

A large teal graphic element consisting of a triangle at the top and a trapezoidal shape below it, forming a stylized 'M' or a similar abstract shape.

New Islay Vessel Enabling Works - Kennacraig Outline Construction Environmental Management Plan

August 2023

This page left intentionally blank for pagination.

Mott MacDonald
Floor 1 Greenside
12 Blenheim Place
Edinburgh EH7 5JH
United Kingdom

T +44 (0)131 221 2300
mottmac.com

New Islay Vessel Enabling Works - Kennacraig Outline Construction Environmental Management Plan

August 2023

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
01	31/03/2023	GC	JC	BR	For Issue
02	09/08/2023	GC	FH	MR	Update to include Navigational Risk Assessment/Vessel Management.
03	27/09/2023	GC	JC	MR	Update to include mitigation for Common Eiders.

Document reference: | | | 105612-MMD-KE-ZZ-RP-O-0004-S2-P01

Information class: Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

1	Introduction	1
1.1	Project Background	1
1.2	Location	1
1.3	Purpose of the Outline Construction Environmental Management Plan	2
1.4	Structure of the Outline Construction Environmental Management Plan	2
1.5	Change Control	2
2	Proposed Development	3
2.1	Proposed Development	3
2.2	Site Operations	3
2.2.1	Construction Method	3
3	Roles and Responsibilities	8
3.1	Introduction	8
3.2	Client	8
3.3	Principal Contractor	8
3.3.1	Principal Contractor's – Site Agent	8
3.3.2	Principal Contractor's – Project Manager (PM)	9
3.3.3	Principal Contractor's Environmental Manager	10
3.3.4	Principal Contractor's Environmental Clerk of Works	10
4	Training and Induction	12
4.1	Site Induction	12
4.2	Environmental Training	12
5	Environmental Auditing and Monitoring	14
5.1	Inspections	14
5.2	Auditing	14
6	Environmental Reporting	16
6.1	Key Performance Indicators and Objectives	16
6.2	Reporting	16
6.3	CEMP Review	17
7	Consultation and Communication	18
7.1	Internal Communication	18
7.2	Meetings and Records	18
7.3	Public Communication	18

7.4	Consultation Feedback	18
8	Pollution Prevention Control	19
8.1	Water Management Plan	19
8.1.1	Potential Pollution Sources, Release Scenarios and Preventative Measures	19
8.1.2	General Pollution Prevention Measures	21
8.1.3	Water Supply	22
8.2	Site Waste Management Plan	23
8.2.1	Types and Predicted Volume of Waste	23
8.2.2	Waste Storage	23
8.2.3	Waste Controls and Handling	24
8.2.4	Waste Exemptions and Licensing	24
8.2.5	Waste Monitoring and Reporting	24
9	Environmental Mitigation	25
9.1	Environmental Setting and Key Constraints	25
9.1.1	Ecology	25
9.1.2	Air Quality, Noise and Vibration and People	29
9.1.3	Water Environment	29
9.1.4	Cultural Heritage	30
9.1.5	Landscape	30
9.2	Relevant Legislative Requirements	30
9.3	Consents and Permissions Required	31
9.4	Environmental Management	31
9.5	Ecology Mitigation Plan	31
9.5.1	Otter	31
9.5.2	Birds	33
9.5.3	Marine mammals and Basking Sharks	35
9.6	Marine Biosecurity Plan	37
9.6.1	Overview	37
○	Legislation	37
9.6.2	Non-native Species Known to be Present	38
9.6.3	Risk Factors for Vessel Types Involved in the Construction	39
9.6.4	Initial Identification of Biosecurity Risk	39
9.6.5	Biosecurity Risk Assessment	39
9.6.6	Development of Control Measures and Control Points	40
9.6.7	Development of Biosecurity Action Plan	42
9.6.8	Communication and Reporting Responsibilities	43
9.7	Construction Noise Management Plan	44
○	Working Hours	44
9.7.1	Best Practicable Means	44
9.7.2	Noise Control Measures	45
9.7.3	Site Area	46

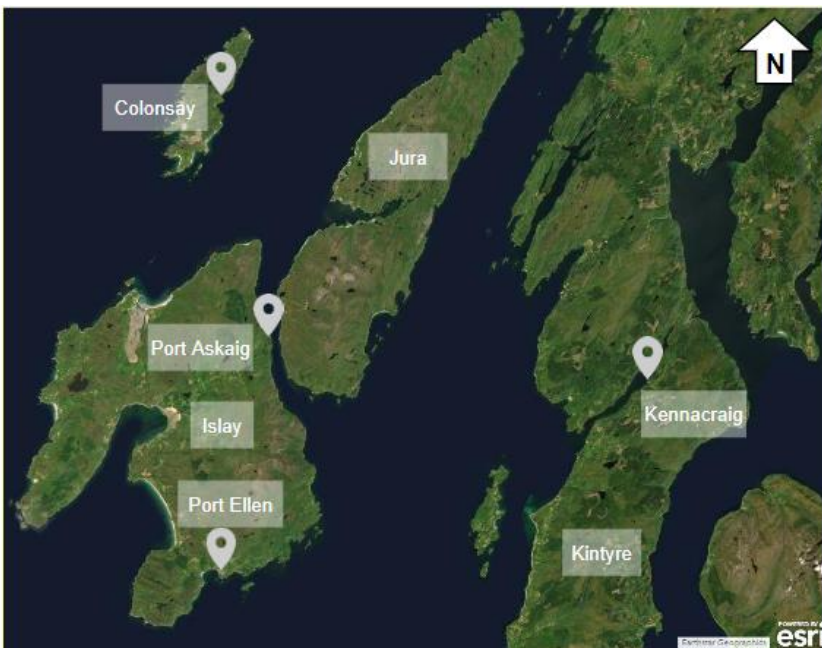
9.7.4	Reversing	46
9.7.5	Erection of Physical Barriers	46
9.7.6	Training	46
9.8	Air Quality Management Plan	46
9.8.1	Construction Management and Mitigation Measures	47
A.	Appendix A Proposed Development Drawings	49
B.	Appendix B Environment Constraints Plans	50
C.	Appendix C Environmental Reports	52
Tables		
Table 5-1	Scope of Environmental Audit	14
Table 6-1	Environmental Reporting	16
Table 7-1	Internal Communications	18
Table 8-1	Potential Pollution Sources, Release Scenarios and Preventative measures	19
Table 9-1	Summary of PMF Habitats around Kennacraig Ferry Terminal	28
Table 9.1:	Critical Control Points and Control Measures	40
Table 9.2:	Biosecurity Action Plan	43
Figures		
Figure 1-1	Terminals on the Islay Ferry Service	1
Figure 2-1	Backhoe dredger example	4
Figure 2-2	Backhoe dredger example	5
Figure 9-1	[Redacted]	26
Figure 9-2	[Redacted]	27
Figure 9-3	[Redacted]	27
Maps		
Map 1	Environmental Constraints Plan	50
Map 2	Ecological Constraints Plan	51

