LANGAN

CONSULTING ENGINEERS

PRELIMINARY CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

CUAN NA LOINGE ROAD CFM

GALWAY COUNTY COUNCIL

24155-RP-2401-PL01 | JUNE 2025

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QUALITY CHECK SHEET

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

Langan Consulting Engineers has been appointed to prepare the necessary documentation for a Section 177 AE application under the Planning and Development Act 2000 (as amended) for the raising and realignment of a 200m section of the L-52214 roadway within the townland of Cuan na Loinge, Co. na Gaillimhe.

This document outlines the preliminary Construction Environmental Management Plan (CEMP), prepared as supporting documentation for the Planning Application.

1.1 PROJECT OVERVIEW

The project aims to address recurring flooding issues on approximately 200m of the L-52214 roadway, which becomes impassable due to its low elevation when high tides coincide with stormy weather conditions. The proposed works aim to raise the roadway and upgrade the existing drainage infrastructure, including culverts and other mechanisms, to facilitate the natural flow of water. Parapets will be installed along the elevated section of the road for user safety.

1.2 PURPOSE OF DOCUMENT

The CEMP outlines the environmental management framework that must be followed throughout all phases of the development and it incorporates the mitigating principles to ensure that the work is carried out in a way that minimises the potential for any environmental impacts to occur.

This report is intended as a single, amalgamated document that can be used during the future phases of the project, as a single consolidated point of reference relating to all construction, environmental and drainage requirements for the Planning Authority and Contractors.

This CEMP is a 'live' document, which shall be updated as the project is progressed.

The Contractors CEMP and method statements will set out the approach and describe the methodology which they will follow in the scheduling and undertaking of the works. It is the responsibility of Galway County Council to ensure that the requirements of this CEMP and any requirements associated with the Contractors Method Statements are implemented in full.

1.3 ROLES AND RESPONSIBILITIES

The anticipated roles and responsibilities of the key parties involved in the management of environmental issues during the construction works are set out in Table 1-1 below. It should be noted that all members of staff are responsible for ensuring the requirements of the CEMP and that associated method statements are followed.

Table 1-1 Roles and Responsibilities

Position	Name	Contact Details
Project Manager	TBC	TBC
Contractor	TBC	TBC
Other relevant persons appointed by the Main Contractor	TBC	TBC
Environmental Coordinator	TBC	TBC

Any changes in roles and responsibilities should be identified and clearly communicated to those affected:

The responsibilities of the Contractor/Project Manager typically include:

- Implement the CEMP and all environmental protection measures and associated management procedures.

- To be responsible for the environmental compliance of the operations during the construction phase, to ensure works are conducted in accordance with the relevant environmental requirements and any other regulatory and contractual requirements.
- To ensure that relevant staff have received appropriate environmental training.
- Appoint suitably qualified and competent Subcontractors.
- To carry out Toolbox Talks to all operatives onsite, making them aware of any environmental ecological sensitives.

The responsibilities of the Contractor/Environmental Coordinator typically include:

- Management of the requirements of the CEMP during the construction phase.
- Maintaining, inspecting and updating the CEMP and other relevant documents.
- Liaise with and provide advice to staff, Subcontractors and other relevant parties with regard to the environmental risk and controls for tasks.
- Monitor the performance of activities to ensure that identified risks and controls are implemented effectively.
- Undertake routine inspections and initiate appropriate actions.
- Management of the environmental management programme e.g. noise and dust.
- Assist in the investigation and resolution of complaints and incidents.
- Documenting and maintaining records for inspection.

1.4 SYSTEM OF UNITS

The System Internationale (SI) system of units will be used throughout the works.

1.5 ASSUMPTIONS

This report is based on the following assumptions:

- The ongoing development of the detailed design.
- It is assumed all 3rd party information is current and accurate.
- All information is based on an assumed construction methodology.

1.6 ABBREVIATIONS AND DEFINITIONS

1.6.1 ABBREVIATIONS

CEMP	Construction Environmental Management Plan
EPA	Environmental Protection Agency
GCC	Galway County Council
HAS	Health and Safety Authority
ITM	Irish Transverse Mercator
LCE	Langan Consulting Engineers Ltd
NPWS	National Parks and Wildlife Service
PPE	Personal Protective Equipment
PSCS	Project Supervisor Construction Stage
PSDP	Project Supervisor Design Stage
RAMS	Risk Assessment Method Statement
SAC	Special Area of Conservation
SPA	Special Protection Area
TBC	To be confirmed

1.6.1 DEFINITIONS

Contract:	Cuan Na Loinge Road CFM
Employer:	Galway County Council

2 PROJECT DETAILS

2.1 SITE LOCATION

The site, located at ITM coordinates (492947, 729964) and shown in Figure 2-1 below is approximately 4km northeast of Leitir Móir, Co. Na Gaillimhe. The site is bounded by transitional waterbodies and a Special Area of Conservation (SAC) to the north and west. The site is bounded by privately owned lands to the south and east.

Figure 2-1 Site location

2.2 OBJECTIVES

The primary objective is to elevate the road to a level that remains passable at all times and, ideally, stays dry during flood events. The finial construction should ensure that water can flow freely through the area, maintaining the existing drainage patterns. Additionally, the final design should be sensitive to the surrounding landscape, preserving local views and respecting environmental constraints where possible.

