

**Construction Environmental Management Plan
(CEMP)
Kilcumber Bridge 110kV Substation**



ISSUE FORM	
Project number	21280
Document number	
Document revision	A
Document title	Construction and Environmental Management Plan
Document status	Final
Document prepared by	DH (MWP 2021-3-1)
Document checked by	GT (MWP 2021-3-8)

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	CEMP Purpose and Objectives	1
2	PROJECT OVERVIEW	2
2.1	Site Details	2
3	CONSTRUCTION WORKS	2
3.1	Overview of Construction Works	2
3.2	Schedule of Construction Works.....	3
3.3	Working Hours and Personnel	3
3.4	Construction environmental mitigations.....	4
4	ORGANISATIONAL STRUCTURE, DUTIES AND RESPONSIBILITIES	10
4.1	On Site Organisational Structure and Responsibility.....	10
4.2	Duties and Responsibilities.....	10
4.3	Contacts	16
5	ENVIRONMENTAL CONSIDERATIONS AND POTENTIAL EFFECTS	17
6	ENVIRONMENTAL COMMITMENTS	18
6.1	Schedule of Environmental Requirements (Mitigation Measures).....	18
6.2	Environmental Management Plans (EMP).....	18
7	AUDITING, MONITORING AND RESPONSE	19
7.1	Environmental Monitoring Schedule	19
7.2	Environmental Performance Indicators.....	20
7.3	Response Procedure	20
7.4	Corrective and Preventative Action	21
8	SUMMARY.....	21

LIST OF TABLES

Table 1:	Expected Construction Programme	3
Table 2:	Plans for Managing Impacts of Construction Activities	18
Table 3:	Preliminary Monitoring Schedule	19
Table 4:	Site Checklist	19

LIST OF APPENDICES**Appendix 1****Environmental Management Plans**

EMP-1	Management of Excavations
EMP-2	Surface Water Run-off Control
EMP-3	Fuels and Oils Management
EMP-4	Management of Concrete
EMP-5	Protection of Habitats and Fauna
EMP-6	Waste Management
EMP-7	Traffic Management
EMP-8	Management of Archaeology
EMP-9	Construction Noise
EMP-10	Dust Management
EMP-11	Invasive Species Management
EMP-12	Emergency Response Plan
EMP-13	Site Environmental Training and Awareness
EMP-14	Monitoring and Auditing
EMP-15	Environmental Accidents, Incidents and Corrective Actions
EMP-16	Environmental Complaints

1 INTRODUCTION

This Construction and Environmental Management Plan (CEMP) for the proposed Kilcumber Bridge 110kV substation has been prepared by Malachy Walsh and Partners (MWP) on behalf of Cloncant Renewable Energy Ltd. to accompany the submission of an EIAR and planning application for the proposed development to An Bord Pleanála.

This CEMP has been developed specifically for this project and outlines construction practices and environmental management measures which will be implemented during the construction phase, in order to ensure that the project is constructed in accordance with best practice, with the minimum impact on the surrounding environment.

Prior to construction, the Appointed Main Contractor will prepare a detailed CEMP taking into account methods/requirements outlined in this report. This CEMP will form the basis of the construction management approach on site, while the works are being completed; ensuring environmental management measures are in place, which will be implemented during the construction phase, in order to ensure that the project is constructed in accordance with best practice, with the minimum impact on the surrounding environment.

1.1 CEMP PURPOSE AND OBJECTIVES

The purpose of a Construction Environmental Management Plan is to outline how the Appointed Contractor(s) will implement a Site Construction Management System to meet the specified requirements which include Contractual, Regulatory and Statutory Requirements, Environmental Mitigation Measures and Planning Conditions.

The principal objective of this CEMP is to avoid, minimise and control adverse environmental impacts associated with all aspects of the construction of the proposed development including the grid connection works. In essence, this CEMP is intended to provide the Appointed Contractors with a practical guide to ensure compliance by all parties with any Planning and Environmental requirements. The CEMP achieves this by providing the environmental management framework to be adhered to during the construction phase of the proposal. It outlines the work practices, construction management procedures, management responsibilities, mitigation measures and monitoring proposals that are required to be adhered to, in order to complete the proposed development, in an appropriate environmental manner.

All site personnel will be required to be familiar with the plan's requirements as related to their role on site.

There is a requirement on the Appointed Contractor(s), that details of this Project CEMP are updated with progress, including the roles and responsibilities of those appointed on the site for the construction of the project, if their respective roles change during the project.

While this version of the CEMP provides a benchmark for good practice, where avoidance or further minimisation of risks to the environment can be demonstrated through use of alternative methods or improvements to current practices, the Contractor will implement these wherever possible.

2 PROJECT OVERVIEW

Cloncant Renewable Energy Ltd., a subsidiary of Statkraft Ireland Ltd. is applying for planning permission and will build out the proposed Kilcumber Bridge 110kV substation project. Once the development is completed the ownership of the facility will transfer to Eirgrid who will operate and maintain the development as part of the national electricity grid.

The proposal is to construct a 110kV substation to facilitate the connection of permitted renewable energy projects in the local area to the transmission network. The overall compound would have an area of approx. 19,809m². The development consists of a 12,875m² compound with all the components of a substation with an additional 7,524m² area for future expansion of the substation electrical capacity. The buildings and other externally mounted electrical plant will be enclosed in a fenced compound.

The components of the proposed Kilcumber Bridge 110kV Air Insulated Switchgear (AIS) Loop Substation are listed below:

- control building,
- over and underground ducting/ cables,
- electrical pylons,
- fencing,
- electrical equipment including busbars, disconnects, breakers, sealing ends, lightning and lighting masts.

The development includes a 400m 110kV overhead line (OHL) going south east from the substation and connecting into the adjacent existing Cushaling – Mount Lucas 110kV OHL. The OHL would consist of a combination of steel lattice pylons and wooden pylons with a height of 12m.

2.1 SITE DETAILS

The proposed substation is located in the townlands of Ballykilleen, Cloncreen and Ballinowlart North, adjacent to the Edenderry power station in County Offaly.

The site is currently an agricultural field and is in a rural location. To the northeast of the site there is the R401 and the Edenderry power station, which is 80m to the north east of the site. The land to the south, west and north of the site is made up of agricultural fields and cutaway peatland.

3 CONSTRUCTION WORKS

3.1 OVERVIEW OF CONSTRUCTION WORKS

Key elements of the civil works and activities associated with the construction phase of the development are as follows and are discussed in the following subsections:

- Site investigation work including pre-construction surveys
- Site preparation and pre-construction activities
- Construct temporary construction compound
- Site drainage
- Internal service road
- Construct substation control building and electrical compound

- Complete electrical installation at the substation control building and compound.
- Commission and test plant
- Complete site works, tidy up site
- Demobilise offices
- Provide any gates, signs etc. which may be required

3.2 SCHEDULE OF CONSTRUCTION WORKS

The project duration is estimated at 12 to 14 months. The typical construction works will be completed in phases as outlined in Table 1 below. A number of these phases will run concurrently as outlined below:

- The access road is constructed up to the construction compound and substation.
- Construction of the site substation and control building will commence by the stripping of the topsoil across the compound followed by the placement of approximately 1-1.6m (depending on existing topography) of hardcore rock up to the compound level of the substation.
- The OHL infrastructure including four 12m steel lattice pylons and six 12m wooden pole structures will begin.

It is expected that the construction works for the substation and OHL will require approximately 30-35 personnel. The electrical works will require less heavy machinery but more labour personnel. It is likely that both the onsite civil and grid connection works will take place simultaneously.

Table 1: Expected Construction Programme

Stage	Activity	Estimated Duration
Phase 1	Site preparation, pre-construction activities, site entrance	2 weeks
Phase 2	Access road construction and compound	3 weeks
Phase 3	Substation hardcore construction	7 weeks
Phase 4	Substation building construction	14 weeks
Phase 5	Trenching and ducting and other electrical works	4 weeks
Phase 6	Pylon frame construction and pylon foundations	4 weeks
Phase 7	OHL erection	6 weeks
Phase 8	Substation commissioning	12 weeks
Total		12 months

Note: phases are likely to overlap and will not be completed in isolation resulting in estimated total programme duration of approximately 12 months.

3.3 WORKING HOURS AND PERSONNEL

Likely Construction hours:-

8:00am – 6:00pm* (Monday – Friday inclusive)

8:00am – 1:00pm* (Saturday)

The working day may extend occasionally at times when critical elements of work need to be advanced.

As stated in Section 3.2, it is envisaged that the construction works will employ approximately 30-35 personnel including during the peak construction phase, to include site contractors, engineers, materials delivery personnel, environmental personnel, health and safety personnel.

3.4 CONSTRUCTION ENVIRONMENTAL MITIGATIONS

3.4.1 Pre-Construction Surveys

Any detailed ground investigations, environmental surveys required to support the construction process will be carried out and finalised. These include:

Pre-construction otter and badger surveys

Pre-construction monitoring of bats and terrestrial mammals conducted to determine whether their use of the site has altered.

Pre-construction invasive species survey
--

Pre-development archaeological testing at the site
--

3.4.2 Pre-construction Activities

Prior to construction commencing, on site demarcation of the construction site boundary will be undertaken to prevent equipment tracking outside planning boundary.

3.4.3 Traffic

- A detailed Construction Traffic Management Plan will be developed at the construction stage (or commenced during planning compliance stage) to ensure controls are in place with all suppliers coming to the project site, including coordination with the permitted Cushaling Wind Farm construction.
- Ensure regular maintenance of plant and equipment. Technical inspection of vehicles to ensure they will perform most efficiently
- Implementation of the construction Traffic Management Plan to minimise congestion
- All site vehicles and machinery to be switched off when not in use - no idling.

3.4.4 Site Access

The substation compound will be accessed from the north off the R401 near the entrance to the Edenderry power station.

There may be limited temporary access further east along the R401 for the purpose of erection works of the OHL but such access will be minimal and will use existing agricultural access with the approval of the relevant landowner. The detailed design of any temporary access routes will be based on the condition of the land at the time of construction and will be agreed with the landowner prior to the commencement of works.

3.4.5 Temporary Construction Compound

One temporary site compound will be situated in the future expansion area of the proposed Kilcumber Bridge 110kV substation, within the red line of the proposed site layout. This compound will act as the construction compound for both the substation and the grid connection. The compound will be used as a secure storage area for construction materials, waste materials and also contain temporary site

accommodation units to provide welfare facilities for site personnel. Facilities will include offices, meeting rooms, a canteen and a drying room.

The proposed temporary compound location will be in the future expansion area of the substation.

The compound will be constructed early in the project in order to provide site offices and accommodation for staff and for the delivery of materials. Any surface water management, bunding, waste management measures etc will also be put in place at the outset. The compound will be in place for the duration of the construction phase and will be removed once commissioning is complete.

The compound will typically be constructed as follows:

- The area to be used as the compound will be marked out at the corners using ranging rods or timber posts.
- The compound will be established using a similar technique as the construction of the excavated site road.
- A bunded containment area will be provided within the compound for the storage of lubricants, oils and site generators etc.
- If necessary, the compound will be fenced and secured with locked gates.
- The compound will include an enclosed wastewater management system (holding tank) capable of handling the demand during the construction phase when as many as 35 people will be working on site. These will be emptied as required by a licensed contractor.
- Upon completion of the project the compound will be cleared and will remain as the future expansion area.