1 Introduction

1.1 Project Background

Caledonian Maritime Assets Limited (CMAL) seek to undertake upgrade works at the four terminals (Port Ellen, Kennacraig, Port Askaig and Colonsay (shown in Figure 1-1) on the Islay route prior to the introduction of new vessels, which are planned to be operational around mid-2024.

Figure 1-1 Terminals on the Islay Ferry Service



Maps created using ArcGIS® software by Esri. ArcGIS® and ArcMap™ are the intellectual property of Esri and are used herein under license. Copyright © Esri. All rights reserved. For more information about Esri® software, please visit www.esri.com.

The new vessels are planned to have a larger beam, length, draught and displacement than the current vessels that serve the route, as well as having a hybrid diesel-electric propulsion system. Enabling works to the four terminals are therefore necessary to safely and reliably berth, moor, load and unload the vessels at all four ports together with shore power for charging the vessels at Port Ellen, Kennacraig and Port Askaig.

The focus of this outline Construction Environmental Management Plan (CEMP) is the New Islay Vessel Enabling Works at Kennacraig Ferry Terminal, which would comprise upgrading of existing fenders, construction of a piled wall, construction of toe protection at existing secant pile walls, fabrication and erection of steel grillage, dredging, installation of new scour protection, installation of new vessel shore power and connections, modification to the existing fixed ramp and a new gangway. Further details are outlined in Section 2.

1.2 Location

The location of the New Islay Vessel Enabling Works at Kennacraig is situated on West Loch Tarbert, 5 miles south west of Tarbert on the Kintyre peninsula, Argyll and Bute, in the west of Scotland. The existing Kennacraig Ferry Terminal is centred at National Grid Reference (NGR) NR 81759 62531. The terminal currently serves the larger mainland ferries from the south berth, while a smaller fixed ramp slipway is situated to the north of the pier.

1.3 Purpose of the Outline Construction Environmental Management Plan

The purpose of this outline CEMP is to provide details of the various site-specific environmental control measures that will be implemented to avoid, minimise or mitigate effects on the environment and surrounding area during construction of the New Islay Vessel Enabling Works at Kennacraig Ferry Terminal, hereafter referred to as the 'Proposed Development'. The CEMP accompanies the marine licence application submission and draws together environmental assessment work undertaken during the design of the Proposed Development.

This outline CEMP has been prepared in advance of appointment of the Principal Contractor and will be adopted and expanded upon into a detailed CEMP by the Principal Contractor in advance of the work commencing on site and when full construction details are known.

The aim of the CEMP is to:

- Define environmental roles and responsibilities during construction;
- Detail the environmental monitoring, reporting and reviewing procedures that will be adhered to during construction;
- Detail the required environmental permits, licences and consents; and
- Set out the site-specific environmental mitigation and control requirements that will be adhered to during construction, to limit the impact of the construction phase of the Proposed Development on the environment.

1.4 Structure of the Outline Construction Environmental Management Plan

The following structure has been adopted for this CEMP:

- Section 1 – Introduction;
- Section 2 – Proposed Development;
- Section 3 – Roles and Responsibilities;
- Section 4 – Training and Induction;
- Section 5 – Environmental Auditing and Monitoring;
- Section 6 – Environmental Reporting;
- Section 7 – Consultation and Communication;
- Section 8 – Pollution Prevention Control; and
- Section 9 – Environmental Mitigation.

1.5 Change Control

This CEMP is a live document that the Principal Contractor will review and update prior to the start of construction, where required. It is not expected that the CEMP will need major revisions following commencement of construction. However, if changes are required due to exceptional circumstances, the Principal Contractor's change control process will be followed to record documentation revision requests and their final approval status. The revised CEMP and changes will be communicated to personnel on site in line with Section 7 Consultation and Communication.

2 Proposed Development

2.1 Proposed Development

The Proposed Development is located on a small island off the coast of West Loch Tarbet, at the existing Kennacraig Ferry Terminal NGR NR 81759 62531 in Argyll.

Kennacraig Ferry Terminal has an associated marshalling area to the south of the main building with an access road leading on to the A83 which runs perpendicular to the terminal.

The Proposed Development would upgrade the ferry terminal to facilitate future accommodation of a new vessel with deeper draught and higher displacement. Works primarily consist of the following:

- Upgrading of existing fenders including breaking concrete at one location;
- Construction of toe protection to support secant pile walls;
- Construction of piled wall;
- Installation of new vessel shore power and connections;
- Modification to the existing fixed ramp within the ferry terminal;
- Fabrication and erection of steel grillage at infill pier;
- Dredging;
- Installation of scour protection; and
- A new longer gangway.

