Mullaghgarve Mass Rock Trail & Car Park

Construction Environmental Management Plan

FLYNN FURNEY
ENVIRONMENTAL CONSULTANTS

For: S. Wilkin & Sons Ltd
Date: April 2023

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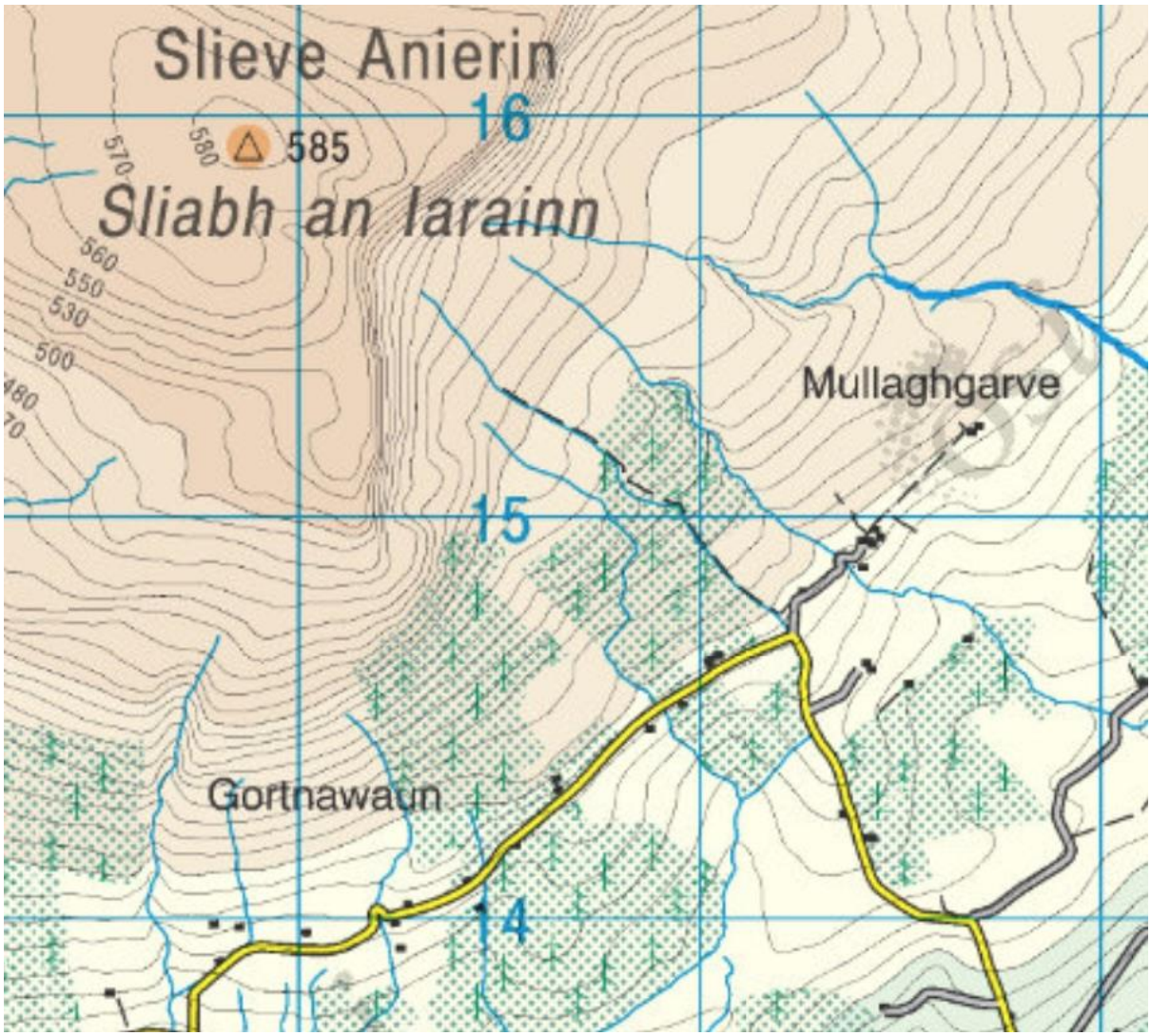


This Construction Environmental Management Plan has been drawn up for S. Wilkin & Sons by Billy Flynn BSc., Msc., C.Env. of Flynn Furney Environmental Consultants

Mass Rock and offerings – May 2023

1. INTRODUCTION

1.1 Purpose of this Construction Environmental Management Plan

This Plan sets out how S. Wilkin & Sons will manage environmental, pollution prevention and control aspects of the construction and development of this project for Leitrim County Council.

This document provides the framework to identify where environmental impact can occur, the pathways for these impacts and the controls that will be implemented to prevent, manage or control these impacts. It will be maintained and used for:

1. Providing project staff with instruction and guidance on the project specific arrangements for managing and monitoring environment and pollution controlled related activities;
2. Issue to the Client, designers, subcontractors and third parties for their information and use;
3. The basis for the Project specific induction training;
4. Demonstrating and monitoring compliance with legal and contract requirements;
5. To comply with the requirements of BS EN ISO 14001:2015 Environmental Management Systems;
6. Prevent adverse environmental impacts;
7. Ensure mitigation measures are implemented for non-preventable environmental impacts and reinstate / restore, as far as is practicable, the environment to its pre-project state where required;

1.2 Preparation & Development

S. Wilkin & Sons' management team shall ensure that this Plan and its supporting documentation are:

1. Developed to comply with the requirements of the Contract;
2. Reviewed, authorised and issued for use;
3. Submitted to the Client or their representatives for review before starting work on the Project;
4. Issued and made available to Project staff so that they are aware of its content and requirements;
5. Updated and reviewed regularly to reflect changing design and / or project circumstances during the 'lifetime' of the Project;

S. Wilkin & Sons' Health, Safety, Environment, Quality and Training team will provide advice and guidance to the project team and will monitor activities to ensure compliance. The broad purpose of the CEMP is:

• To ensure works are carried out in accordance with the Code of Construction Practice (CoCP);
• To provide a framework to identify and manage any environmental issues associated with the project;
• To ensure nuisance levels and inconveniences to the public as a result of construction activities are kept to a minimum;
• To comply with regulatory requirements and other environmental commitments established as part of the planning and development process;
• To identify environmental risks associated with the project and ensure suitable and sufficient control measures and procedures are in place;
• To provide a programme for compliance auditing and inspection to enable Leitrim County Council to be assured that its aims with respect to environmental performance are being met.
• To ensure that the project is being undertaken in a manner that the environmental impacts are minimised and that positive environmental effects and the associated favourable publicity is maximised.

1.3 Structure

This Plan comprises three main sections:

1. Description of the Project;
2. Management of the environmental impact;
3. Arrangements for controlling environmental risks.

1.4 Status

It is our aim that in carrying out this project we will avoid, control and manage all foreseeable risks to the environment and any third parties who may be affected by our work and construction activities. The requirements of this plan and its supporting documents are mandatory on all project staff and will be implemented in all aspects of the works to a deliver safe site and working environment.

S. Wilkin & Sons will provide Leitrim County Council with a Construction Environmental Management Plan as soon as possible after Contract award and before beginning of Works on Site.

The broad purpose of the CEMP is:

• To ensure Works are carried out in accordance with the Code of Construction Practice (CoCP);
• To provide a framework to identify and manage any environmental issues associated with the project;
• To ensure nuisance levels and inconveniences to the public as a result of construction activities are kept to a minimum;
• To comply with regulatory requirements and other environmental commitments established as part of the planning and development process;
• To identify environmental risks associated with the project and ensure suitable and sufficient control measures and procedures are in place;
• To provide a programme for compliance auditing and inspection to enable the Employer to be assured that its aims with respect to environmental performance are being met.
• To ensure that the project is being undertaken in a manner that the environmental impacts are minimised and that positive environmental effects and the associated favourable publicity is maximised.

This CEMP includes:

• A list of reference documents, applicable laws and regulations;
• The Contractor's environmental policies, objectives and targets;
• The organisational structure of the Contractor's and its Subcontractors environmental management team organisation and responsibilities, as well as the approaches to staff training;
• The environmental Management System monitoring description, review and improvement;
• The "Environmental Manager" contact details;
• The environmental management meetings and communication methods;
• The environmental hazard identification and risk assessment methodology;
• The lists of tasks and their impacts on the environment, as well as provisions they impose on the Contractor and its Subcontractors;
The specific means implemented by the Contractor and/or its Subcontractors to achieve the objectives established in accordance with regulatory requirements and commitments made by the Employer;

• The environmental risk analysis/matrix, aligned with the overall project risk management process, to identify the aspects and impacts of the activities and / or Works on the environment, to assess their importance and to define the operational and control procedures imposed on staff and Subcontractors before the start of operations. This analysis shall describe the arrangements to reduce Significant Environmental Aspects and Impacts
• The list of controls, inspections and audit procedures to be implemented to prevent the risk and associated records;
• The measures taken to prevent and respond to potential accidents and Environmental Emergencies Situation including the pollution prevention and action plan;
• Detailed dropped object recovery procedure for both floating and non-floating objects;
• Presentation of measures taken for awareness of Contractor's staff and its subcontractors (Environmental management induction and training);
• path construction environmental impact (if any).

This CEMP shall be submitted to the relevant planning authority – Leitrim County Council (the Employer) and approved in writing prior to commencement of the Works.

The Works shall be carried out in accordance with the CEMP unless with the prior written approval of the relevant planning authority. The Construction Environmental Management Plan shall be kept up to date throughout the Contract, and shall be **updated every 3 months** or when major changes to the Construction Environmental Management Plan occurs, whichever is the sooner. The Contractor shall send a version to the Employer after each modification.

