MWP

Construction Environmental Management Plan (CEMP)

Bantry Mill Culvert Upgrade Project

Cork County Council

November 2024

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Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
24349	6005	A	01/11/2024	WM	AOC/CB	AOC	FINAL

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1. Introduction

A Part 8 Planning Application is being lodged by Cork County Council (CCC) hereafter referred to as "the Applicant" for the Bantry Mill Culvert Upgrade Project (BMCUP) hereafter referred to as "the proposed development".

The purpose of the BMCUP is to upgrade the existing Mill River culvert within Bantry town and remove the existing foul connections to the culvert and change these to discharge into an independent foul network.

The proposed development comprises:

The proposed development comprises:

- Reconstruction of a new Mill River Culvert along Bridge Street and New Street and Wolfe Tone Square and connection to the existing Mill River Culvert at chainage 80m; This includes:
    - A new Mill River Culvert of internal dimensions 5.2m wide, 1.5m high which will be constructed from a tie in at Wolfe Tone Square, at Chainage 80m, to William Street, at Chainage 242m
    - A new Mill River Culvert of internal dimensions 3.6m wide, 1.5m high which will be constructed from William Street junction at Chainage 242m to the Mill on Bridge Street at Chainage 452m
- Connect to existing drainage/services at William Street and Main Street
- Repair/upgrade works to be carried out to the Mill River Culvert from Chainage 0 to 80m
- Road and footpath reinstatement works
- Removal and reconstruction of the central section of Wolfe Tone Square architectural feature will be required to facilitate the tie in of the new Mill River culvert and backfilling of the old stone culvert;
- A short extension (approximately 4m) of the Alley River culvert will be required so that it ties into the line of the new Mill River Culvert;
- Construction of new services and utilities including foul water drainage. Surface water drainage, watermain infrastructure, electricity and communications will be required at Wolfe Tone Square, New Street and Bridge;
- Construction of 2 No. surface water pumping sumps in Wolfe Tone Square

This Construction and Environmental Management Plan (CEMP), prepared by MWP on behalf of Cork County Council outlines construction practices and environmental management measures which are to be implemented during the construction phase to ensure the project is constructed in accordance with best practice and with the minimum impact on the surrounding environment.

This CEMP has been produced to accompany the planning application. It is intended that this will be updated to include more site specific information, once the Contractor's and Construction Management Team (CMT) is appointed.

1.1 CEMP Purpose and Objectives

All Construction Projects require the preparation of a site-specific Construction Environmental Management Plan (CEMP) in order to ensure that the project is constructed in accordance with Best Practice, with the minimum impact on the surrounding environment.

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

This CEMP is to provide the Client and the Contractor with a practical guide to ensure compliance by all parties with Planning and Environmental requirements.

The CEMP achieves this by providing the environmental management framework to be adhered to during the construction phase of the proposal. It outlines the work practices, construction management procedures, management responsibilities, mitigation measures and monitoring proposals that are required to be adhered to, in order to complete the proposed works, in an appropriate environmental manner.

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

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

1.2 Scope

This CEMP defines the approach to environmental management at the site during the construction phase. Compliance with the CEMP, the procedures, work practices and controls will be mandatory and must be adhered to by all personnel and contractors employed during the construction phase of the project.

This CEMP seeks to:

- Promote best environmental on-site practices for the duration of the construction phase,
- Comply with any planning conditions that may apply.

1.3 Live Document

The CEMP is considered a 'live' document, and as such, should be reviewed on a regular basis. Updates to the CEMP may be necessary due to any changes in environmental management practices and/or contractors. As explained in more detail in the later sections, the procedures agreed in this CEMP will be audited regularly throughout the construction phase to ensure compliance.

2. Overview of Project

2.1 Site Location

Bantry is located in County Cork, 85km west of Cork City. The Mill Culvert runs down Bridge Street and New Street and Wolfe Tone Square (see Figure 2-1).

The Bantry catchment is centred around the 2.2 km long Mill River, also known as the Bantry River, a steep channel upstream before it passes into a tidal culvert under Chapel Street in Bantry. The culvert passes under Bantry Town Centre and has an outfall into Bantry Harbour. There are multiple tributaries which join the Mill River: the Knocknaveagh, Sheskin East, Carrignagat, Alley River, and Scart. These are relatively steep and narrow, with many engineered sections including culverts, weirs, bridges, and aqueducts. The Alley River, also known as the Reenrour, has a shallower gradient, and is culverted in its lower reaches.

Bantry's culverts consist of a main culvert and two side culverts. The main culvert is 445m long and carries the Mill River under the centre of Bantry along New Street until it outfalls to the estuary west of Wolf Tone Square. There is a 103m long side culvert from the south which carries the Scart Stream into the main culvert at Bridge Street approximately 440m upstream of the outfall. The other side culvert connects from the north and carries the Alley River into the Mill River approximately 309m upstream of the outfall.

There are surface water capacity issues with the Mill River and existing surface water culverts which contribute to flooding in the area. Foul water in the Bantry area is conveyed via a combined sewer system to the Bantry Wastewater Treatment Plant (WWTP), which has a design capacity of 6,000 population equivalent (PE) and is situated on the northern side of Bantry Harbour. Sewage treatment discharge locations were gathered from EPA maps (2024). The primary discharge location for foul water is in Inner Bantry Bay, approx. 2.6 km west of the Mill River outflow into Bantry Harbour. A secondary outflow is at the junction of Glengarriff Road and Barrack Street, while emergency outflows are located on the Scart Rd south of the Harbour, at Reenrour East north of the Harbour, and in Bantry Harbour itself, near the WWTP.

In 2018 an Inlet Survey was caried out by MWP to determine the inlets to the culverts (MWP, 2018). The findings of the inlet survey recorded 132 inlets of varying size and condition. During the inlet survey, it was not possible to fully determine whether the inlets were a foul service, storm service or combined although the presence of faecal matter throughout the culvert was noted.

Significant access difficulties, including close proximity of the culvert to buildings and absence of adjacent sewerage infrastructure at a number of locations in the town, were also noted. To confirm their (inlets) source and the likely permanent infrastructure and temporary diversion works requirements, a detailed connectivity survey was recommended.

The survey was conducted in October 2020 and additional survey works were completed in June 2021. MWP prepared the Drainage Options Report for the Bantry Culverts Connectivity Survey in 2022. The report recommended the options for the BMCUP.

The purpose of the BMCUP is to upgrade the existing Mill River culvert within the town and remove the existing foul connections to the culvert and change these to discharge into an independent foul network. An overall plan view of the proposed development is provided on Figure 2-2 and Figure 2-3 below and typical cross sections are given on Figure 2-4. Further detail on the BMCUP is included in the Preliminary Design Drawing Booklet which is included as Appendix 3.

MWP also prepared a Geotechnical Interpretative Report (GIR) and rippability assessment on behalf of Cork County Council in relation to the proposed BMCUP.

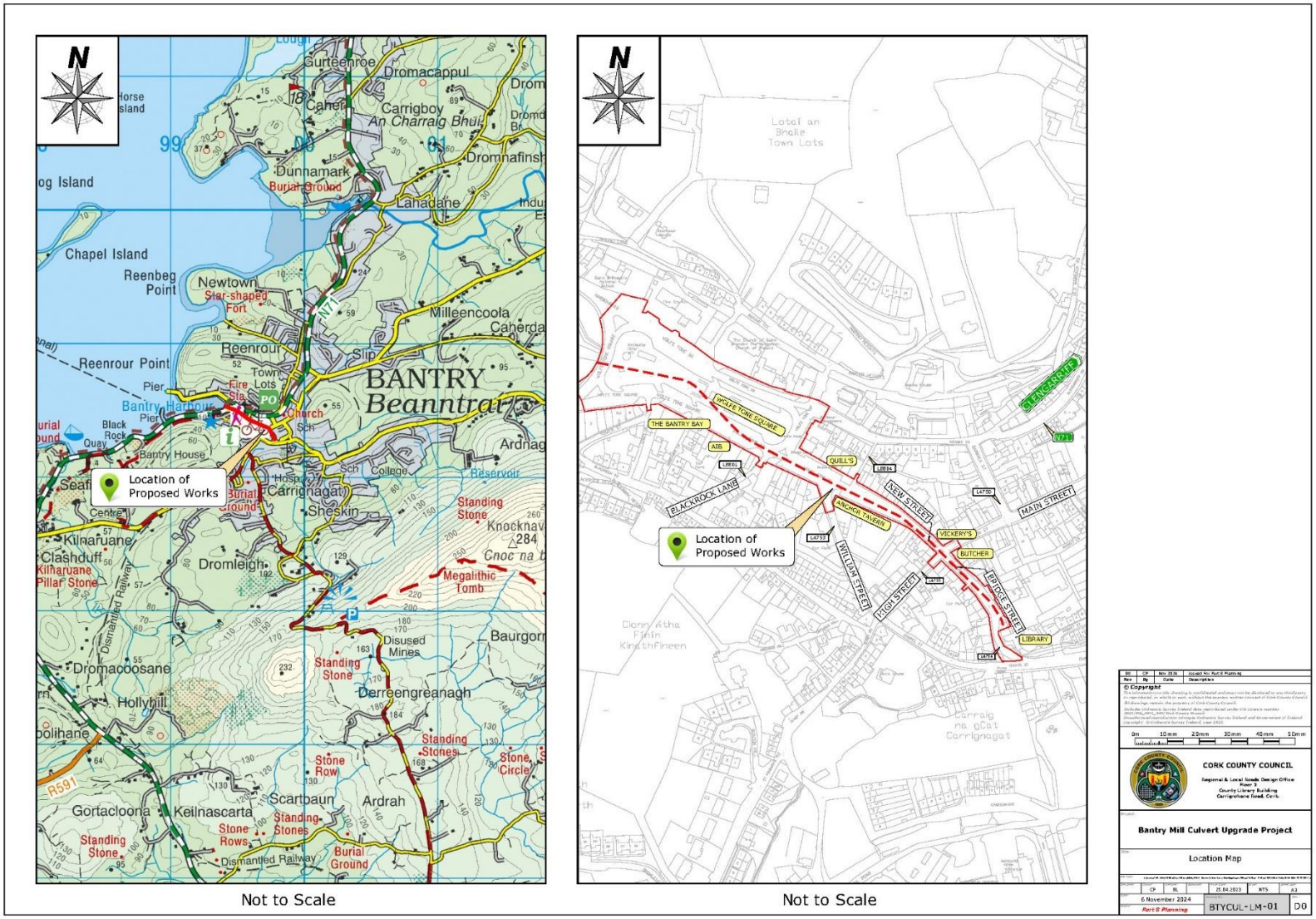


Figure 2-1: Site Location

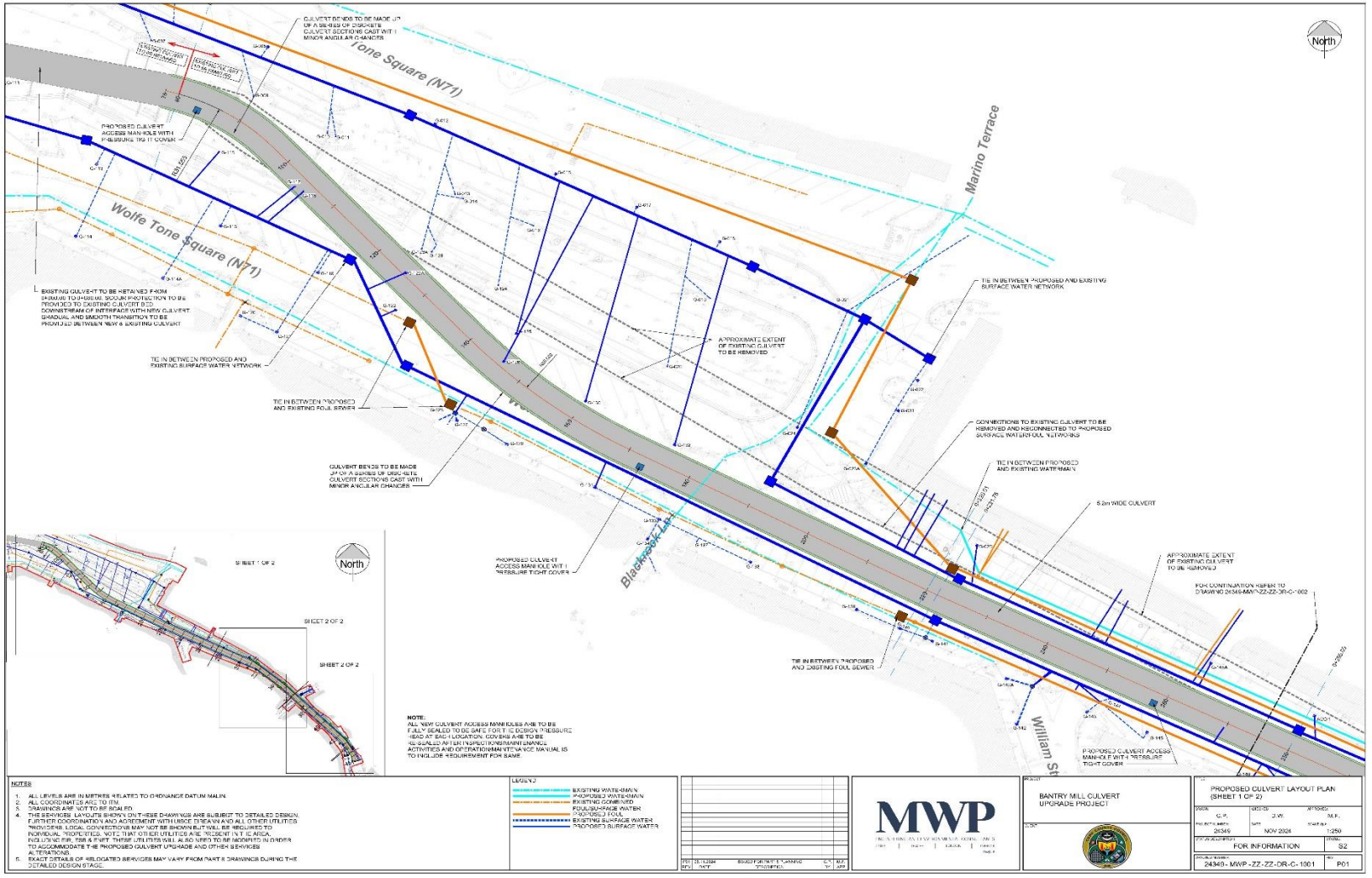


Figure 2-2: Site Layout (1 of 2)