3.4.5.1 Site Drainage System

During the construction phase of the project, there is potential for sedimented surface water run-off from the construction works areas to contaminate downstream watercourses. Fundamental to any construction project, is the need to keep clean water (i.e. runoff from adjacent ground upslope of the permitted development footprint) clean and manage all other run-off and water from construction in an appropriate manner.

A site-specific drainage system has been designed taking account of the following:

- Knowledge of the ground and hydrological conditions at the site;
- Technical guidance and best management practice manuals.

The system is designed to ensure that the proposal will largely mimic the existing drainage regime across the site, will not deteriorate water quality and will safeguard catchment water quality status from construction-related sediment run-off.

It is comprised of the following key elements:

- The land drains situated within the substation field and situated down gradient of the works will be installed with a double silt trap. Each silt trap will be made up of a stone or straw dam combined with a silt fence. Any rainwater runoff from the construction site will enter these drains and any potential suspended solids within the water will be retained in the field drains.

- Once construction finishes the risk of suspended solids in the runoff will dissipate. The silt traps will remain in place during the operational phase for the life of the trap.

The site drainage layout and details are shown in **EMP 2 Surface water runoff control**.

The concepts and details pertaining to the drainage philosophy are defined in **Chapter 6 Water** of the EIAR.

Best practice and practical experience on other similar projects suggests that in addition to the above outlined drainage plans there are additional site based decisions and plans that can only be made in the field through interaction between the Site Construction Manager and the Environmental Manager. In relation to decisions that are made on site it is important to stress that these will be implemented in line with the associated drainage controls and mitigation measures outlined above and to ensure protection of all watercourses.

3.4.5.1.1 Road Construction

The road will have to be maintained during the construction phase. When weathered, the stone should not contain any constituents, which may be harmful to the environment, surface and groundwater in particular. Terracing will be used such that no erosion of roadside embankments and cuttings will occur. The angle of repose of these embankments will be preserved where possible to encourage re-vegetation.

When a road crosses a drain a culvert will be installed to preserve the natural drainage. Culverts will be designed to a sufficient size such that no overloading, blocking or washout occurs. Shooting velocities will also be avoided.

The road will be raised above existing ground level within areas defined as at risk of flooding.

The new access road will generally be constructed as follows:

- Establish alignment of the new site road from the construction drawings and mark out the centre line with ranging rods or timber posts;
- The access road will be of single-track design with a minimum width of 4.5m.
- Well-graded crushed rockfill will be spread and compacted in layers to provide a homogeneous running surface on a geogrid support membrane. The thickness of layers and amount of compaction required will be generally in line with construction drawing details but may vary subsequent to geotechnical site investigation work and detailed design. Any changes will be decided by the project designers and project construction team.
- The road will be constructed with a camber to aid drainage of surface water.
- The site entrance and internal road will be finished in tarmac.

3.4.5.2 Substation Construction

The construction consists of the stripping of the topsoil across the compound followed by the placement of approximately 1-1.6m (depending on existing topography) of hardcore rock up to the compound level of the substation. The control building, compound infrastructure and perimeter fence will be built on the hardcore rock layer.

3.4.5.3 Grid Construction

Pre-construction surveys will be undertaken immediately prior to the construction phase, including ground investigations to allow detailed design of the OHL route. Access to the grid connection construction areas will primarily be via the compound area with limited temporary access from existing field entrances and routes used by the landowner. The detailed design of any temporary access routes will be based on the condition of the land at the time of construction and will be agreed with the landowner prior to the commencement of works. The existing Mount Lucas - Cushaling overhead line will be isolated to allow for construction of the proposed grid connection.

The OHL route consists of two lines going in and out of the substation. The OHL infrastructure includes four 12m steel lattice pylons and six 12m wooden pole structures. The 12m steel lattice pylons will be constructed on four concrete foundation footings of approximately one cubic meter each (four cubic meters of concrete per steel lattice pylon). The steel lattice frames will be constructed on site. The wooden pole infrastructure will consist of holes cored into the ground. The poles will then be concreted into the prepared holes.

3.4.5.4 Substation Commissioning

The final stage of the project construction includes commissioning of the substation and overhead line. It will include testing for compliance with standards and for compliance with the Electricity Distribution Grid Code. Once the tests results are satisfactory, the substation will be taken over by Eirgrid and incorporated into the National Grid.

3.4.6 Other Elements of the Construction Phase

3.4.6.1 Water Requirement / Water Supply

Potable water will be required for the construction employees (30 to 35 personnel). The average requirement is estimated at approximately 50 litres per person per day which equates to 1,500 to 1,750 litres per day during peak construction. It is proposed to import all water to the site during the construction phase.

3.4.6.2 Wastewater Treatment / Effluent Disposal

During the construction period it is expected that a maximum of approximately 30-35 workers will be on site. The maximum wastewater production is estimated to be the same as the maximum water consumption (i.e. approximately 1,500 to 1,750 litres per day based on anticipated worker numbers). The project will include an enclosed wastewater management system at the temporary compound capable of handling the demand during the construction phase, which will be emptied as required by an approved and fully licensed contractor.

3.4.6.3 Waste Management

From a waste management perspective, the project can be divided into two phases:

- Construction; and
- Operation/Maintenance.

Construction phase waste may consist of hardcore, concrete, spare steel reinforcement, shuttering timber, food waste from the canteen and unused oil, diesel and building materials. This waste will be collected at the end of the construction phase and taken off site to be reused, recycled and disposed of in accordance with best practice procedures at an approved facility. The holding tank for the temporary enclosed toilets will be emptied on a regular basis by an appropriate permitted/licensed and approved contractor. Plastic

waste will be taken for recycling by an approved contractor and disposed or recycled at an approved facility. Excavated materials from all construction activities will be subsequently reused on site for re-grading or re-vegetation. No waste soil, subsoil or bedrock will require disposal outside the boundary of the proposed development site.

Wastes arising during the operation phase of the project include but are not limited to lubricating oils, cooling oils, unused paint and packaging from spare parts. The containment and disposal of such oils will be carried out in a safe manner by an approved contractor. Such operations will be carried out in accordance with the Waste Management (Hazardous Waste) Regulations, 1998. The remaining wastes will all be removed from site and reused, recycled or disposed of in an authorised facility in accordance with best practice.

3.4.6.4 Fuel Storage and Management

All plant will be refuelled on site e.g. excavators, dumpers etc, while rigid and articulated vehicles will be fuelled off site as would all site vehicles (jeeps, cars and vans). At construction stage, a fuel management plan will be developed specific to the site and the particular plant and equipment required for construction. The plan outlined will have regard to the following elements:

- Mobile bowsers, tanks and drums should be stored in a secure, impermeable storage area, away from drains and open water;
- Fuel containers should be stored within a secondary containment system e.g. bund for static tanks or a drip tray for mobile stores;
- Ancillary equipment such as hoses, pipes must be contained within the bund;
- Taps, nozzles or valves should be fitted with a lock system;
- Fuel and oil stores, including tanks and drums, should be regularly inspected for leaks and signs of damage;
- Only designated trained operators should be authorised to refuel plant on site;
- Procedures and contingency plans should be set up to deal with an emergency accidents or spills; and
- An emergency spill kit with oil boom and absorbers is to be kept on site in the event of an accidental spill.

3.4.7 Method Statements

The appointed Contractor will provide method statements to carry out the works and risk assessments based on the outline method of works, procedures and the environmental requirements set out in this CEMP.

The following will be considered during the detailed planning of the works phase:

- Good practice guidelines on the control of water pollution from construction sites developed by the Construction Industry Research and Information Association (CIRIA) in particular.
- Method statement for management of surface water to prevent run-off of silt or any other pollutant from the site to watercourses.
- C532 Control of water pollution from construction sites: guidance for consultants and contractors (Masters-Williams et al, 2001).

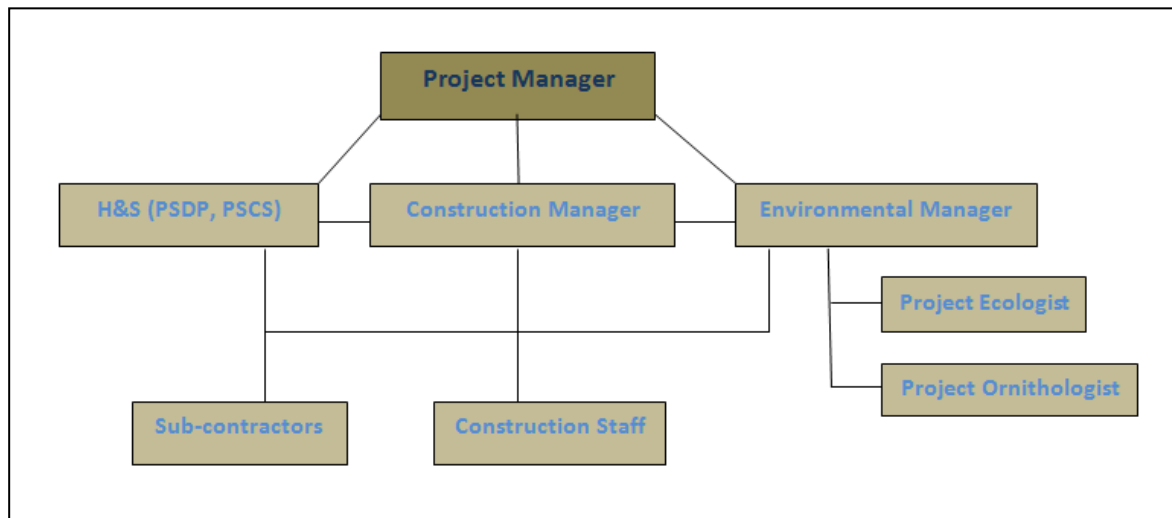
- SP156 Control of water pollution from construction sites – guide to good practice (Murnane et al, 2002).
- Requirements for the protection of fisheries habitat during construction and development works at river sites developed by the ERFB.
- Proper storage and bunding of any oils/ hydrocarbons.
- Noise management measures.

4 ORGANISATIONAL STRUCTURE, DUTIES AND RESPONSIBILITIES

While the Project Supervisor Construction Stage (PSCS) / Contractor will manage the obligations of the project during construction, Cloncant Renewable Energy Limited (client) and the Project Supervisor Design Phase (PSDP) will ensure same is undertaken correctly.

4.1 ON SITE ORGANISATIONAL STRUCTURE AND RESPONSIBILITY

The Organisational Structure for the appointed Contractor's Project Team is included below. This structure will be defined by the Contractor and will include the names of the assigned personnel with the appropriate responsibility and reporting structure reflected.



4.2 DUTIES AND RESPONSIBILITIES

The general role of key people on site implementing the CEMP will be;

- The Project Manager - liaises with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor's project team.
- The Construction Manager - liaises with the Environmental Manager when preparing site works where there is a risk of environmental damage and manages the construction personnel and general works.
- The Design Engineer - undertakes and certifies the Design and supervises the standard of works, including geotechnical aspects.
- The Environmental Manager - ensures that the CEMP is developed, implemented and maintained. The Environmental Manager's tasks at the construction site are described below at section 4.2.3.