Fig. 1. Site Location at Mullaghgarve

2. DESCRIPTION OF THE WORKS

2.1 Scope and Description of the Works

Leitrim County Council proposes to construct a car park and upgrade the existing walking trail up to Mass Rock at Mullaghgarve. Mass Rock has been a tourist attraction for many years near Drumshanbo, Co. Leitrim. In recent years, visitor numbers have been increasing even during COVID- 19. Tourists and locals use the walking trail for exercise and to view the Mass Rock as the site and proposed car park are near the top of Sliabh an Íarainn. There are spectacular views from this area of the Co. Leitrim countryside. The Mass Rock is promoted on various tourism websites and social media. Cars currently park along the nearby local road. Cars also park along a private access road, often blocking access for the landowner to their property. There is currently a walking trail to the Mass Rock from the nearby local road.

2.1 Works Location

The scheme is located at Mullaghgarve to the northwest of Drumshanbo, Co. Leitrim. The scheme will start from the public road L1601. There is an existing walking trail from the local road to the summit which will be upgraded. There will be 975m of an existing trail upgraded with Cl804 stone. This will be followed by 150m of a proposed sheep's wool walking trail. There will also be a 20m timber boardwalk installed at a section to preserve the natural drainage through the bog. The proposed carpark will be located opposite the beginning of the trail.

Fig. 2. Site Location & Extent

2.2 Works Description

There are 2 no. main elements to this project : a) the construction of a car park and b) the upgrading of an existing pedestrian trail. There are described below:

a) **A new construction of a carpark** which will be adjacent to the beginning of the trail just off the L-1601. It will consist of 13 No. parking bays, including 1 No. Disabled parking bays. The parking bay will lead to a pedestrian trail to the Mass rock.
b) **Replenishment of 950m a 3m wide stone surface trail** between the newly constructed carpark and the mass rock, including clearing of drains, upgrading sections of fencing and installation of gates and stiles. 150m of the trail will consist of a sheep's wool trail through a Special Area of Conservation (SAC). This is the Cuilcagh Anieran SAC (Site Code 000584).

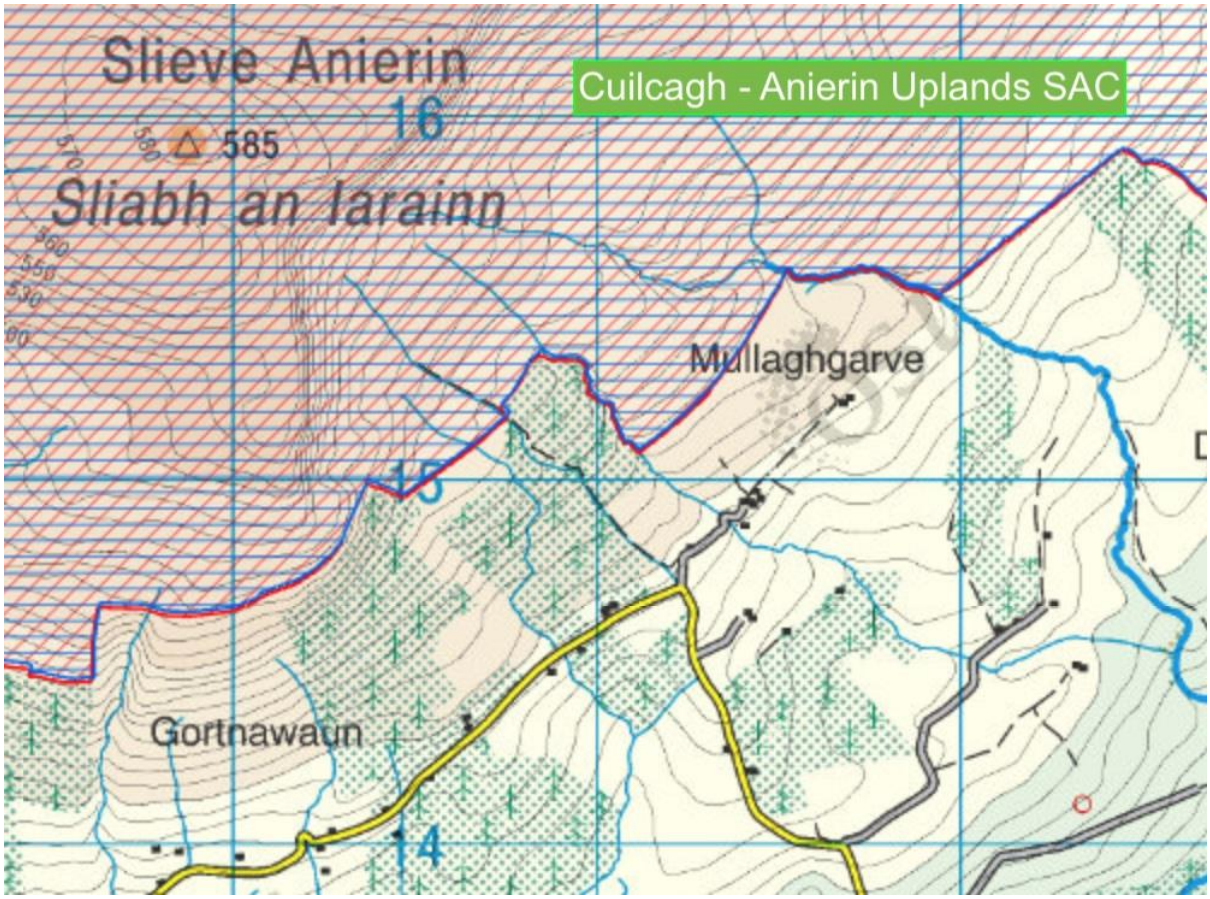


Fig 3. The Cuilcagh Anieran Special Area of Conservation (hatched area)

2.3 Existing Conditions

S. Wilkin & Sons recognise that its operations can have a significant impact on the environment. The following tables summarise the areas for potential impacts. To enable the Project to manage these issues effectively, we may need to carry out surveys to investigate the conditions prior to construction.

2.3.1 Ecology, Habitat, Invasive and / or Protected Species

The ecology, habitat, nuisance and / or protected species and habitats are to be surveyed by the Project Ecologist prior to the onset of construction.

2.3.2 Archaeological & Built Heritage

The results of any archaeological and built heritage surveys that have been carried out on this project during the planning stages are to be summarised in the following table (to be completed when supplied)

Date of Survey	Surveyor	Location	Comments
20 Dec 2022	Tamlyn McHugh	602840/815066	The development will have no direct or negative impact on any known recorded archaeological sites or monuments in the vicinity of the proposed new trail extensions, upgrade of the existing trail or addition of a trail carpark. There will

Date of Survey	Surveyor	Location	Comments
			be no visual impact on the recorded archaeological sites or monuments in the vicinity of the proposed new trail extensions or carpark.

The full archaeological report containing the results of the survey is to be kept in the Project HSEQT Files.

Archaeology and cultural heritage requirements

The Contractor shall agree any ground works or topsoil stripping with the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht DCGH.

A detailed management plan shall be developed to define how archaeological mitigation shall be sequenced with earthworks operations. This shall be approved by the project archaeologist and shall require that all areas be certified prior to construction works continuing.

As a minimum, site controls shall include:

• An archaeological watching brief in all areas where topsoil strip is required

• The use of toothless buckets

• Agreement of the most suitable areas for topsoil strip

• Fencing shall protect any/all Scheduled Monuments.

2.3.3 Landscape and visual impact

The CEMP shall ensure, as far as is reasonably practicable, that disturbance to the landscape is contained within defined limits and site restoration proposals are implemented in a timely manner and in accordance with best practice. The plan shall address both hard and soft landscaping, identifying hard landscape materials, lighting, site furniture and specifying soft landscape details including plant species and quantities.

2.4 Designated Sites & Sensitive Features

S. Wilkin & Sons recognise that its operations may have an impact on designated statutory sites or environmentally sensitive features. In order to minimise this, we need to recognise where these are located, how we could affect them and what mitigation measures we need to take. Some sensitive features may need specific or unusual treatment. If this is the case, we will produce detailed method statements for these operations.

The designated sites and sensitive features that fall within the boundary, or which could be affected by this project, are marked on the site plan kept in the Project File. Their locations and the procedures to be adopted are summarised in the following table:

Designation	Location	Procedure
Special Area of Conservation	Cuilcagh Anieran SAC, Mullaghgarve & Gortnawan	See Section 4.3 for details

Proposed Natural Heritage Area	Cuilcagh Anieran pNHA, Mullaghgarve & Gortnawan	See Section 4.3 for details

2.5 Watercourses, Rivers & Groundwater

S. Wilkin & Sons recognise that construction activities in or near water have the potential to cause pollution or impact on the bed and banks of watercourse and on the quality or quantity of the water, both above and below ground. Some activities with the potential for affecting watercourses or groundwater may require consent.