All works are below the mean high water springs (MHWS) with the exception to upgrading existing fenders, new shore power and modification to the existing fixed ramp. Further details of the Proposed Development are shown in the Proposed Development Drawings in Appendix A.

2.2 Site Operations

2.2.1 Construction Method

Upgrading Fenders, Modification of Ramp and Installation of Vessel Shore Power and Gangway

To upgrade the fenders, a crane, construction operatives and any other equipment (e.g. welding machines where required) will be supported on the existing structure (jetty deck) for access to the fenders. Materials will comprise fenders (rubber fenders, UHMW-PE panels and stainless steel fixings) and, where required, steel brackets and beams for connection to the existing structure.

For modification of the existing ramp and where concrete requires breaking, a barge pontoon, excavator and pecker/breaker would be used. A single cut will be made in the existing concrete capping to form a clean break line. A excavator hydraulic pecker attachment will be used to break out the concrete. Netting and/or pontoon will be positioned beneath the area of concrete being broken out.

Dredging

Dredging would be undertaken around Kennacraig Ferry Terminal as shown in Appendix B, Map 1. Dredging works would likely be undertaken either by a backhoe dredger only or by a trailer suction hopper dredger working in conjunction with a backhoe dredger (for areas of the structures which are inaccessible by trailer suction hopper). If required, bedrock would be pre-

fractured by drilling and splitting using Cardox (a CO₂ driven hydraulic breaker). Non-explosive blasting methods would be used.

Dredging Process (backhoe dredger)

The spuds extend to the seabed and provide lateral resistance and stability for the pontoon (Figure 2-1). The dredged material will be loaded into a split hopper barge (SHB) (Figure 2-2)

The dredging process consists of:

1. Digging and filling the bucket;
2. Lifting the bucket;
3. Swinging towards the SHB;
4. Emptying the bucket into the SHB;
5. Swinging towards the next digging location;
6. Lowering the bucket;
7. Positioning at the next digging location; and
8. Digging and filling the bucket.

The excavator is located above the dredged face and digs towards itself, in an upward motion, to fill the bucket. With the pontoon positioned in one location, the excavator covers an area along an arc which is dependant on the length of the excavator's boom and stick.

Figure 2-1 Backhoe dredger example



Source Backhoe Dredging (graphic sourced at International Association of Dredging Companies, 2016 <https://www.iadc-dredging.com/wp-content/uploads/2016/07/facts-about-backhoe-dredgers.pdf>)

Split hopper barges (SHB) are self-propelled barges, which transport the dredged material once loaded by the backhoe dredger to the assigned disposal/dump area.

Figure 2-2 Backhoe dredger example

Source: Backhoe Dredging onto SHB (graphic sourced at International Association of Dredging Companies, 2016 www.iadc-dredging.com)

Dredging Process (trailer suction hopper dredger)

Trailer suction hopper dredgers are equipped with one or two suction pipes ending in drag heads. The drag head moves slowly over the bed collecting the sand like a giant vacuum cleaner. The mixture of sand and water is pumped into the hopper of the dredging vessel. Excess water flows out through so-called overflows. Dredging stops when the maximum hopper capacity is reached.

Disposal

The transportation of material from the dredged areas to the disposal area is by means of self-propelled SHB. On board the barges, a barge report is completed for each load, specifying date, shift, load number, departure time from dredger and unloading location.

It is anticipated that any disposal at sea would be undertaken at the nearest disposal site. The closest disposal sites are approximately 60km west of the Proposed Development, on the south side of the Island of Islay (Site ID MA035 south of Port Wemyss).

Piling, Toe Protection and Scour Protection

Hydro-demolition

To facilitate the works hydro-demolition will be used within areas of the ferry terminal. Hydro-demolition is a process that uses high-pressure water jets to remove concrete or other materials from a surface. During the process, the waste debris is typically removed using a combination of suction and filtration systems. The water and debris mixture created during hydro-demolition is usually collected using a vacuum or suction system that draws the material into a holding tank. The tank is designed to separate the water from the solid debris which is typically settled at the bottom of the tank. The waste can be disposed of in accordance with local regulations.

Piling

For sheet piles, the temporary frame guide beam will be fixed at survey lines to ensure verticality and alignment of sheet piles. The guide frame will likely consist of vertical end members (legs) along with two I-beams that will be fixed horizontally, with a gap provided between their faces to allow for pitching of the sheet piles. Then, vibratory hammer's clutches will pitch the sheet pile and lift it up by crawler crane. The sheet piles will be attached to a safe line which features a release shackle attachment. The sheet pile will then be pitched down by the vibration force of the hammer.

Bored piles would be installed through the following sequence

1. Casing installation with the rotary drive of the drill rig
2. Drilling with bucket, auger, or core barrel. Stabilisation of the wall of the bore partially with casings.
3. Installation of reinforcement cage with the auxiliary winch of the drill rig (or alternatively with a separate service crane) into the borehole.
4. Concrete pour via tremie method. The required top of concrete (calculated as per the top level of casing given by the surveyor) will be monitored using an end-weighted scale. The quantity of concrete may be increased in order to fill the space created by the insertion of the casing.
5. Extract casing with the rotary drive. The extraction will be done by rotating the casing gradually in a clockwise and counterclockwise direction until the casing has been completely removed. The casing can be removed once the concreting has been completed.

Toe protection

To protect the toes of the piles would be undertaken through placement of structural collars around the toes of the piles with dowels into the bedrock below the piles or concrete mattress to replace the overburden on the pile toe. The collar protections would likely be installed prior to any dredging close to the piles.