Other roles are outlined as follows;

- Health and Safety (PSDP and PSCS).
- Project Ecologist (as required by the Environmental Manager)
- Project Ecologist (as required by the Environmental Manager).
- Geotechnical Engineer (as required by Design Engineer).

The roles and responsibilities outlined below are indicative and will be updated on the appointment of the main contractor (Contractor). Details of the personnel and their responsibilities must be added to the finalised CEMP. An outline of potential roles is provided below but will require revision.

4.2.1 Project Manager

(To be updated upon appointment of Contractor/finalisation of CEMP)

Name: _____

A Project Manager is to be appointed on behalf of the main Contractor to manage and oversee the entire project. The Project Manager is responsible for:

- Implementing of the Construction and Environmental Management Plan (CEMP).
- Implementing the Health and Safety Plan.
- Management of the construction project.
- Liaison with the client/developer.
- Liaison with the Project Team.
- Assigning duties and responsibilities in relation to the CEMP.
- Production of construction schedule.
- Materials procurement.
- Maintaining a site project diary.

4.2.2 Construction Manager

(To be updated upon appointment of Contractor/finalisation of CEMP)

Name: _____

The Construction Manager manages all the works to construct the Substation and OHL, on behalf of the main contractor. The Construction Manager reports to the Project Manager. In relation to the CEMP, the Construction Manager is responsible for:

4.2.2.1 Site-Specific Method Statements

- Liaising with the Environmental Manager in preparing site-specific Method Statements for all Works activities where there is a risk of environmental damage, by incorporating relevant Environmental Control Measures and referring to relevant Environmental Control Measure Sheets.
- Liaising with the Environmental Manager in reviewing and updating site-specific Method Statements for all Works activities where Environmental Control Measure and Environmental Control Sheets have been altered.
- Liaising with the Environmental Manager where third party agreement is required in relation to site-specific Method Statements, Environmental Control Measures and/or Environmental Control Measure Sheets.

4.2.2.2 General

- Being aware of all project Environmental Commitments and Requirements.
- Ensuring that all relevant information on project programming, timing, construction methodology, etc., is communicated from the Project Manager, to the Environmental Manager in a timely and efficient manner in order to allow pre-emptive actions relating to the environment to be taken where required.

- Programming and planning of excavation works and communicating this schedule to the Environmental Manager.
- Ensuring that adequate resources are provided to design and install any environmental interventions.
- Liaising with the Design Engineer and providing information on environmental management to the Design Engineer during the course of the construction phase.
- Liaising with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor's project staff.
- Ensuring that the Environmental Manager performs regular and frequent environmental site inspections.

4.2.3 Design Engineer

(To be updated upon appointment of Contractor/finalisation of CEMP)

Name: _____

The Design Engineer is appointed by the Contractor for the works.

The Design Engineer reports to the Project Manager and is responsible for:

- Design of the Works.
- Review and approval of relevant elements of the method statements – assist the Construction Manager with the overall review.
- Oversee geotechnical aspects of the Works (a geotechnical engineer may be used where required).
- Participating in Third Party Consultations.
- Liaising with Third Parties through the Environmental Manager.

4.2.4 Environmental Manager

(To be updated upon appointment of Contractor/finalisation of CEMP)

Name: _____

The Environmental Manager is appointed by the Contractor and reports to the Project Manager.

The Environmental Manager is responsible for:

4.2.4.1 General

- Being familiar with the project environmental commitments and requirements.
- Being familiar with baseline data gathered for the Environmental Impact Assessment and during pre-construction surveys.
- Assisting the Construction Manager in liaising with the Design Engineer and the provision of the information on environmental management to the Design Engineer during the course of the construction phase.
- Liaising with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor's project staff.
- Implementing the environmental procedures of the CEMP.
- Liaising with the Construction Manager to ensure that the control measures set out in the Schedule of Environmental Mitigation are implemented.

- Liaising with the client/developer in relation to environmental issues.
- Auditing the construction works from an environmental viewpoint.

4.2.4.2 Site-Specific Method Statements

- Liaising with the Construction Manager in preparing site-specific Method Statements for all Works activities where there is a risk of environmental damage. These site-specific Method statements should incorporate relevant Environmental Control Measures and take account of relevant Environmental Control Measure Sheets.
- Liaising with the Construction Manager in reviewing and updating site-specific Method Statements for all Works activities where Environmental Control Measures and Environmental Control Sheets have been altered.
- Liaising with the Construction Manager where third party agreement is required in relation to site-specific Method Statements, Environmental Control Measures and/or Environmental Control Measure Sheets.

4.2.4.3 Third Party Consultations

- Overseeing, ensuring coordination and playing a lead role in third party consultations required statutorily, contractually and in order to fulfil best practice requirements.
- Ensuring that the minutes of meetings, action lists, formal communications, etc., are well documented and that the consultation certificates are issued to the Design Engineer as required;
- Liaising with all prescribed bodies during site visits, inspections and consultations.
- Where new Environmental Control Measures are agreed as a result of third party consultation, ensuring that the CEMP is amended accordingly.
- Where new Environmental Control Measures are agreed as a result of third party consultation, the Environmental Manager should liaise with the Construction Manager in updating relevant site-specific Method Statements.
- Where required, liaising with the Construction Manager in agreeing site-specific Method Statements with third parties.

4.2.4.4 Licensing

- Ensuring that all relevant works have (and are being carried out in accordance with) the required permits, licences, certificates, planning permissions, etc.
- Liaising with the designated licence holders with respect to licences granted pursuant to the Wildlife Act, 1976, as amended.
- Bringing to the attention of the Project, Design and Construction Team any timing and legal constraints that may be imposed on the carrying out of certain tasks.

4.2.4.5 Waste Management Documentation

- Holding copies of all permits and licences provided by waste contractors.
- Ensuring that any operations or activities that require certificates of registration, waste collection permits, waste permits, waste licences, etc., have appropriate authorisation.
- Gathering and holding documentation with the respect to waste disposal.

4.2.4.6 Legislation

- Keeping up to date with changes in environmental legislation that may affect environmental management during the construction phase.
- Advising the Construction Manager of these changes.

- Reviewing and amending the CEMP in light of these changes and bringing the changes to the attention of the main contractor's senior management and subcontractors.

4.2.4.7 Specialist Environmental Contractors

- Identifying requirements for specialist environmental contractors (including ecologists, waste contractors and spill clean-up specialists) before commencement of the project.
- Procuring the services of specialist environmental contractors and liaising with them with respect to site access and report production.
- Ensuring that the specialist environmental contractors are competent and have sufficient expertise to co-ordinate and manage environmental issues.
- Co-ordinating the activities of all specialist environmental contractors on environmental matters arising out of the contract.

4.2.4.8 Environmental Induction Training and Environmental Tool Box Talks

- Ensuring that Environmental Induction Training is carried out for all the main contractor's site personnel. The induction training may be carried out in conjunction with Safety Induction Training.
- Providing toolbox talks on Environmental Control Measures associated with Site-specific Method Statements to those who will undertake the work.

4.2.4.9 Environmental Incidents/Spillages

- Prepare and be in readiness to implement at all times an Emergency Response Plan.
- Notifying the relevant statutory authority of environmental incidents.
- Carrying out an investigation and producing a report regarding environmental incidents. The report of the incident and details of remedial actions taken should be made available to the relevant authority, the Design Engineer and the Construction Manager.

4.2.4.10 Site Environmental Inspections

- Carrying out regular documented inspections of the site to ensure that work is being carried out in accordance with the Environmental Control Measures and relevant site-specific Method Statements, etc.
- Carrying out a daily inspection of the bunded areas and site drainage system.
- Appending copies of the inspection reports to the CEMP.
- Liaising with the Construction Manager to organise any repairs or maintenance required following the daily inspection of the site.

4.2.5 Other Roles

4.2.5.1 Health and Safety Personnel

(To be updated upon appointment of Contractor/finalisation of CEMP)

The Health and Safety personnel for the construction project are appointed by the Contractor in line with the Construction Regulations:

- Carrying out duty of Project Supervisor Construction Stage.
- Responsible for safety induction of all staff and personnel on site.
- Implementing the Health and Safety Plan.
- Auditing and updating the Health & Safety Plan.
- All other required legal duties.

4.2.5.2 Project Archaeologist

The Archaeologist may be appointed by the Developer or the Contractor and is responsible for:

- ensuring implementation of archaeological mitigation measures
- monitoring of groundworks associated with the development
- liaison with the Environmental Manager/Construction Manager
- liaison with the Project Manager/client/developer

4.2.5.3 Project Ornithologist

(To be updated upon appointment of Contractor/finalisation of CEMP)

The Ornithologist may be appointed by the Contractor and is responsible for:

- Ensuring all pre-construction and construction phase avian monitoring is conducted at the site
- Advice on any mitigations required.
- Consultations with NPWS.

4.2.5.4 Project Ecologist

(To be updated upon appointment of Contractor/finalisation of CEMP)

The Ecologist, may be appointed by the Contractor and is responsible for:

- Ensuring implementation of ecological mitigation measures.
- Advising on re-vegetation onsite.
- Monitoring of success of on re-vegetation.

4.2.5.5 Geotechnical Engineer

(To be updated upon appointment of Contractor/finalisation of CEMP)

The Geotechnical Engineer, may be appointed by the Developer or the Contractor and is responsible for:

- Assisting the Design Engineer as required.
- Providing advice on geotechnical aspects of the works.
- Requirement for specific geotechnical engineer to be finalised by the Contractor.

4.2.5.6 All site personnel

The site personnel appointed by the Contractor are responsible for:

- Adhering to the relevant Environmental Control Measures and relevant site-specific Method Statements.
- Adhering to the Health and Safety Plan.
- Reporting immediately to the Environmental Manager and Construction Manager any incidents where there has been a breach of agreed procedures including:
 - A spillage of a potentially environmentally harmful substance;
 - An unauthorised discharge to ground, water or air, damage to a protected habitat, etc.

4.3 CONTACTS

4.3.1 Main Safety Contacts

Position Title:	Name:	Phone:	Email:
The Client (Project Developer will be the client)			
Project Supervisor Design Stage (PSDP)			
Project Supervisor Construction Stage (PSCS)			

4.3.2 Main Contractor Contacts

Position Title:	Name:	Phone:	Email:
Project Manager			
Construction Manager*			
Environmental Manager*			
Safety (PSCS)*			
Safety Officers*			
Site Emergency Number*			
Project Ecologist			
Project Ornithologist			
Overall Project PSDP			
Project Liaison Officer			

4.3.3 Third Party Contacts

Organisation:	Position:	Name:	Phone:	Email Address:
Inland Fisheries Ireland	Senior Environmental Officer			@fisheriesireland.ie
National Parks and Wildlife Service	District Conservation Officer			@ahg.gov.ie
Environmental Protection Agency		EPA Headquarters	053 916 0600	
Local Authority		Offaly County Council		
Department of Arts, Heritage and the Government	District Conservation Officer			
Health and Safety Authority		Office	1890 289 389	wcu@hsa.ie
Emergency Services			999	
Other, as appropriate.				