The key project objectives include:

- Ensure construction works and activities are completed in accordance with the best practice approach presented in this CEMP.
- Ensure construction works and activities are completed in accordance with all planning conditions for the development and that the CEMP is updated as required.

- Ensure construction works and activities have minimal impact/disturbance to local landowners and the local community.
- Ensure construction works and activities have no adverse effect on the integrity of any sensitive habitats.
- Avoidance of any pollution incident or near miss as a result of working around or in close proximity to existing watercourses (emergency measures in place where necessary).
- Provide adequate environmental training and awareness for all project personnel.
- Correct fuel storage and refuelling procedures to be followed.
- Good waste management and house-keeping to be implemented.
- Air and noise pollution prevention to be implemented.
- Monitoring of the works and any adverse effects that it may have on the environment. Construction methods and designs should be altered where it is found there is the potential for an adverse effect on the environment.
- Comply with all relevant water quality legislation and environmental legislation listed throughout this document.

2.3 DEVELOPMENT DESCRIPTION

The proposed scheme will involve modification to approximately 200m section of the L-52214 roadway within the townland of Cuan na Loinge Co. na Gaillimhe.

The project will include:

- Approximately 200m of road raising works.
- Improvement of the existing junctions onto this road section.
- The scheme is expected to include only minimal new drainage features, with the raised road section making use of the existing drainage infrastructure wherever possible.
- The new scheme interacts with buried mains water infrastructure and overhead telecommunications services. The necessary works to protect/divert existing services should be developed further during the detailed design phase.
- Road closure during the works is not feasible, as it provides the only access for the local residents. Closing the road for extended periods would obstruct access to essential services, facilities, and emergency response vehicles.
- The roadway is to remain online throughout the construction period. It will be the responsibility of the Contractor to undertake the works in a manner that will cause the least amount of traffic disruption. The haulage of materials to and from the site will create a significant temporary impact to both road users and to residents living in the area.

3 LEGAL COMPLIANCE

During the construction of the proposed development and as part of the environmental management of the project, the Contractor should adhere to all relevant Irish and EU environmental legislation, guidelines and best practice measures during the construction phase, including legislation relating to ecology and biodiversity, air, water and groundwater, and noise and vibration.

The Contractor shall have regard for the guidance and advice of the ISO14001 environmental management standard[1] and relevant Construction Industry Research and Information Association's (CIRIA) guidance.[2]

The Contractor and all Subcontractors should comply with the CEMP and associated management plans in order to adhere to relevant legislation and to meet relevant best practice measures during the construction phase.

[1] ISO 14001:2015 Environmental Management Systems
[2] C741 Environmental good practice onsite guide (fourth edition)

4 CONSTRUCTION MANAGEMENT

The main elements of the proposed road development will include the following:

- Road raising.
- Upgrade of existing junctions.
- Earthworks and pavements.
- Drainage works.
- Landscaping works.
- Environmental protection measures.
- Utilities and services diversion and installation.
- All other ancillary works.

4.1 SITE ESTABLISHMENT

The site will be accessed from the R374 regional roadway. Prior to commencement of any works, a site compound will need to be fully established with security gates and the provision of parking for construction workers vehicles. (For the duration of the project all vehicles should be parked within the confines of the site compound).

An excavator will typically strip the topsoil from the area where the compound will be established. The topsoil will be stored for reuse during site demobilisation. Terram is typically rolled out and a layer of granular material placed and tracked in to provide a sound base for the compound.

The Contractor will typically mobilise to site with offices, welfare facilities, storage containers, construction plant and the other equipment required to carry out the works. The welfare facilities should include an enclosed waste water storage tank adjacent to the toilet facilities and should be emptied on a regular basis. A separate surface water discharge point is usually established for the discharge of water from sinks located in offices and canteens.

If a permanent mains electrical connection cannot be established within the extents of the compound, a generator will be required for power generation. An appropriately double bunded generator should be positioned on a drip tray to retain oils and fuels in the event of a leak or spillage during refuelling operations.

Appropriate signage should be erected as per the recommendations set out in chapter 8 of the traffic signs manual to ensure road users are aware of the works.

The following details industry best practice for the establishment of site compounds:

- The site compound should be located on dry land with a minimum setback of 25m from lakes, river and stream channels, ecological sensitive areas and nationally important habitats, wetlands, marshes and potential flood plains.
- Site compounds should not be located in European Sites or within 50m of their boundary.
- Site compounds should not be located within other designated environmental sites or other ecological sensitive areas.
- The storage of fuels, other hydrocarbons and other chemicals within the compound is typically not permitted within 30m of any sensitive watercourse.

Considering the above requirements, it is proposed to use the Galway County Council Chip Depot, located approximately 250m northeast of the scheme location, as the main site compound. This location offers adequate space for car parking, welfare facilities, and materials storage.