The installation method for steel collars is likely to be as follows:

- Works for the collars would be carried out by divers.
- Removal of seabed material locally around the pile until sound bedrock is exposed;
- Bedrock is to be prepared to accommodate the steel collar which would act as a permanent formwork and the installation of dowel bars;
- The void between the pile and the steel collar would be infilled with concrete; and
- Works for the collars would be carried out by divers.

Scour Protection (concrete mattress)

For scour protection (concrete mattress), on completion of dredging and/or seabed preparation, the fabric formwork will be offered up, unrolled and lowered into position. The diver in the water will zip together two adjacent mattress formworks before either are filled. Once the formwork is positioned and sealed, filling commences by pumping the concrete from above water through filling tubes. A secondary tube is provided to permit air/water to be released from the formwork during filling.

Upon completion, edge protection (anticipated to be rock armour units) is installed. This will be done by an excavator positioned on a jack-up barge.

2.2.1.1 Working Hours

Working hours are anticipated to be 24 hours each day, Monday to Sunday to accommodate dredging works and minimise disruption to the existing ferry service through allowing some dredging works to be undertaken overnight. However, piling works will be restricted to the hours between 08:00 – 18:00 Monday to Friday and 08:00-13:00 Saturday. No piling works would be undertaken on Sunday.

2.2.1.2 Deliveries and Transportation of Materials, Plant and Equipment to Site

Deliveries including the transport of materials, plant, and equipment to the development site will only take place during the following hours:

- 07:00 to 18:00 on Monday to Friday; and
- No deliveries on Saturday, Sundays or Bank Holidays or local Public Holidays to reduce disruption to local road networks.

Site access will typically be via road, i.e. wagon haulage. However, it is possible that some material may be transported by sea, e.g. by barge or ship.

Construction transport is expected to use local roads within the vicinity and it is anticipated that one wagon per week during the construction works would be required

2.2.1.3 Storage of Materials

Materials to be used on site would likely be stored within the hardstanding of a temporary site compound, located at NGR NR 81960 62579 within the existing harbour area currently used as a car park. This is to be determined by the Principal Contractor following contract award.

2.2.1.4 Programme

It is anticipated that construction would start in September 2023 and end in approximately May 2024 dependent on weather conditions and planned downtime.

3 Roles and Responsibilities

3.1 Introduction

To ensure that environmental standards are maintained throughout the construction works, it is necessary that every person working on the site is aware of their responsibilities. Specific roles and responsibilities have been set out below. The Principal Contractor will have overall responsibility for implementation of the CEMP and will ensure that the provisions and commitments set out within the CEMP, including permits, licences, consents and associated mitigation measures that apply to the site work are adhered to.

3.2 Client

The Client shall provide general oversight and strategic direction to the works. Client representation on site relevant to the implementation of the CEMP would include a Project Manager (PM) and an Environmental Project Manager to ensure delivery of the commitments set out in the CEMP. They will liaise with the Key Principal Contractor roles as described below. The phasing in the works will result in changes in the parties responsible for these roles.

3.3 Principal Contractor

The Principal Contractor shall execute the work and would have direct responsibility for updating and implementing the CEMP. The Principal Contractor would ensure that all members of the Project Team, including sub-contractors, comply with the procedures set out in the CEMP. The Principal Contractor would also ensure that all persons working on site area provided with sufficient training, supervision and instruction to fulfil this requirement.

The Principal Contractor shall ensure that all persons allocated specific environmental responsibilities area notified of their appointment and confirm that their responsibilities area clearly understood.

3.3.1 Principal Contractor's – Site Agent

The Site Agent's environmental management responsibilities will include but are not limited to:

- Ensure that all personnel have received and understood the site induction;
- Undertake suitable checks to confirm that personnel are suitably qualified and have undertaken appropriate environmental training to cover tasks to be carried out in compliance with the CEMP;
- Sign off relevant work permit forms for staff;
- Undertake regular inspections at the site. This will include daily considerations of weather conditions, with reference to the three-day weather forecast in order to ensure that appropriate mitigation measures are in place to manage weather challenges;
- Report any public complaint matters to the Principal Contractor PM as soon as practicable, completing the complaints log;
- Ensure that environmental incidents are reported to the Client Project Manager within 30 minutes for further communication to all relevant parties;
- If the Client Project Manager or Environmental Project Manager cannot be contacted, the Principal Contractor's Site Agent must notify the Client within 30 minutes by telephone;
- Ensure that any such events are subsequently reported via the Principal Contractor's incident reporting system;

- Undertake investigations into environmental incidents or near misses to determine the root/direct cause and present the findings, recommendations and lessons learnt;
- Oversee site works, alongside the Principal Contractor's Environmental Manager, with a view to eliminating/reducing the environmental impact of the works and raising any environmental concerns with the Principal Contractor's Environmental Manager;
- Ensure Toolbox Talks are carried out and recorded on relevant environmental topics;
- Carry out environmental checks keeping records as appropriate;
- Ensure that environmental emergency plans are prepared by Principal Contractor's Environmental Manager and tested;
- Ensure that the risk assessments for control of substances hazardous to health regulations (COSHH), noise and environmental risk are prepared by the Principal Contractor's Environmental Manager and effectively monitored, reviewed, and communicated on site,
- Managing the preparation and implementation of method statements;
- Ensure that the Principal Contractor's Environmental Manager reviews all method statements and that relevant environmental protocols are incorporated and appended;
- Regular weekly survey to monitor environmental/ecological sensitivities at the site;
- Ensure the period and frequency of environmental monitoring, reflects higher risk areas and conditions – such as silt run off and changing weather. These high-risk areas will be monitored on a daily basis when high risk activities, e.g. piling and dredging works;
- Produce environmental emergency plans and conduct monthly checks to ensure that they are effective by means of emergency drills;
- Inspect the site to ensure effective implementation/operation of any environmental mitigation measures, including inspections of construction activities in close proximity to sensitive environmental receptors;
- Review/comment on site Risk Assessments and Method Statements (RAMS) as necessary with respect to environmental impacts and controls;
- Provide weekly report on environmental works on site, inclusive of programme updates;
- Assist with investigations into environmental incidents or near misses to determine the root/direct cause and present the findings, recommendations and lessons learnt; and
- Ensure the required audits and inspections are completed as per Section 5 of the CEMP.