5 ENVIRONMENTAL CONSIDERATIONS AND POTENTIAL EFFECTS

The key potential environmental impacts associated with the proposed development preparation and construction works are set out in the following table. Relevant potential sensitive receptors to the works are identified. These potential sensitive receptors, the environmental considerations and potential impacts are to be considered as the basis for a future detailed CEMP.

Environmental issue	Potential Receptor	Potential Impacts
Protected Sites	Tenuous hydrological connectivity to one Natura 2000. (River Barrow and River Nore SAC)	This site contains conservation interests which are dependent on water quality. They are considered to be within the zone of influence of the proposed Development, and could potentially be impacted by water pollution from chemicals or sediment
Water	A number of land drains drain the development site	Chemical Pollution of surface waters Increased runoff and Sediment Pollution of surface waters.
Water	Groundwater	Chemical Pollution of groundwater.
Habitats	Hedgerow /Drainage Ditch	Felling / Excavations Accidental damage during construction
Protected Species	Fish species	Degradation of water quality
Protected Species	Badger and otter	Disturbance or destruction of resting places

6 ENVIRONMENTAL COMMITMENTS

6.1 SCHEDULE OF ENVIRONMENTAL REQUIREMENTS (MITIGATION MEASURES)

A number of Environmental Commitments, in the form of mitigation measures, were identified in the project EIAR. These commitments are summarised in a Schedule of Environmental Mitigation in Chapter 14 of the EIAR.

The Appointed Project Manager and/or Environmental Manager will be required to update the Schedule of Environmental Mitigation if any modifications or additional requirements arise.

6.2 ENVIRONMENTAL MANAGEMENT PLANS (EMP)

A number of environmental management plans (EMP) have been prepared for managing the impacts of Construction Activities associated with the development. See **Table 2** below and refer to **Appendix 1**. These plans are to be implemented by the Project Manager and/or Project Contractor as relevant.

Table 2: Plans for Managing Impacts of Construction Activities

Ref:	Procedure:
EMP-1	Management of Excavations
EMP-2	Surface Water Run-off Control
EMP-3	Fuels and Oils Management
EMP-4	Management of Concrete
EMP-5	Protection of Habitats and Fauna (Ecological Management)
EMP-6	Waste Management
EMP-7	Traffic Management
EMP-8	Management of Archaeology
EMP-9	Construction Noise
EMP-10	Dust Management
EMP-11	Invasive Species Management
EMP-12	Emergency Response Plan
EMP-13	Site Environmental Training and Awareness
EMP-14	Monitoring and Auditing
EMP-15	Environmental Accidents, Incidents and Corrective Actions
EMP-16	Environmental Complaints

7 AUDITING, MONITORING AND RESPONSE

7.1 ENVIRONMENTAL MONITORING SCHEDULE

The environmental Monitoring Schedule will take cognisance of all mitigation measures outlined in the EIAR and relevant planning conditions outlined in the grant of planning permission. The Monitoring Schedule for construction will also provide for the checking of equipment, materials storage and transfer areas and specific environmental controls.

A Preliminary Monitoring Schedule is provided below (**Table 3**) and will be finalised pending appointment of the Contractor. The Contractor's developed daily Site Checklists must have the following information included at a minimum:

Table 3: Preliminary Monitoring Schedule

Aspect	Monitoring Required	Frequency	Note	Responsibility
Water	Sediment & Erosion Controls (Drainage Performance)	Daily during the construction phase as well as during and after significant rainfall events	Refer to Table 4 below	Environmental Manager
Water	Fuel & Oil Storage inspection	Daily	Refer to Table 4 below	Environmental Manager
Ecology	Material and Waste Storage	Daily	Refer to Table 4 below	Environmental Manager
Water	Water quality monitoring	Fortnightly	Minimum parameters: pH, Suspended Solids, metals, nitrates, phosphates	Environmental Manager
Water	Concrete Pours	As Required	To be scheduled with pours	Environmental Manager

The Contractor will assign an on-site Environmental Manager to monitor the construction activities on a day to day basis. The duties will include completing the required checklists (sample checklist included below) and coordinating with the relevant personnel (e.g. Project Ecologist, and the Design Engineer as required) ensuring all environmental monitoring is carried out.

The Contractor-developed daily Site Checklists will have the following information included at a minimum:

Table 4: Site Checklist

Area of Inspection	Environmental Hazards
Silt filters	Missing filters Blocked filters - build up of sediment & peat
Roadside drains	Damage Silt build-up Blockages in the pipes conveying the runoff to the settlement pond drains
Cross drains – located under the drain crossings	Damage Silt build-up Blockages in the pipes
The land adjacent to the development	Presence of waste Presence of construction equipment Presence of invasive species identified during the preconstruction survey
Site road	Unacceptable level of sediment/silt on the road surface Presence of waste

Site compound – storage area	Damage Untidiness
Site compound – waste collection area	Damage Untidiness Full skips
Site compound – oil storage area	Damage to containers or ancillary equipment Leakages Unlocked storage container
Waste water facilities	Holding tank requiring emptying
Concrete chute washout area	Damages Leakages Unacceptable level of concrete washings
Site Entrance	Unacceptable level of sediment/silt on the road surface Presence of waste

7.2 ENVIRONMENTAL PERFORMANCE INDICATORS

The Appointed Project Contractor will outline the key performance indicators for the site in gauging successful site management in the prevention of pollution and the protection of the environment.

Environmental performance indicators will at a minimum include:

- Number of environmental accidents logged.
- Number of environmental incidents logged.
- Breach of procedure and corrective actions.
- Number of environmental complaints received.
- Results of monthly water quality monitoring.
- Results of monthly dust monitoring.
- Results of noise and vibration monitoring.
- Results of site audits.

The performance indicators will be finalised by the Appointed Contractor and communicated to all relevant personnel and sub-contractors. The review periods for analysing site performance indicators must also be specified.

7.3 RESPONSE PROCEDURE

In the event of an environmental incident, or breach of procedure, or where a complaint is received, the contributing factors are to be investigated and remedial action taken as necessary. The Contractor will ensure that the following respond actions will take place:

- 1) the Project Manager, PSDP and Client must be informed of any incident, breach of procedure and/or complaint received and details must be recorded in the incident/complaint register.
- 2) the Project Manager is to conduct/co-ordinate an investigation to determine the potential influence that could have led to the non-compliance.
- 3) the Project Manager is to notify and liaise with the appropriate site personnel where required, e.g. Site Environmental Manager, Project Ecologist.
- 4) If necessary, the Project Manager will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident.

- 5) The details of the incident will be recorded on an Incident / Complaints Form which is to record information such as the cause, extent, actions and remedial measures used following the incident/complaint. The form will also include any recommendations made to avoid reoccurrence of the incident.
- 6) The Project Manager will be responsible for any corrective actions required as a result of the incident e.g. an investigative report, formulation of alternative construction methods or environmental sampling, and will advise the Main Contractor as appropriate.
- 7) the Site Project Manager is to ensure that the relevant environmental management plans/procedures are revised and updated as necessary.

7.4 CORRECTIVE AND PREVENTATIVE ACTION

Corrective Action Requests will be issued to ensure that prompt action is agreed and committed to, with a view to the effective resolution of any deviations from the CEMP requirements or any environmental issues.

8 SUMMARY

This CEMP provides the information which will be contained in the final Contractor-developed Plan at the construction stage of the project. The requirement on the Contractor to update these details has been explained, and there is a particular requirement for an update to the roles and responsibilities of those appointed on the site for the construction of the project. The CEMP is a live document and will be improved upon as the project progresses as appropriate.

Appendix 1

Environmental Management Plans

EMP-1	Management of Excavations
EMP-2	Surface Water Run-off Control
EMP-3	Fuels and Oils Management
EMP-4	Management of Concrete
EMP-5	Ecological Management/Protection of Habitats and Fauna
EMP-6	Waste Management
EMP-7	Traffic Management
EMP-8	Management of Archaeology
EMP-9	Construction Noise
EMP-10	Dust Management
EMP-11	Invasive Species Management
EMP-12	Emergency Response Plan
EMP-13	Site Environmental Training and Awareness
EMP-14	Monitoring and Auditing
EMP-15	Environmental Accidents, Incidents and Corrective Actions
EMP-16	Environmental Complaints

EMP 1: Management of Excavations

Purpose

To describe measures for the management of all excavations and excavated soil and rock on the site

Procedure

General

- Soils excavated during construction will be reused for localised landscaping and reprofiling. Excavation will be carried out from access roads or hardstanding areas to reduce the compaction.
- Excavation and construction of the substation and entrance road will be carried out by excavation of the topsoil followed by replacement with compacted crushed rock. Machinery will not operate directly on excavated/stockpiled soils.
- Drainage will be constructed in parallel with substation and road construction. This approach will be used in combination with the installation of other drainage protection measures in advance of construction, such as the installation of silt fencing or other waterway protection measures.
- Within excavations and around excavations, pore water pressure will be kept low by avoiding loading the soil/subsoil and giving careful attention to the existing drainage and how structures could affect it.
- All temporary cuts/excavations will be carried out such that they are stable or adequately supported. Where appropriate and necessary, cuts and excavations will be protected against ingress of water or erosion by the use of cut off drains around the excavation works. Temporary works will be such that they do not adversely interfere with existing drainage channels/regimes.
- Plant and materials will be stored in approved locations only (such as the proposed site compounds) and will not be positioned or trafficked in a manner that would surcharge existing or newly-formed slopes.
- All site excavations and construction should be supervised by a suitably experienced engineer. The Contractor's method statements for each element of work should be reviewed and approved by the engineer prior to site operations.
- The existing network of drainage within the site should be utilised whenever possible.
- Excavated topsoil and subsoil will be stored onsite for reuse. Temporary stockpiles of soils will not be permitted within 50m of any watercourse.

Management and Storage of Excavated Materials and Soil Management

Site management should include the checking of equipment, materials storage and transfer areas, drainage structures and their attenuation ability on a regular basis during the construction phase of the project. The purpose of this management control is to ensure that the measures in place are operating effectively, prevent accidental leakages, and identify potential breaches in the protective retention and attenuation network during earthworks operations.

Operational Phase

- The potential impact on the land and soils of the site due to excavations will be lower during operation and maintenance, as the majority of excavations will have been reinstated. Some erosion of soil may continue into the operation phase, however as vegetation becomes established and equilibrium is achieved, erosion rates will reduce to normal levels.

Monitoring

This is to be detailed in the Contractors Final Method Statement

Responsibility

- The Environmental Manager will monitor the excavation areas and associated drainage.
- The Construction Manager will monitor vehicle movements throughout the construction phase
- The Project Manager will oversee the phasing of the excavation and machinery movement across the site.
- Construction personnel will be informed of the measures to prevent pollution of water courses.
- The Design Engineer, Geotechnical Engineer and Sub-contractors will have responsibilities as appropriate.
- All responsibilities will be finalised by the Appointed Contractor.

Details of Excavating Soil and Rock be finalised by Appointed Contractor

EMP 2: Surface Water Run-off Control (Sediment and Erosion Control)

Purpose

To describe measures for the management of all surface water and run-off on the site, for the protection of watercourses and in particular, sediment and erosion control.