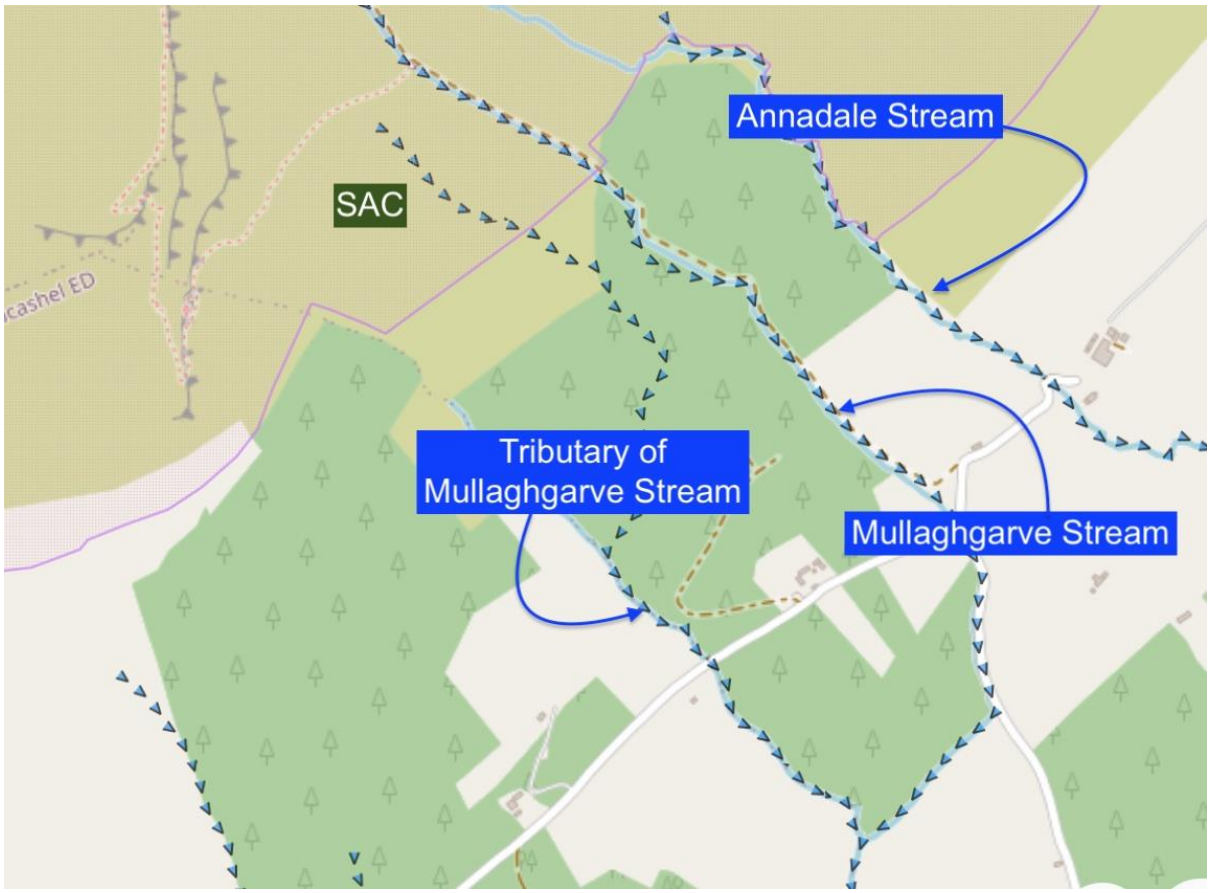


Fig. 4. Watercourses crossed by the proposed route of the trail. Light brown shaded area is Cuilcagh Anieran SAC. Base mapping from www.gis.epa.ie

Types of activity that may impact upon the bed and banks of a watercourse or of a wetland include:

- Repair, maintenance or improvement of any structure, over or above a main river [as defined in the Water Resources Act 1991];
- Erection or construction of any structure, either permanent or temporary, in, over or above a main river;
- Diversion of flows;
- Works within the river channel or lake / loch or within the vicinity of;
- Any works likely to increase the risk of flooding;
- Works within 10m of a main river watercourse of flood defence;

Types of activity that have the potential to cause pollution of groundwater include:

- Use of potentially polluting substances near groundwater abstraction boreholes;
- Use of potentially polluting substances near wells and springs;
- Use of potentially polluting substances in areas where groundwater in vulnerable e.g. high groundwater table and thin covering of soil;
- Sub-water table construction using materials containing potential pollutants;

Types of activity that may remove water from sensitive parts of the water environment or affect other water users include:

- Dewatering of excavation, particularly abstraction of large amounts of ground

The watercourses, rivers and groundwater features that fall within the boundary, or which could be affected by this project, are marked on the site plan kept in the Project File. Their locations and the procedures to be adopted are summarised in the following table:

Feature	Location	Procedure
Watercourses: Annadale Stream Mullaghgarve Stream	Townlands of Mullaghgarve & Gortnawan	See Section 4.2

The project is located within the Erne Catchment (No. 36) and the Yellow (Ballinamore) Sub-catchment (No. 010). The route will cross or run closely adjacent to 3 no. watercourses as listed above. Please refer to Section 3.7 for operations/mitigation measures as required.

2.6 Licences & Consents

S. Wilkin & Sons recognise that it needs the benefit of various licences and consents to carry out certain operations legally. These may be discharge, sewerage, abstraction and flood defence consents, waste exemptions, wildlife licences for specific species [e.g. bats, badgers,frogs] or Noise consents.

The following licences and consents are foreseen as a potential requirement and have been obtained or will be obtained for the completion of this project:

Issuing Authority	Issue Date	Expiry Date	Type /Ref No of Licence	Location	Summary of Conditions
Section 14 Electro Fishing Licence				Instream works	May be restricted to between July 1st & September 30th. To be agreed with Inland Fisheries Ireland.
Application for a License to Remove Schedule III Invasive Floral Species				TBC	To be applied for if such a species is encountered and needs to be removed off-site.
Derogation License for Otters				TBC (watercourses)	To be applied for depending on nature of works within areas containing holts
Derogation License for Badgers				TBC (farmland)	To be applied for depending on nature of works within areas containing setts
Derogation License for Frogs				TBC (pond, marsh, wetland areas, drains)	To be applied for depending on nature of works within areas containing frog spawn/tadpoles

Please note that no requirements for licences have been identified at time of writing.

3. MANAGEMENT OF ENVIRONMENTAL IMPACT

3.1 Management Responsibility

The Management Responsibilities of key staff are defined at site level. Each member of staff involved in the Project is responsible for:

- Reading and understanding the requirements of the System and integrating these requirements into their regular working methods
- Ensuring that employees under their control are familiar with relevant procedures and instructions and have ready access to them;
- Providing clear and unambiguous instructions to employees under their control;
- Ensuring that work under their control is planned, controlled and completed in accordance with Company, Contract and Statutory requirements;
- Verifying the standard of work carried out under their control by supervision, surveillance and inspection;
- Recording all instances of failure in the System, incidents and near misses with the agreed corrective action to remedy the immediate problem and minimise the probability of recurrence;
- Controlling documents received and prepared;

3.2 Management Policy

Our corporate policy on managing environment on every project is defined in our S. Wilkin & SonsEnvironment Policy Statement [see Appendix 1]. This Policy will be implemented in full on this project and a copy of the Policy will be available at all operating locations to inform people of its requirements and expectations.

3.3 Objectives & Targets

Our Project specific and Employer or Contract specific environmental objectives and targets is:

> *To ensure minimum disruption to Flora and Fauna while delivering the project on time and to the client's satisfaction*

3.4 Best Practice Schemes

We are committed to achieving best practice on our sites and this can be recognised by registering for award schemes. All projects are required to register with the Considerate Constructors Scheme to encourage and foster good relations with the local community;

3.5 Communication & Co-operation.

3.5.1 Issue of Information

This Construction Environmental Management Plan will be made available to all sub-contractors tendering for work and any updates made to the EMP affecting or having an impact on their works will be communicated to them.
This EMP will also be issued to all contractors assigned to complete works on behalf of the Client directly. These Contractors will be expected to comply with the requirements for co-ordination and co-operation in the execution of the Project and the CEMP.

The Project Manager will hold Project Performance Meetings, including site sub-contractors and will ensure that all HSEQT issues concerning the project are being suitably addressed, monitored and maintained to the required standards.

3.5.2 Employee Consultation

Initial consultation and communication will be completed via the Site Induction process. This process will provide Project Specific detail and information to all persons working on the Project.

S. Wilkin & Sons ask all of our employees on this project to report any concerns on site to Site Management via the HSEQT Employee Consultation. We will ask for feedback from the site employees on areas of concern, for improvement or issues that require addressing to improve safety and performance on site.
The HSEQT Employee Consultation meetings will be held by the Project HSEQT Manager on a monthly basis. Those present will be asked to report any issues that may be of concern without recrimination.
All immediate environmental risks and concerns should be reported directly to the Project Manager.

3.6 Site Set Up

3.6.1 Site Layout Plan for the Works

The Project Manager will ensure that a detailed Site Layout Plan is produced, periodically reviewed to reflect the project programme.

Examples of the information that will be recorded on the Site Layout Plan are:

- Sequence of Development;
- Site access & exit points;
- Proposed pedestrian routes and crossing points;
- Proposed site traffic routes;
- Permanent and temporary fencing;
- Construction compound location;
- Delivery routes to loading / unloading areas;
- Proposed lay-down areas;
- Public roadways connecting to the site;
- Public footpaths connecting to or crossing the site;
- Watercourses and protected environmental areas;

A copy of the Plan should be available and provided to sub-contractors, delivery companies visiting site and a copy available for use in an Emergency or for issue to the Emergency Services [as required];

3.7.2 Construction Compound

S. Wilkin & Sons will take into account the impact of the compound location on the local population and environment when choosing this site. To reduce our impact further, we will:

- Introduce one-way systems to reduce the nuisance of reversing alarms [where possible];
- Direct site lighting away from local housing;
- Use silenced generators;
- Cover / damp down stockpiles of dusty material in dry weather;
- Store fuel, oils and other hazardous chemicals/materials in accordance with the legislation, away from drains and watercourses;
- Ensure all drainage systems are known – type, location, flow and emergency response required contamination or spillage of drainage system;
- Operate within the planning guidelines;

3.7.3 Site Rules

The Site Manager will produce a set of project specific Site Rules (see Appendix). These will be included in the induction and a copy is maintained on the IRE HSEQT Notice Board[s].

If any employee, contractor or visitor is in breach of any of the site rules, or is observed carrying out an environmental non-conformity, S. Wilkin & Sons will take appropriate action to make the site safe and notify both the individual and their company in writing of the breach. Our Site Unsafe Action / Condition Notification

form [IRE HSEQT/SFM-710] will be used for this purpose. S. Wilkin & Sons will require that those personnel involved are disciplined appropriately and in the case of a serious breach, will be removed from site.