3.3.2 Principal Contractor's – Project Manager (PM)

The Principal Contractor's PM will:

- Facilitate dissemination of specific environmental requirements to the Project Team;
- Oversee the implementation and review of environmental procedures throughout the project. Monitor the environmental performance of the project through maintaining an overview of incidents, inspections and audits;
- Ensure that environmental reviews are undertaken as part of regular project meetings;
- Implement and maintain a project communications strategy to manage project public relations and complaints;
- Review environmental matters with the Client Project Manager on a regular basis and as per project requirements;
- Stop works, if necessary, should an environmental incident occur;
- Ensure that arrangements for liaison with respective regulatory bodies on all environmental issues is appropriate and maintained; and
- Ensure that all environmental incidents are reported to the Client in accordance with the detailed reporting requirements (Client Project Manager or Environmental Project Manager)

within 30 minutes of the Contractor being notified) and the respective regulatory bodies (where required) as soon as possible.

3.3.3 Principal Contractor's Environmental Manager

The Principal Contractor's Environmental Manager will work with the Principal Contractor's PM on environmental matters.

Key responsibilities and duties include:

- Implement, review and update Construction Environmental Management Plan (in conjunction with the Project Team) in accordance with marine licence conditions, Client requirements, Contractor's procedures, licence/ consent requirements and current legislation;
- Ensure that specific environmental management plans are implemented for: pollution, water, site waste, ecology, marine biosecurity, noise and air quality management
- Lead the implementation of environmental mitigation particularly management of noise and vibration impacts from piling and dredging works during construction;
- Regularly provide training and Tool Box Talks for site staff to make sure that all personnel work strictly in accordance with the environmental requirements defined in consents/licenses and CEMP;
- Ensure that all appropriate consents and licences are in place prior to work starting on site;
- To be a key interface point for the Client Environmental Project Manager;
- Monitor and report on site environmental performance including key performance indicators;
- Engage and manage specialist sub-contractors/consultants;
- Manage and update the environmental programme, with site surveys, mitigation measures, and monitoring;
- Investigate and report on environmental incidents;
- Approve the closure of any environmental corrective actions and non-compliance from audits/inspections;
- Provide the necessary updates and reports to the project team and Client Environmental Project Manager;
- Interface with Contractor's site staff and subcontracted companies on environmental issues; and
- Check environmental control measures have been effectively implemented.

3.3.4 Principal Contractor's Environmental Clerk of Works

The Principal Contractor's Environmental Clerk of Works will work with the Principal Contractor's PM and Environmental Manager on environmental matters, particularly those relating to specialist knowledge such as ecology and biosecurity.

Key responsibilities and duties include:

- Ensure that specific environmental management plans are implemented e.g. the marine biosecurity plan;
- Regularly provide training and Tool Box Talks for site staff to make sure that all personnel work strictly in accordance with the environmental requirements defined in consents/licenses and CEMP;
- Investigate and report on environmental incidents;
- Approve the closure of any environmental corrective actions and non-compliance from audits/inspections;

- Provide the necessary updates and reports to the project team and Client Environmental Project Manager; and
- Check environmental control measures have been effectively implemented.

4 Training and Induction

4.1 Site Induction

All personnel involved in construction of the Proposed Development will receive environmental awareness training. The environmental training and awareness procedure will ensure that staff are familiar with the principles of the CEMP, the environmental constraints and mitigation and consequences of departures from these procedures.

All documentation relating to the environmental management of the Proposed Development will be kept within the Principal Contractor's site office. As part of the site audit, checks will be made to ensure that appropriate documentation is being held and maintained on site. On completion of the Proposed Development, the final versions of the CEMP and all other documents that record environmental risks, best practice examples, mitigation measures, commitments, environmental incidents, and other relevant information will be provided for inclusion in the project file.

4.2 Environmental Training

The risk of adverse environmental effects can be minimised through training and awareness. A project specific training plan that identifies the competency requirements for all personnel allocated with environmental responsibilities will be produced by the Principal Contractor and a register of completed training will be kept by the Principal Contractor's Site Agent including the dates on which all personnel undertook environmental training.

The purpose of environmental training is to ensure that all site personnel have the knowledge to successfully implement the environmental requirements of the Proposed Development. In order to ensure the CEMP is implemented on site, the following environmental training will be carried out.