Procedure

- Implement erosion control to prevent runoff flowing across exposed ground and become polluted by sediments.
- Intercept and divert clean water runoff away from construction site runoff to avoid cross-contamination of clean water with soiled water.
- Implement sediment control to slow down runoff allowing suspended sediments to settle in situ particularly on roads.
- Implement the erosion and sediment controls before starting site clearance works.
- Minimise area of exposed ground by maintaining existing vegetation that would otherwise be subject to erosion in the vicinity of the substation and OHL infrastructure and keeping excavated areas to a minimum.
- Delay clearing of soil and peat until before construction begins rather than stripping the entire site months in advance particularly during road construction.
- Avoid working near drains during or after prolonged rainfall or an intense rainfall event and cease work entirely near drains when it is evident that pollution is occurring.
- Install a series of silt fences or other appropriate silt retention measure where there is a risk of erosion runoff to watercourses from construction related activity particularly if working during prolonged wet weather period or if working during intense rainfall event.
- Implement sediment control measures that includes for the prevention of runoff from adjacent intact ground that is for the separation of clean and 'dirty' water.
- Install appropriate silt control measures such as silt-traps, check dams and sedimentation ponds.
- Provide recommendations for public road cleaning where needed particularly in the vicinity of drains.
- Controls need to be regularly inspected and maintained otherwise a failure may result, such as a build up of silt or tear in a fence, which will lead to water pollution so controls must work well until the vegetation has re-established; inspection and maintenance is critical after prolonged or intense rainfall.

Drains

A site-specific drainage system has been designed taking account of the following:

- The riparian border will be retained at the River Figile.
- Maintenance of the existing vegetative land drains in order to keep them vegetated.
- Continuation of flows by natural flow paths via existing drains before entering the watercourse, providing further retention and treatment of discharges.
- Existing land drains will be utilised at the site for drainage. Maintenance of the existing vegetative land drains will ensure they stay vegetated.
- Where necessary, existing pollution prevention measures (vegetation in drains, check dams and silt ponds) will be maintained / upgraded to ensure optimum standard of water running into the River Figile from the land drainage system.

- Where the drains have a gradient greater than 2%, check dams will be installed in the drains.
- Where each land drain exits the proposed development a double silt trap will be placed. Each silt trap will be made up of a stone or straw dam combined with a silt fence. See **Figure 1** below for the location of the silt traps.
- Additional silt fencing and emergency spill kits will be kept on site for use in emergencies.
- Silt and runoff will be prevented from entering ground water, surface water drains or water courses using appropriate means. These include the temporary installation of silt fences, cut off drains, silt traps and drainage to vegetated areas where appropriate.

The site drainage layout and details are shown in **Figure 1** below.

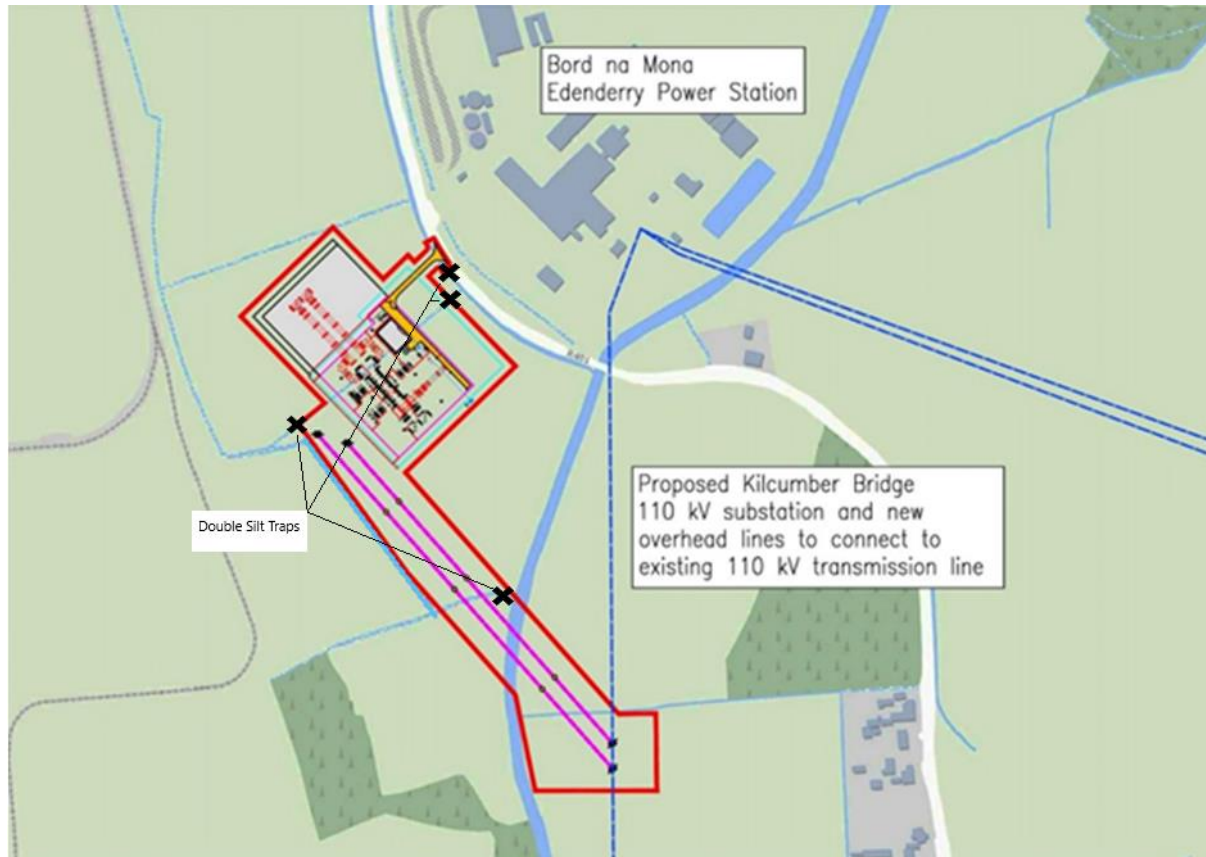


Figure 1 Silt trap locations

Sediment Control

- Prior to any construction activity, the site will be inspected for areas that would be prone to siltation of nearby rivers/streams. Where necessary, existing pollution prevention measures (check dams and silt ponds) will be maintained / upgraded to ensure optimum standard of water running into streams from the drainage adjacent to access road. Drainage, silt fences and settlement ponds will be installed where new development components are proposed, including access road, compound and substation. Additional silt fencing and emergency spill kits will be kept on site for use in emergencies.
- All erosion control and retention facilities will be regularly maintained during the construction phase. The treatment approach described below will reduce significantly any potential increase in surface water run-off as a result of the substation and OHL development.
- Prior to and during construction works, operations will be monitored by a competent member of the construction team on a regular basis to check if working appropriately.

Dewatering

All ground water/surface water that may enter substation foundations will be removed and treated and disposed of appropriately, in accordance with best practice. Any dewatering (if/where required) will adhere to the following measures:

- Ground water/surface water will not be pumped directly into roadside drains/watercourses.
- Ground water/surface water which has become silted within the substation foundations will be pumped to the surface water drainage system/sediment ponds.
- In the case of heavy siltation, water will be tankered off site for disposal at an authorised waste facility, or pumped to a portable onsite settlement tank for treatment.

Monitoring

- The Environmental Manager will walk the site each day and check the cross-drain pipes, dirty water drains and outlets, settlement ponds, interceptor drains and silt fences for any damage or blockages. Any damage or blockages will be repaired or cleared promptly.
- As detailed above, weather forecasts will be monitored during the construction phase. The 24 hour advance meteorological forecasting service from Met Éireann will be used.
- A surface water monitoring schedule, drawn up prior to construction, and agreed with the county council will be followed. Suspended solids monitoring will be undertaken on a weekly basis and ad-hoc if required (rainfall event for example), while monthly monitoring of pH, metals, nitrates and phosphates will also take place.

Operational

- Potential impact on water quality due to the operation and maintenance of the substation is principally related to the minor risk of oil spillages. This will have been mitigated by design through the provision of adequate bunding and implemented in the construction stage.
- The other potential risk during the operational phase is due to sanitary waste from the substation toilet facility. This will be mitigated by collecting the effluent in a sealed holding tank which will be emptied as part of the maintenance regime for the development.

Responsibility

The Environmental Manager is responsible for ensuring that appropriate water pollution prevention measures are put in place and that water sampling is carried out. Where standards are breached and remedial action is taken, an investigation must be carried out in conjunction with the Construction Manager, and further samples must be taken to verify that the situation has returned to normal.

The Environmental Manager is responsible for ensuring spill kits are readily available in vulnerable locations and that booms for watercourses are long enough and have adequate anchorage.

The Construction Manager (or a designate) is responsible for ensuring the spill kits are adequately stocked and should inform the Environmental Manager when items have been used.

Details and Responsibilities for Sediment and Erosion Control to be finalised by Appointed Contractor

EMP 3: Fuel and Oils Management

Purpose

To describe measures for the management of all fuel and oils on site for the protection of watercourses from any spills

Procedure

Construction Machinery and Vehicles

- The potential for hydrocarbons getting into the existing drains and local watercourses will be mitigated by only refuelling construction machinery and vehicles in designated refuelling areas using a prescribed re-fuelling procedure.
- Refuelling will be carried out using 110% capacity double bunded mobile bowzers. The refuelling bowser will be operated by trained personnel. The bowser will have spill containment equipment which the operators will be fully trained in using.
- To reduce the potential for oil leaks, only vehicles and machinery will be allowed onto the site that are mechanically sound. An up to date service record will be required from the main contractor.
- Potential leaks from delivery vehicles will be reduced by visually inspecting all delivery vehicles for major leaks. Contractors supplying concrete and crushed stone to the site will be contractually required to supply their products using roadworthy vehicles.
- Should there be an oil leak or spill, the leak or spill will be contained immediately using oil spill kits; the nearby dirty water drain outlet will be blocked with an oil absorbent boom until the fuel/oil spill has been cleaned up and all oil and any contaminated material removed from the area. This contaminated material will be properly disposed of in a licensed facility.
- The Environmental Manager will be immediately informed of the oil leak/spill, and will assess the cause and the management of the clean-up of the leak or spill. They will inspect nearby drains for the presence of oil, and initiate the clean-up if necessary.
- Immediate action will be facilitated by easy access to oil spill kits. An oil spill kit that includes absorbing pads and socks will be kept at the site compound and also in site vehicles and machinery.
- Correct action in the event of a leak or spill will be facilitated by training all vehicle/machinery operators in the use of the spill kits and the correct containment and cleaning up of oil spills or leaks. This training will be provided by the Environmental Manager at site induction.
- In the event of a major oil spill, a company who provide a rapid response emergency service for major fuel spills will be immediately called for assistance, their contact details will be kept in the site office and in the spill kits kept in site vehicles and machinery.

Oil Storage during the Construction Phase

- The scale of potential impacts on downstream water quality will be reduced by only storing the required volume of oils for the works taking place at the time.
- Fuel containers must be stored within a secondary containment system e.g. bund for static tanks or a drip tray for mobile stores;
- Access to oil stores will be controlled by the storage of oils within a locked steel container within the site compound. The site compound will be surrounded by a palisade fence and locked when there are no site personnel present.