3.7.4 Visitors

All visitors must sign in before they enter site, they will only be allowed on to site if they have read, understood and signed to confirm their understanding of the Site Rules and are accompanied by a fully inducted person, and otherwise they must attend the site induction.
It is the host's responsibility to ensure that the visitor is accompanied at all times and complies with the site rules. Those persons failing to comply with the site rules will be dealt with appropriately, and where persistent offences occur, the right to bring visitors to site or accompany visitors around the site will be withdrawn.

3.7.5 Site Toilets

The tanks within portable or mobile toilet facilities will be emptied regularly. A regular removal contract has been established with Rego who will attend site and will be disposed of by at a licensed site. All waste removed from site will be disposed of and recorded within the Site Waste Management Plan.

3.7.6 MSDS & Fuel Storage

S. Wilkin & Sons and its sub-contractors will avoid any environmental damage, as a result of the inadequate storage or misuse of any substance hazardous to health, through strict adherence to the company MSDS procedures and the measures identified in project specific risk assessments.
The substances to be used on site will be recorded and added to HSEQT/SFM-312 MSDS Register and will be continually updated as works progress
Diesel fuel will be stored in a bunded / self-bunded. Locks will be fitted to all fuel storage tanks.
MSDS materials, oils and lubricants will be stored in suitable containers within a bunded unit, providing the appropriate capacity required. Locks will be fitted to all bunded units to prevent unauthorised access.
No potentially polluting materials or substances will be stored near watercourses or in such a situation that these materials can fall, or be carried into a watercourse, e.g. near surface water drains. All static plant will have integral / separate drip trays and secure fuel tanks.
In areas of potential risk, emergency procedures will be prepared and pollution control equipment provided, such as 'grab packs' and absorbent granules. All spill kits will be replaced or replenished after use and a record of any spillages or their use noted.
In areas of potential risk, emergency procedures will be prepared and pollution control equipment provided, such as "grab packs" and absorbent granules. These will also be carried by some vehicles on the site. All spill kits will be replaced or replenished after use.
The spill kits are located at the following points:

Type of Spill Kit	Location
30 litre Grab Pack	Site Stores
90 litre Response Kit	Fuel Stores
Emergency Spill Pack	Site compound and site vehicles

3.7.7 Refuelling

A fuel bowser will be used for refuelling throughout the project. Where possible, this will remain in a static position and the refuelling position restricted to a designated area within the site compound. The bowser will be stored in a suitable position, on level ground, away from drains, watercourses and sensitive receptors. Where this is not practical, the bowser will be used as a mobile unit.
The bowser driver will be responsible for ensuring that refuelling of mobile plant does not take place within 20m of a watercourse, where possible. The operator of the bowser will be trained in the use of spill kits. The refuelling bowser will be equipped with a 'Grab Pack' spillage control kit. Special attention will be paid to spillage control at watercourses.

3.8 Information & Training

3.8.1 Induction

Everyone intending to work on site must first attend a S. Wilkin & Sons induction. At the induction, details of the Site Rules and other related items e.g. project outline, the main site hazards, organisational arrangements, emergency and evacuation procedures etc. will be discussed.

All personnel commencing employment on the site, including subcontractors, will attend an induction training course. The course will include training in the following areas:

- Environmental legislation and its relevance to this project;
- Individual environmental responsibilities and environmental constraints to specific operations;
- Areas of environmental sensitivity, how activities may affect them, methods and timing necessary to protect them and activities to be avoided;
- Procedures and equipment to use in case of an incident;

All those who have attended the site Induction must sign a HSEQT Site Induction Record [IRE HSEQT/SFM-401].

3.8.2 Toolbox Talks

Toolbox talks will be provided to the workforce at the relevant time to supplement the induction.

Environmental information will be given to employees, direct and subcontract, through a minimum of one Toolbox Talk monthly. The subject of these talks will be chosen to suit current site activities but may also include project specific incidents or environmental issues.

The completion of the TBT will be recorded on the Project briefing Register [IRE HSEQT/SF405].

Those contractors conducting their own internal Toolbox Talks are required to supply copies of records showing communication.

3.8.3 External Training

Training records of the site team will be maintained through the Competence and Training Matrix [HSEQT/SF403]. To ensure the appropriate levels are maintained on site and within the team, this will be cross referenced with the roles and responsibilities of the individuals, and any areas that require additional up skilling will be identified and the appropriate training provided.

The training requirements of individuals will be based on Project activities and Project requirements.

3.8.4 Training Records

All persons attending site must prove competence through the supply of the relevant Training Certificates. All Training providers completing training at the Projects must ensure that Training Attendance Record [HSEQT/SFM-406] is completed by those receiving training.

The completed form is issued to the Project Management team and the S. Wilkin & Sons HSEQT Department Training Manager. Copies of all certificates must be issued via the S. Wilkin & Sons Department Training Manager

3.9 Incident Management

3.9.1 Emergency Response

In potentially dangerous / environmentally damaging situations S. Wilkin & Sons will take all necessary precautions to minimise the consequences without putting any person at risk.

At all times the approach adopted will be to:

- **Stop** – prevent further spillage by stopping the flow, righting the drum, turning off the tap etc.
- **Contain** – by using sand or earth, absorbent pads, booms or skimmers or digging trenches etc.
- **Report** – all pollution incidents to the Foreman who will take the appropriate administrative action.

Steps will be taken with oil spill clean up specialists to facilitate a rapid response in the event of a major incident, where additional pollution control equipment may be required.

The probability of small spillage on land is greatest during refuelling operations. Staff must be familiar with all the refuelling equipment. Refuelling will be carried out using the correct equipment i.e. nozzles of the appropriate size, funnels etc.

Each refuelling bowser will carry an appropriate spill kit and the driver will be fully trained in its use.
Action in the event of spillage on land:

- Stop the leak;
- Use a spill kit to mop up spill;
- In the event of a more significant spillage, obtain assistance from the Foreman and other members of the workforce. If necessary, construct an earth barrier or trench to contain the spilled material;
- All contaminated materials must be removed to waste – ensure sufficient clean material is removed along with the contaminated material to ensure spillage is cleared fully;
- Dispose of contaminated soil in heavy plastic sacks;
- Dispose of sacks at an approved licensed facility in accordance with Project Site Waste Management Plan and record.

To prevent or reduce the risk of fuel spillage into water, storage tanks will not be located near any watercourse or peaty soil. Refuelling within 20 metres of a watercourse will not be permitted where possible.
Prior to starting works, an emergency response location should be established. This should provide clear access, suitable water currents and surface, allowing effective use of a boom.
Action in the event of a spillage to a watercourse:

- Every effort should be made to prevent a spillage reaching a watercourse;
- In the event of any spill reaching a watercourse, a boom will immediately be deployed downstream of the spillage;
- It will be secured on each bank and span the entire watercourse;
- To enable the recovery of the pollutant, the boom should be deployed at an angle to direct the pollutant to one bank;
- The pollutant will be removed using floating absorbents and if necessary, skimmers;

All the contaminated material and absorbents will be disposed of in accordance with the Site Waste Management Plan.

All significant and major spillages into a watercourse will be reported to the EPA;
In the event of a discharge of suspended solids into a watercourse, immediate action will be taken to prevent further contamination.

- Every effort should be made to prevent the suspended solids reaching the watercourse;
- Any activity causing pollution will stop immediately;
- Straw bales will be used extensively and deposited to slow down the rate of discharge;
- Where possible, civil engineering controls will be installed to manage the incident;

Environmental Emergency Situations (EES)

Possible Environmental Emergency Situations (EES) during works:

S. Wilkin & Sons will determine any other possible EES from its own procedures or means. It shall define the actions of prevention and the response to limit the environmental consequences of all EES thus determined.
For each EES, direct and specific contact information will be provided by Leitrim County Council at a later stage and shall be required by S. Wilkin & Sons will be included in the CEMP before the start of the Works.
In case an environmental emergency is detected, S. Wilkin & Sons will inform Leitrim County Council as soon as possible. It will be clearly define the palliative measures that have been undertaken to solve the EES.

3.9.2 Investigation & Reporting

All Incidents
All incidents will be investigated to determine both immediate and root causes and the findings recorded;
All environmental incidents, near misses or third party complaints must be recorded.
All completed forms are recorded and notified to the Manager Director, Contracts Manager, S. Wilkin & Sons HSEQT Manager.

Significant / Reportable Incidents

In the event of a significant or major environmental incident, S. Wilkin & Sons HSEQT Director or HSEQT Manager will inform the appropriate regulator and take appropriate action following liaison with them.

The Project Manager will notify the IRE HSEQT Manager immediately for any accident or incident that is or has the potential to be:

- a significant or major environmental incident;
- a significant complaint, communication or visit the EPA or Local Authority;

The causes of the incident, learning points and control measures identified through site investigation by the HSEQT Manager and Project Manager, will be implemented and communicated across all sites.

4. ARRANGEMENTS FOR ENVIRONMENTAL PROTECTION

4.1 Aspects & Impacts (Significant Environmental Aspects and Impacts (SEA-SEI)

S. Wilkin & Sons has identified the environmental aspects within the scope of the environmental management system, taking into account the inputs and outputs associated with its activities and services. This process has considered both normal and abnormal operating conditions as well as reasonably foreseeable emergency situations.

The approach selected for identifying environmental aspects has considered include but are not limited to:

- emissions to air
- releases to water
- releases to land
- use of raw materials and natural resources
- use of energy

In addition to those environmental aspects the organisation can control directly, we also consider those aspects that we can influence, e.g. those related to goods and services used by the organisation and those related to products and services provided.

Consideration is given to related activities, products and services, such as but not limited to:

- design and development
- packaging and transportation
- waste management
- environmental performance and practices of sub-contractors and suppliers
- extraction and distribution of natural materials such as soil
- wildlife and biodiversity

Significant Environmental Aspects and Impacts (SEA-SEI)

S. Wilkin & Sons will undertake an environmental risk analysis. It shall allow to identify the impacts of the Works on the environment in several respects (water, air, soil, fauna, flora) and their relative importance.