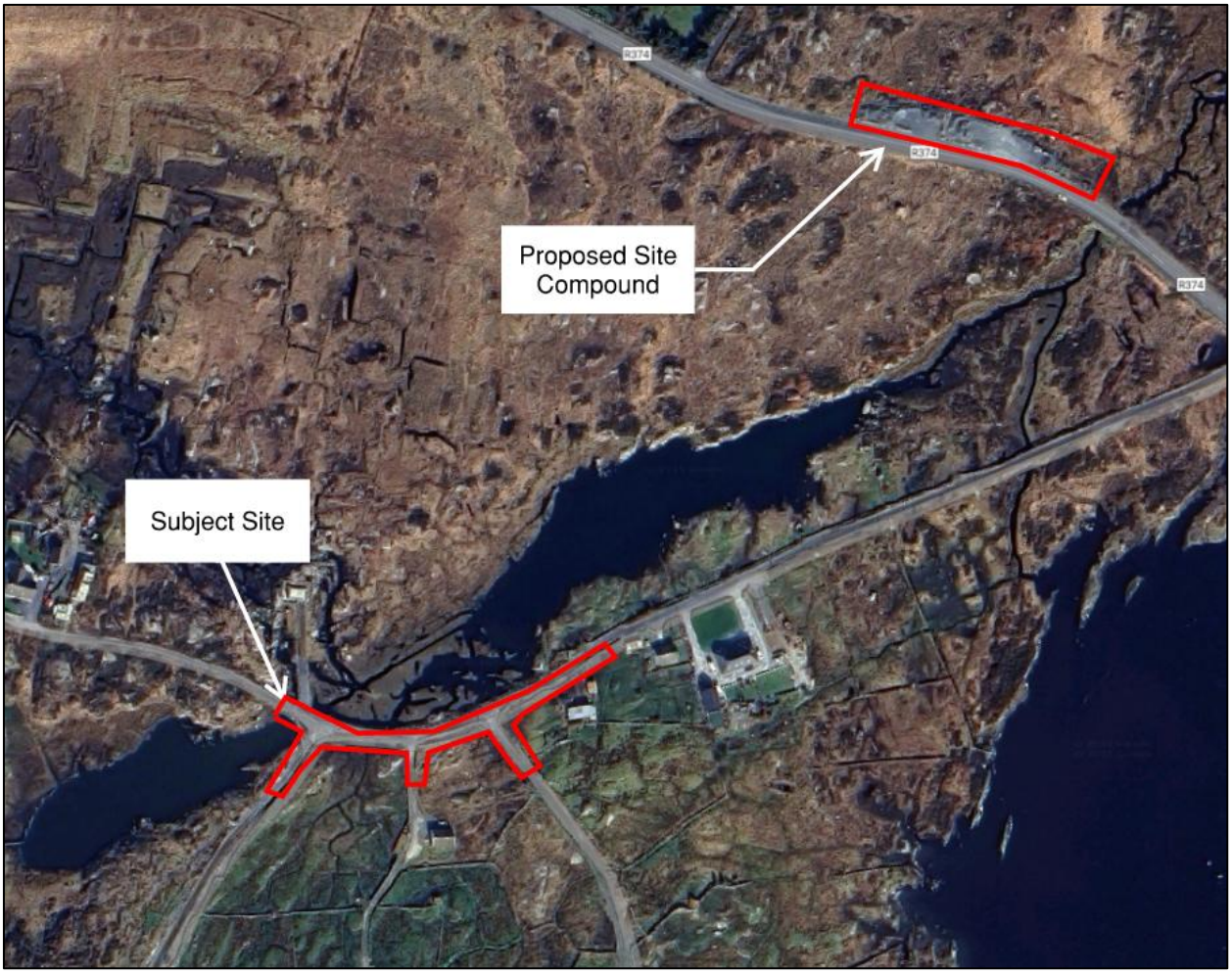

Figure 4-1 Proposed site compound location

4.2 SITE EXCAVATION

A survey should be carried out at the site to identify the presence and location of any invasive species by a suitably qualified ecologist prior to site excavation works. If invasive species are identified onsite at any stage of the works an invasive species management plan should be prepared and adhered to.

The main excavation works will include the stripping of the existing road surface and the maintenance/upgrade of the existing drainage channels in use. During the excavation works the following typically applies:

- Prior to excavation works the area should be surveyed and all existing services identified.
- All relevant bodies i.e. ESB, Gas Networks Ireland, Eir, Galway County Council etc. should be contacted and all drawings for existing services sought.
- All plant operators and general operatives should be inducted and informed as to the location of any services.
- All plant operators and general operatives should be inducted and informed as to the identification of invasive species.
- It is envisioned that a wheeled excavator will be used to excavate the existing road surface and 8 wheeler trucks used to transport the excavated material to a licenced disposal facility.
- Alternatively, excavated material may be transported to the site compound via site dumpers and stockpiled prior to disposal at a licenced waste facility.
- Stockpiles should be positioned at a minimum setback of 25m from any watercourse.
- The roadway should be regularly inspected by site management for cleanliness and cleaned, as necessary.

- The transport of crushed stone infill material should be delivered to site under tarpaulin-covered vehicles where necessary.
- Alternativity the surfacing course could be planed using a standard road planer and similarly the material removed off-site via 8 wheeler truck or stockpiled in the site compound.
- The follow-on materials such as the existing stone pavement materials should be tested for their suitability for reuse with the proposed infill for the precast concrete wall structures.