- Collision with oil stores will be prevented by locating oils within a steel container in a designated area of the site compound away from vehicle movements.
- Leakages of oil from oil stores will be prevented by storing these oils in bunded tanks which have a capacity of 110% of the total volume of the stored oil. Ancillary equipment such as hoses and pipes will be contained within the bunded storage container. Taps, nozzles or valves will be fitted with a lock system.
- The volume of leakages will be prevented through monitoring oil storage tanks/drums for leaks and signs of damage. This will be carried out daily by the Environmental Manager.
- Long term storage of waste oils should not be allowed on site. These waste oils will be collected in leak-proof containers and removed from the site for disposal or re-cycling by an approved service provider.

Responsibilities

The Construction Manager and Environmental Manager are responsible for ensuring Fuel and Oils are managed in line with this procedure. The Appointed Contractor, in updating the CEMP, must designate personnel to the tasks relating to Fuels and Oil, as outlined.

References

Best Practice Guidelines BPGCS005 – Oil Storage Guidelines (Enterprise Ireland).

EMP 4: Management of Concrete

Purpose

To describe measures for the management of concrete on site for the protection of watercourses from any spillages

Procedure

Supervision of Concrete Pours

- To reduce the potential for cementitious material entering watercourses, concrete pours will be supervised by the Construction Manager, a suitably qualified Engineer and the Environmental Manager.
- The construction manager will ensure that the area of the pour is completely drained of water before a pour commences.
- Pours will not take place during forecasted heavy rainfall.
- Incidental rainfall from light showers during the period of a pour is typically absorbed into the concrete matrix but heavier showers can result in some run off from the top surface of the concrete pour. If run-off is encountered the Environmental Manager will block the outflow from the drains to retain or treat the run-off until the pH is neutral before discharge to the drainage network.
- In the event of a spillage on site, the Environmental Manager will temporarily block the dirty water drains in the immediate area and monitor the pH levels of the water in the associated settlement ponds and if necessary will adjust the pH levels using CO₂ entrainment. Any spillage will be cleared immediately and deposited in the Chute wash down area.

Concrete Control

- During the pouring of concrete, effective containment measures will be implemented to avoid spilling concrete outside construction areas and to prevent concrete entering any drainage system. To reduce the potential for cementitious material entering watercourses, concrete pours will be supervised by the Construction Manager.
- The construction manager will ensure that the area of the pour is completely drained of water before a pour commences. Pours will not take place during forecasted heavy rainfall.
- There will be a dedicated concrete chute washout area on site. Concrete trucks will be washed out off site at the source quarry. Wet concrete operations are not envisaged for this site within or adjacent to watercourses or aquatic zones. However, if wet concrete operations are required in such locations, a suitable risk assessment will be completed prior to works being carried out.
- Wet concrete operations are not envisaged for this site within or adjacent to watercourses or aquatic zones. However, if wet concrete operations are required in such locations, a suitable risk assessment will be completed prior to works being carried out.

Storage

- Temporary storage of cement bound granular mixtures will be on hardcore areas. Cement products are hazardous and should always be stored in a COSHH store or similar (shipping container), and only be in the open when in use. If cement products are temporarily located in the open, then they will be located within an impermeable bunded area, and covered to prevent contact with rainwater. This will prevent direct drainage of cement storage areas to surface waters. Bunding will be in the form of sandbags or silt fencing.

Concrete Water

- Pours will not take place during heavy rainfall.
- To reduce the volume of cementitious water, washout of concrete trucks will not take place on site. Concrete trucks will be washed out off site at the source quarry.
- To reduce the volume of cementitious water, only concrete truck chutes will be washed down on site. The concrete trucks will wash down their chutes at a designated chute wash down area in the site compound. The wash down area will consist of a polythene lined bunded area with a capacity of about 20m³. This capacity will be sufficient to accommodate the chute wash down for two turbine base pours.
- The environmental manager will monitor the pH of the water in the chute wash down bund and can dose with CO₂ or acidic water from the drains until the wash out water achieves neutrality before discharge.

Responsibilities

- The Project Manager, the Construction Manager and the Environmental Manager will supervise all concrete pours.
- The Environmental Manager is responsible for ensuring that appropriate water pollution prevention measures are put in place and that water sampling is carried out. Where standards are breached he/she should carry out an investigation and in conjunction with the Construction Manager, he/she should ensure remedial action is taken and further samples taken to verify that the situation has returned to normal.
- The Environmental Manager is responsible for ensuring spill kits are readily available in vulnerable locations and that booms for watercourses are long enough and have adequate anchorage.

EMP 5: Ecological Management Plan (Protection of Habitats and Fauna)

Purpose

To describe measures for the management and protection of habitats and fauna on the site

Procedure

- ensuring implementation of ecological protection measures outlined below.
- advising on re-vegetation onsite.
- monitoring of success of re-vegetation.

Environmental Manager/Ecological Clerk of Works

- A suitable qualified and experienced project ecologist will be employed during the construction phase of the project. Duties will include the review of all method statements, delivery of toolbox talks and monitoring of construction phase to ensure all environmental controls and EIAR mitigation is implemented in full.
- The project ecologist will be awarded a level of authority and will be allowed to stop construction activity if there is potential for adverse environmental effects other than those predicted and mitigated in the EIAR. For example, if there is a risk of contaminated surface water entering a drain, and measures are not in place to block the pathways to the Figile River, then the project ecologist can stop the work until prescribed measures to prevent such a risk have been implemented.
- Spraying of vegetation using pesticides (herbicides, fungicides and insecticides) will not be permitted at any stage of development.

Ecological Protection Measures

General Habitats

- Acknowledging that works required for development are exempt from conditions stipulated in the Wildlife Acts, removal of trees will be conducted where possible outside the general bird breeding season which runs from the 1st of March to the 31st of August inclusive.
- Spraying of vegetation using pesticides (herbicides, fungicides and insecticides) will not be permitted at any stage of development.
- Habitat disturbance to fauna will be limited by controlling the movement of maintenance vehicles. Construction vehicles will not encroach onto habitats beyond the proposed development footprint;
- Duration of construction activities will be restricted to between 7.30am and 7.30pm, Monday to Friday and between 8am and 6pm on Saturdays. Construction work will not take place at night unless in exceptional circumstances to reduce potential disturbance to fauna.
- In the unlikely event that protected faunal species are found actively using the site for breeding/roosting during the construction phase, works will cease immediately, and the area will be cordoned off until advice is sought from a suitable qualified specialist; and
- Should the resting or breeding places of any protected species be discovered within the site during construction works, the NPWS will be informed. Any mitigations required for badgers will be carried out under license from NPWS, and using NRA Guidelines (2005) (now TII) where applicable; Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes.

Protection of Fauna

- Pre construction mammal surveys will be undertaken to ensure that newly established mammal resting places (i.e. bat roosts, badger setts and otter holts), do not occur within the works area before the commencement of construction. Should a resting place/sett be identified, additional surveys/enabling works will only be undertaken under the appropriate NPWS licence.
- Any lighting introduced to the development site will follow guidance in the documents:
 - Bats and lighting: Overview of current evidence and mitigation guidance (Stone, 2013);
 - Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25 (Kelleher & Marnell, 2006); and
 - Bats & Lighting. Guidance Notes for: Planners, engineers, architects and developers (BCI, 2010).
- Habitat disturbance to fauna will be limited by controlling the movement of maintenance vehicles.
- Duration of construction activities will be restricted to between 7.30am and 7.30pm, Monday to Friday and between 8am and 6pm on Saturdays. Construction work will not take place at night unless in exceptional circumstances to reduce potential disturbance to fauna.
- In the unlikely event that protected faunal species are found actively using the site for breeding/roosting during the construction phase, works will cease immediately, and the area will be cordoned off until advice is sought from a suitable qualified specialist.
- Should the resting or breeding places of any protected species be discovered within the site during construction works, the NPWS will be informed. Any mitigations required for badgers will be carried out under license from NPWS, and using NRA Guidelines (2005) (now TII) where applicable; Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes.

Protection of Bats

Measures for the protection of bats will be implemented in accordance with the following:

- *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes* (TII, 2005);
- *Guidelines for the treatment of bats during the construction of National Road Schemes* (TII, 2006) and;
- *NPWS Irish Wildlife Manuals, No. 25: Bat Mitigation Guidelines for Ireland* (Kelleher & Marnell, 2006).

If felling of trees with bat roosting potential (i.e. mature trees with voids, cracks, loose bark and/or ivy cover) is required, a bat survey will be required by a suitably qualified bat ecologist prior to felling; as such works have the potential to cause disturbance and/or damage to roosting bats. Should any tree roosts be identified, a derogation licence from the NPWS will be required to fell or undertake works in close proximity these trees.

If felling of such mature trees is required, the following TII (2006) guidance will be followed:

- Immediately prior to felling, trees should be inspected for the presence of bats and/or other Bat activity by a suitably qualified Bat ecologist during daylight hours and night-time using a Bat detector. This survey should be carried out from dusk through the night until dawn to ensure Bats do not re-enter the tree;

- Where examination of the tree has shown that Bats have not emerged or returned to tree, felling may proceed the following day. Should a delay in felling be encountered, resurveying is required;
- In areas where Bat activity has been recorded, tree-felling must not be conducted in June to early August
- Felling during winter months (December – February) should be avoided as this increases the risk to hibernating bats.

Birds (General)

The removal of woody vegetation, where possible, will be undertaken outside the bird breeding season which runs from the 1st of March to the 31st of August inclusive. Where sections of woody vegetation are removed for the purposes of the junction and road upgrades, these will be replaced with suitable hedge/tree species which are common in the local context.

Habitat Replacement

Hedgerow

There will be removal of approximately 160 meters of hedgerow to facilitate the development. Replanting of hedge line will occur on the northwest and south eastern sides of the development on the outside of the palisade fence. The length of replanting will equal the amount of hedgerow lost. The planting will consist of native hedgerow species which will provide habitat and food sources for local wildlife, including bat and bird species.

Bats

As foraging habitat and potential roost sites (mature trees) will be removed to facilitate project, it is proposed three bat and three bird boxes will be erected at suitable locations in the study area (e.g. in standing trees).

Bat boxes will be installed and maintained (if required) by an Ecologist according to manufacturer's instructions. Any boxes installed should be robust and cater for a range of species. Guidance for installation of bat boxes should follow:

- Bat Conservation Ireland (BCI) Guidance Notes for Agri-environmental Schemes (2015); and
- Bat Mitigation Guidelines for Ireland (Kelleher and Marnell, 2006).

Pond Creation

As there will be a loss of Drainage ditch habitat, to replace this three small ponds at least 10 m² and 1 m deep will be constructed, these standing bodies of water will provide habitats for Common Frog and Smooth newt. The location will be decided by the project ecologist in conjunction with the site manager/engineer.

Other

Any trees cut down will be stacked in piles to create hedgehog resting habitat, dead wood also creates a damp invertebrates habitat for and their larvae which can be a nutritious food source for birds and mammals.