- Emergency response training;
- Induction, which would include all environmental aspects of the site such as waste management, working in or near water bodies, surface water pollution and control, ecology, dust management, noise management, sediment management, archaeology, waste management, and emergency preparedness and response.
- Environmental awareness including 'Toolbox talks' will be carried out, by the Principal Contractor's Environmental Manager, at a minimum of one per week appropriate to the construction works being carried out at that time and also to all existing and new persons carrying out work on site (site personnel, sub-contractors and any other visitors). Toolbox talks are required as part of the European Protected Species licence for otter and marine mammals, noise and marine biosecurity. Training would cover as a minimum:
 - Legal responsibilities;
 - Noise reduction and abatement;
 - Dust abatement;
 - Water management/pollution control / sedimentation;
 - Waste management;
 - Discovery of archaeological remains;
 - Local terrestrial and marine ecology
 - Biosecurity;
 - Spill management/emergency preparedness and response;

- Management and storage of materials, fuel, lubricants and oils;
 - Good housekeeping requirements;
 - Communication with the public; and
 - Individuals' responsibilities.
- Environmental bulletins/legalisation briefings/best practice briefings will be used to brief all those carrying out work on site (site personnel, subcontractors and visitors);
 - Task specific training e.g. IOSH Working with Environmental Responsibilities, IOSH Managing Environmental Responsibilities, Site Water Management, Use of Pollution Prevention Equipment, Sediment management, Noise Management, will be provided for specific personnel with environmental responsibilities e.g. piling, dredging, surface water management for site supervisors/managers; and
 - Project specific information, including relevant elements of the CEMP and the marine licence conditions would be delivered to all site staff by the Principal Contractor's Environmental Manager.

5 Environmental Auditing and Monitoring

5.1 Inspections

Routine inspections to check that environmental control measures are in place would be undertaken by the Principal Contractor’s Environmental Manager, who will produce inspection reports. Inspections will be carried out weekly, or more frequently, depending on the work activity. Works which would require more frequent inspections for dredging and piling works, as these activities would likely cause greater environmental impacts.

Daily inspections will be made by the Principal Contractor’s Site Agent during each shift and any environmental problems or risks that are identified would be actioned as soon as is reasonably practicable. Any issues arising from the daily inspections will be notified to the Principal Contractor’s Environmental Manager, by email or phone if the Principal Contractor’s Environmental Manager is not on site.

Environmental monthly inspections and quarterly audits shall be carried out by the Principal Contractor’s Environmental Manager to check compliance with the CEMP and any specific environmental licence conditions. Findings of the inspection/audits shall be recorded and reported by the Project Team during progress meetings.

5.2 Auditing

An internal audit schedule would be prepared. This would include audits of the CEMP and audits of the sub-contractor and supplier’s environmental performance by the Principal Contractor’s Environmental Manager. Table 5-1 sets out the scope of environmental audits.

Table 5-1 Scope of Environmental Audit

Monitoring Area	Audit Element
Environmental Documentation	CEMP copy kept on site and available to all relevant employees
	Changes made in accordance with change management procedures
	All contractor environmental policies up to date
	Site inductions include relevant elements of the CEMP
Waste Management	Dredged material suitably disposed of in accordance with the Best Practicable Environmental Option (BPEO) report and marine dredging licence
	Waste correctly separated and stored in suitable, designated containers
	Site kept litter free
	Duty of care assessments carried out on all waste contractors
	Waste Transfer Notes (WTN) received for all controlled waste transfers
	Appropriate European Waste Codes (EWC) quoted on all WTNs
	Waste Electronic and Electrical Equipment (WEEE) waste disposed of appropriately
	Recycling maximised
	Evidence of licences and exemptions, licencing control measures followed
	Appropriate storage and disposal of special/hazardous waste in accordance with waste management licences exemptions and legal requirements
	Monthly waste audits undertaken in line with the Site Waste Management Plan and any recommendations implemented
	All potential impacts of specific earthworks activities mitigated including dewatering operations during soil strip/top soil strip, storage of soils and reinstatement
	Drainage systems, including foul drainage, inspected at regular intervals

Monitoring Area	Audit Element
	Water flush volumes minimised where relevant
	Water use monitored during construction
Pollution Prevention and Management	Discharges from site drainage to surface water environment clear (not silty)
	Material storage areas appropriately designated and utilised
	Vehicles parked in designated area of hard standing
	COSHH stored will be secure and appropriately ventilated
	Tank sites on impermeable surface and at least 10m from water courses
	Fully stocked Emergency Response Trailer/Spill Kits available on site, in vehicles and close to high risk activities
	Use of plant nappies for plant when not in use
	Plant and equipment kept in a good state of repair
	Mobile fuel storage/refuelling areas 10m from water courses or surface water drainage
Ecological Management	Evidence of appropriate ecology briefings carried out when relevant
	Works undertaken in accordance with the ecological mitigation plan
	Works undertaken in accordance with the marine biosecurity plan
	Otter checks carried out in advance of works
	Marine mammal observation checks carried out just prior to piling works
	Environmentally sensitive areas clearly demarcated
Noise Management	Evidence of working hours undertaken in accordance with the noise management plan
	Evidence of regular communication with local residents
	Plant and machinery in good state of repair
	Contractor's compound area noise, fumes and dust controlled
	Noisy operations timed to avoid impact on sensitive receptors and appropriately controlled
	Plant and machinery switched off when not in use
Environmental Emergency Response	Incident response plan briefed and available to all relevant personnel
	Spill kits available at all areas of the site
	Environmental incidents reported to the employer within the required time period
	SEPA notified of any emergency incidents
	Incidents appropriately recorded, including lessons learned
	Emergency response drill held with appropriate frequency
Management of Communication and Training	Environmental training records stored appropriately, including record of CEMP briefings
	Any changes to working hours which have been agreed with Argyll and Bute Council will be communicated to local residents in advance of the works taking place

6 Environmental Reporting

6.1 Key Performance Indicators and Objectives

The Principal Contractor will set Environmental Performance Indicators in order to continuously improve environmental performance on site. They will be based on each environmental topic considered within the CEMP and will be reviewed, and revised, if necessary, on a monthly basis. Procedures, monitoring requirements and key performance indicators will be measured against achievable targets and will include objectives to:

- Ensure construction activities are carried out in accordance with any Mitigation Measures, any Licences/Consents and the additional measures detailed within the CEMP;
- Provision of mandatory environmental inductions, toolbox talks and awareness to all project personnel ensuring that all staff involved in the Proposed Development are made aware of the potential impact to the environment;
- Reduce, re-use and recycle materials and reducing the amount of material sent to landfill in accordance with the Site Waste Management Plan; and
- Reduce energy consumption e.g. by switching off all unnecessary equipment and using energy efficient equipment where possible (lighting).