4.3 UNDERGROUND AND OVERHEAD SERVICES

The relevant service providers should be contacted prior to the commencement of the works and the location of each underground services identified within the extents of the site.

All underground services encountered during the works should be surveyed and where possible should be left in place. If there is a requirement to move the service, then the appropriate body (ESB, GCC, Gas Networks Ireland, EIR, Irish Water etc.) should be contacted, and the appropriate procedure put in place. All works should be in compliance with the service providers required specifications.

It is likely that the existing overhead telecommunications cables will have to be risen or buried underground throughout the extent of the site. This will be determined during the detailed design phase of the project.

A temporary diversion may be required for the existing mains water pipe (located in the verge of the existing roadway) during the construction works. A new 25mm diameter watermain is expected to be installed as part of the scheme of works.

4.4 DRAINAGE

The proposed road drainage system will replace the current system. Road run-off is discharging directly into the receiving water courses and groundwater without any pollution control or attenuation.

The proposed roadway will ensure the speedy removal of surface water in order to provide safe driving conditions and to minimise the impact of runoff on the receiving environment. The preliminary drainage proposals will be developed in accordance with the Department of Transport ‘Guidelines for Road Drainage Second Edition March 2022’ This system discharges to the local drainage network which drains toward Kilkieran Bay. Kilkieran Bay is included in the Kilkieran Bay and Islands SAC.

5 GENERAL ENVIRONMENTAL PROTECTION MEASURES

The environmental protection measures that have been described in this CEMP and the other relevant environmental protection reports and plans will help to avoid, reduce or offset potential environmental impacts. Task specific method statements, and the Construction Stage Health and Safety Plan should be developed by the Contractor prior to the commencement of the works to further avoid, reduce and offset potential impacts.

In order to protect material assets, pre-construction consultation should be undertaken and authorisation achieved for all relevant infrastructure connections with the relevant infrastructure or utility providers. Any works to material assets on or around the site should be carried out in conjunction with the relevant utility provider to ensure minimal disruption to existing users. Any such works should be carried out strictly in accordance with the relevant providers Code of Practice.

5.1 CORRECTIVE ACTION

Where monitoring identifies an impact on the receiving environment, the Contractor/Environmental Coordinator should be notified immediately. An inspection of the location and surrounds carried out to identify the source and a review of recent site activities in that area.

If the source of the impact is identified as an emission from the site, the Contractor/Environmental Coordinator should undertake corrective action to isolate and minimise the effects of the emission on the surrounding environment. If required, environmental monitoring may be required to determine the extent of impact.

The Contractor/Environmental Coordinator is typically required to monitor the implementation of all corrective actions to ensure that they are properly carried out and effective.

Where the cause of emissions identified is as a result of the design of the proposed development the Contractor/Project Manager should ensure that the design efficiencies are rectified to avoid recurrence.

6 RECORD KEEPING AND REPORTING

6.1 RECORDS TO BE MAINTAINED

The Contractor/Project Manager are typically accountable for overseeing the implementation of the CEMP, associated management plans, and maintaining an up-to-date copy of the CEMP onsite.

The Contractor/Environmental Coordinator are responsible for all record keeping of all environmental monitoring and compliance documentation onsite. This typically includes:

- Relevant management plans.
- Weekley environmental inspections.
- Environment reporting (if required by GCC).
- Environmental monitoring data (if required by GCC).
- Waste and chemical inventories.
- Record of environmental complaints and corrective actions.

6.2 REPORTING

The Contractor/Environmental Coordinator may be required by GCC to provide periodic reporting on the environmental performance and progress at the site.

6.3 COMPLAINTS

The Contractor/Environmental Coordinator is responsible for responding to complaints and queries from local residents and other stakeholders. A complaints procedure should be developed to ensure the following:

- All complaints are investigated and dealt with appropriately.
- Any corrective actions required are implemented.
- A record of all complaints, responses, and actions.

During the investigation of a complaint, the Contractor/Environmental Coordinator should confirm if the relevant protection measures detailed in this CEMP were implemented in full and ensure that relevant corrective actions are undertaken.

6.4 AUDIT AND REVIEW

Audits of the CEMP, other management plans, and monitoring data should be undertaken by the Contractor/Environmental Coordinator, with feedback provided to the Project Manager.

To ensure the CEMP remains ‘fit for purpose’ for the duration of the project, it should be regularly reviewed and updated to facilitate efficient and effective delivery of the project legal and environmental commitments.

7 TRAINING

Environmental training should be delivered and assessed throughout the construction period, to ensure the relevant aspects of the CEMP and associated construction plans are communicated to the project team (including Subcontractors).

The Contractor should ensure that the training is appropriate for the works being undertaken by the staff and Subcontractors. Training typically takes the form of the following:

- Site environmental inductions.
- Daily pre-start meetings.
- Environment toolbox talks.
- Incident and near miss reports.

Only suitably qualified and trained personnel should conduct certain tasks, including refuelling of plant, management of any chemical stores, conducting specialised environmental monitoring and management of waste.