Responsibility

Environmental Manager

Construction Manager
Project Ecologist

Details of Ecological Protection to be finalised by Appointed Contractor

EMP 6: Construction Waste Management

Purpose

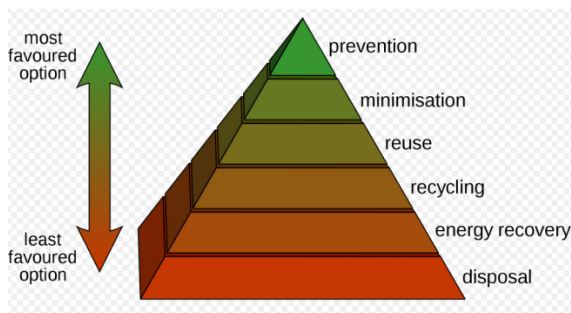
To describe measures for the management of all wastes associated with the construction of the substation and OHL.

Procedure

Waste Management Plan

A Waste Management Plan should be prepared by the Appointed Project Contractor for the construction phase. This Plan will form part of the CEMP:

- Regard should be had to the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (DoEHLG, July 2006) in preparing and maintaining this plan.
- The Waste Management Hierarchy (illustrated below) should be assessed and applied in the preparation and maintenance of the Construction Phase Waste Management Plan.
- The Construction Phase Waste Management Plan should address the following aspects of the Project:
- Analysis of the waste arising/material surpluses.
 - Specific waste management objectives for the project.
 - Methods proposed for prevention, reuse and recycling of wastes.
 - Material handling procedures.



Any material deemed unsuitable for re-use in the works will be transported off site in trucks and disposed of under license from Offaly County Council. This will prevent any contaminated run-off to drains adjacent to access road during heavy rainfall.

The Waste Management Plan should contain individual headings describing the following:

- Description of the Project.
- Wastes arising including proposals for minimisation/reuse/recycling.
- Estimated cost of waste management.
- Record keeping procedures.

As part of the record keeping procedures, the Environmental Manager should keep records provided by waste contractors of all waste being removed from site. The Environmental Manager should record waste removed from site on a quarterly basis. This information should be recorded in a standard format.

A construction phase waste management plan should be developed to control all site generated construction waste and the storage and disposal of same.

Any introduced semi-natural (road building materials) or artificial (PVC piping, cement materials, electrical wiring) materials must be taken off site at the end of the construction phase. Any accidental spillage of solid state introduced materials must be removed from the site by the appropriate means.

General Waste

- Access to materials will be controlled. A dedicated storage area will be provided in the site compound for building materials such as cables, , geotextile matting, blocks, tools and equipment, fence posts and wire, booms, pipes etc.
- Access to stored materials will be restricted; the site compound will be securely fenced from the outset and will be locked when there are no site personnel present.
- To contain and manage construction phase waste, multiple skips will be provided at the storage compound; one for recyclable waste and others for various construction waste. These skips will be emptied when required by a licensed waste management company. Waste oil and waste oil drums will be collected and stored in containers and on a bunded tray within the storage container.
- The substation and OHL will be constructed in phases. At the end of each phase, the completed works areas will be tidied of any unused material or waste; this material will be brought to the site compound for storage and reuse or placed in the appropriate skip for disposal.

Waste water

- Any waste water will be removed from site to a licensed facility.

Responsibility

- The Environmental Manager will be responsible for creating and updating the Waste Management Plan.
- The Environmental Manager will be responsible for identifying a waste contractor to remove waste that can be recycled or reused. He/she will obtain records for all waste leaving the site for this purpose.
- It is the Construction Managers responsibility to organise the removal of skips from his/her area when they are full.

References

Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (DoEHLG, July 2006).

Details of Site Waste Management to be finalised by Appointed Contractors.

EMP 7: Construction Traffic Management

Purpose

To describe measures for the management of all traffic, including construction traffic and oversized loads, for the minimisation of disturbance and nuisance to the local community.

Scope

All Site Construction Areas, approach roads to the site and internal road traffic.

Procedure

General

The Contractor will prepare a detailed Traffic Management Plan prior to the works commencing. This Plan will be finalised in agreement with the Offaly County Council and An Garda Síochána. The plan will include provision for:

- Communicating with the community, the Gardaí and the Local Authority.
- Details of site access and any site traffic rules, including security, parking, loading and unloading, required speed or other relevant details.
- Programme of maintenance and upkeep of public roads.
- Site operating hours (including delivery) to be outlined.

Public Road

- In order to mitigate from a significant impact during peak traffic hours, the majority of staff will either arrive on-site before or after the peak morning traffic and finish work before or after the evening peak traffic hours.
- The condition of the public road will be monitored on an on-going basis and a road sweeper provided to clean the public road as required.

Site Entrance

- There will be no parking of any vehicles on the public road near the substation site entrance.
- Adequate parking will be provided on site for both employees and visitors.
- The condition of the site entrance will be monitored on an on-going basis and a road sweeper provided to clean the public road as required.

Responsibility

Project Manager

Construction Manager

Construction personnel

Sub-contractors as appropriate

Delivery personnel

Details of Traffic Management Plan to be finalised by Appointed Contractor

EMP 8: Management of Archaeology

Purpose

To describe measures for the management and protection of archaeological and cultural heritage on the site.

Procedure

- Licensed archaeological test excavations should be undertaken at targeted areas of all primary ground impacts associated with the proposed development including:
- Substation and compound;
- Internal access road and drains;
- All other primary ground disturbance activity along the riparian limits of the Figile River.

Responsibility

Environmental Manager

Construction Manager

Project Archaeologist

Details of any management and protection of archaeological and cultural heritage on the site to be finalised by Appointed Contractor

EMP 9: Construction Noise Management

Purpose

To describe measures for the management of impacts from construction noise

Procedure

Control of Noise at Source

- Plant will be properly and regularly maintained.
- Compressors, if needed, will be 'sound related' models fitted with properly lined and sealed acoustic covers which will be kept closed whenever machines are in use.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers.

Construction Phase

Best practice in the form of BS5228 –1&2:2009 + A1 2014, *Code of Practice for the Control of Noise and Vibration on Construction and Open Sites* will be adopted during the construction phase in order to minimise the noise generated by construction activities and nuisance to neighbours.

All plant and equipment for use will comply with the Construction Plant and Equipment Permissible Noise Levels Regulations 1996 (SI 359/1996) and other relevant legislation.

Operational Phase

Post commissioning operational phase monitoring should be carried out to ensure compliance with the relevant planning noise limit criteria in accordance with guidance outlined in the IOA GPG Supplementary Guidance Note 5: *Post Completion Measurements* (July 2014).

Responsibility

- The Construction Manager will be familiar with the noise sensitive receptors and alert the Environmental Manager in good time prior to work commencing in the areas closest to any noise sensitive receptors.
- The Environmental Manager will review any relevant planning conditions in updating this plan.

References

BS5228 –1&2:2009, Code of Practice for the Control of Noise and Vibration on Construction and Open Sites

IOA GPG Supplementary Guidance Note 5: *Post Completion Measurements* (July 2014).

Details of management of noise on the site to be finalised by Appointed Contractor

EMP 10: Construction Dust Management

Purpose

To describe the measures for the management of nuisance impacts on air quality from construction generated dust.

Procedure

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 several hundred metres of the construction area.

Construction phase generated dust can be minimised by the following measures:

- The use of water as a dust suppressant, e.g. a water bowser to spray access road and substation hardcore areas during any extended dry periods when fugitive dust emissions could potentially arise;
- Public roads will be inspected regularly for cleanliness and cleaned as necessary;
- All loads entering and leaving the site will be covered during dry periods if dust becomes a nuisance on site;
- Control of vehicle speeds passing over access road within the site;
- Where necessary, site stockpiling of materials will be designed and laid out to minimise exposure to wind;
- Regular site inspections should take place to examine dust measures and their effectiveness.

Construction Traffic Emissions

Construction traffic emissions can be reduced using the following measures:

- Ensure regular maintenance of plant and equipment. Carry out periodic technical inspection of vehicles to ensure they perform most efficiently;
- Implementation of the Traffic Management Plan to minimise congestion; and
- All site vehicles and machinery to be switched off when not in use - no idling.

In order to ensure that no dust nuisance occurs, a series of measures will be implemented:

- Site road will be regularly cleaned and maintained as appropriate.
- Furthermore, any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- Speeds will be restricted on roads as site management dictates.
- Public roads in the vicinity of the site will be regularly inspected for cleanliness, and cleaned as necessary.
- A temporary vehicle wheel wash facility will be installed in proximity to the site entrance.

The dust minimisation plan will be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures.

Responsibility

The Environmental Manager is responsible for developing and reviewing the site Dust Minimisation Plan. The Construction Manager is responsible for organising dust suppression through use of bowsers and cleaners.

References

- *'Control of Dust from Construction and Demolition Activities'*, UK British Research Establishment (BRE).
- *'Environmental Good Practice on Site'*, Construction Industry Research and Information Association (CIRA).
- *'Environmental Management Plans'*, Institute of Environmental Management and Assessment (IEMA).
- *'Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan'* National Roads Authority of Ireland (NRA).

EMP 11: Management of Invasive Species

Purpose

To describe measures for the management of invasive species on site.

Procedure

An invasive species survey shall be undertaken prior to commencement of construction.

Areas where invasive species are present will be identified and demarcated prior to commencement of construction:

Invasive species

The following measures address potential effects associated with the construction phase of the project

- Good construction site hygiene will be employed to prevent the introduction and spread of problematic invasive alien plant species (e.g. Himalayan Balsam, Japanese Knotweed etc.) by thoroughly washing vehicles prior to leaving any site.
- All plant and equipment employed on the construction site (e.g. excavator, footwear, etc.) will be thoroughly cleaned down using a power washer unit prior to arrival on site to prevent the spread of invasive plant species.
- All washing must be undertaken in areas with no potential to result in the spread of invasive species. This process will be detailed in the contractor's method statement.
- Any soil and topsoil required on the site will be sourced from a stock that has been screened for the presence of any invasive species and where it is confirmed that none are present.
- All planting and landscaping associated with the proposed development shall avoid the use on invasive shrubs.

An invasive species survey shall be undertaken prior to commencement of construction. Should newly established invasive species be identified within the site, an Invasive Species Management Plan will be incorporated into the final CEMP. Areas where invasive species are present will be identified and demarcated prior to commencement of construction:

- A distribution map of the invasive alien plant species present, and the above recommendations, will be incorporated into the final CEMP.
- To reduce the likelihood of invasive species spreading, the construction personnel involved in works will be trained in basic relevant invasive species prevention and management (toolbox talk).
- To reduce the likelihood of invasive species being introduced to the site from quarries, the aggregate will be crushed stone which will be biologically inert and would not be expected to have a seed bank.

Invasive Alien Species

- Best Practice and mitigation incorporated into the project design. The measures followed to avoid the spread of invasive alien species will follow guidelines issued by the National Roads Authority – The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads (NRA 2010). Prior to being brought onto the site, all plant and equipment will need to be clean and free of soil/mud/debris or any attached plant or animal material. Prior to entering the site, all

plant/equipment will be visually inspected to ensure all adherent material and debris has been removed.

- A pre-construction survey for invasive species will be conducted. Should invasive species be recorded at works locations on the transport route, along the grid connection route or within the development footprint an Invasive Species Management Plan will be prepared prior to construction works commencing.
- All footwear/waders and all equipment that will be placed within the water should be treated to prevent foreign flora/fauna entering the water and after use to prevent the spread to other catchments.
- Non-native species control will be practised according to the following IFI documents, noting that some works components are located near the Figile River, or drains that feed this watercourse.