6.2 Reporting

The Principal Contractor will prepare environmental reports summarising progress made during construction and the findings of inspections, audits and other regular monitoring as set out in Table 6-1 below.

Table 6-1 Environmental Reporting

Activity	Frequency	Responsibility
Key Environmental Issues	Monthly	Principal Contractor's Environmental Manager
Summary of progress made during construction		
Findings of inspections		
Findings of audit		
Findings of regular monitoring		
Review of CEMP	Monthly	Principal Contractor's Environmental Manager / Project Manager
Results of the internal monitoring environmental audit		
Non-conformance audits		
Achievements of environmental audits		
Records of complaints and concerns of relevant external agencies and parties		
Means for improving performance		

6.3 CEMP Review

The Principal Contractor's Project Manager and Principal Contractor's Environmental Manager will review the CEMP every month following commencement of the construction activities, and should the need arise, regarding:

- Results of the internal monitoring/environmental audits;
- Non-conformance audits;
- Achievements of environmental audits;
- Records of complaints and concerns of relevant external agencies and parties; and
- Means for improving performance.

Any changes/revisions to the CEMP shall be communicated to relevant members of the site team to ensure agreed changes are implemented on site.

7 Consultation and Communication

7.1 Internal Communication

Internal communications on environmental matters will be undertaken through briefings to site personnel, use of notice boards on site, tool box talks, inductions etc. Information will include but not limited to information provided in Table 7-1.

Table 7-1 Internal Communications

Briefing	Detail	To be carried out by	Frequency
Site Inductions	For all personnel attending site, which must be carried out on the first attendance to the site prior to any work commencing. Any further inductions will be carried out at the discretion of the Contractor.	Principal Contractor's Project Manager / Site Agent	As required
Team briefs	For all personnel undertaking works at the site	Principal Contractor's Project Manager / Site Agent	Daily
Risk Assessment / Method Statement briefings	Undertaken for each job task for all personnel undertaking works at the site.	Principal Contractor's Project Manager / Site Agent	As required
Environmental Toolbox Talks	Environmental practices for all site personnel on a weekly basis or more frequently as required.	Principal Contractor's Environmental Manager	Weekly/As required
Periodic stand down events	Site briefing	Principal Contractor's Project Manager / Site Agent	As required

7.2 Meetings and Records

Environmental issues relevant to the Proposed Development will be discussed during weekly Site Progress Meetings attended by the Principal Contractor's Site Agent and Principal Contractor's Environmental Manager. Environmental performance will also be discussed at regular meetings. This will include dissemination of the findings of audits, reports and other inspections.

7.3 Public Communication

The Client shall ensure that the public is kept informed of operations that may have an effect upon them. This may involve letter drops and meetings to keep local residents up to date with progress with the Proposed Development and any new operations that are to be carried out. The Principal Contractor's Site Agent will provide details of contacts within the project team for the public to contact, should any issues arise.

7.4 Consultation Feedback

Feedback from consultation with Statutory Stakeholders received to date have been considered within the proposed mitigation and control measures in this CEMP.

8 Pollution Prevention Control

8.1 Water Management Plan

The following sections describe environmental control measures that will be put in place to prevent pollution of the water environment during construction. Good practice guidance¹ (e.g. CIRIA guidance C584 - Coastal and Marine Environmental Site Guide) will be followed to ensure controls are in place to avoid adverse effects.

8.1.1 Potential Pollution Sources, Release Scenarios and Preventative Measures

Based on a review of the construction activities an assessment of potential pollutant sources, release scenarios and prevention measures have been developed. These are set out in Table 8-1.

Table 8-1 Potential Pollution Sources, Release Scenarios and Preventative measures

Potential Pollutant Source	Pollution Release Scenario	Prevention Measure
Piling	<ul style="list-style-type: none"> Risk of noise pollution (airborne and underwater) from piling works 	Piling works will be restricted to the hours between 08:00-1800 Monday to Friday and 08:00-13:00 Saturday. No piling works will be undertaken on Sunday.
Dredging	<ul style="list-style-type: none"> Release of / risk of mobilisation and release of contaminants in dredged materials 	<p>Dredged material obtained and removed would be tested and disposed of appropriately under a marine licence for dredging and disposal.</p> <p>A full closure bucket will be attached to the backhoe dredger to minimise spillage. Additionally, further discussion with Marine Scotland on additional measures and conditions required will be undertaken a part of the dredge licensing.</p>
Concrete	<ul style="list-style-type: none"> Release of contaminated concrete to the environment 	<p>The following measures will be required to prevent discharges of cementitious materials and alkaline wastewaters to the surface water drainage system, subsoil and groundwater or directly to local watercourses and the marine environment:</p> <ul style="list-style-type: none"> Risk assessments for wet concreting will be completed by the Principal Contractor prior to works being carried out; Concrete washout will not drain to any waterbody, drainage channel or marine environment. Impermeable areas will be designated for concrete handling/mixing and for washing and cleaning, at least 10m from surface drainage systems, local waterbodies and marine environment; There will be a designated area for the washout of concrete wagons, shoots and mortar bins at the site. This will be either a lined skip or a pit lined with an impervious membrane to prevent the escape of the alkaline and silty waters entering the groundwater, surface water or marine environment; and Excess concrete remaining in the delivery wagon at the end of a pour will be returned to a designated collection area. Once work sites are completed any solid concrete in the washout area will be broken out and used either as suitable fill or disposed of to a licensed waste facility.