The Contractor should ensure that:

- All staff and Subcontractors receive instruction, information and training appropriate to the role and works they are conducting.
- All staff are aware of the reporting procedures surrounding environmental incidents, and that all such incidents are required to be reported immediately.
- All staff ae aware for the environmental sensitivities in the area surrounding the site.

8 ENVIRONMENTAL SITE MANAGEMENT

The Contractor/Environmental Coordinator should refer to the good practice provision in the CIRA C741 Environmental good practice on site guide (fourth edition).

Environmental protection measures as identified herein should be adhered to by the Contractor and Subcontractors during the development of project specific method statements.

8.1 GENERAL

The Contractor should emphasise the importance of carrying out the following general safeguarding measures in order to protect the environment:

- The site should be fenced of where possible, prior to works commencing.
- Before the removal of the existing road surface and subsequent earthworks – drainage, erosion control and sediment control measures should be in place and functioning.
- If deemed necessary at detailed design stage, silt fences should be erected in accordance with the manufacturers recommendations and in compliance with the design criteria outlined in CIRIA C648 Control of Water Pollution from Linear Construction Projects.
- All silt fences should be inspected daily and repairs or replacements carried out as required.
- A maintenance checklist should be developed for the control and inspection of environmental protection measures.

8.2 HOUSEKEEPING

The Contractor should emphasise the importance of good housekeeping during the construction phase. Housekeeping is an important part of environmental practice and it helps to maintain an efficient and safer site. The site should be tidy, secure and have clear access routes to the works and welfare facilities. The Contractor should ensure the following:

- Zone the site with designated areas for materials and waste storage.
- Segregate waste as per the waste management plan.
- Keep the site and external areas clear of debris.
- Ensure that materials and plant storage areas are correctly managed.
- Keep roads free from mud using a road sweeper.
- Ensure the site is secure.
- Ensure adequate space is given for the safe refuelling of site vehicles with appropriate protections in place for refuelling operations.

8.3 WORKING HOURS

The general working hours for the project will be from 08:00 and 18:00 Monday to Fridays, between 08:00 and 13:00 on Saturdays and there should be no activity on Sundays or Bank Holidays.

The site should remain secure when construction is not taking place. No work, or other activity that could reasonably be expected to cause annoyance to residents in the vicinity (including deliveries), should take place onsite between 18:00 and 08:00.

8.4 CONSTRUCTION SITE LIGHTING

Lighting should be kept at the minimum brightness necessary for adequate security and safety as excessive lighting can disturb ecology including bats.

8.5 CONSTRUCTION SITE SECURITY

Site security is an important component of good environmental management as vandals may cause the following which harms the environment:

- Opening taps on tanks or cutting fuel lines in order to gain access to fuel.
- Damaging/stealing raw materials.
- Setting materials/waste on fire.
- Tipping liquids from drums and containers.

The Contractor should ensure the following:

- The site compound boundary is secured using perimeter hoarding with high quality locks on gates and access points.
- Materials are not stacked against the boundaries so that opportunities to scale hoarding are prevented.
- Position of fuels, hazardous/flammable materials aways from boundaries to avoid the potential for theft and arson.

8.6 EMERGENCY RESPONSE PLAN

A list of emergency contacts is presented in Table 8-1. A copy of these contacts should be included in the Construction Health and Safety Management Plan, and in appropriate locations throughout the site, including site offices, noticeboards and various site welfare facilities. Further details of appropriate contacts should be included by the Contractor in the table below as the project progresses.

Table 8-1 Emergency Contact

Contact	Telephone Number
Emergency Services	999 / 112
Site Project Manger	TBC
PSCS	TBC
Environmental Coordinator	TBC
PSDP	TBC
Site Health and Safety Co-Ordinator	TBC
ESB emergency services	1800 372 999
Gas Network Ireland	1800 20 50 50
Uisce Eireann emergency	1800 278 278
EPA	094 904 8400
Health and Safety Authority	0818 289 389

Emergency response procedures and an overall response plan should be devised by the Contractor in conjunction with their Construction Health and Safety Management Plan. The final procedures should be agreed and updated in this document or as a stand-alone and accessible appendix.

The Emergency Response Plan should address the following at a minimum:

- Roles and responsibilities.
- Initial emergency steps and notifications.
- Provisions for appropriate drills and scenario training for staff and Subcontractors, appropriate to the level of risk.
- Emergency communication procedures.

The Environmental Coordinator should assess the environmental risk prior to the commencement of each activity, and the appropriate controls that should be put in place. The Contractors and Subcontractors Risk Assessment Method Statements (RAMS) should include provisions for environmental risk and protection.

The Contractor/Environmental Coordinator should ensure the following is available prior to carrying out site activities:

- Copies of material safety data sheets of the substances being used.
- Details of environmental and health and safety storage, handling and transportation controls for the substance.
- The emergency response equipment and location in the event of an incident.
- Appropriate Personal Protective Equipment (PPE) for the tasks.

Suitable equipment, such as spill kits, and absorbent material should be held at appropriate locations onsite.

Prior to commencement of construction works, the Contractor should assess the number of spill-kits required and the appropriate deployment areas across the site.

It may be necessary to quarantine an area of the site following an environmental incident such as an accidental loss to prevent cross contamination of impacted and unimpacted areas of the site.