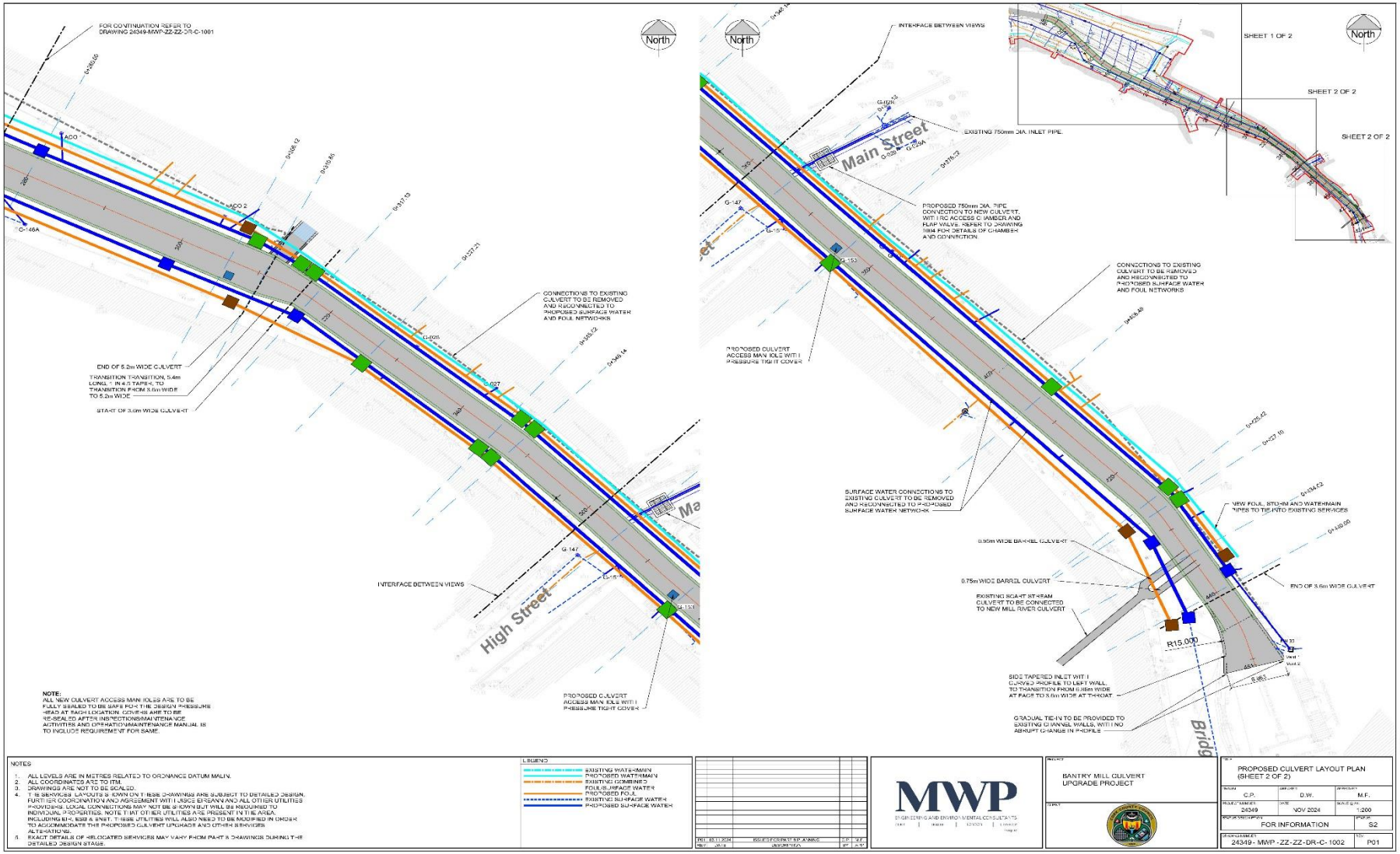


Figure 2-3: Site Layout (2 of 2)

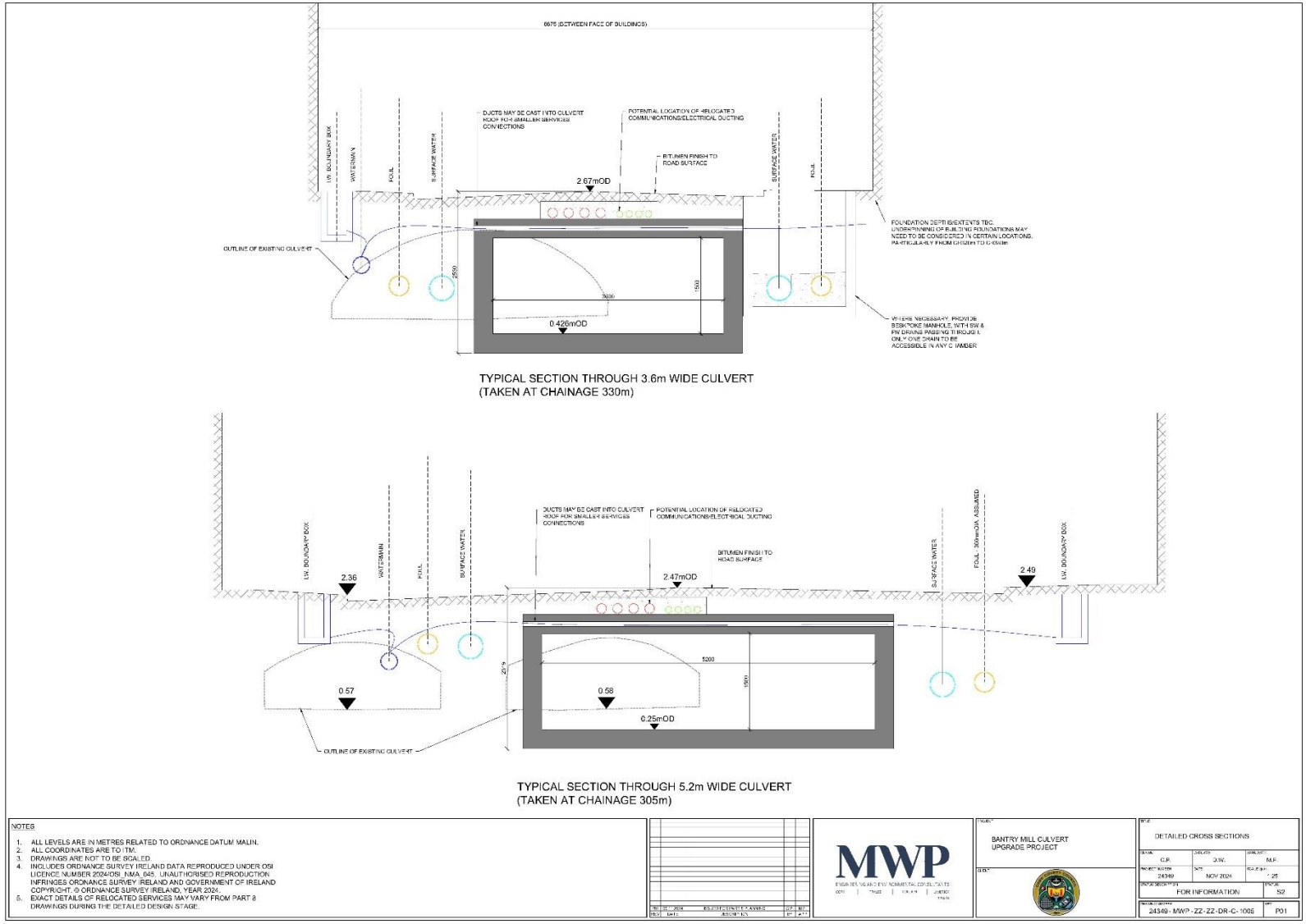


Figure 2-4: Cross Sections

2.2 Submitted Environmental Planning Documents – Mitigation Measures

The proposed upgrade works to the culvert will occur in the town, along Bridge Street, New Street and Wolfe Tone Square. The following environmental documents were submitted with this Application:

- Screening for Environmental Impact Assessment (EIA)
- Screening for Appropriate Assessment (AA)
- Ecological Impact Assessment (EcIA)

These documents are to be read in conjunction with the CEMP, as they inform the mitigation measures and Environmental Management Plans (EMP) developed for this project.

2.3 Project Description

This section of the CEMP presents information and details on the characteristics and operations involved in the project. The proposed project consists of upgrade works to the Bantry Mill culvert. It includes the following works:

- Initial excavations and temporary services diversions will be undertaken,
- Excavation for the culvert will typically include the additional excavation required for the new/upgraded services and utilities which will be installed on each side of the new culvert,
- A mass concrete levelling blinding will be placed where required on the existing soil/rock to ensure a uniform surface is provided to support the culvert,
- The permanent services and utilities will be installed and the excavation/trenches will be backfilled,
- The road/pavements will then be reinstated. It is envisaged that a temporary finish will initially be provided for each segment,
- It may be necessary to undertake additional excavations each side of the new culvert to access the new services/utilities and make the final permanent connections for properties,
- Alternatively the culvert could be installed in its entirety with temporary services and, following completion of the culvert installation, the new services and utilities would be constructed each side of the culvert.

The works will be carried out in phases.

Works will be generally confined to Bridge Street, New Street, N71 and Wolfe Tone Square within Bantry Town. Existing drainage and services from William Street and Main Street will need to be connected which will result in limited works on both of those streets.

2.4 Site Description

The proposed upgrade works occur in Bantry town, Co. Cork, which is located within the Electoral Division of ‘Bantry Urban, (CSO Area Code ED 47042). CSO data from 2022 indicates that this Electoral Division had a population of 3,358.

The Corine Landcover Category (2018)1 at the subject site is classed as 'Artificial Surfaces' (112) and in the surrounding area the dominant land use is 'Agricultural Areas' (231) as well as patches of 'Forest and semi-natural areas' (311) to the southwest of Bantry Town.

The Mill River, also called the Bantry River, (EPA Code 21B31) is a 3rd order river flows through the town. The river flows into the sea, first at Bantry harbour then out through Bantry Bay. Inner Bantry Bay (EU code IE_SW_170_0100) is a transitional waterbody with a WFD status of 'Not At Risk'.

The EPA operate surface-water quality monitoring at one station along the Bantry River. It is situated upstream of Bantry, c. 250 m from Bridge Street, and is an 'investigative' station type (RS21B310750). Bantry Bay is also classified as a 'Designated Shellfish Area' for the production of live bivalve mollusc.

There was one designated area identified during the AA Screening process that has a limited hydrological connection to the site, the Glengarriff Harbour and Woodland SAC (000090), located 7.5 km from the proposed project. The screening process screened out this designated area as not likely to be significantly affected by the proposal, individually or in-combination with other plans or projects.

3. Construction Works

3.1 Working Hours

Construction working hours will be normal daytime hours, typically 8.00am to 7.00pm Monday to Friday and from 08.00am to 2.00pm on Saturdays with no work on Sundays.

All traffic movements will be carried out between the hours of 7.00am to 7.00pm on Monday to Friday and 8.00am to 2.00pm on Saturdays.

Outside of these times works are limited to:

- Working at road junctions to minimise disruption e.g. cross-roads in the town centre critical to traffic flow.
- Commissioning and testing; and
- Works required in an emergency where there is the potential of harm or damage to personnel, plant, equipment, or the environment. Deliveries will also be scheduled to avoid peak times where relevant, e.g. avoiding rush hours and after school pick up times.