S. Wilkin & Sons will limit the Significant Environmental Impacts generated by its services by defining the associated operational procedures and controls, imposed on its staff and sub-Contractors before the start of operations.

ENVID Environment aspects and impacts identification

An Environmental Aspects and Impacts Identification (ENVID) methodology shall be applied to identify and assess the significant environmental aspects and impacts associated with Projects activities and review the associated mitigation measures required.

S. Wilkin & Sons with its Project Manager and HSEQ representative shall call for an ENVID meeting in order to identify and quantify the main environmental risks of the Project throughout the various steps of the Work.

The ENVID study is a management tool communicated to the Project Manager, the Management Team, including the HSEQ manager. ENVID could be combined with the HIRA when necessary. In such case, the risk matrix shall embed environmental criteria. The Employer shall be systematically invited to such workshops.

4.2 Significant & High Risk Project Activities

During the completion of the Project, the following aspects and impacts have been identified as high risk for the completion of this project

- Pollution of aquatic habitats and species in the Mullaghgarve and Annadale Streams and any associated/connected downstream habitats, especially those within the Cuilcagh Anieran SAC.
- Net loss and damage of hedgerows, treelines, woodland plantations, wet grasslands, dry grasslands (including road verges);
- Loss of rare or protected plant species (if found to be present by pre-construction surveys);
- Spread of several invasive plant species known to occur within the proposed development footprint;
- Disturbance and/or injury to the nests, eggs, or individuals of several species of breeding birds potentially including species of high conservation concern such as grey wagtail
- Disturbance and/or injury to amphibians (assumed present)
- Disturbance and/or injury to roosting bats (if present) in trees and structures identified as having suitability for roosting bats.

It is anticipated that the following pollutants may arise from construction operations on this Project:

- Plant fuels and lubricating oils
- Concrete
- Cement
- Silty water [surface water runoff from construction site]
- Sewage and Trade Effluent
- Noise [from construction operations]
- Dust [from construction operations]

Management of environmental risks

It is the Contractor's duty to demonstrate that health, safety and environmental hazards are identified and their correlated risks are addressed and mitigated following ALARP's hierarchy of control and monitor those as well as follow up on improvement measures.

The application of hazard identification and risk assessment methodology is a simple and effective methodology and shall be applied at project's early design and engineering phase and aiming to identify and assess the hazards associated with each hazardous task or design and product development intention and review the associated controls and precautions required. All documentation prepared associated with the risk management on Environmental shall be written and made available on site in the English language.

The Contractor shall develop for the Project an Environmental risk management plan highlighting Environmental studies to be developed during the course of the Project including, not limited to, during the engineering/design phase, transport, installation and sail away. This document shall detail in particular the Risk Assessment Matrix which shall be used as a reference.

In addition, in order to ensure overall understanding of the Contractor on all Environmental studies to be performed during the course of the projects, to adequately schedule the workshops for all Environmental studies (ENVID) and inform all relevant parties in due time (Employer, subcontractors, any third parties…), the Contractor shall issue on a quarterly basis a Project Environmental studies look ahead plan. A formal notification must be issued by the Contractor to Employer with the detailed Terms Of Reference (location, timing, procedures risk assessed…) at least ten (10) working days before every session.

4.3 Construction Controls & Mitigation Methodologies

4.3.1 Ecology, Habitat Protection & Protected Species

S. Wilkin & Sons recognise importance of protecting ecology, habitat and protected species during construction and will take all practical measures to achieve this. Where possible, we will also carry out habitat enhancement to improve the ecological value of the local environment.

Protection of Fauna and Flora

At each location of the worksite, the Contractor makes sure to protect the trunks and branches of the trees from any deterioration by his Work and procedures. More generally, the Contractor shall comply with the findings of the Environmental Impact Assessment.

Ecology General Requirements

S. Wilkin & Sons Ecologist: A suitably qualified ecologist shall be appointed by S. Wilkin & Sons to advise on compliance with relevant legislation, and to oversee implementation of the requirements in the planning documents and statutory approvals. S. Wilkin & Sons Ecologist shall establish a regular communication and reporting protocol for the Ecologist within the Employer's Representative Team.

The S. Wilkin & Sons Ecologist will facilitate site visits by the Ecologist within the Employer's Representative Team.

Ecological Training: Prior to mobilisation, and regularly thereafter, the S. Wilkin & Sons Ecologist will provide toolbox talks/briefings on risks to and mitigation for sensitive ecological features. The S. Wilkin & Sons Ecologist will maintain an attendance record of all such training events.

Surveys: A suitably qualified ecologist shall be appointed by S. Wilkin & Sons to carry out surveys prior to site clearance works in order to determine if protected or invasive species are present, having regard for the findings and requirements of the environmental assessments in the planning documents. These surveys shall be carried out sufficiently in advance of works to enable derogation licences to be obtained (typically at least one month). All surveys shall be completed having regard for relevant guidance.

Method statements: S. Wilkin & Sons will provide and revise method statements/RAMS to the satisfaction of the Ecologist within the Employer's Representative Team. Liaison with the local Inland Fisheries Ireland and National Parks and Wildlife Services staff will be conducted where required.

Physical Protection: S. Wilkin & Sons will provide fencing as physical separation between construction operations and ecologically sensitive areas. This shall include temporary fencing where necessary and be installed to the satisfaction of the Ecologist in the Employer's Representative Team.

Temporary Areas Re-Instatement: All areas used for temporary construction operations, including site compounds, temporary storage areas, and passing bays shall be subject to re-instatement, and enhancement where required under the planning documents, statutory approvals and/or statutory bodies. The Contractor shall complete re-instatement and any enhancement to the satisfaction of the Ecologist in the Employer's Representative Team.

Legislation: The Contractor shall operate procedures to ensure compliance with:

- EC Bird and Natural Habitats) Regulations 2011 S.I 477/2011 (as amended);
- Wildlife Act 1976 S. I 39/1976 (as amended);
- Flora Protection Order S.I. No. 356/2015; and;
- Any other relevant statues and legislation.

CEMP: .This S. Wilkin & Sons CEMP shall ensure that the Works are carried out so that, as far as is reasonably

practicable, disturbance to habitats or species is avoided or, in instances where this is not possible, minimised and that suitable mitigation measures are implemented.

Reporting: S. Wilkin & Sons Ecologist will provide all ecological survey reports for review by the Ecologist within the Employer's Representative Team. S. Wilkin & Sons Ecologist will provide these reports a maximum of two weeks from the survey completion dates, unless otherwise agreed with the Employer Representative.

Ecological Records: Within four weeks of completing ecological surveys, the Contractor's Ecologist will populate the ecological recording form available from the National Biodiversity Data Centre (NBDC) https://www.biodiversityireland.ie/resources/with records of any species or habitats of conservation significance and make this available for review by the Ecologist within the Employer's Representative Team prior to submission to the NBDC.

Pollution Protection: S. Wilkin & Sons will provide detailed site-specific method statements for review by the Ecologist within the Employer's Representative Team, to include pollution prevention and protected and invasive species control measures for all works in the vicinity of watercourses. S. Wilkin & Sons will regularly check and monitor the performance and condition of all pollution protection measures (at least daily). S. Wilkin & Sons will report any environmental incidents, including release of silt or other pollutants, to the Employer's Representative Team.

Noise Reduction: Efforts to reduce noise from working operations (e.g. limiting working times, turning off plant and machinery when not in use) will be employed at all times of the year, for:

- All works within the Cuilcagh Anieran SAC;
- Any other ecologically sensitive sites, and
- Within the zone of influence of any other sensitive receptor.

Landscaping Damage: Should any tree or shrub, which is intended to be preserved, be killed, removed or damaged by S. Wilkin & Sons during the course of the Works, they shall be replaced by S. Wilkin & Sons with plants of the same species and size (as those killed, removed or damaged), or made-good by arboriculture work to the satisfaction of the Employer's Representative. Such work shall be carried out at S. Wilkin & Sons own expense. Such an occurrence should be reported as an incident. Any vegetation material which is intended to be chipped should be described as such in the design in order to avoid it becoming waste.

Biodiversity and Landscaping: Any planting shall be largely of locally indigenous native species, but for the avoidance of doubt, the Contractor will not plant the following non-native species of negligible value to wildlife: cherry laurel *Prunus laurocerasus*, Leyland cypress *Cuprocyparis* X *leylandii,* snowberry *Symphoricarpos albus*.

All plans will be formed in consultation with the contractor ecologist and employer ecologist.

Invasive species: Through ISMP implementation, the Contractor will comply with the requirements of the EC (Bird and Natural Habitat Regulations) 2011-2015. In particular, the Contractor will comply with Regulation 49, to ensure that no scheduled species are (allowed or caused to be) planted, dispersed , or spread.

Aquatic Biosecurity: S. Wilkin & Sons will incorporate within the ISMP, specific measures to prevent the release, spread, or dispersal of invasive plants and pathogens in aquatic environments, having regard for Invasive Species Ireland guidance https://invasivespeciesireland.com/invasive-plant-management/setting-yourpriorities/. This will include the requirement, prior to mobilising to site (and after leaving site), that the Contractor steam cleans any plant proposed for use within or adjacent to watercourses (including HDD plant), to remove invasive plant or pathogens potentially present. Any such plant will be allowed to dry prior to entering site.

Plants and Habitats (Cuilcagh Anieran SAC): This SAC is designated for the following conservation interests (qualifying interests):

- Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110]

- Natural dystrophic lakes and ponds [3160]
- Northern Atlantic wet heaths with *Erica tetralix* [4010]
- European dry heaths [4030]
- Alpine and Boreal heaths [4060]
- Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230]
- Blanket bogs (* if active bog) [7130]
- Transition mires and quaking bogs [7140]
- Petrifying springs with tufa formation (Cratoneurion) [7220]
- Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110]
- Siliceous rocky slopes with chasmophytic vegetation [8220]
- *Hamatocaulis vernicosus* (Slender Green Feather-moss) [6216]

It is to be noted that all the work including turning sod, filling with sheep's wool and stone must be carried out by hand as no machinery is allowed within the SAC. The Sheep's wool is to be sourced from direct local sources to the land.