8.7 ECOLOGY AND BIODIVERSITY

Potential impacts to ecology and biodiversity should be managed through a combination of management and protection measures. Management measures such as site lighting during the construction phase should be in accordance with Section 8.4 to reduce the potential for light overspill off -site and the disturbance of nocturnal species. Section 8.8 details the safeguarding measures which relate to the protection of water sources.

Invasive species can be introduced to a site through contaminated vehicles and equipment, particularly tracked vehicles previously used in an area containing invasive species. To mitigate this risk, good site organisation and hygiene practices should be maintained throughout construction activities.

The following, non-exhaustive list, of best-practice measures are typically included in the construction methodology to prevent the introduction or spread of invasive species:

- All machinery and equipment used for the works, such as excavators, tracked vehicles and footwear, should be thoroughly cleaned using a power washer unit. Cleaning should be conducted in a designated area before equipment arrives onsite and upon leaving the site to prevent the spread of invasive species such as Japanese Knotweed and Himalayan Balsam. The Contractor should maintain a sign-off sheet to document the cleaning process.
- Any material collected in the designated clean-down area should be treated as contaminated and managed appropriately onsite.
- All materials entering the site must be accompanied by supplier assurances confirming they are free of invasive species.
- All site personnel should be made aware of the invasive species management plan and associated treatment methodologies through pre-works “toolbox talks.”
- Clear and adequate signage should be installed onsite to promote adherence to hygiene protocols related to the management of non-native invasive species.

8.8 WATER, LAND, SOILS AND GEOLOGY

Potential impacts to the water environment (surface water and groundwater), soils, land and geology during the construction period should be managed through a combination of protection measures and design features embedded into the design of the roadway.

The following describes the typical standards and good practice measures which should be carried out onsite:

- Reusing material onsite where possible to minimise the transport of material off-site. If additional material is required onsite, it should be of a suitable quality that will not lead to ground contamination.
- The removal of material and waste from the site should be carried out as per the Waste Management Plan.
- There should be no onsite concrete batching.
- Washout from concrete lorries, with the exception of the chute, should not be permitted onsite.
- Chute washout should be carried out in a designated location into an appropriate concrete adsorption sack.
- Hydrophilic grout and quick-setting mixes or rapid hardener additives shall be used to promote the early setting of concrete surfaces exposed to water.
- A wheel washing system should be developed at the site entrance/exit to reduce the deposition of material on the surrounding road network that could impact the water environment.
- There are no discharges to ground expected during construction, which should reduce the potential for impacts to land and water quality.
- Exposed excavations should be enclosed as soon as possible in order to control sediment in run-off and reduce the potential for leaving pathways open to contamination between the surface and groundwater.
- Material stockpiles should be evaluated and monitored by the Contractor to minimise erosion and input of suspended solids to the water environment.

- Refuelling and the addition of hydraulic oils or lubricants to vehicles/generators should take place onsite using an appropriately bunded mobile fuel bowser. The designated fuelling area should have an impermeable surface, any fuels/oils that enter the drains should be intercepted and the refuelling area should be equipped with easily accessible spill kits.
- All construction works should be conducted in accordance with the specified site rules.
- Hazardous materials should be labelled clearly, transported with care by competent and trained person, and stored in dedicated appropriately bunded containers. Any liquid accumulating within the bunds or secondary containment systems should be appropriately disposed of at a licenced facility.
- Maintenance checks and procedures should be completed to reduce the potential for leaks and spills from plant and substance storage. This should include plans for inspection, maintenance, and actions should a spill occur. Best practice measures for avoiding and responding to leaks and spills should be implemented.
- Method statements should be prepared and followed for the management, storage, testing and disposal of waste.
- Pollution management measures should be implemented to prevent the contamination of the water environment from machinery pollutants, such as fuels, oils and lubricants during construction and operation activities.
- Should any discharges to ground or surface water be proposed during construction, the relevant responsible authority should be consulted to determine if the discharges require authorisation.

8.9 HYDROCARBON CONTAINMENT STRATEGY

Hydrocarbons may access waterbodies and water courses due to a single catastrophic spillage or through a prolonged low level, initially undetected seepage. Either loss may be equally damaging to the environment. Once contamination has occurred, recovery of hydrocarbons from soils, groundwater, surface water, drainage or watercourses is difficult, costly and time consuming. The environmental consequences of hydrocarbon contamination may be of major significance.

The application of strict procedures and management plans relating to the storage, handling and control of hydrocarbons is of critical concern and shall be addressed by the Contractor. Examples of typical control measures relating to hydrocarbons are outlined in Table 9-1

8.10 WASTE MANAGEMENT PLAN

The generation of waste as a result of construction and demolition related activity will provide the majority of onsite wastes which will need to be managed under the guidelines set out in the Waste Management plan developed by the Contractor.

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

A significant quantity of waste generated during this scheme of works will be generated during the excavation of the existing roadway. It is anticipated that a portion of this material will be removed offsite by a licensed haulier to an authorised waste disposal facility.