The working day may extend at times when critical elements of work need to be advanced. Longer working days can occur when there is a planned concrete pour, etc.

In the event that activities outside of normal working time are needed, the Contractor shall prepare a suitable Method Statement, and the Contractor will seek the approval of the Local Authority and if required, the directly affected residents/other.

[1] https://gis.epa.ie/EPAMaps/

3.2 Construction Personnel

The following personnel will be required during the duration of the construction phase:

- 1 no. Project Manager
- 1 no. Construction Manager
- 1 no. Environmental Manager
- Health and Safety Personnel
- Approx 25no. Construction Personnel

It is forecast that there will be a maximum of 35 staff on site at any one time during the construction phase, although this will vary subject to the overall programme of works.

3.3 Construction Programme and Phasing

The construction phase of the proposed development is anticipated to cover a period of between 12-18 months. During this period, there will be a combination of HGVs for the component deliveries and cars/vans for construction staff. HGV movements are expected to be most intense throughout the stage of construction, tailing off towards the final weeks. Car/van movements are expected to be constant throughout.

Due to the limited space available for the construction works at many locations, it is anticipated that the construction will be carried out in a phased manner, whereby the works will be divided into suitably sized segments. Further details on the proposed sequences of works in Section 4.1.

3.4 Construction Traffic and Haul Route

A detailed Traffic Management Plan (TMP) will be prepared for the proposed development by the appointed contractor(s) prior to construction.

Throughout the construction phase of the project access will need to be maintained to the following areas:

- Local road network
- Site access roads
- Emergency Services

Construction traffic will include:

- HGVs importing construction materials including concrete, pre-cast culverts and piping
- HGVs exporting waste/spoil materials
- HGVs delivering plant and fuel
- Mobile Cranes
- Traffic associated with on-site construction personnel

Sections of the N71 road, New Street and Bridge Street will need to be closed to traffic at times to facilitate the works. Prior to commencing the works, a detailed traffic management system will be implemented to minimise disruption caused by the works. Traffic and pedestrian diversions will be put in place. Where feasible, access to all properties will be maintained however there may be short timeframes when access cannot be safely maintained to particular properties.

Further details on how traffic will be managed during construction is provided in Appendix 2, EMP 6: Traffic Management.

4. Construction Methodology

This section of the CEMP presents information on the elements that constitute the proposed works and details the characteristics and operations involved in the project. It describes the components of the proposed works and details the activities and operations required to construct the project.

The Applicant is proposing to reconstruct an existing culvert in Bantry, Co. Cork. Key elements of the civil works and activities associated with the construction phase of the development are in the following subsections

4.1 Summary of Proposed Works

The construction phase of the proposed development is anticipated to cover a period of between 12-18 months.

The basic sequence of works for each segment will likely include:

- Initial excavations and temporary services diversions will be undertaken,
- Excavation for the culvert will typically include the additional excavation required for the new/upgraded services and utilities which will be installed on each side of the new culvert,
- A mass concrete levelling blinding will be placed where required on the existing soil/rock to ensure a uniform surface is provided to support the culvert,
- The permanent services and utilities will be installed and the excavation/trenches will be backfilled,
- The road/pavements will then be reinstated. It is envisaged that a temporary finish will initially be provided for each segment,
- Once all sections of the culvert are installed, it may be necessary to undertake additional excavations each side of the new culvert to access the new services/utilities and make the final permanent connections for properties,
- Alternatively the culvert could be installed in its entirety with temporary services and, following completion of the culvert installation, the new services and utilities would be constructed each side of the culvert.

4.2 Site Preparation

Prior to the commencement of construction activities, the area for development will be fenced off. The site boundary will be clearly marked with high visibility tape and the appointed contractor will not be permitted to use any areas outside the identified site boundary for any activity relating to construction.

4.3 Dewatering of Work Areas and Excavations

The method of de-watering the works area will be decided upon after mobilisation to site. Consideration will be given to ground conditions, tidal variation and river flow rates. The following options will be considered:

- Damming and channel diversion; or

- Damming and over-pumping.

The majority of the new culvert will be constructed along the line of the existing culvert and at such locations temporary over-pumping may be carried out. Over-pumping will involve the collection of water at the upstream end of each segment of works and pumping it back into the culvert at the downstream end of that segment. This will allow the stream flows to by-pass the works therefore construction will be carried out in the dry.

4.4 Excavation Works

The new culvert will be constructed using traditional open cut excavation methods whereby the ground is excavated from the existing road/surface level down to the proposed culvert formation level. Where space permits, the sides of the excavations will typically be battered and where the excavation is in proximity to existing buildings or other structures, a temporary shoring system such as trench boxes or sheet piles will be required.

It is anticipated that the majority of excavation will be carried out using an excavator or similar with an attached toothed bucket. It is anticipated that some areas will require excavation assisted by rock ripping or localised use of rock breakers. Where excavations are close to buildings or other structures, investigations will be carried out prior to commencing the main works to establish the nature and depth of foundations and, where necessary, temporary supports or underpinning will be provided

All material which is excavated during the construction works will be sorted and, where feasible, will be re-used in the new works. Where material is not suitable for use elsewhere in the works, it will be disposed of off-site. Because there are existing foul discharges into the sections of culvert to be demolished, some of the excavated material will be contaminated.

4.5 Demolition of Existing Structure

The proposed culvert lies along the same route as the existing culvert in most areas. As a result, the existing culvert will be demolished during the excavation for the new culvert.

In areas where the old culvert is outside of the footprint of the new culvert, the old culvert is to be filled with stone. This will require removal of the top of the culvert and backfilling with suitable fill material such as crushed stone or gravel. Site won excavated rock or crushed concrete may also be suitable subject to testing.

4.6 Construction of New Structures

The new culvert will be installed in accordance with the Preliminary Design Booklet Drawings (Appendix 3).

It is anticipated that the majority of the new culvert will be manufactured off site and transported to the site in segments before being lifted into position by a crane and joined together. Localised sections of the culvert will be cast *in-situ,* typically at interfaces with existing culverts or at irregular or non-uniform geometries. Cast *in-situ* sections will typically be constructed using the following methods:

- Steel reinforcement for the culvert base slab will be lifted onto the formation/blinding and fixed into position before pouring concrete,
- Starter bar will be left out of the base slab to allow the reinforcement for the walls to be lapped on to provide continuity to the structure. Conventional formwork will be lifted into position using a crane before pouring concrete for the culvert walls. The culvert roof will also include conventional soffit formwork and may be poured at the same time as the walls,
- Once the concrete has sufficiently cured the formwork will be stripped

4.7 Construction Compound

A suitably surfaced contractor's temporary construction compound and laydown area will be required for the duration of the site works on the proposed development site. The construction compound will consist of temporary site offices, equipment storage and construction staff welfare facilities, as well as car parking areas for staff and visitors.

Container storage units will be required for holding tools and materials. The compound will be fenced with chain-link fencing on wooden posts and will have a lockable gate.

A potable water supply will be required for the duration of the works. Foul sewage from the temporary facilities will be routed to covered precast concrete watertight $5m^3$ tanks designed for receiving and storing sewage with no outlet. The tanks will be sized to suit the expected use and will be installed in a location remote from water courses. Contents and residues will be regularly emptied by a competent operator for safe disposal to an approved treatment works.

The temporary compound will be used as a secure storage area for construction materials, waste materials and also contain temporary site accommodation units to provide welfare facilities for site personnel. Facilities will include offices, meeting rooms, a canteen and a drying room.

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

The temporary construction compound will typically be constructed as follows:

- The area to be used as the compound will be marked out at the corners using ranging rods or timber posts;
- The compound will be established using a similar technique as the construction of the excavated site road;
- A bunded containment area will be provided within the compound for the storage of lubricants, oils and site generators etc;
- If necessary, the compound will be fenced and secured with locked gates; and
- The compound will include an enclosed wastewater management system (holding tank) capable of handling the demand during the construction phase when as many as 20 people will be working on site. These will be emptied as required by a licensed contractor.

Figure 4-1: Typical temporary site construction compound

See Figure 4-1 for an example temporary construction compound. Materials and waste handling and storage will be within the confines of the site(s). Adequate warning signs will be on display to illustrate the required PPE and risks associated when entering the construction areas.

4.8 Equipment Requirements

Mechanical machinery and electrical equipment typically used for construction projects will be required to facilitate the proposed development. The following is a non-exhaustive list of plant that is typically heavy civil engineering work and may be used in this proposed development. The exact equipment to be used is not known at this stage, however the plant and machinery listed below are typical of plant that are commonly used in construction projects of this nature and scale.

- Telescopic Handler
- Mobile Crane
- 15-30T Excavator
- 12T Roller
- Dump truck
- Mini-dumper (1t to 5t)
- Tractor & Trailer
- 15-20T Rubber Tired Excavator

- 3-10T mini digger
- Piling equipment where temporary works are required.
- Generators – with acoustic shielding
- Water pumps 100mm or 150mm with integral drip trays
- Settling Tanks
- Cement Mixers
- Handheld drilling equipment for grout holes
- Grout mixer and pump
- Formwork
- Hand tools
- Surfacing Equipment

4.9 Environmental Management Measures

This preliminary construction and environmental management plan (CEMP) will be further developed and implemented prior to any construction works being carried out. The CEMP will ensure that all practices operate to standard operating practices (SOPs).

4.10 Waste Management

Contractors working on site during the works will be responsible for the collection, control and disposal of all waste generated by the works. Construction phase waste may consist of hardcore, stone, concrete, steel reinforcement, ducting, shuttering timber, food waste from the canteen and unused oil, diesel and building materials. This waste will be collected at the end of the construction phase and taken off site to be reused, recycled and disposed of in accordance with best practice procedures at an approved facility. Domestic wastewater from the on-site holding tank will be collected on a regular basis by approved contractors and disposed of in an authorised facility in accordance with best practice. Plastic waste will be taken for recycling by an approved contractor(s) and disposed or recycled at an approved facility.

All waste generated during construction, including surplus excavation material to be taken off-site, shall be only recovered, or disposed of at an authorised site which has a current Waste Licence or Waste Permit in accordance with the Waste Management Acts, 1996 to 2011. This shall not apply to the reuse of excavated material within the applicant's site boundary.

4.11 Fuel Management

Only qualified persons shall operate plant machinery. Plant/equipment shall be checked on a regular basis to ensure they are working properly (no oil/fuel leaks etc.). No refuelling shall take place within 50m of any watercourse. Fuel will be stored in doubly bunded bowsers or in bunded area at the site compound. Spill kits will be readily available on plant equipment or when working with fuel operated heavy tools. Refer to Appendix 1, EMP 2: Fuel and Oils Management for additional information.

4.12 Drainage and Surface Water Management

The aim of surface water management is to ensure that the development shall not impair existing road drainage; no surface water from the development shall be discharged outside the site boundaries; only clean, uncontaminated surface water shall discharge to the surface water system.

The CEMP will include the management of the following:

- Surface Water Runoff and Excavation (See Appendix 2: EMP 1: Surface Water Runoff and Excavation Management)
- Construction and demolition waste management plan (See Appendix 2: EMP 5: Construction Resource and Demolition Waste Management Plan)
- Management of concrete / bituminous materials (See Appendix 2: EMP 3: Management of Concrete and Bituminous Materials)
- Fuel and oils management (See Appendix 2: EMP 2: Fuel and Oils Management)

4.13 Noise Management

The construction works shall be carried out in accordance with the noise guidance set out by BS 5228- 1:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites and the NRA Guidelines for the treatment of Noise and Vibration in National Roads Schemes and the Construction Environmental Management Plan.

5. Construction & Environmental Management

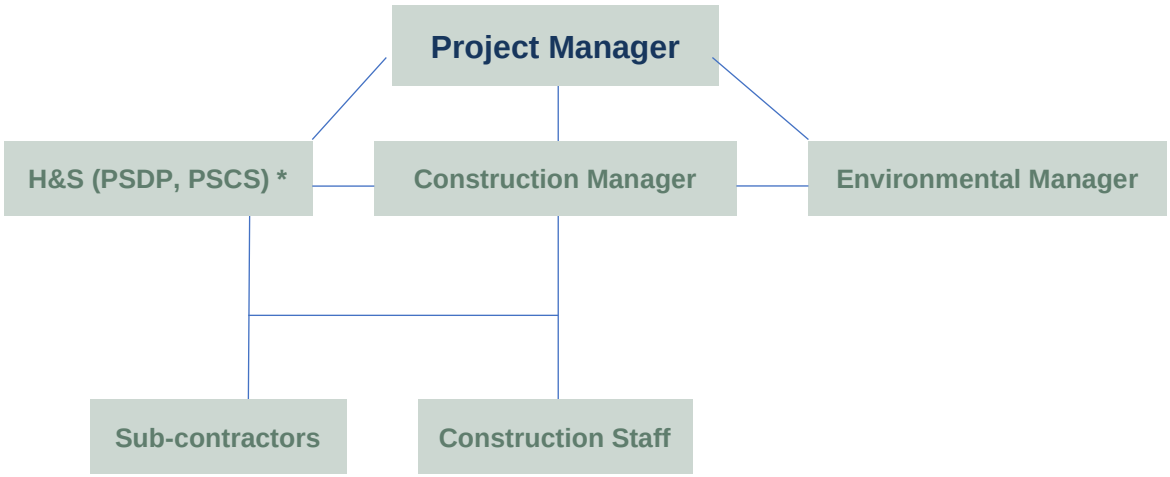
5.1 Overview

A number of outline environmental management plans (EMPs) have been prepared for managing the impacts of Construction Activities associated with the proposed development. See Table 5-1 below. Prior to commencement of construction these plans are to be updated and implemented by the Appointed Project Manager and/or Project Contractor as relevant.