S. Wilkin & Sons will enable the successful digging out, storage, and replanting of any habitats/plants by adhering to instructions of the onsite ecologist.

Badgers: As per the Guidelines for the Treatment of Badgers during the Construction of National Road Schemes (NRA, 2006), where setts have been confirmed, no heavy machinery will be used within 30m of badger setts (unless carried out under licence from the NPWS). Lighter machinery (generally wheeled vehicles) will not be used within 20m of a sett entrance; light work, such as digging by hand or scrub clearance will not take place within 10m of sett entrances.

Biodiversity Enhancement: S. Wilkin & Sons will maintain a photographic record of the pre-works condition at all sites, to inform the monitoring of biodiversity enhancement measures in the planning documents and/or statutory approvals. S. Wilkin & Sons will implement all enhancement measures laid out in the planning documents and statutory approvals .

Ecology – Seasonality and Timing Restrictions

S. Wilkin & Sons will adhere to the seasonal restrictions set out in the statutory approvals and/or imposed by statutory bodies.

Nesting birds: S. Wilkin & Sons will schedule works outside of the nesting bird season (March to August inclusive). The NPWS does not typically issue derogation licenses to permit the disturbance or injury of birds for development purposes. Where works cannot avoid this season, vegetation clearance will be mobilised in advance of other works, and carried out before the nesting season (i.e. vegetation cleared from September to February inclusive). Alternatively, a suitably qualified ecologist will carry out pre-construction nesting bird surveys in advance of vegetation clearance; where nesting birds are demonstrated to be absent, clearance may proceed. If clearance works are delayed by more than 48 hours, repeat nesting bird surveys will be required.

If surveys confirm nesting birds within the area proposed for clearance during the nesting bird season (or adjacent areas at risk of indirect disturbance), clearance works will be delayed until the ecologist has determined that the nest is no longer active. Localized clearance may be feasible, subject to the ecologist setting up suitable setback zones from known nest sites.

Badgers: Unless otherwise agreed, and under license from the NPWS, during the breeding season (December to June inclusive), no intrusive works will be undertaken within 50m of active setts nor blasting or pile driving within

150m of active setts. An assumption that a sett is active will be made unless proven otherwise during the course of investigation. Monitoring of setts will be conducted in consultation with NPWS and trail cams will be used by the ecologist to determine activity, under license.

Plants and Habitats: The Contractor will plan and sequence all aspects of plant and habitat translocation works, in accordance with the requirements in the planning documents, and the Ecologist in the Employer's Representative Team.

Instream Works: Unless otherwise agreed with Inland Fisheries Ireland (IFI) and the Ecologist in the Employer's Representative team, instream works in watercourses and drainage ditches will be undertaken in the open season for fisheries (i.e. instream works will only be carried out from July to September inclusive).

Other Species: Where pre-construction ecological surveys identify protected species at risk of disturbance/injury, S. Wilkin & Sons may be obliged to delay works until a derogation license(s) has been obtained, and mitigation measures have been agreed with the National Parks and Wildlife Service (NPWS), Inland Fisheries Ireland (IFI) and/or the local authority.

Site Housekeeping

Good housekeeping is an important part of good environmental practice and helps to maintain a more efficient and safer site. The site should be tidy, secure, and have clear access routes that are well signposted. The appearance of a tidy, well-managed site can reduce the likelihood of theft, vandalism, complaints and/or specific hazards that could affect the safe operation of the other businesses in the area, such as bird hazards and wind-blown litter.

'Environmental good practice on site when considering good housekeeping, Sorensen will implement the following steps:

- Adequately plan the site with designated areas of materials and waste storage;

- Segregate different types of waste as it is produced and arrange frequent removal;

- Keep the site tidy and clean;

- Ensure that no wind-blown litter or debris leaves the site, use covered skips to prevent windblown litter;

- Frequently brush-clean wheel washing facilities;

- Keep roads free from mud by using a road sweeper; and,

- Ensure site is secure.

Equipment

The following equipment will be maintained in proper working order at the Contractor's compound and/or works locations in quantities as appropriate for the Project:

There will not be a requirement within the Project to use or complete wheel washing activities. All haul routes provided prevent the contamination of vehicles operating or visiting the site.

One spill kit will be maintained at the site compound, and will contain;

- Terrestrial oil booms (80mm diameter x 1000mmm; 10 no);
- Water booms and attachment clips (130mm diameter x 3000mm; 10 no.); and
- Oil soak-up granules (minimum 10 no. 20 litre bags);

- Each work crew will also carry a mobile spill kit as specified under method statements/RAMS.

4.3.2 Archaeological & Built Heritage Protection

S. Wilkin & Sons understand the need to preserve the archaeological and built heritage of the local area in which

we are working. We will liaise closely with the necessary bodies and specialists to ensure that we meet the requirements of the contract documentation.

Key Potential Impacts from Archaeology, Architecture and Cultural Heritage

The full details of the measures to protect the archaeological and built heritage features on this project will be contained in the Archaeological Report kept in the Project HSEQT File.

4.3.3 Contaminated Land Management

S. Wilkin & Sons are committed to minimising the impact of our works on the environment and will manage works involving contaminated land to prevent the mobilisation, spread or transfer of contaminated land on the site and beyond the perimeter of the construction works.

4.3.4 Control of Invasive Species

invasive species are generally non-native and can establish/spread themselves very quickly. They have a significant impact on construction sites as they spread readily, are difficult to eradicate, can damage structures, contaminate soils and cause an imbalance in the natural fauna and flora. The owner / occupier of a site are required by law to manage and prevent the spread of invasive plants. If you knowingly spread, or allow these plants to spread through construction activities, an offence will be caused.

S. Wilkin & Sons will ensure through prior survey and subsequent management, that we deal with invasive species legally and in an environmentally responsible manner. We will put in place working practices that prevent the spread of invasive plants.

Sorensen will monitor knotweed populations within the footprint of the proposed development.

4.3.5 Watercourses, Rivers and Groundwater

Pumping water is potentially one of the most hazardous operations to the environment carried out on site. It is possible to pollute surface waters and also disrupt the sewage system, even if the water is clean. Any pollution caused by a pumping operation will be seen by the Regulator as a wholly avoidable act and prosecution is a likely outcome.

It is essential that there is close liaison between the Project Team and the local authority, to ensure they are aware of the works being completed, the consents that are required and open discussion of any concerns or local requirements and considerations.

The construction phase of the proposed development could result in increased siltation of the surrounding waterbodies. In particular when felling trees, removing other vegetation, or exposing soils close to identified streams. The following section details mitigation measures focused on treatment of surface water during construction. This section prescribes the mitigation measures necessary to minimise impacts and monitor effects upon the water environment during construction.

Surface Water

S. Wilkin & Sons will clearly identify rivers and streams on all maps in method statements and site plans, in addition to the ditches, pond, and wet grassland habitats identified in the mapping.

Vegetation Removal and Soil Management

Throughout the course of the project the Contractor shall:

1. Minimise areas stripped of vegetation using a phased approach during the planning and construction phase i.e. stripping during periods of dry weather etc.;
2. Fell trees only once a Permit to Fell has been filled in, submitted and approved by the relevant parties;

3. Removal of hedges and trees in winter, cutting of vegetation to maintain short sward will also reduce run-off and erosion;
4. Consideration shall be given to ground water level and ground saturation to prevent excessive overland flow and associated scouring and mobilisation of suspended solids.

Refuelling and Storage practices

Proper use and storage of oils, fuels and other materials shall include the following measure:

- Plant/machinery shall be re-fuelled at the site compound at the start of each working day and additionally as required (refuelling will take place at least 20m from all watercourses). Drip-trays will be employed at the refuelling location within the compound, and the spill kit will be kept there for the duration of the contract and be checked daily if fit-for-purpose;
- The Contractor will inspect the refuelling area at the compound at least daily during operation of the compound to verify that drip-trays are being used consistently by site staff (and are being regularly emptied to a bowser).
- Refuelling of plant and machinery shall take place at least 10 m away from drains or dewatering points using a mobile fuel bowser and restricted to designated areas on hard standing. Only double bunded fuel bowsers shall be used. Vehicles must not be left unattended during refuelling operations, and drip trays must be placed under the fuelling point during fuelling;
- All fuel/ oil storage areas shall be covered and bunded to 110% of storage capacity.
- Drip trays will be used underneath mobile plant and drums whilst in use on site
- There will be no stockpiling of excavated materials by watercourses, to avoid any runoff entering them.
- Storage of materials (including fuel and chemicals) will be located away from water bodies, within designated and bunded areas. Refuelling operations will also take place away from ditches and watercourses;
- Stockpiles shall be kept to a minimum, to control erosion from areas of exposed ground. Stockpiles shall be minimised to reduce silty runoff and located well away from drains and dewatering points.
- Oils, fuels and chemicals will be stored away from drains and watercourses and secondary containment will be provided.
- Leaking or empty oil drums shall be removed from site immediately and disposed of via an appropriately licensed waste disposal contractor;
- All hazardous substances on-site shall be controlled within enclosed storage compounds that shall be fenced off and locked when not in use to prevent theft and vandalism;
- Care must be taken whilst using shuttering oils when preparing formwork. This requires operatives to be trained in the proper handling of materials, the sensitive nature of the wider drainage system, and the consequences of accidental spillage; and,
- Concrete mixing must be undertaken in designated impermeable areas, at least 10 m away from drainage or dewatering points to reduce the risk of runoff entering a watercourse, or the sub-surface, or groundwater environment.

4.3.6 Vehicle Wash

There will not be a requirement within the Project to use or complete wheel washing activities. Any haul routes provided prevent the contamination of vehicles operating or visiting the site.

