclement weather.
2. Employees will have access to at least a litre of water at all times.
3. Weather forecast will be discussed every morning with the crews. Weather conditions and forecast will be monitored regularly by management.
4. No Employee will work alone. A buddy system will be used so employees can contact a supervisor in case of an emergency.



#### 6.2.10 Environmental Emergency Procedure

An emergency preparedness and response procedure is required to prevent environmental pollution incidents. Emergency Silt Control and Spillage Response Procedures will be contained in this ERP.

Suitable spill kits and absorbent material for dealing with oil spills will be maintained on site. In the event of pollution or potential risk of pollution, the Local Authority should be informed immediately.

#### 6.2.11 Emergency Response Plan – Haul Routes

Emergency Response Procedure relating to transportation of plant, equipment and materials to the site will be developed by the contractor during the construction phase of the development.

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