Once appointed, it is the Contractor's responsibility to update and add (where required) project specific control measures relevant to the environmental management plans and procedures. The Contractor will ensure that plans/procedures are communicated to all site staff, including sub-contractors, through induction, training and at relevant meetings.

5.2 On-site Organisational Structure and Responsibility

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



*H&S – Health and Safety

*PSDP – Project Supervisor Design Process

PSCS – Project Supervisor Construction Stage

The Contractor will select the Project Team for the construction of the Project. The Contractor's Project Team will include an overall Project Manager, whose duties will stretch beyond the day-to-day works to budgetary, procurement and scheduling matters. The selected Construction Manager will have overall responsibility for the construction-site personnel carrying out the works and the Construction Manager will report to the Project Manager.

A competent Environmental Manager will be appointed for the duration of the works and will report to the Project Manager. The Construction Manager will communicate regularly with the Environmental Manager to ensure mitigation measures are applied to specific works. The Environmental Manager will carry out tasks as required,

including ensuring that installation and maintenance of sediment control measures are implemented and maintaining approved waste management control measures. The use of dedicated staff, under the direction of the Environmental Manager, will ensure the environmental controls are in situ ahead of the works on-site.

5.3 Duties and Responsibilities

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

- The Project Manager - liaises with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor(s)'s project team.
- The Construction Manager - liaises with the Environmental Manager when preparing site works where there is a risk of environmental damage and manages the construction personnel and general works.
- The Environmental Manager - ensures that the CEMP is developed, implemented, and maintained. The Environmental Manager's tasks at the construction-site are described below at Section 5.6. To ensure adequate cover of environmental tasks, waste management tasks and responsibilities, dedicated construction staff will be assigned to the Environmental Manager to implement and maintain the Sediment and Erosion Plan and any other measures required.

Other roles include:

- Health and Safety (PSDP and PSCS);
- Specialist environmental contractors (if required).
- Geotechnical engineer (if required).

5.4 Project Manager

Name: TBC

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

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

5.5 Construction Manager

Name: TBC

The Construction Manager manages all the works to construct the project, on behalf of the Contractor. The Construction Manager reports to the Project Manager. In relation to the CEMP, the Construction Manager is responsible for:

Site-Specific Method Statements

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

General

- Being aware of all project Environmental Commitments and Requirements;
- Ensuring that all relevant information on project programming, timing, construction methodology, etc., is communicated from the Project Manager, to the Environmental Manager in a timely and efficient manner in order to allow pre-emptive actions relating to the environment to be taken where required;
- Programming and planning of excavation works and communicating this schedule to the Environmental Manager;
- Ensuring that adequate resources are provided to design and install any environmental interventions;
- Liaising with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the Contractor's project staff;
- Ensuring that the Environmental Manager performs regular and frequent environmental site inspections; and
- Reviewing and approving all waste management control measures ensuring compliance with National and International Waste legislation and best practice.

5.6 Environmental Manager

Name: TBC

The Environmental Manager is responsible for:

General

- Being familiar with the project environmental commitments and requirements;
- Being familiar with baseline data gathered for the various environmental assessments and during pre-construction surveys;
- Assisting the Construction Manager with the provision of the information on environmental management during the course of the construction phase;

- Liaising with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the Contractor's project staff;
- Implementing the environmental procedures of the CEMP;
- Liaising with the Construction Manager to ensure that the control measures set out in the Schedule of Environmental Mitigation are implemented;
- Liaising with the client/developer in relation to environmental issues; and
- Auditing the construction works from an environmental viewpoint.

Site-Specific Method Statements

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

Third Party Consultations

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

Licensing

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

Resource & Waste Management Documentation

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

Legislation

- Keeping up to date with changes in environmental legislation that may affect environmental management during the construction phase;
- Advising the Construction Manager of these changes; and
- Reviewing and amending the CEMP in light of these changes and bringing the changes to the attention of the Contractor's senior management and subcontractors.

Specialist Environmental Contractors

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

Environmental Induction Training and Environmental Toolbox Talks

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

Environmental Incidents/Spillages

- Prepare and be in readiness to implement at all times an Emergency Response Plan;
- Notifying the relevant statutory authority of environmental incidents;
- Carrying out an investigation and producing a report regarding environmental incidents. The report of the incident and details of remedial actions taken should be made available to the relevant authority, and the Construction Manager;
- The Site Environmental Manager shall notify the Client of any complaints or environmental incidents within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services or where any pollution events occur, the Client shall be notified within 1 hour; and
- In the event of encountering a spillage or contaminated land/buried waste being encountered the Environmental Manager will contact MWP - Engineering and Environmental Consultants who have at their disposal Environmental Engineers and Scientists with experience in addressing spillage or contaminated

land/buried waste. MWP have personnel based in three offices in Ireland and will be available to dispatch suitably qualified and experienced personnel at short notice in the event of an Environmental Incident.

Site Environmental Inspections and Auditing

- Carrying out regular documented inspections of the Site to ensure that work is being carried out in accordance with the Environmental Control Measures and relevant site-specific Method Statements, etc.,
- Carrying out inspections of the site drainage system;
- Appending copies of the inspection reports to the CEMP;
- Liaising with the Construction Manager to organise any repairs or maintenance required following the daily inspection of the Site;
- Accommodate audits by the Employer and/or independent auditing consultants during the Project;
- Accommodate third party environmental auditing when required;
- During audits, the Environmental Site Manager shall make the necessary staff available during each audit and provide access to all documentation and site areas (and provide necessary induction and training to allow access where required);
- If there are any adverse findings arising from the environmental audits, the Environmental Site Manager shall be required to take prompt mitigation actions and provide written reports to the Employer detailing such mitigation; and
- The Environmental Site Manager shall notify the Employer of any complaints or environmental incidents within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services or where any pollution events occur, the Employer shall be notified within 1 hour.

Note: Communication in respect of the project to regulatory or statutory bodies shall be undertaken by the Employer, unless otherwise agreed, except in the case of incident notification.

Environmental Records

- The Construction Environmental Manager shall provide all CEMP documentation to the Client on completion of the site works. Reports arising during the site works, such as verification reports or waste disposal records shall be provided to the Client within one month of completion of the activity and may be subject to review.

5.7 Project Environmental Consultant

The Project Environmental Consultant will be responsible for, but not limited to, the following activities:

- Preparation/updating of the CEMP, environmental control plans, supporting procedures;
- Advise site management (including, but not limited to, the site Construction/Commissioning Manager) on environmental matters;
- If necessary, carry out environmental surveys (data logging (noise, water, dust, etc.)) where necessary;
- If necessary, generate reports as required to show environmental data trends and incidents;
- If necessary, ensure adherence to the specific measures listed in the Planning Conditions/that may pertain;

- Advise upon the production of written method statements and site environmental rules and on the arrangements to bring these to the attention of the workforce;
- Investigate incidents of significant, potential or actual environmental damage, ensure corrective actions are carried out and recommend means to prevent recurrence; and
- Will be responsible for maintaining all environmental related documentation.

5.8 Site Supervisors/Foremen

Site Supervisors/Foremen are required to:

- Read, understand and implement the CEMP;
- Know the broad requirements of the relevant law in environmental matters and take whatever action is necessary to achieve compliance. Where necessary seek the advice of the Project Manager/Construction Manager/Environmental Officer;
- Ensure that environmental matters are taken into account, when considering Contractors' Construction Methods and materials at all stages;
- Be aware of any potential environmental risks relating to the site, plant or materials to be used on the site(s), and bring these to the notice of the appropriate management;
- Ensure plant suggested is environmentally suited to the task in hand;
- Co-ordinate environmental planning of activities to comply with environmental authorities requirements, with minimum risk to the environment. Give Contractors/Construction Manager precise instructions as to their responsibility to ensure correct working methods where risk of environmental damage exists;
- Where appropriate, ensure the Contractor(s) method statements include correct waste disposal methods, etc.;
- Be aware of any potential environmental risks relating to the Contractor(s) and bring these to the notice of the appropriate management; and
- Ensure materials/wastes are stored in appropriate manner.

5.9 Site Personnel

All Contractors, and other site personnel, on the project will adhere to the following principal duties and responsibilities:

- To co-operate fully with the CMT and the Project Manager/Environmental Manager in the implementation and development of the CEMP at the site;
- Adhering to the relevant Environmental Control Measures and relevant site-specific Method Statements
- To conduct all their activities in a manner consistent with regulatory and best environmental practice;
- To participate fully in the environmental training programme and provide management with any necessary feedback to ensure effective environmental management at the site; and
- Adhere fully to the requirements of the site environmental rules.

- Adhering to the Health and Safety Plan;
- Reporting immediately to the Environmental Manager and Construction Manager any incidents where there has been a breach of agreed procedures including:
    - a spillage of a potentially environmentally harmful substance;
    - an unauthorised discharge to ground, water or air etc.

5.10 Other Roles

5.10.1 Health and Safety Personnel

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

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

5.10.2 Specialist environmental contractors

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

5.10.3 Temporary Traffic Management Designer

- TTM Designer is to comply with the requirements described in Chapter 8 of the Traffic Signs Maual, and to use relevant road design principles, where appropriate, to provide a safe working area, and provide a safe and efficient flow of traffic through or around the works
- Ensure a detailed understanding of the works being undertaken to adequately cater for the number of required TTM phases within the design. Consider how the implementation and removal of TTM will be carried out
- Consult with all relevant parties such as the Road Authority, An Garda Síochána, etc. Ensure sufficient timeframes are allowed to comply with the statutory requirements of obtaining a road opening licence and / or a road closure order from the Road Authority. If the works are on or affecting a National Road, then

consultation with TII shall be required. This will require August 2019 8/10 forward planning as these agencies require notification and time to consider the design.

- Take cognisance that access for emergency vehicles through the roadworks should be always maintained whenever practicable. Proposals for emergency access should be discussed with the emergency services early in the design process. Also, the emergency services need to be aware of roadworks along their preferred routes;

Produce TM plans for discussion with the Client and Contractor and, subject to approval by all parties, produce the plans to be implemented within the works.

5.11 Contacts

5.11.1 Main Contractor Contacts

Table 5-1: Main Contractor Contacts

Position Title	Name	Phone	Email
Main Contractor	TBC		
Project Manager	TBC		
Construction Manager	TBC		
Environmental Manager*	TBC		
Safety (PSCS)*	TBC		
Safety Manager*	TBC		
Site Emergency Number*	TBC		
Resource & Waste Management Coordinator	TBC		
Overall Project PSDP	TBC		

**24 hour contact details required*

5.11.2 Employer Contacts

Table 5-2 Employer Contacts

Position Title	Organisation	Name	Phone	Email
Employer	Cork County Council			
Employer's Representative	MWP			

5.11.3 Third Party Contacts

The Project Manager/Construction Manager/Environmental Officer, will undertake any required 3rd party communications, and where required, liaise directly with local residents, landowners/local authorities (i.e. CCC, IFI, and NPWS)/members of the public, etc. to minimise the impact of the development on such persons, for access, scheduling of works, and accommodation works etc.

Table 5-3: Third Party Contacts

Organisation:	Position:	Name/Address	Phone:	Email Address:
Inland Fisheries Ireland	Dublin Office	Inland Fisheries Ireland Sunnyside House Co. Cork P12 X602 Ireland	+353 (0) 26 41222	macroom@fisheriesireland.ie
National Parks and Wildlife Service	South Western Division	National Parks & Wildlife Service 90 King Street North Dublin 7 D07 N7CV IRELAND	064 669 1700	nature.conservation@chg.gov.ie
Environmental Protection Agency (EPA)	EPA Regional Inspectorate Cork	EPA Cork Inniscarra County Cork P31 VX59	(021) 487 5540	info@epa.ie
Local Authority	Cork County Council	Cork County Council, Planning Department, Ground Floor, County Hall, Carrigrohane Road, Cork. T12 R2NC	(021) 4276891	planninginfo@corkcoco.ie
Health and Safety Authority	HSA Contact Centre	HSA Contact Centre Health and Safety Authority Metropolitan Building James Joyce Street Dublin 1	0818 289 389	contactus@hsa.ie
Emergency Services	An Garda Síochána Bantry Garda Station	Bantry Garda Station, The Quay, Bantry, Co. Cork, P75 R266	(027) 208 60	
Emergency Services	Ambulance and Fire Service	Ambulance and Fire Service	999 or 112	

6. Site Environmental Awareness

The following general site Environmental Rules will apply. These general rules will be communicated to all site personnel via the site induction training and they will be posted across the site at strategic locations, such as the site compound, site entrances, etc.