8.11 WATER QUALITY MANAGEMENT PLAN

The safeguarding measures should include the requirements for best practice and adherence to relevant Irish guidelines and international guidelines where these are not available. The following is an non-exhaustive list of best practice guidance:

- Good practice on the control of water pollution from construction sites developed by the construction industry research and information Association (CIRIA, 2001).
- Fisheries guidelines for local authority works. Department of Communications, Marine Natural Resources, Dublin.
- Guidelines on protection of fisheries during construction works in and adjacent to waters (Inland Fisheries Board, 2006).
- International Marine Organisation guidelines; and control of Substances Hazardous to health (COSHH) handling of hazardous Materials.

The monitoring programme should include the establishment of water quality trigger levels and corresponding actions (including the necessity to temporarily cease construction operations) to safeguard sensitive conservation sites (SPA and SAC) and the operations of other users of the receiving waters.

8.12 NOISE AND VIBRATION MANAGEMENT PLAN

Safeguarding measures should be included in compliance with British standard BS5228:2009 – Noise and vibration control on construction and open sites: part one – Noise.

8.13 DUST AND ODOUR MANAGEMENT PLAN

A dust and odour management plan should be developed by the Contractor.

The dust minimisation plan should be prepared upon the industry guidelines in the building research establishment document entitled 'control of dust from construction and demolition activities'.

An odour management plan to mitigate the potential of odours from operations should be implemented. The plan should follow the guidance presented in the environmental agency of England and Wales "odour management guidance" (H4 guidance, 2011). The odour monitoring and investigation aspects of the plan should follow the EPA guidance note "Odour impact assessment guidance for EPA licensed Sites" (Guidance note AG5,2021).

8.14 TRAFFIC MANAGEMENT PLAN

A Traffic Management Plan should be developed prior to commencement of the works as the roadway is to remain online throughout the construction period. It will be the responsibility of the Contractor to undertake the works in a manner that will cause the least amount of traffic disruption.

The haulage of materials to and from the site will create a significant temporary impact to both road users and to residents living in the area. The Contractor should ensure that the construction process is planned to accommodate the existing traffic flows.

The proposed traffic management plan should include the following measures at minimum:

- Warning sigs/Advanced warning signs should be installed at appropriate locations in advance of construction works.
- Construction and delivery vehicles should be instructed to use only the approved and agreed means of access.
- The parking of site vehicles should be managed and should not be permitted along the public roadway unless previously agreed with GCC.
- A road sweeper should be on standby to clean the roadway of any residual debris that may be deposited on the road.
- Safe and secure pedestrian access should be provided. These measures should facilitate the movement of vulnerable users including mobility and impaired persons.

8.15 MATERIAL ASSETS

Material assets comprise of the physical resources in the environment, which may be of human or natural origin. Material assets which may be in the vicinity of the site comprise of built services and infrastructure such as surface water drainage, telecommunications, electricity, gas, water supply infrastructure and sewerage.

To mitigate the potential impacts on these services and infrastructure the Contractor should carry out the following:

- Prior to commencement of works the Contractor should conduct a survey to locate existing infrastructure and services surrounding the site. These services should be isolated and decommissioned or, identified for their protection.
- Any works required to material assets onsite should be carried out in accordance with the relevant provider's code of practice.

8.16 METHOD STATEMENTS

Site specific method statements should be drawn up by the Contractor for all aspects of the works. The method statements should include all Health, Safety and Environmental risks, protection measures and controls. The method statements shall consider the following environmental impact areas as a minimum:

- Water quality.
- Noise and vibration.
- Dust and odour.
- Site works.
- Site traffic.

9 ENVIRONMENTAL HAZARDS AND CONTROLS

Table 9-1 below sets out the typical environmental hazards and associated controls for effective management and prevention of pollution and environmental Impacts. These hazards and control are aligned with the proposed development works.

Table 9-1 Typical Environmental Hazards and associated Controls

Environmental Aspect	Environmental Hazard	Control No.	Typical Control Measures
Water Quality (see water quality management plan section)	Surface water run-off & sediment control	1	The location and risk to all water receptors within or adjacent to the site shall be assessed prior to commencement of the works. Water quality of these receptors should be determined before work commences. If run-off is generated onsite, it should be collected and treated by attenuation and settlement prior to discharge to the receiving environment. Methods of treatment will vary according to the construction operations and be agreed with suitably qualified individual. The Contractor should ensure that there is minimal areas of exposed ground by maintaining existing vegetation and keeping excavated areas to a minimum. Spill kits shall be readily available in the vicinity of the works and close to all receptors (watercourses). The Contractor shall draw up a programme of surface water quality monitoring and arrange for monitoring to be carried out by competent persons. Site-specific Method Statements should be drawn up for all management of surface water and control of sediments in water courses due to construction activities.
	Emergency response plan (Water)	2	In the event of siltation or pollution of a waterbody, the Contractor/Environmental Coordinator should be contacted immediately and the Emergency Response Plan put into action. The response plan should include the measures included below as a minimum. Any spills of oils, fuels or any harmful contaminants will be immediately contained and contaminated soils removed by a licensed agent for appropriate treatment. Oil boom and oil soakage pads should be kept onsite as part of a spill kit to deal with any accidental spillage. The emergency spill kit is to be kept onsite near the works and near sensitive receptors. In the event of a spill, fluids collected and any contaminated soils should be secured in a leak proof container and removed from the site for disposal by an appropriately licensed waste Contractor. All persons involved in the works shall be given a toolbox talk on the emergency response plan.
Noise and Vibration (see noise and vibration	Noise and vibration (general)	3	Construction work shall be carried out within agreed working hours only.