4.3.7 Concrete Work

Wet concrete or dry cement will not be allowed to enter any watercourse or ground water. This will be prevented by:

- Development of a suitable safe system of work and methodology appropriate to the works;
- Increase in the design 'factor of safety' of formwork and falsework, reducing the risk of formwork failure;
- diverting the flow away from the working area where possible and practicable e.g. creation of temporary cofferdam for completion of works or damming upstream and over-pumping the flow beyond the working area [these methods will not be suitable for all works / situations];
- Reviewing of forecasted weather systems to ensure works will not be completed when there is a risk of flooding or localised breach of protective systems;
- All concrete pump systems will be cleaned away from sensitive areas. The inlet to the pump will be screened to reduce risk of blockages;
- Loose concrete will be removed prior to the return of the watercourse to its original course;
- Tools and equipment will not be cleaned in the watercourse. Should it be necessary to clean tools and equipment on site, this will be done well away from watercourses. Wash water will not be poured away into watercourses or surface drains or disposed of in any way as to cause / permit a discharge into a watercourse;
- If concrete has to be sprayed, sheeting will be used to cover the water surface and the open faces of the structure to prevent deposits of concrete dropping into the water. The area will be thoroughly cleaned before removing the sheeting;
- A concrete wash out area will be created for contractors to wash out their delivery wagons. This will be appropriately signed and all drivers will be made aware of it. The concrete wash out areas on this project will be highlighted on the site layout and traffic management plans;
- Method statements for concrete works in sensitive areas will be drawn up in consultation with the contractor ecologist and employer ecologist. Liaison with IFI will be carried out if required.

4.3.8 Control of Nuisance – Noise, Vibration, Dust & Light

Statutory nuisance refers to problems caused by noise, vibration, dust, mud on the road, intrusive light and disruption to local people and businesses. S. Wilkin & Sons are committed to minimising the impact of these nuisance issues by employing best practice construction techniques.

Noise & Vibration

S. Wilkin & Sons will comply with Code of Practice for Noise & Vibration Control on Construction Sites to manage noise and vibration to avoid disturbance to local neighbours, businesses and wildlife, or structural damage to buildings and utilities.

These activities will not necessarily occur continuously or simultaneously, but in stages, with peaks of activity separated by periods of relative inactivity. The Project will work within 'core site hours' wherever practical. The core site hours for the Project are:

- Monday to Friday: 07:00hrs – 19:00hrs
- Saturdays: 07.00hrs – 15.00hrs
- Sundays: No Works (except by prior agreement)

Noise and vibration impacts associated with the Project will be managed through the 'best practicable means' by use of low noise and vibration construction techniques [where practicable, use of low noise equipment [e.g. broadband alarms], use noise abatement measure [e.g. localised screening] and, if necessary, noise and vibration monitoring.
All plant and machinery will have effective silencers fitted and kept in good condition. Noise pollution measures such as silenced equipment; controlled working hours and screening will be implemented on site. Areas of traffic movement will be designed to minimise reversing alarm use principally by the use of one way systems. Natural features and buildings will be used to minimise noise from operations where practical.
The recommendations for the control of noise and vibration on construction and open site in the approved code of Practice BS 5228 Part 1:2009 will be adopted. As such, the following general measures will be taken in order to control the noise and vibration on the site:

- plant and equipment will be turned off when not in use;
- where practicable, deliveries to site will be conducted during normal working hours;
- all vehicles and mechanical plant will be fitted with effective exhaust silencers and will be maintained in good effective order;
- machines in intermittent use will be shut down in intervening periods of non-use or, where this is impracticable, they will be throttled down to a minimum;
- where reasonably practicable, fixed items of construction plant will be electrically powered in preference to petrol or diesel driven;
- all plant enclosures will be kept closed when in use;
- plant will be isolated from transfer medium by sitting the equipment on a heavy base, reducing vibration transfer;
- all compressors and generators shall be 'sound reduced' models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever machines are in use;
- hydraulic bursting or breaking activities will be trialled and over pneumatic breaking techniques;
- air lines will be maintained to reduce leaks;
- methods of construction and plant have been selected so as to minimise noise and vibration and reduce the use of percussive and vibratory equipment;
- static plant will be located so as to optimise screening and/or distance attenuation in relation to occupied residential properties and fitted with suitable enclosures where practicable;
- where practicable, concrete pours will be programmed to avoid overruns and enable work to be carried out in core hours;
- all relevant plant will be maintained to a high level to ensure it is running efficiently, as designed and to the manufacturers designed 'permissible noise levels';
- enclosures or three-side screens will be erected around static plant where necessary to attenuate noise;
- good practice guides will be provided to all operatives through the provision of tool box talks and an appropriate induction routine. The induction will inform operatives of good practice to be employed during normal working hours including, amongst other issues, ways of limiting unnecessary noise;
- As far as reasonably practicable, noise from reversing alarms will be controlled and limited in accordance with consent requirements. This will be achieved in the following way:
  - The site layout will be designed to limit and where reasonably practicable, avoid the need for reversing of vehicles. Measures will be undertaken to ensure that drivers are familiar with the site layout.
  - Banksmen will, where reasonably practicable, be used to avoid the use of reversing alarms.

    - Reversing alarms will be reviewed to assess the possibility of utilising one of the following noise reduction techniques:
        - Highly directional sounders
        - Use of broadband signals
        - Self adjusting output sounders
        - Flashing warning lights.
- Should the above measures be unfeasible, reversing alarms will be set to the lowest minimum output noise level required for health and safety compliance;

Dust

During prolonged periods of dry weather, dust may cause a nuisance to local residents and damage nearby crops, vegetation and animal habitats.

The site will provide effective control of potential dust generation to safeguard local receptors and prevent nuisance from dust. Although it is not anticipated to have major stockpiles or areas that will remain undisturbed for prolonged periods of time, consideration will be given to a full range of measures that may be appropriate to employ to ensure effective control of dust. These will include:

- A 10 mph /15kph speed limit will operate on the site to reduce excessive airborne dust during dry spells. Haul lorries carrying dusty loads will be covered;
- use of road sweepers on hard-standing surfaces to remove excess mud, thereby preventing future dust generation once the mud has dried;
- use of bowsers to keep road surfaces damped down;
- damping down of temporary stockpiles with sprinklers under windy conditions;
- covering of such stockpiles with suitable sheeting (plastic or textile) where weather conditions and/or stockpile life-span dictate;
- where localized works generate dust, these will be addressed through the operational safe system of work to remove the risk of dust nuisance e.g. cutting of slabs and paving products – localized dust suppression systems;

In addition, the weather forecast will be checked daily, the aim being to provide notice of adverse windy conditions which will dictate extra vigilance and possible need for increased control of dust and use of mitigation measures.

Light

The issue of local residents in nearby properties being adversely affected by works during hours of darkness can create a nuisance in a limited number of situations, notably when task lighting is required for works in large open areas, or security lighting is used in compounds and temporary storage areas. Therefore the project planning of works need to ensure that the impact of lighting spillage outside the work area is minimised and controlled.

To manage the impact of light, the following mitigation measures will be considered and adopted where required:

- sensitive location of lighting units and directional lighting;
- minimising the number of units used, ensuring the numbers used are appropriate;
- screening or shuttering of lighting units to provide directional control and avoid light spillage;
- use of low intensity lights, wherever possible;
- effective planning of works to avoid times when lighting is required, wherever possible;
- switching off all lighting at the end of each working day, other than low level lighting that may be required for security purposes
- consideration of bats

4.4 Public Rights of Way

Through co-ordination and consultation with the Client and the Local Authority, S. Wilkin & Sons will work with the Client to ensure active consultation with the Public to ensure any concerns, fears, queries and questions can be answered to ensure good communication with the Public over any potential closures or works affecting Public Rights of Ways.
There are no Public Rights of Way directly affected by this Project.

4.5 Waste Management

All waste management on site will be managed through the HSEQT/SFM-218 Site Waste Management Plan. This applies to all activities throughout the project. All personnel will be made aware of the relevant requirements in the Plan at the initial site induction and in subsequent tool box talks.
S. Wilkin & Sons acknowledge the statutory Duty of Care. This imposes a vicarious liability on S. Wilkin & Sons and others in the chain of waste handling, making the producer of the waste ultimately responsible for the storage, transportation and disposal of all waste generated throughout the project.
S. Wilkin & Sons will ensure that:

- A Waste Champion is appointed to drive the waste minimisation culture on the Project;
- Each waste stream is identified and appropriate storage and disposal measures provided in line with Duty of Care;
- Wherever practical, the production of a waste will be prevented, reduced, re-used, recycled and recovery of secondary energy sources before opting for the final disposal of our waste;
- Targets for re-use and recycling will be recorded at the start of the project and monthly progress towards this monitored;
- The site registers with the Environment Agency as a producer of hazardous waste and obtains a premises code for use on all Consignment Notes [where required – i.e. not required where Principal Contractor has completed when operating as a Contractor];
- Waste is segregated, secured, labelled and disposed of safely and completely;
- Any incidents of incompetence or mishandling or illegal disposal are reported;
- Waste Transfer Notes are correctly completed for each consignment of inert or non-hazardous waste;
- Hazardous Waste Consignment Notes are correctly completed for each consignment of hazardous waste;
- Waste contractors' carriers licences are verified with the EPA [copies to be placed in the Project File];
- The procedures detailed in the HSEQT/SFM-218 Site Waste Management Plan are brought to the notice of all employees and subcontractors' employees.
- A summary of all the Duty of Care information required by the S. Wilkin & Sons environmental management system is contained in Project HSEQT Files;

General provisions on waste responsibility

S. Wilkin & Sons is responsible for the management of all waste, according local regulations. It includes the management of hazardous waste, such as that containing PCBs (polychlorobiphenyls) and asbestos, shall comply with relevant legislation applicable to each worksite.
∗ S. Wilkin & Sons will follow current best-practice with regard to waste management and minimisation, based on a hierarchy in which the order of preference is as follows:
• Reduction – the aim shall be to reduce the generation of waste, as far as reasonably practicable;
• Re-use – subject to the requirements of the waste management and environmental permitting regimes;
• Recover (including re-cycling) – where the waste cannot be re-used then recovery options shall be considered;
• Disposal – the final option shall mean that the waste is either disposed off at the site (subject to the requirements of the permitting regimes) or removed to an appropriately licensed facility.