6.1 General Site Environmental Rules

The do's

- Any signs of pollution or environmental damage will be reported to the Project Manager/Environmental Officer, no matter how small;
- Any spills, incidents or near misses that may occur on site, will be immediately reported to the relevant supervisor/Project Manager/Environmental Officer;
- Refuel only in designated areas with spill kits available.

The don'ts

- There shall be no disposing of anything into a drain or onto land. All waste must be sent to the designated site waste management areas;
- Do not throw litter on ground, all waste must be sent to site waste management contractor;
- Do not drive plant or machinery outside the authorised working boundaries of the site(s).

Environmental Procedures will be in place to control any potential impacts from the construction phase of the project. These procedures, together with the site Environmental Policy are to be made available in the main site compound/information points at the site.

The training of the site construction staff is the responsibility of the Project Manager. An environmental training programme should be organised for onsite personal, to outline the CEMP and to detail the site environmental policy.

A brief outline of this CEMP should be incorporated into the site induction course.

Contractors shall verify the competency of their drivers and sub-contractor drivers. Where practical, employers are encouraged to identify a pool of drivers who would regularly be used to service the site(s)/project.

There will be regular audits, and monitoring of the CEMP, through an Environmental Auditing and Inspection programme, which is to be developed in conjunction with the CMT.

7. Auditing, Monitoring, Inspections and Response

Regular inspections/audits should be carried out by the Project Manager/Construction Manager/Environmental Officer, to address environmental issues including dust, litter, noise, traffic, surface water, waste management and general housekeeping.

Environmental aspects of this audit should be documented. The frequency of these audits (weekly / monthly / other) will be based on the nature of construction activities/contractor activity.

The Environmental Monitoring Schedule (Table 4-4) for construction will provide for the checking of equipment, materials storage and transfer areas and specific environmental controls.

Table 7-1: Example of Environmental Monitoring Schedule

Aspect	Area of Inspection	Monitoring Required	Note/Checks	Frequency	Responsibility
Surface Water Run-off Controls	Weather Forecast	Met Éireann download	• Pre-determined rainfall trigger levels (e.g. 1 in 5-year storm event or heavy rainfall at >25mm/hr)	Regular/daily/weekly during the construction phase as well as during and after significant rainfall events	Environmental Manager
	Discharges from on-site sediment and erosion controls	Visual inspection	• Colour, presence of silts	Weekly	Environmental Manager
Water quality monitoring	Discharges from on-site sediment and erosion controls Internal site road Site Entrance	Visual inspection	• Unacceptable level of sediment/silt on the road surface • Presence of waste	Weekly	Environmental Manager
		Visual inspection	• Unacceptable level of sediment/silt on the road surface • Presence of waste • Surface Condition	Daily	Project Manager
Roads	Fuel & Oil Storage areas	Visual inspection	• Damage to containers or ancillary equipment • Leakages • Unlocked storage container • Fuels stored within bunded area	Daily	Project Manager
	Construction Materials Storage Areas	Visual inspection	• Damage • Untidiness	Daily	Environmental Manager
Temporary Site Compound Area	Waste Collection Areas	Visual inspection	• Damage • Untidiness • Full skips	Daily early/weekly	Environmental Manager
	Mobile wheel wash	Visual inspection	• Build-up of sediment	Daily	Environmental Manager
	Wastewater facilities	Visual inspection	• Holding tank requiring emptying	Weekly	Project Manager
Operation Control	Concrete pours	Visual inspection	• Run-off / spills	Weekly	Project Manager
	Dust generation	Visual Inspection	• Cleanliness of roads and compound area • Dust at stockpiles • Dust from delivery vehicles	To be scheduled with pours	Project Manager

7.1 Record Keeping

The Construction Manager will ensure that fully detailed records are maintained of any 'incident /event' likely to cause non-compliance and / or harm to the environment. Environmental Incidents/Near Miss Reports are reported and recorded.

Complaints and Follow up Actions on the construction site will be managed by the CMT and contractors will ensure that all complaints are recorded according to CMT requirements.

Each contractor will be responsible for ensuring that a full record and copy of all Safety Data Sheets (SDS) pertaining to their works is kept on file and up to date in their site offices/other. Contractors will also retain a duplicate copy of all SDSs held by the contractors.

The Project Manager will be responsible for monitoring the movement and treatment of all waste during the construction phase of the project. Monitoring should be carried out, and record the nature, quantities and off-site destination of wastes.

7.2 Environmental Performance Indicators

The Contractor will outline the key performance indicators (KPIs) for the Site in gauging successful site management in the prevention of pollution and the protection of the environment.

Environmental performance indicators will include:

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

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

7.3 Response Procedure/ Corrective Action

In the event of an environmental incident, or breach of procedure, or where a complaint is received, or in the event of encountering buried waste or contaminated soils/groundwater, the contributing factors are to be investigated, and remedial action taken as necessary. The Contractor will ensure that the following response actions will take place:

1. The Project Manager must be informed of any incident, breach of procedure and/or complaint received and details must be recorded in the incident/complaint register
2. The Project Manager is to conduct/co-ordinate an investigation to determine the potential influence that could have led to the non-compliance.
3. The Project Manager is to notify and liaise with the appropriate site personnel where required, e.g. Site Environmental Manager.

4. The Project Manager shall notify the Client of any complaints or environmental incidents within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services or where any pollution events occur, the Client shall be notified within 1 hour.
5. If necessary, the Project Manager will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident.
6. The details of the incident will be recorded on an Incident / Complaints Form which is to record information such as the cause, extent, actions and remedial measures used following the incident/complaint. The form will also include any recommendations made to avoid reoccurrence of the incident.
7. The Project Manager will be responsible for any corrective actions required as a result of the incident e.g. an investigative report, formulation of alternative construction methods or environmental sampling, and will advise the Designer and Client as appropriate.
8. The Project Manager is to ensure that the relevant environmental management plans/procedures are revised and updated as necessary.

7.4 Corrective and Preventative Action

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

8. Implementation of Controls

The Contractor(s)/Project Manager shall be responsible for the implementation of control measures identified in Section 10 below, and detailed in Appendix 1.

Contractors will comply with the requirements of the Client/Construction Management Team to document and seek approval for Method Statements, Permits and other site-generated documentation as requested.

The CEMP can form part of tender and contract documentation for each works contract. Requirements and responsibilities will be reviewed with each Contractor at site kick-off meetings, and at progress meetings.

Contractors shall ensure that any sub-contractors working under their remit, are supplied with a copy of the CEMP, receive sufficient environmental training and are aware of their environmental obligations on the project.

Environmental requirements identified will be controlled as follows:

- Procedures and control measures as set out in this CEMP;
- Approved Method Statements and Risk Assessments from Contractors which shall address all potential environmental impacts for the specific task;
- Detailed contractor plans for specific environmental aspects;
- Emergency response plans;
- Specific induction training before commencing work.

In summary, it is expected that all contractors will follow good environmental practice throughout all Construction Activities

8.1 Environmental Induction Training and Environmental Toolbox Talks – Construction Personnel

Contractors should conduct safety meetings / toolbox talks on relevant EHS topics for all employees in their care on a regular basis. All construction personnel will be required to complete contractor induction and be certified with FÁS Safe-Pass or equivalent.

9. Environmental Controls

A number of environmental management plans (EMP) have been prepared for managing the impacts of Construction Activities associated with the Project. See Table 5-1 and refer to Appendix 2. These plans are to be implemented by the Appointed Project Manager and/or Project Contractor(s) as relevant.

Once appointed, it is the Contractor's responsibility, to update and add (where required) project specific control measures relevant to the environmental management plans and procedures. The Contractor will ensure that plans/procedures are communicated to all site staff, including sub-contractors, through induction, training and at relevant meetings.

Table 9-1: Plans for Managing Impacts of Construction Activities

Ref:	Procedure:
EMP 1	Surface Water Runoff and Excavation Management
EMP 2	Fuels and Oils Management
EMP 3	Management of Concrete and Bituminous Material
EMP 4	Noise, Vibration, Dust and Air Control
EMP 5	Construction Resource & Waste Management
EMP 6	Traffic Management
EMP 7	Management of Archaeology
EMP 8	Protection of Habitats and Fauna
EMP 9	Landscaping
EMP 10	Emergency Response
EMP 11	Site Environmental Training and Awareness
EMP 12	Monitoring and Auditing
EMP 13	Environmental Accidents, Incidents and Corrective Actions
EMP 14	Environmental Complaints

Appendix 1

Contractor Method Statements

(Contractor Input Required at Construction Stage)

Appendix 2

Environmental Management Plans

EMP 1: Surface Water Runoff and Excavation Management

Purpose

The purpose of this plan is to describe measures for the management of excavations, the management of all surface water and run-off on the site, and in particular, sediment and erosion control.

Management of Surface Water during Earthworks

It is important that surface water/ground water is controlled during the construction phase of the proposed development to prevent heavy silting/contamination to the watercourses including the Mill Stream.

Surface water/ground water run off using the following methods:

- Erosion controls are required to be implemented to prevent runoff flowing across exposed ground and become polluted by sediments. These measures include:
    - Monitoring of the weather forecast prior to planning excavation works;
    - Minimising the area of exposed ground and ensuring excavation will not proceed faster than the rate of construction;
    - Stripped pavement/soil material will be temporarily stockpiled more than 10m away from any drain or watercourse or taken off-site.
    - Stockpiles will be in a dry zone that is not subject to ponding.
    - Providing bunds or other diversions to keep run off from entering the stockpile area where required.
    - Providing impermeable mats (plastic sheeting) as covers to mounded excavated material and open excavations during periods of heavy rainfall.
- Earth movement activities will be suspended during periods of prolonged rainfall events;
- The earthworks material will be placed and compacted in layers to prevent water ingress and degradation of the material;
- Drainage and associated pollution control measures will be implemented on site before the main body of construction activity commences;
- Runoff of surface water from construction areas will be controlled;
- Silt-laden runoff should be expected from any areas of recently exposed soil or rock. There is also potential for pollution to occur from machinery used in the construction.
- Any introduced or artificial materials required (e.g. silt fencing, straw bales, sand bags, etc.) that might need to be deployed onsite, will be removed on completion of the works.
- Discharge from the silt control measures will be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques or discharged into the existing drainage network within the proposed development site.
- Additional drainage measures will be implemented to help attenuate the increase in surface water flows, if surface water is observed discharging from the construction compound.

- Runoff from this area is anticipated to have high silt loading due to mobilised soils from excavated surfaces, fines from track aggregate and sludge due to traffic.

Dewater of Works Area / Excavations

- The method of de-watering the works area will be decided upon after mobilisation to site. Consideration will be given to ground conditions, tidal conditions, and river flow rates. The options will be damming and diversion channel or damming and overpumping.

Stockpile Control Measures:

- All construction waste within the site shall be removed from the site and disposed of/recovered at a suitably authorised waste facility.
- Excavation and stockpiling activities will be minimized during wet weather periods.
- Soil and/or subsoil will be left undisturbed in situ for as long as possible prior to excavation.
- Stockpiles of excavated soil and/or subsoil will be graded so as to shed water.
- Repeated handling of soil will be avoided and ideally all soil stockpiles will remain undisturbed until otherwise required.

Excavation and Earthworks

- All excavation and earthworks will be carried out in accordance with BS6031:2009 Code of Practice for Earthworks. Soil handling, extraction and management will be undertaken with regard to best practice guidelines such as Guidance on the Waste Management (Management of Waste from the Extractive Industries) Regulations 2012.
- The following practices will be followed in relation to the excavation of cable trenches, topsoil stripping and any other earthworks:
- Excavated material will be stored and re-used to infill excavations on site where possible. Where the soil is to be re-used, this will be side casted. All side casted soil to be kept a minimum of 20m from any watercourse.
- If any contaminated earth is uncovered, this will be stored separately and disposed of accordingly once the contaminant has been identified.
- Efforts will be made to ensure that water does not accumulate in excavated areas.
- All topsoil and subsoil will be stored separately, and care will be given to ensure the structure and quality of the soil is not damaged.
- The amount of exposed ground and soil stockpiles will be kept to a minimum and any stockpiles in place for an extended period of time will be allowed to re-vegetate naturally.
- Earthworks shall not occur during unsuitable weather conditions, including when soils are waterlogged or very dry.

Silt Control

- Silt-laden runoff should be expected from any areas of recently exposed soil or rock. There is also potential for pollution to occur from machinery used in construction of the proposed development.

- Any introduced or artificial materials required (e.g. silt fencing, straw bales, sand bags, etc.) that might need to be deployed onsite, will be removed on completion of the works.
- Discharge from the silt control measures will be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques or discharged into the existing drainage network within the proposed development site.