Environmental Aspect	Environmental Hazard	Control No.	Typical Control Measures
management plan section)			Mechanical plant and equipment used for the purpose of the works should be fitted with effective exhaust silencers and maintained in good working order. Careful selection of quiet plant and machinery to undertake the required work where available. All major compressors and pumps should be 'sound reduced' models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use. Any ancillary pneumatic percussive tools should be fitted with mufflers or silencers of the type recommended by the manufacturers. Machines in intermittent use should be shut down in the intervening periods between works. Handling of all materials should take place in a manner which minimises noise emissions. Audible warning systems should be switched to the minimum setting required by the Health & Safety Authority (HSA). A complaints procedure should continue to be operated by the Contractor throughout the construction phase and all efforts should be made to address any noise issues at the nearest noise sensitive properties. Site-specific Method Statements should be drawn up for all management of noise and vibrations due to construction activities.
Dust and Odour (dust and odour management plan section)	Dust and odour (general)	4	Roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface while any un-surfaced roads shall be restricted to essential site traffic only. Any site roads with the potential to give rise to dust should be regularly watered, as appropriate, during dry and/or windy conditions (also applies to vehicles delivering material with dust potential). Where necessary, all vehicles exiting the site shall make use of a wheel wash facility prior to entering onto public roads, to ensure mud and other wastes are not tracked onto public roads. Wheel washes should be self-contained systems that do not require discharge of the wastewater to water bodies.

Environmental Aspect	Environmental Hazard	Control No.	Typical Control Measures
			Public roads outside the site shall be regularly inspected for cleanliness and cleaned, as necessary. Material handling systems and site stockpiling of materials should be designed and laid out to minimise exposure to wind. Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods. All vehicles which present a risk of spillage of materials, while either delivering or removing materials, should be loaded in such a way as to prevent spillage on to the public road. The Contractor will be required to ensure that all vehicles are suitably maintained to ensure that emissions of engine generated pollutants is kept to a minimum.
Dealing with Hydrocarbons (fuels & oil)	Contamination of watercourses – handling	5	Hydrocarbons and watercourse shall at no point be allowed to mix. Only persons trained in handling hydrocarbons are allowed to open, handle and dispense hydrocarbons. Always plan works relating to hydrocarbons and utilise the correct handling equipment and materials. All equipment to be in good working order. All fuelling and lubrication shall be carried out in designated bunded areas. Funnels, drip trays and oil absorption matts to be used at all times. Oil handling equipment to be left clean and dry when finished and in storage. Any spill of hydrocarbons in excess of 25ml shall be reported to the Environmental Coordinator.
	Contamination of watercourses – storage and facilities	6	Oils and oil containers shall be kept dry, within sealed containers and stored in a bund. Hydrocarbon storage tanks and filling areas if required should be located on firm level ground, avoiding sloping ground and permeable soils. Bunded areas shall be inspected regularly for leaks and damage. Hydrocarbon storage and filling areas should be at least 20m from any watercourses. Proximity to drains and manholes should also be considered. Fuelling to be carried out by a registered fuel supplier and directly from a mobile fuelling bowser.

Environmental Aspect	Environmental Hazard	Control No.	Typical Control Measures
			Fuel tanks to have gate valves and an instant release shut-off fuel nozzle fitted to the hose. Safety barriers to be included against accidental impact. A lockable shut-off valve should be located on the exit point of all hoses from tanks. When not in use, dispensing heads shall be located within a bund. All oil storage tanks and equipment shall include drip trays/ bunds for capture of rainwater run-off. Notices shall be located immediately adjacent to all filling points detailing filling procedures and emergency response measures. Oil soakage/ spill kits to be at hand. All collected hydrocarbons (waste, run-off, spillages etc.) should be stored in leak proof containers and removed from the site for disposal by a licensed waste Contractor.
	Contamination of watercourses – fuel bowsers, generators and other fuel equipment	7	Fuel bowsers should be bunded or double skinned. Refuelling from bowsers should only take place a minimum of 20m from watercourses. Refuelling should not take place near manholes or drains. Drip trays should be put in position when using generators, pumps or other equipment where leakage or spillage could occur.
Hazardous Waste	Unforeseen contamination of ground	8	Hazardous wastes pose a risk to health and safety of personnel as well as the environment. The Contractor/Environmental Coordinator should develop site specific hazardous waste handling procedures for excavation works. All contaminated material should be disposed of at a appropriately licensed landfill.

10 CONCLUSION

As noted, this CEMP is a 'live' document, which should be updated by the Contractor as the project is progressed.

During the construction stage of the project, the CEMP should be reviewed and updated by the Environmental Coordinator to include project specific method statements and detail relating to the program for delivery for each element of the works. Project specific method statements should consider the recommendations detailed within this document and any environmental reports submitted as part of the planning application.

All other relevant planning conditions should be adhered to prior to commencement of and during the construction phase of the project.

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