Bio-security

To reduce the likelihood of invasive species being introduced to the site from construction works on other sites, it will be required that vehicles and tools will arrive on site clean. Work boots will be dipped in or scrubbed with a disinfectant solution and thoroughly dried afterwards before being used on the site for the first time (Also requirement during water quality sampling between different catchments). All PPE will be visually inspected and any attached vegetation or debris removed. PPE and tools will remain on site for the duration of construction. Any machinery or equipment returning from a different construction site will be cleaned, power washed/steam washed and visually inspected again before re-entering the site.

Methodologies

Invasive species management methodologies and plans outlining Best Available Techniques (BAT) will be sourced from the National Invasive Species Database, from previously published documents and from the Invasive Species Ireland and Inland Fisheries Ireland websites.

Responsibility

Project Manager

Environmental Manager

Construction Manager

Project Ecologist

References

Information on invasive species is provided in the National Road Authority (NRA) (now Transport Infrastructure Ireland (TII))¹, and Invasive Species Ireland (ISI)² documents provided in Annexes I and II, in relation to identification, control and eradication of Japanese Knotweed.

- 'IFI Biosecurity Protocol for Field Survey Work' (IFI, 2010) and
- 'Disinfection of scuba diving equipment' (IFI, 2011)
- 'Invasive species biosecurity guidelines for boaters' (IFI, 2013)

¹ <http://www.tii.ie/technical-services/environment/construction/Management-of-Noxious-Weeds-and-Non-Native-Invasive-Plant-Species-on-National-Road-Schemes.pdf>

² <http://invasivespeciesireland.com/>

Should newly established invasive species be identified within the development site, a Site Specific Invasive Species Management Plan will be developed, and will be incorporated into the finalised Contractors CEMP.

EMP 12: Emergency Response Plan

Purpose

To describe measures for the prevention of an environmental accident or incident and the response required to minimise the impact of such an event.

Procedure

In the event of an environmental emergency, all personnel will react quickly and adhere to this procedure. All site personnel will be inducted in the provisions of the **Emergency Response Plan**.

The following outlines some of the information, on the types of emergency, which must be communicated to site staff;

- Release of hazardous substance - Fuel or oil spill
- Concrete spill or release of concrete
- Flood event – extreme rainfall event
- Environmental buffers and exclusion zones breach
- Housekeeping of materials and waste storage areas breach
- Stop works order due to environmental issue or concern (threat to archaeological or ecological feature)
- Fire on site (cross-reference site Safety Emergency Plan as appropriate)

If any of the above situations occur; the Emergency Response Plan is activated. The Environmental Manager will most likely be responsible for overseeing the Emergency Response Plan (to be confirmed upon appointment of Contractor) and will be prepared and ready to implement the plan at all times. The Environmental Manager will be immediately informed and report to the scene. He/she must be aware of the;

- Nature of the situation – brief description of what has happened.
- Location of the incident.
- Whether any spill has been released.
- Whether the situation is under control.

The Emergency Response Plan must be completed by the appointed Contractor.

Oil Spillages

The following list outlines issues likely to be appropriate for inclusion in such a plan:

- Site staff will report the spillage immediately to the Environmental Manager or Construction Manager.
- Where relevant, the Environmental Manager will report the spillage to Inland Fisheries Ireland and Offaly County Council.
- Where possible, the source of pollution will be identified.
- Switch off all sources of ignition.
- Stop the spillage spreading.

- Use absorbent materials from the spill kit to mop up the spill (sand or absorbent materials should be used rather than detergents).
- Place boom across watercourse or in nearby downstream existing drains as a precaution.
- Do not wash spillage into drainage system. Washing will only make the situation worse and extend the pollution to other water bodies/drainage systems.
- If the spill has already reached drains, block the inlet of the dirty water cross pipes in the nearby drainage outflow points on the roadside drains with oil absorbent booms, which will prevent oils flowing into the existing drains.
- Shovel contaminated sand/earth/absorbent granules into sacks or skips.
- A specialist oil removal company should remove pooled oil.

Concrete Spillages

The following list outlines issues likely to be appropriate for inclusion in such a plan:

- Site staff will report the concrete spillage immediately to the Environmental Manager or Construction Manager.
- Where relevant, the Environmental Manager will report the spillage to Inland Fisheries Ireland and Offaly County Council.
- If there is a risk of concrete spreading into the drainage system, the inlet of the dirty water cross pipes in the nearby drainage outflow points on the roadside drains will be blocked using the absorbent booms, which will prevent concrete flowing into the existing drains.
- Do not wash spillage into drainage system. Washing will only make the situation worse and extend the pollution to other water bodies/drainage systems.
- If the spill has already reached drains, acid may be added to the drains by the Environmental Manager to neutralise the alkalinity of the concrete.
- Shovel contaminated concrete granules into sacks or skips for treatment in the Roadside Concrete Wash unit.

Contacts

As an Environmental Control Measure, the Environmental Manager will append the relevant contact details to the Emergency Response Plan document. Examples of such contact details include:

- Environmental Manager.
- Specialist oil removal Company.
- Offaly County Council.
- Inland Fisheries Ireland.
- National Parks and Wildlife Service.

Location of Emergency Spill Kits

- A map indicating the location of all emergency spill kits will be attached to the Emergency Response Plan document.
- Emergency oil spill kits will also be carried in all site vehicles and machinery and in the site office.

Responsibility

- The appointed Contractor/Environmental Manager will prepare and finalise an Emergency Response Plan to be ready to respond to any incident.
- All site personnel will report any spillages of oil or chemicals to the Environmental Manager and Construction Manager immediately.
- As appropriate, the Environmental Manager will report the spillage to the Regional Fisheries Board, local authority and any other relevant authority.

Details of Emergency Response Plans to be finalised by Appointed Contractor

EMP 13: Site Environmental Training and Awareness

Purpose

To describe measures for the training of all site personnel in the protection of the environment and the relevant controls.

Scope

All site personnel and construction teams which may influence environmental impacts.

Procedure

An initial site environmental induction and ongoing training will be provided to communicate the main provisions of the CEMP to all site personnel. Two-way communication will be encouraged to promote a culture of environmental protection.

The following outlines some of the information which will be communicated to site staff;

- Environmental procedures of the CEMP.
- Environmental buffers and exclusion zones.
- Housekeeping of materials and waste storage areas.
- Environmental Emergency Response Plan.

Housekeeping and Storage of hazardous materials

- Hazardous materials marked with the following symbols will only be stored in the secure storage container in the site compound.



- Subcontractors will provide a copy of the Material Safety Data Sheets for all hazardous substances brought on site.

All finalised CEMP policies will be adhered to, in the management of fuels and oils, concrete, and installation of sediment and erosion controls and drainage features. All finalised details will be communicated with site personnel. Environmental Training including spill kit training, installation of silt fence training is to be provided by the Appointed Contractor. Environmental training records will be retained in the site office.

Responsibility

Environmental Manager

Construction Manager

All site personnel

Details of Induction and Training to be finalised by Appointed Contractor.

EMP 14: Monitoring and Auditing Procedure

Purpose

To describe measures for environmental monitoring during the construction works and audit of control measures to ensure environmental protection.

Procedure

All mitigation measures, any planning conditions and relevant construction methods will be monitored on site. The Appointed Contractor will nominate an Environmental Manager for the works. The Environmental Manager will provide Audit Checklists to ensure regular checks of the site's control measures for the ongoing protection of the environment.

At a minimum monitoring will be carried to ensure adherence with the following;

EMP-1	Management of Excavations
EMP-2	Surface Water Run-off Control
EMP-3	Fuels and Oils Management
EMP-4	Management of Concrete
EMP-5	Protection of Habitats and Fauna (Ecological Management)
EMP-6	Waste Management
EMP-7	Traffic Management
EMP-8	Management of Archaeology
EMP-9	Construction Noise
EMP-10	Dust Management
EMP-11	Invasive Species Management

Checklists for daily, weekly or monthly site audits will be finalised by the Environmental Manager and the relevant personnel informed of their duties. Checklists will include (but are not limited to) confirmation that fuel is stored appropriately, waste management rules are adhered to, all environmental buffers are maintained, sediment and erosion control measures of the Sediment & Erosion/Storm Water Control Plan are in place and functioning, and concrete chute wash-out procedure is being followed. Checklists will be finalised with the Final Contractor's CEMP.

All environmental records, including completed checklists, will be retained at the site office.

Responsibility

Project Manager

Environmental Manager

Construction Manager

Project Ecologist

Project Archaeologist

Details of Monitoring Procedure and Checklists to be finalised by Appointed Contractor's Environmental Manager

EMP 15 Environmental Accidents, Incidents and Corrective Actions

Purpose

To describe measures for the recording, investigating and close-out of any environmental accidents or incidents on the site

Procedure

- The Environmental Manager or Construction Manager will be contacted as soon as possible where there is any incident that carries the possibility of negative environmental consequences (e.g. minor oil leakage or blockage of drainage pipe).
- The Emergency Response Plan and standard emergency procedures will be applied to get the incident under control and prevent injury or loss of life in the first instance.
- Work in the area will be halted and the Environmental Manager will be called to the scene to assess the situation and to decide on initial responses and remedial measures.
- Once the situation is under control, the environmental accident or incident will be recorded and the cause investigated.
- Any remedial action required will be taken to mitigate any damage and prevent a reoccurrence.
- Corrective actions will be communicated to personnel and sub-contractors where relevant – particularly where it results to a change in procedure.

Example list of environmental accidents & incidents

- Accidents involving large spill of fuel or concrete from delivery truck (emergency response required).
- Spills of fuel and oil (minor).
- Waste or rubbish left around the site (not in dedicated waste areas).
- Breach of any buffers (ecological, archaeological, watercourse).
- Failure of any control measures (silt fences collapsed in a storm).
- Concrete chute wash out in a non-dedicated area.
- Unplanned vehicle movement off the access road.
- Unplanned vehicle movement within a buffer zone.

Responsibility

- Site staff will contact the Environmental Manager or Construction Manager as soon as possible where there is any incident that carries the possibility of negative environmental consequences.
- The Environmental Manager is responsible for alerting the relevant authorities.

Details of Environmental Accidents, Incidents and Corrective Actions Procedure, including a chain of responsibility, to be finalised by Appointed Contractor and communicated to all personnel and sub-contractors.

EMP 16: Environmental Complaints

Purpose

To describe measures for the recording and resolving complaints by third parties, including local residents or members of the public

Procedure

Any environmental complaints received, whether internal or external, will be recorded and investigated. It is recommended that immediate action is taken as relevant to resolve environmental complaints to avoid any nuisance to the local community or any environmental damage.

This procedure includes;

- Recording of any complaints to a Site Log.
- Follow up by the relevant site representative – Environmental Manager.
- Remedial measures where required.
- Ongoing communication with complainant to confirm resolution.
- Any required training or communication with site personnel and sub-contractors as a result.

Responsibility

Project Manager

Environmental Manager

Construction Manager

Details of Environmental Complaints Procedure to be finalised by Appointed Contractor.