Monitoring

- Controls will be regularly inspected and maintained.
- The Environmental Manager will regularly inspect the site. Any damage will be repaired or cleared promptly.
- Weather forecasts will be regularly monitored during the construction phase. The 24 hour advance meteorological forecasting service from Met Éireann will be used.
- Water Inspection Programme to include visual monitoring of Sediment and Erosion Control measures.

Responsibility

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

The Environmental Manager is responsible for ensuring spill kits are readily available in vulnerable locations.

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

EMP 2: Fuel and Oils Management

Purpose

The purpose of this plan is to describe measures for the management of all fuel and oils on-site for the protection of watercourses from any spills.

Procedure

Construction machinery and vehicles:

- The potential for hydrocarbons getting into the existing drains and local watercourses will be mitigated by only refuelling construction machinery and vehicles in designated refuelling areas using a prescribed re-fuelling procedure;
- Fuel tanks, drums and mobile bowsers will have a secondary containment such as a double skinned tank. All tanks, drums and mobile bowsers will be located in a sealed impervious bund with sufficient capacity to contain at least 25% of the total volume of the containers or 110% of the largest container, whichever is the greatest;
- Refuelling will be carried out using 110% capacity double bunded mobile bowsers. The refuelling bowser will be operated by trained personnel. The bowser will have spill containment equipment which the operators will be fully trained in using;
- Refuelling of vehicles and plant will be carried out on hard standing, using drip trays to ensure that no fuel can contaminate the ground outside of the bunded areas;
- Storage areas will be covered, wherever possible, to prevent rainwater filling the bunded areas;
- Storage areas will be kept secure to prevent acts of vandalism that could result in leaks or spills;
- All containers of any size will be correctly labelled indicating their contents and any hazard warning signs.
- All oil and diesel storage facilities will be at least 30m from any watercourse including surface water drains;
- Fuel fill pipes will not extend beyond the bund wall and will have a lockable cap secured with a chain;
- Suitable precautions will be taken to prevent spillages from equipment containing small quantities of hazardous substances (i.e. consaws and jerry cans) including;
    - Each container or piece of equipment will be stored in its own drip tray made of a material suitable for the substance being handled; and
    - Containers and equipment will be stored in a firm level surface.
- Plant nappies or absorbent mats to be placed under refuelling point during all refuelling to absorb drips. Plant nappies to be provided beneath small mobile plant (e.g. small generators, pumps, etc.);
- Mobile bowsers, tanks and drums should be stored in secure, impermeable storage area, away from drains and open water;
- No tanks or pipework containing liquids such as fuel, oils or chemicals will be stored below ground;
- To reduce the potential for oil leaks, only vehicles and machinery will be allowed onto the site that are mechanically sound. An up-to-date service record will be required from the main contractor;

- For deliveries and dispensing activities, it will be ensured that:
    - Site specific procedures are in place for bulk deliveries;
    - Delivery points and vehicle routes are clearly marked; and
    - Emergency procedures are displayed and a suitably sized spill kit is available at all delivery points, and staff are trained in these procedures and the use of spill kits.
- Potential leaks from delivery vehicles will be reduced by visually inspecting all delivery vehicles for major leaks. Contractors supplying concrete and crushed stone to the site will be contractually required to supply their products using roadworthy vehicles;
- Vehicles and plant will not park near or over drains and will be washed in accordance with the commitments set out above;
- Should there be an oil leak or spill, the leak or spill will be contained immediately using oil spill kits; the nearby dirty water drain outlet will be blocked with an oil absorbent boom until the fuel/oil spill has been cleaned up and all oil and any contaminated material removed from the area. This contaminated material will be properly disposed of in a licensed facility;
- The Environmental Manager will be immediately informed of the oil leak/spill and will assess the cause and the management of the clean-up of the leak or spill. They will inspect nearby drains for the presence of oil, and initiate the clean-up if necessary;
- Immediate action will be facilitated by easy access to oil spill kits. An oil spill kit that includes absorbing pads and socks will be kept at the site compound and also in site vehicles and machinery;
- Correct action in the event of a leak or spill will be facilitated by training all vehicle/machinery operators in the use of the spill kits and the correct containment and cleaning up of oil spills or leaks. This training will be provided by the Environmental Manager at site induction; and
- In the event of a major oil spill, a company who provide a rapid response emergency service for major fuel spills will be immediately called for assistance, their contact details will be kept in the site office and in the spill kits kept in site vehicles and machinery.

Oil storage during the construction phase

- Only the required volume of oil will be stored for the works taking place at the time.
- A secure bunded containment area will be provided within the site for the storage of lubricants, oils and site generators, etc. Emergency procedures and contingency plans, including emergency spill kit with oil boom, will be set up to deal with accidental spillages.
- Fuel containers must be stored within a secondary containment system e.g. bund for static tanks or a drip tray for mobile stores;
- Access to oil stores will be controlled by the storage of oils within a locked steel container within the site compound. The site compound will be surrounded by a palisade fence and locked when there are no site personnel present.

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

Responsibilities

The Construction Manager and Environmental Manager are responsible for ensuring Fuel and Oils are managed in line with this procedure.

Reference

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

EMP 3: Management of Concrete and Bituminous Material

Purpose

The purpose of this plan is to describe measures for the management of concrete on-site for the protection of watercourses from any spillages.

Procedure

Supervision of concrete pours:

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

Concrete Water

- Pours will not take place during heavy rainfall;
- To reduce the volume of cementitious water, washout of concrete trucks will not take place on site. Concrete trucks will be washed out off site at the source quarry;
- To reduce the volume of cementitious water, only concrete truck chutes will be washed down on site. The concrete trucks shall wash down their chutes at a designated chute wash down area within the temporary Construction Compound (away from the works area). The wash down area shall consist of a polythene lined bunded area of about $10m^3$ capacity. The collected washdown water will be disposed of using a registered contractor;
- No disposal of concrete remnants will be permitted on site;
- Breaking of concrete (associated with structure demolition) has the potential to emit alkaline dust into the receiving environment. Where necessary a barrier between the dust source and the sensitive receptor (the water body in this case) will be erected to limit the possibility of dust contacting the receptor.
- The use of wet concrete and cement in or close to any water body will be carefully controlled so as to minimise the risk of any material entering the water;

- Where possible, a specific fast-setting mix (by having either a higher-than-normal fines content, a higher cement content or the use of ecologically-appropriate chemical admixtures, will be used to minimize risk of ecological impacts.
- Concrete will not be allowed to enter watercourses under any circumstances, and drainage from excavations in which concrete is being poured will not be discharged directly into existing watercourses without appropriate treatment and consent from the relevant authority. Delivery trucks, tools and equipment will be cleaned at the wheel wash facility located at the temporary site compound.

Paving/Bituminous Materials

- Material stockpiles (if required) will be kept to a minimum size, covered and located at least 15m from any watercourse.
- To prevent contaminated or silt-laden runoff from entering drains/ultimately River Laune, a range of temporary measures will be implemented (if required), including silt fences, cut-off ditches, silt traps, straw bales, entrapment matting and drainage to vegetated areas;
- Runoff will be controlled and, if required, directed to settlement ponds or sumps. Any temporary attenuation and treatment facilities will be designed according to best practice., and will be regularly inspected and maintained;
- Construction works will be avoided during prolonged periods of very heavy rainfall

Responsibilities

- All concrete pours will be supervised by suitable personnel;
- The Environmental Manager is responsible for ensuring that appropriate water pollution prevention measures are put in place and that water sampling is carried out where required. Where standards are breached he/she should carry out an investigation and in conjunction with the Construction Manager, he/she should ensure remedial action is taken and further samples taken to verify that the situation has returned to normal;
- The Environmental Manager is responsible for ensuring spill kits are readily available in vulnerable locations.

EMP 4: Noise, Vibration, Dust and Air Control

Purpose

The purpose of this plan is to describe measures for the management of impacts from construction noise.

Construction works will be carried out in accordance with best practice and in line with recommendations contained within BS 5228-1:2009+A1:2014.

Noise and Vibration

Noise will be generated from inter alia earthmoving plant, demolition/excavations and Jack hammers etc. The main control measure will be the suppression of noise at source by the use of plant and equipment in good working order, new or for all other plant with a full maintenance schedule. All plant operatives will contact their supervisors/foremen in the event that their machine becomes defective with resulting high noise emissions. The supervisors/foreman as part of his/her weekly physical inspection will check the mechanical state of all plant with the fitter. Any defective plant will be kept out of service until the necessary repairs are done.

- A pre-construction commitment to managing nuisance noise will be agreed through notification and consultation with affected parties, if deemed necessary.
- A nominated person from the appointed contractor will be appointed to liaise with local residents and businesses regarding noise nuisance events.
- Working hours at the site during the construction phase will be limited to 08.00 to 19.00 Monday to Friday and 08.00 to 14.00 Saturday. No intrusive works at night. on Sundays or public holidays[2].
- Construction contractors will be required to comply with the requirements of the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations, 1988 as amended in 1990 and 1996 (S.I. No. 320 of 1988, S.I. No. 297 of 1990 and S.I. No. 359 of 1996), and the Safety, Health and Welfare at Work (Control of Noise at Work) Regulations, 2006 (S.I. No. 371 of 2006).
- A noise barrier should be installed for any works which occur within 20m of an Noise Sensitive Location (NSL) at chainage 370m to 440m and works which occur within 15m of any NSL at chainage 0m to 370m. An effective acoustic barrier requires a minimum surface mass density of at least 10kg/m^2.
- Where rock breaking is required, a rock breaker shroud attachment should be attached to the rock breaker in order to provide attenuation of noise.
- Operators of all mobile equipment will be instructed to avoid unnecessary revving of machinery.
- All contractors will ensure that the plant and construction methods employed are the quietest available for the required purpose insofar as practicable.
- Roads will be maintained in a clean condition and the site speed limits will be strictly adhered to.
- Engines, vehicles and equipment will be switched off when not in use.
- Significant sources of noise will be enclosed.
- Plant will be used and serviced regularly in accordance with manufacturer's instructions.
- Machinery having rotating parts will be serviced according to supplier recommendations to prevent friction induced sound.
- Materials should be lowered, not dropped, insofar as practicable and safe.

[2] Without written agreement from the Planning Authority

- Noise generating equipment will be located as far as possible away from local noise sensitive areas.
- All contractors will notify the CMT in advance of any critical periods arising for noisy activities.

Complaints regarding noise will be entered into the complaints log, and if required, the Project Manager/Environmental Officer will arrange to meet with those affected. The situation will be acted upon immediately and reviewed by the Project Manager. If nuisance is occurring then the project manager will decide what action is necessary to reduce to acceptable levels or eliminate the disturbance.

The main control measures will be control of noise at source using the following methods in line with Clause 8 'Control of noise' of BS 5228-1:2009+A1:2014:

- Operators of all mobile equipment will be instructed to avoid unnecessary revving of machinery (Clause 8.2.1 General).
- Use of appropriate plant and equipment where possible with low noise level generation where possible (Clause 8.2.2 Specification and substitution).
- All construction plant to be used on site should have effective well-maintained silencers (Clause 8.2.3 Modification of existing plant and equipment).
- Noise generating equipment will be located as far as possible away from local noise sensitive areas identified (Clause 8.2.5 Use and siting of equipment); and,
- Regular and effective maintenance of site machinery including a full maintenance schedule to ensure that all pieces of equipment are in good working order. With efficient use of well-maintained mobile equipment, considerably lower noise levels than those predicted can be attained (clause 8.2.6 Maintenance).

In addition, the following best practice measures are proposed:

- Training of site staff in the proper use and maintenance of tools and equipment.
- Avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment.
- Machines that could be in intermittent use will be shut down between work periods or will be throttled down to a minimum.
- Plant start-up will be sequential rather than all together.
- Internal access tracks to be well maintained.
- Plant known to emit noise strongly in one direction will, when possible, be orientated so that the noise is directed away from noise-sensitive locations.
- Drop heights for materials such as gravels will be minimised whenever practicable

Dust and Air Quality Control

The principal source of air emissions during the construction phase will be dust arising from road works/earthworks, excavations, upgrading/realignment/construction of road, and the movement of material around the site.

If dust nuisance arises, a water bowser will be engaged. Complaints in relation to dust will be entered into the site complaints log and the Project Manager/Environmental Officer, if required, will arrange to meet with those affected. The situation will be acted upon immediately and reviewed by the Project Manager.

In the unlikely event that dust situation, be such as to pose a hazard to site traffic, or others then the Project Manager will decide whether to cease operations in the area impacted or whether a second bowser is required.

The control measures that will be implemented, where necessary, during the construction phase of the project to address the potential impact of dust and particulate pollution are as follows:

- A water bowser will be available to spray work areas and haul roads, especially during periods of excavations works coinciding with dry periods of weather, in order to suppress dust migration from the site.
- All loads which could cause a dust nuisance will be covered to minimise the potential for fugitive emissions during transport
- All other stockpiles will be kept damp and covered to prevent windblown dust emissions
- Construction vehicles and machinery will be serviced and in good working order
- Wheel washing facilities will be provided if required.