∗ The above shall apply to contaminated soils and to other waste arising, including domestic type waste generated within the temporary site accommodation. In all circumstances, attempts shall be made to 'design-out' the generation of waste in the first instance.

Waste Management Plan (WMP) - Separate Document

The Contractor shall identify and list the waste likely to be produced during the Works and shall recommend how it must be treated and treat it accordingly.

A list of wastes is initiated by the Contractor at study phase, and is to be completed by the Contractor before the opening of the start of the Works. It shall be informative and detailed (type, quantity, treatment).

The Contractor shall therefore define and carry out a Waste Management Plan (WMP), the Environmental Manager shall plan and check the appropriate areas for the segregation and storage of waste, which shall be marked and identified.

In case of non-listed waste arising during the performance of the Works, the Contractor shall advise the Employer in writing (Email) within 24 hours and retain responsibility for its management.

As responsible for waste, the Contractor shall manage it according to the following treatment of waste hierarchy:

- Preparation for re-use;
- Recycling;
- Any other recovery, e.g. energy recovery;
- Elimination.

The Contractor shall be able to justify, describe and quantify this management at the request of the Employer.

The Contractor is required to recover all packaging recyclable waste.

The Contractor shall re-use or recycle any remaining power cable offcuts.

The Contractor shall adapt their WMP according French requirements and Irish requirements.

At the end of the Works, all the areas used shall be free of waste, construction materials, machinery and other waste, as well as of any type of contamination.

Storage and sorting of waste

S. Wilkin & Sons will pay particular attention to the storage of waste on the Worksite with respect to the environment (water contamination, pollution) and the safety of people (mercury, toxic or reactive waste, compatibility between wastes). It shall be particularly vigilant with respect to waste separation with clear identification of waste collection points. A skip system is highly recommended (preventive measures necessary to prevent accidental spills); a retention system for liquid waste is mandatory and shall be controlled. Illegal landfill or burning waste in the open air are prohibited.

The storage and classification of waste shall be carried out in accordance with the provisions of current legislation, depending on the type of waste in question. The Contractor shall send the Employers a document guaranteeing the compliance of waste storage areas (plan). It shall be validated by the time of the meeting to open the Construction Site at the latest. In drinking water catchment areas, wastes shall be stored in tight trays before evacuation.

Common Environmental requirements

In this section, all requirements are applicable on the overall project (i.e. across Ireland).

The requirements contained in the **Environmental Impact Assessment Reports (EIARs)** shall be mandatory respected by the Contractor. The complete Environmental Impact Assessment Report (EIARs) applicable for France is provided in Appendix [C13-I]. The Irish EIAR will be made available to the Contractor following the submission of the consenting application.

The Contractor agrees to identify, respect and ensure compliance of its employees and its Subcontractors, of all requirements arising from national and local regulations.

The Contractor shall inform all its Employees, Employees' members, agents, Subcontractors, consultants and other persons working on behalf of the Contractor of the importance of any preventive and reactive action that may prove necessary in order to limit consequences on the environment of environmental emergencies identified by Employer, or which may result from the Contractor's procedures and resources. Accordingly, it shall educate its staff and anyone involved for whom it is responsible:

• of the Employer's Environmental Policy set out in the Conditions of Contract,
• of the importance of controlling environmental impacts generated by its Works,
• of the resources to be employed to reduce these impacts,
• in the control of actions to prevent and limit the consequences of environmental emergencies identified by the Employer and set out in appendix or from its own procedures and means.
S. Wilkin & Sons will comply with the documents in APPENDIX II, aiming at identifying **Specific Environmental Requirements (SER)**. These contain:
• commitments made by Employers;
• local regulatory requirements;
• the potential contact persons; and
• the other environmental commitments negotiated with S. Wilkin & Sons in the framework of the consultations in order to reduce the environmental footprint of the worksites.

Considering the ongoing permitting process, the SER document shall be updated during the tendering process as new requirements may arise from local authority decisions.
The SER document provided by Employers and Contractor's documents describing the SER shall be available on Site.
The Employer shall inform the Contractor that the application of the SER requirements may be subject to inspections during execution of the Works.

S. Wilkin & Sons will:
• integrate consideration of SER requirements in its Environmental Management Plan (CEMP);
• conduct a review of SER with Employers, before the start of the service;
• implement suitable measures to meet the requirements of SER and describe such measures in the CEMP for each environmental requirement;
• bring it to the attention of the staff on Site, including Subcontractors;
• in case of doubt, questioning of the commitments and requirements of the SER, or if prescribed in the SER, contact the appropriate contacts listed in the SER.

Local requirements
Local requirements shall be added to this Construction Environmental Management Plan as and when they emerge.

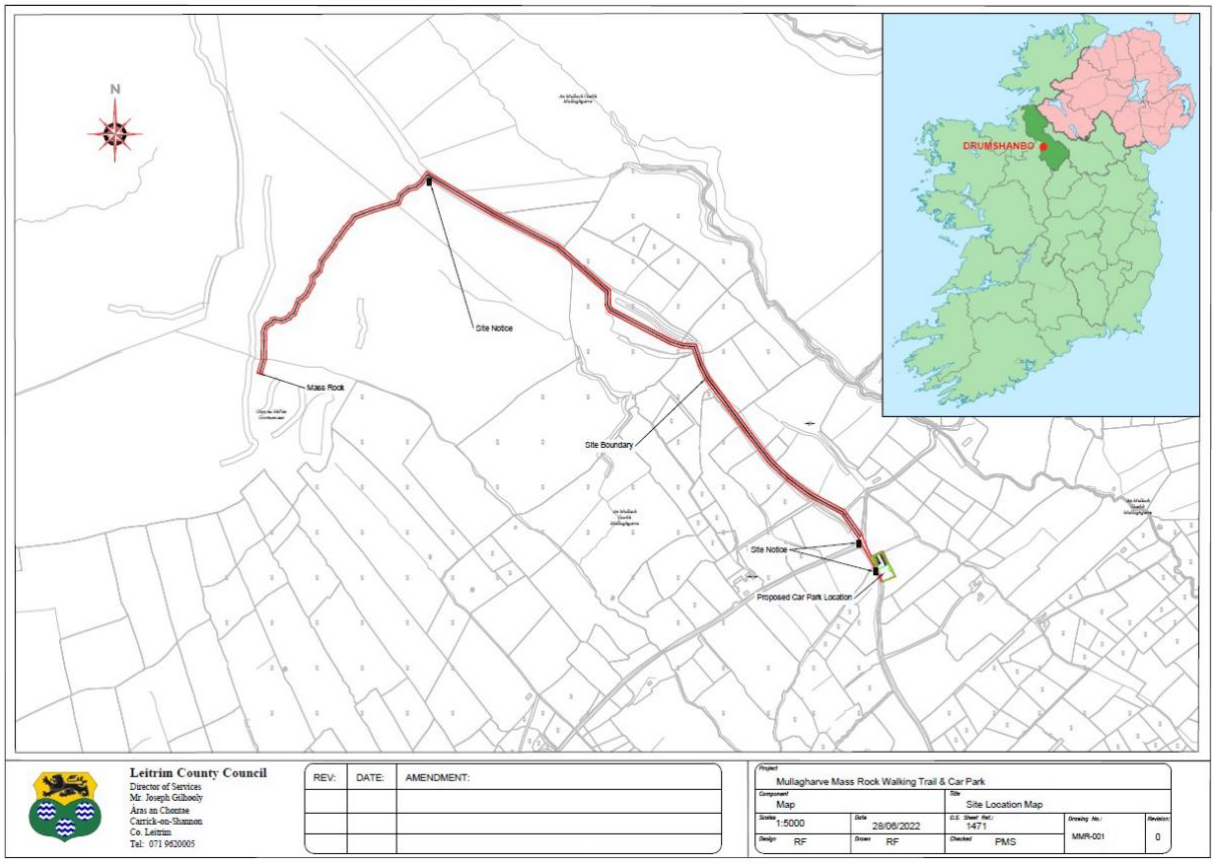
Environmental inspections
The Contractor shall put into place a programme of both internal and external inspection to ensure compliance with legislation, the CEMP's and the CoCP.

The Contractor shall provide the Employer with details on how this inspection process shall be undertaken, shall forward the findings of each inspection promptly to the Employer's Representative and shall implement any corrective actions considered necessary, as a result of the audit (Through iAuditor) Inspections shall be undertaken on weekly basis.

Feedback from inspections shall help facilitate continuous improvement.

Appendix 1

Site Layout Plan



Appendix 2

Specific Environmental Requirements (SERs) for Project

SER No.	SER	RATIONALE
1	Works on /within Blanket Bog habitat are to be strictly limited to the works area and these to be minimised	In order to protect the qualifying interests of Cuilcagh Anieran SAC **Blanket Bog** and **Quaking Bog and Transition Mire**
2	Works at, adjacent to and uphill of any watercourses are to be carried out as per Section 4.3.5 of this CEMP	In order to protect the water quality of streams, groundwater and associated/water-dependant species.
3	Works on /within Blanket Bog habitat are not to be carried out in poor weather conditions (i.e. during or immediately following high rainfall).	In order to protect the qualifying interests of Cuilcagh Anieran SAC **Blanket Bog** and **Quaking Bog and Transition Mire.** In order to protect the water quality of streams, groundwater and associated/water-dependant species.

4. DISCUSSION