Responsibility

- The Construction Manager will be familiar with the noise sensitive receptors and alert the Environmental Manager in good time prior to work commencing in the areas closest to any noise sensitive receptors.
- Any noise complaints shall immediately be directed to the site agent. Depending on the nature of the complaint remedial action may need to be undertaken.
- The Environmental Manager will review any relevant planning conditions in updating this plan.

References

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

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

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

EMP 5: Construction Resource & Demolition Waste Management

Purpose

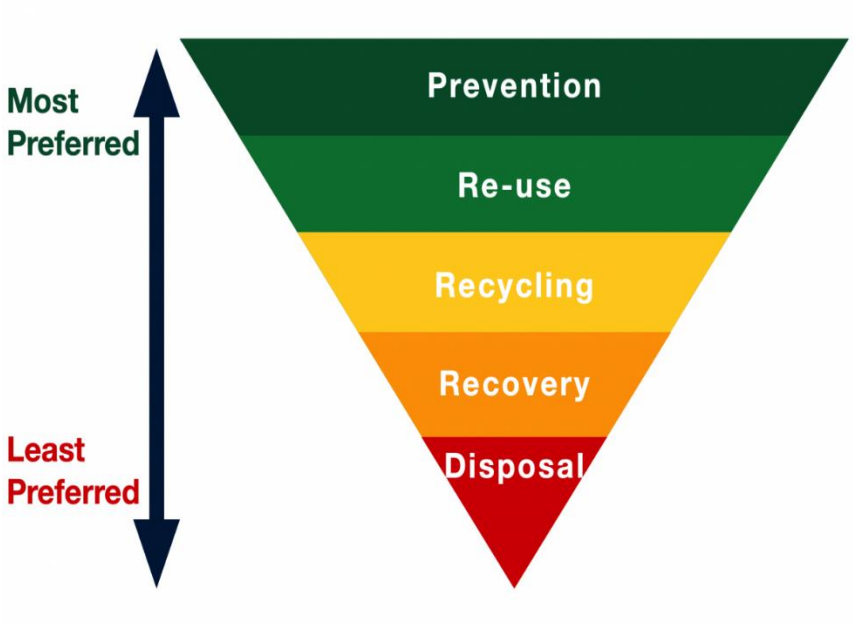
The purpose of the plan is to describe measures for the management of all wastes associated with the construction works. There will be limited waste generated during the construction phase of the Proposed Development.

Procedure

Waste Management Plan

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

- Regard should be had to the Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (DoEHLG, July 2006) in preparing and maintaining this plan.
- The Waste Management Hierarchy (illustrated below) will form the basis of the Plan and will incorporate the principles outlined in '*A Waste Action Plan for a Circular Economy*' (WAPCE) and the guidance provided in EPA '*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects*', 2021;
- The Construction Resource & Waste Management Plan will address the following aspects of the Project:
    - Analysis of the waste arising/material surpluses;
    - Specific waste management objectives for the project;
    - Methods proposed for prevention, reuse and recycling of wastes, and
    - Material handling procedures.



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

- Description of the Project;

- Wastes arising including proposals for minimisation/storage/reuse/recycling;
- Estimated cost of waste management;
- Record keeping procedures.

General Waste

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

Wastewater from staff facilities

- During the construction phase, staff facilities will be provided at the site compound. A cabin comprising a canteen, washroom and toilets will be provided. This cabin will contain three integrated holding tanks; one for clean water, one for waste water and the third for sewage. The waste water tank and sewage tank will be emptied as required by a vacuum tanker and removed from site to a licensed facility. These staff facilities will be removed at the end of the construction phase.

Construction

Contractors working on site during the works will be responsible for the collection, control and disposal of all waste generated by the works. Construction phase waste may consist of hardcore, stone, concrete, steel reinforcement, shuttering timber, food waste from the canteen and unused oil, diesel and building materials. This waste will be collected at the end of the construction phase and taken off site to be reused, recycled and disposed of in accordance with best practice procedures at an approved facility. Domestic wastewater from the on-site holding tank will be collected on a regular basis by approved contractors and disposed of in an authorised facility in accordance with best practice. Plastic waste will be taken for recycling by an approved contractor(s) and disposed or recycled at an approved facility.

General Resource & Waste Management on Site

To manage waste effectively, focus on the following:

- Ordering the correct amount of materials to be delivered when needed;
- Ensuring materials are not delivered to site damaged and unusable;

- Reducing the amount of packaging used by suppliers;
- Where possible, establish a 'take back' system with suppliers;
- Ensuring wastes are handled and stored correctly; and
- Limiting the amount waste going to landfill by reusing and recycling where possible.

Temporary Construction Compound

Construction compound / waste storage area will be created for storage of waste materials, plant, and equipment and for site offices, and welfare facilities.

Waste Generation

Best practice procedures in general will minimise waste generated on-site. Measures including good site management will be taken to limit the quantity of waste generated during construction phase.

Miscellaneous/incidental waste materials will be generated during construction including concrete, pallets, packaging, spare steel reinforcement, shuttering timber, food waste, unused oil, and building materials. Waste will be collected at regular intervals during the construction phase and taken off site by licenced waste contractor to be reused, recycled and disposed of in accordance with best practice procedures at an approved facility.

Plastic waste will be removed for recycling by an approved contractor and disposed or recycled at an approved facility.

Surplus materials will include materials generated by the excavation works during construction works, mainly comprising excavated soil and subsoil.

Waste streams will include wastes generated by plant, machinery and construction workers over the period of the works, for example waste oils, sewage, refuse (paper, carton, plastic etc), wooden pallets, waste batteries, fluorescent tubes etc.

Minimisation, Reuse, Recycling, and Management of Construction Waste

The primary aim of this Resource & Waste Management Plan is to ensure that wastes generated during the course of the project are managed in a systematic manner in accordance with Waste Management Legislation and the principles of the waste Hierarchy, i.e. Prevention, Minimisation, Reuse, Recovery, and Recycling.

Wastes generated during the construction phase will be identified and segregated according to their category as described by the European Waste Catalogue (EWC). In order to affect this, designated waste storage areas will be created at the site temporary construction compound andother suitable locations, for storage and segregation of wastes prior to transport for recovery/disposal at suitably licensed/permitted facilities. Suitably sized containers for each waste stream will be provided and will be supervised by the Waste Management Coordinator (WMC). The WMC will be responsible for the management of wastes during the entire project. The numbers and sizing of the containers will be agreed with the Waste Contractors/Hauliers in advance of the commencement of the construction works. Source segregation of the wastes generated will result in cost savings, in addition to providing an environmentally sound route for the management of all the Construction and Demolition Waste.

Under Waste Management Regulations 2007 a waste collection permit, for appropriate waste codes and destinations is required by the waste haulier, to transport the waste from one site to another. The contractor will ensure the movement of all wastes are carried out in compliance with relevant waste regulations.

Wastes will only be treated or disposed of at waste facilities to carry out a specific activity (i.e. chemical treatment, landfill, incineration etc.) for the specific waste types. Records of all waste movements and associated documentation will be held on site. It is planned that all waste activities at the site will comprise of;

- source,
- segregation,
- storage, and
- collection

In order to prevent/minimise the generation of wastes, the Contractor will ensure that raw materials are ordered so that the timing of the delivery/quantity delivered, and the storage is not conducive to the creation of unnecessary waste.

The Contractor will continuously seek to improve the Resource & Waste Management process on the site during all stages of the construction phase and maximise opportunities for reuse/recycling wherever they exist. For example in relation to waste packaging, the Contractor will seek to negotiate take back of as much packaging waste as possible at source, to ensure maximum recycling. The Construction Resource & Waste Management Plan will be included in the team weekly meetings. In addition, the plan will be communicated to the whole construction team regularly on site, including any updates form earlier revisions of the plan.

An overview of the methods to manage the primary waste streams is presented in the following sections;

Soils and Spoil

There will be a requirement to excavate concrete, rock, tarmac, hardcore, topsoil and subsoil. Excess soil material will be taken offsite by an approved contractor to a licence waste facility. As a precautionary measure, it is recommended that an "Unexpected Contamination Finds Protocol" is developed prior to the commencement of works, which will enable the contractor to safely manage any potential contamination on the site should it be encountered during planned excavation works.

Should contaminated soil be encountered during excavations works the Contractor shall cease excavation works in the area where contaminated soil has been uncovered. The Contractor shall engage the services of a Consultant who specialises in Contaminated Land and arrange a site visit for the inspection of the contaminated soil. The Contaminated Land Consultant shall provide guidance on appropriate soil sampling and chemical testing and classification of the waste. Once the test results are available the Contaminated Land Consultant will issue a report.

Concrete

Concrete waste will occur. Excess concrete will be returned to the supplier for reuse. Concrete trucks will be washed out off site at the source quarry. To reduce the volume of cementitious water, only concrete truck chutes will be washed down on site. The concrete trucks will wash down their chutes at a designated chute wash down area in the site compound. The wash down area will consist of a polythene lined bunded area with a capacity of about 10m³. No disposal of concrete remnants will be permitted on site. Concrete management procedures are detailed in **EMP 3: Management of Concrete and Bituminous material**.

The Environmental Officer will monitor the pH of the water in the chute wash down bund(s) and can dose with CO_2 or acidic water from the drains until the wash out water achieves neutrality before discharge if deemed necessary.

Waste-Water Treatment / Effluent disposal

During the construction phase, staff facilities will be provided at the site compound/other suitable locations. A cabin comprising a canteen, washroom and toilets will be provided. This cabin will contain three integrated holding tanks; one for clean water, one for waste water and the third for sewage. The waste water tank and

sewage tank will be emptied as required by a vacuum tanker and removed from site to a licensed facility. These staff facilities will be removed at the end of the construction phase. Foul sewage from the temporary facilities will be routed to covered precast concrete watertight 5m^3 tanks designed for receiving and storing sewage with no outlet. The tanks will be sized to suit the expected use and will be installed in a location remote from water courses. Contents and residues will be regularly emptied by a competent operator for safe disposal to an approved treatment works.

Hazardous and Other Waste

The following Table lists some of the waste types that may be generated during the construction works. Although some waste types may be generated in locations other than the temporary construction compound (for example if absorbent filters are required at foundation/track locations etc.), such waste materials will be stored within the temporary construction compound only. Waste materials outlined below, generated outside the temporary construction compound, will be taken to the temporary construction compound on a daily basis and placed in appropriate waste receptacles.

Common Construction Wastes					
Concrete	Wood	Cables	Ducting	Metallic packaging/tins	Cardboard Packaging
Paper packaging	Plastic packaging	Wooden packaging	Office paper	Non-hazardous detergent	Plastic containers
Plastic bottles	Mixed waste	Ferrous metal	Non-hazardous waste electrical(s)		

Hazardous Waste, as categorised by the European Waste Catalogue	
13 01 10: Used mineral hydraulic oil (non-chlorinated)	13 02 08: Other waste engine, gear or lube oil
13 02 05: Waste engine, gear or lube oil (non-chlorinated)	13 02 08: Other waste engine, gear or lube oil
16 01 07: Oil filters	20 01 23: Discarded equipment containing CFCs
16 06 01: Lead batteries	16 07 08: Oily waste from transport and storage tanks
16 10 01: Hazardous liquid wastes to be treated off-site	20 01 21: Fluorescent tubes and other mercury-containing waste
20 01 33: Hazardous batteries and accumulators that are collected separately	15 02 02: Absorbents, filter materials, wiping cloths, clothing contaminated by dangerous substances

If hazardous waste / contaminated ground is encountered, then appropriate handling, storage, transportation, and disposal will be carried out. Works to the area where the hazardous waste/contaminated ground is encountered will stop. The ground will be assessed by an Environmental Engineer. Prior to being removed from the site, the waste will undergo a comprehensive waste assessment and classification by suitably trained/qualified person(s), in accordance with the EWC hazardous waste list. If non-hazardous waste becomes contaminated with hazardous waste, the entire load will be considered hazardous. At the site every effort will be made to segregate waste, and properly segregate hazardous waste from non-hazardous and inert waste arising. Hazard wastes will be identified, removed and kept separate from other wastes in order to avoid cross contamination. Specific method statement detailing the necessary mitigation measures during the excavation/handling, transportation, and disposal of hazardous materials encountered at the site will be prepared as required.

Oils, paints, adhesives and chemicals will be kept in a separate contained secured storage area. Lids will be kept on containers to avoid spillage/evaporation. Waste oils, adhesives etc will be handled, and disposed of appropriately. Every effort will be made at the site for no long term storage of hazardous materials/fuels/oils/chemicals, etc. There shall be no long term storage of waste oils etc. at the site.

Gravel/Stone/Asphalt/ Bituminous Materials

These materials will be delivered to site if required, with excess returned to supplier.

Metals

It is now common practice to segregate metals for reuse and recycling, however there are still sites where waste metal is thrown away in the general rubbish. One of primary sources of metal on sites is rebar. Waste of rebar will be reduced by ordering 'made to measure' from the source and detailed scheduling of all reinforced concrete structural elements.

Packaging/Plastic

Double handling will be avoided by segregating packaging wastes immediately after un-wrapping. Waste packaging will be segregated and in separate containers, at storage area for collection by the waste contractor for disposal to licensed facility.

Mixed Waste

- This waste stream will arise from waste packaging of piping components;
- A 40 m^3 open skip will be put in place to collect mixed waste within a designated waste area at the temporary site construction compound;
- This skip will accept plastic packaging, plastic piping, cardboard and other waste;
- Special care will be taken to ensure that no green waste or food waste will be disposed of in this skip. The purpose of this arrangement is to stop birds scattering food items across the site and therefore prevent vermin infestation;
- This material will be collected by contracted and licensed non-hazardous waste collectors.

Mixed Waste/Canteen Waste

Staff canteens have the potential to generate food waste and packaging waste. Designated receptacles will be provided at the canteen(s) to allow for segregation, and storage of individual waste streams. These will include receptacles for food waste, dry recyclables, and residual bin. All offices and canteens will be equipped with black plastic refuse bags and wheelie bins for the purpose of collecting and delivering this waste stream to the compactor. This material will be collected by the contracted waste management company/transported to licensed facility.

Dry recyclable collection from welfare facilities

- All offices and canteens will be equipped with clear plastic bags and wheelie bins for the purpose of collecting dry recyclables. This will be strictly managed to prevent any food waste entering the dry recyclable stream;
- Recycling wheelie bins will be located at all welfare facilities and offices associated with the project; and
- This material will be collected by the contracted and licensed non-hazardous waste collectors.

Other waste

Other wastes which may be generated may include residual non-recyclable waste such as paper, cloth, some cardboards, or plastics. Others may include fibreglass and geotextiles, and polystyrene. These types of materials will be stored in a dedicated container at the site compound. All residual wastes will be dispatched to suitably licensed facility for disposal. Other construction and demolition waste will be collected and disposed of appropriately.

Construction Phase General Waste

- Construction waste (timber, steel, concrete etc) elements will be segregated and stored in dedicated bins on site for recycling;

- All waste steel reinforcing will be stockpiled and at the end of each work unit, it will be collected for recycling by Licensed Facility;
- Plastics and packaging will be segregated and stored in dedicated bins on site for recycling;
- Waste oil stored on site will be stored in labelled containers and will be collected by licensed facility/licensed oil-recycling contractor as necessary. Records will be maintained on the volumes of waste oil generated.
- Paper / cardboard, this material will be recycled; and
- Wastewater from office and welfare facilities. These facilities will be regularly emptied by licensed/suitable contractors.

Training

Copies of the Resource & Waste Management Plan will be available to all site personnel. All site personnel and sub-contractors will be instructed about the objectives of the Resource & Waste Management Plan for the site, and informed of the responsibilities which fall upon them as a consequence of its provisions. This will be carried out during the site induction process for all site personnel. Where source segregation and materials reuse techniques apply, each member of the construction team will be given instructions on how to comply with the Resource & Waste Management Plan for the site. Site notices will be designed to reinforce the key messages of the Resource & Waste Management plan and will be displayed prominently for the benefit for all on site personnel.

Waste Records

All details of wastes (arising/generated/movement, etc) will be recorded during the project. Each consignment of waste removed from the site will be documented in the form of a waste management movement record form which will ensure full traceability of the material to its final destination. All records will be retained at a designated location at the site office/temporary construction compound and made available for auditing of the Resource & Waste Management plan.

Responsibility

The Environmental Manager will be responsible for adherence to correct waste management procedures. They will also identify a waste contractor to remove waste that can be recycled or re-used.

The Environmental Manager will keep records provided by waste contractors of all waste being removed from site. The Environmental Manager will record waste removed from site regularly. This information will be recorded in a standard format. It will be the construction manager's responsibility to organise the removal of skips from their area when they are full.

The Environmental Manager will inspect waste segregation and temporary soil/rock storage stockpiles during his regular site visits.

References

EPA 'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects', 2021

Design Out Waste: A design team guide to waste reduction in construction and demolition projects (EPA, 2015)

EMP 6: Traffic Management

Purpose:

The purpose of this plan is to describe measures for the management of all traffic, including construction traffic, for the minimization of disturbance and nuisance to the local community.

During the construction phase there will be additional traffic on the existing road network and road closures. Possible negative effects include additional traffic volumes on the local road network and impacts on residential amenity by construction traffic vehicles.

A detailed TMP will be prepared for the proposed development by the appointed contractor(s) prior to construction.

Procedure

General

A TMP will be prepared for the proposed development by the Appointed Contractor. This Plan will be finalised in agreement with Cork County Council.

The plan will include provision for:

- Communicating with the community, An Garda Síochána, public transport providers, fire brigade, ambulance, schools, and Cork County Council.
- Each proposed phase will require detailed TMPs
- Details of site access and any site traffic rules, including security, parking, loading and unloading, required speed or other relevant details.
- Programme of maintenance and upkeep of public roads.
- Site operating hours (including delivery) to be outlined.
- Access to the Site is from an existing access point off the N71. It is anticipated the haul route will likely be from the N71.
- Access on this existing road will be maintained where possible. The volume of traffic generated by the transportation requirements will be minimal.
- Road closures will be necessary for the duration of the proposed development.
- The details of the road closures will be agreed between the Appointed Contractor and Cork County Council and communicated to the public as necessary.
- Final details of road closures will be provided in the TMP prepared by the appointed contractor.

Public Roads

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

Site Entrance

- There will be no parking of any vehicles on the public road near the site entrance.
- Adequate parking will be provided on-site for both employees and visitors.

- The condition of the site entrance will be monitored on an on-going basis and a road sweeper provided to clean the public road if required.

Responsibility

- Project Manager
- Construction Manager
- Construction personnel
- Sub-contractors as appropriate
- Delivery personnel

EMP 7: Management of Archaeology

Purpose

The purpose of this plan is to have procedure in place for the discovery of any archaeology at the construction sites. An Environmental Procedure will be developed (if required), prior to commencement of the construction phase to consider archaeological sensitivities.

Procedure

If any archaeological materials are uncovered, an archaeologist will cordon off the area in which the archaeological material has been uncovered. No further construction work can take place within the cordoned area until a mitigation strategy agreed with the CCC/DoAHG has been implemented.

The mitigation strategy can include hand recording and excavation of the archaeological material by the archaeologist. This must be carried out under licence to the DoAHG and the archaeologist will need to prepare paperwork to be forwarded to the DoAHG with details of the archaeological material to be excavated and for the necessary licence to be issued by the DoAHG.

Following completion of monitoring on site, a report detailing the results of monitoring should be prepared and submitted to the DoAHG and CCC.

Responsibility

- The Site Manager is responsible for reporting of any archaeological discoveries.
- The construction personnel will all be trained to report the discovery of any archaeological site.

EMP 8: Ecological Management Plan for the Protection of Habitats and Fauna

Purpose

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

Procedure

Ensuring implementation of ecological protection measures outlined below.

Ecological Protection Measures

General Habitats

- Habitat degradation will be limited by controlling the movement of construction vehicles and machinery. Construction vehicles and machinery will not encroach onto habitats beyond the proposed development footprint and will be required to travel via the constructed roads when moving between works areas. To emphasise this requirement, the boundaries of the footprint of the development will be fenced off with post and wire. The Environmental Officer will also monitor vehicle movements;
- Mitigation measures set out in Ecology Impact Assessment prepared by MWP for the proposed development will be adhered to for the protection of habitats, ecology and fauna during construction.
- The extent of construction works area within the development site boundary will be clearly marked out using temporary stakes and high-visibility tape/bunting such that the construction zone, including extent of access for all construction plant and machinery, site compound and materials storage areas, is defined and is clearly visible to all contractor staff and machine operators.

- Movement of construction plant/construction vehicles will be restricted as much as is practicably possible to within the extent of works footprint within the development site boundary.
- Disturbance of fauna will be limited by controlling the movement of construction vehicles and personnel. Construction vehicles and personnel will not encroach onto habitats beyond the proposed development footprint.
- Construction materials and wastes will be kept in designated areas to reduce the risk of accidental injury/entrapment of any wildlife on-site.
- All temporary construction lighting will be turned off outside daylight hours.
- Should any resting or breeding place of any protected species be discovered within the site during construction works, works will cease immediately, the area will be cordoned off and the advice of NPWS sought.

Protection of Otter

No evidence of otter was recorded within the culvert or environs of marine area during surveys undertaken in February and June 2024. Though otters are found throughout Ireland in a range of habitat types, the underground culvert does not represent suitable or feasible habitat for otters as the walls of the culvert are constructed, there is no soft sediment in the walls which could be dug out for the creation of a holt. In the marina area, where the culvert exits, coastal otters may forage in these areas, however the shoreline is entirely surrounded by steep rock and built wall so access to the shoreline is relatively limited from natural areas surround Bantry town. Upstream of the culvert, fish species were limited to trout in the environs of the town. Modification of the river within the town and limited prey availability limits the potential for otter to forage within the town. Otters may forage higher in the catchment where more natural conditions are likely. A pre-construction survey is not recommended as part of these works.

There is potential for any commuting otters using the site during the construction phase to become trapped in trenches excavated during works. In line with construction best practice, all excavations during the construction phase of the proposed development will be covered securely to prevent the accidental trapping of otters.

Monitoring

In the unlikely event that protected faunal species are found actively using the Site for breeding/roosting during the construction phase, works will cease immediately, and the area will be cordoned off until advice is sought from a suitable qualified expert / NPWS.

Responsibility

- Environmental Manager; and
- Construction Manager.

EMP 9: Landscaping

Purpose

To describe the procedure for any landscaping works that will occur throughout the duration of the project's construction.

Procedure

Any landscaping works will be performed as soon as reasonably possible and after consultation with the local authority. All areas excavated during the works will be reinstated to match the surrounding areas.

EMP 10: Emergency Response

Purpose

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

Procedure

In the event of an environmental emergency, all personnel will react quickly and adhere to this procedure.

All site personnel will be inducted in the provisions of the Emergency Response Plan.

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

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

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

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

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

Oil Spillages

The following list outlines issues likely to be appropriate for inclusion the plan:

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

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

Concrete Spillages

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

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

Contacts

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

- Environmental Manager;
- Specialist oil removal company ;
- Cork County Council;
- Inland Fisheries Ireland; and
- National Parks and Wildlife Service.

Location of Emergency Spill Kits

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

Responsibility

- The Environmental Manager will prepare and finalise an Emergency Response Plan to be ready to respond to any incident;
- All site personnel will report any spillages of oil or chemicals to the Environmental Manager and Construction Manager immediately; and
- As appropriate, the Environmental Manager will report the spillage to the Inland Fisheries Ireland, Cork County Council and any other relevant authority.

EMP 11: Site Environmental Training Awareness

Purpose

To describe measures for informing the public of restricted access to the construction-site and the training of all site personnel in the protection of the environment and the relevant controls.

Scope

Notification to the public of restricted access to the Site. All site personnel and construction teams which may influence environmental impacts.

Procedure

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

Site signage will be provided at the entrance to the site to inform the public that access to the site is restricted to those directly involved in the construction works.

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

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

<u>Housekeeping and Storage of Hazardous Materials</u>

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

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

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

Responsibility

- Construction Manager;
- Environmental Manager; and
- All site personnel.

EMP 12: Monitoring and Auditing

Purpose

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

Procedure

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

Monitoring will be carried to ensure adherence with the following;

- EMP 1: Surface Water Runoff and Excavation Management
- EMP 2: Fuels and Oils Management
- EMP 3: Management of Concrete and Bituminous Material
- EMP 4: Noise, Vibration, Dust and Air Control
- EMP 5: Construction Resource & Waste Management
- EMP 6: Traffic Management
- EMP 7: Management of Archaeology
- EMP 8: Protection of Habitats and Fauna
- EMP 9: Landscaping
- EMP 10: Emergency Response
- EMP 11: Site Environmental Training and Awareness
- EMP 12: Monitoring and Auditing
- EMP 13: Environmental Accidents, Incidents and Corrective Actions
- EMP 14: Environmental Complaints

Checklists for daily, weekly or monthly site audits will be finalised by the Environmental Manager and the relevant personnel informed of their duties. Checklists will include (but are not limited to) confirmation that fuel is stored appropriately, resource & waste management rules are adhered to, all environmental buffers are maintained, Surface water and run-off control measures of the are in place and functioning, and concrete chute wash-out procedure is being followed. Checklists will be finalised with the Contractor's EOP.

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

Responsibility

- Project Manager;
- Environmental Manager; and
- Construction Manager.

EMP 13: Environmental Accidents, Incidents and Corrective Actions

Purpose

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

Procedure

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

Example list of environmental accidents & incidents:

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

Responsibility

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

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

EMP 14: Environmental Complaints

Purpose

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

Procedure

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

This procedure includes:

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

The out of hours contact number for the Site is: TBC

Responsibility

- Project Manager;
- Environmental Manager; and
- Construction Manager.

Appendix 3

Preliminary Design Drawing Booklet