¹ Engineering in the Water Environment, Good Practice Guide – Temporary Construction Methods” by SEPA

Potential Pollutant Source	Pollution Release Scenario	Prevention Measure
Hydro-demolition of concrete	<ul style="list-style-type: none"> Hydro-demolition leads to release of concrete into the marine environment 	<ul style="list-style-type: none"> Marine grade, non-toxic compounds and materials will be utilised for construction and any materials utilised will be fully cured before exposure to the marine environment. Containment: To prevent the waste debris from spreading in the marine environment, it is important to establish an appropriate containment system. This may involve the use of barriers, booms or other devices that can be deployed to contain the debris. Filtration: When hydro-demolition is carried out in the marine environment, it is important to use a filtration system that is designed to capture the debris and prevent it from entering the surrounding water. The filtration system will be capable of handling the high flow rates of water that are typically used during hydro-demolition. Disposal: Waste debris collected during hydro-demolition in the marine environment will be disposed of in a responsible manner, following local regulations and guidelines. This may involve transporting the waste to an appropriate facility for processing and disposal. Marine life protection: To avoid harm to marine life, hydro-demolition will be scheduled and carried out in a manner that minimizes disruption to the surrounding marine environment. For example, it may be necessary to avoid sensitive habitats or migration routes during the demolition process. Monitoring: During hydro-demolition in the marine environment, it is important to monitor the surrounding water for any signs of contamination or environmental impact. This may involve regular sampling and testing of the water, as well as monitoring of marine life in the surrounding area.
Welfare facilities	<ul style="list-style-type: none"> Release of untreated waste to the environment 	<p>Effluent from the site compound will be collected in an effluent holding tank and removed from site as controlled waste. The foul effluent can only be removed from site by licensed waste disposal companies and the effluent must be taken to a fully recognised and licensed sewerage treatment works.</p>
Fuel, Oil and Chemicals	<ul style="list-style-type: none"> Failure of fuel, oil and chemical storage facilities; Theft & Vandalism; Leaks and spills from construction vehicles 	<p>The following pollution prevention measures will be required:</p> <ul style="list-style-type: none"> Adherence to all Pollution Prevention Guidelines (PPGs) and Guidance for Pollution Prevention (GPPs); Good housekeeping during construction including the use of drip trays underneath plant and pumps, and the inspection of all plant for fuel and oil leaks before being accepted for delivery into the construction site; Re-fuelling points will be located away from water bodies (>10m), in line with SEPA guidelines; All fuel tanks and oil drums will be banded with imperious material. Where more than one container is stored, the bund will be capable of storing 110% of the largest tank or 25% of the total storage capacity, whichever is the greater. Bunds will be constructed in accordance with PPG 2. Any valve, filter, sight gauge, vent pipe or other ancillary equipment must be kept within the bund when not in use. No drainage valve may be fitted to the bund for the purpose of draining out rainwater; All tanks and containers will be kept in a secure compound and be protected from vandalism and will be clearly marked with their contents. Stores shall be located at least 10m from any waterbody;

Potential Pollutant Source	Pollution Release Scenario	Prevention Measure
Materials stored on site	<ul style="list-style-type: none"> Materials stored on site being blown/washes away 	<ul style="list-style-type: none"> All mobile plant will be refuelled in a designated area on a temporary bunded impermeable surface and away from drains. In case of any spillages there will be a spill response kit available at each refuelling point and within each machine working within the site. Where it is impractical to refuel within a bunded area, a drip tray will be available to catch any spills caused by over fuelling; Oil absorbers and grab packs will be available on all vehicles and further materials, including booms; Spill kits will be available on all plant / machinery and centrally in each area. Drip trays will be placed at the point where oils/fuels are transferred from one container to another. An Environmental Emergency Response Plan will be prepared by the Principal Contractor prior to construction. This will be issued as a tool box talk and kept in site offices for consultation. The storage of materials in the construction compound and work sites will be controlled in a such a manner to ensure that materials are not damaged prior to use either through vehicle or people movements or through exposure to the elements. The storage and activities involving the use of materials, chemicals and oils shall also be inspected daily to ensure all relevant controls are in place and effective in preventing pollution of the water environment. All fuel, oil and chemical deliveries will be supervised by a refuelling marshal who will be trained to deal with any spillage to prevent a pollution problem occurring. <p>All building, and construction materials will be stored at designated locations within the site compound, this will be marked up on a site environmental plan that will be posted on the site office wall. All storage will be established, implemented and maintained according to best practice as set out in current GPPs/PPGs with regard to containment at source. Spill kits will be located within the site compound and be clearly signed.</p> <p>Stockpiles of materials will be positioned at least 10m away from sensitive receptors where possible and suitable measures implemented to prevent runoff and dispersion if left for any length of time. Any powders will be stored in sealed bags or silos prior to use. Dust suppression measures to be used where required.</p> <p>Good housekeeping practices will be implemented on site at all times, any areas where hazardous substances have been used e.g., concrete will be sufficiently covered at the end of each day.</p>

8.1.2 General Pollution Prevention Measures

There some general pollution prevention measures which will be implemented:

- Pollution prevention measures will be adhered to during works to avoid pollution/run-off of any material into the harbour. These will include current Scottish Environment Protection Agency (SEPA) and Construction Industry Research and Information Association (CIRIA) guidance.
- Portnahaven - Site ID MA035 south of Port Wemyss has been identified to receive the dredged sediment. As this is a licenced disposal site, it is assumed that Portnahaven - Site ID MA035 south of Port Wemyss has effective pollution prevention control measures to limit

sediment dispersal. Records should be sought pertaining to compliance to permitted pollution control measures prior to sediment disposal. Records will be sought pertaining to compliance to permitted pollution control measures prior to sediment disposal by the Principal Contractor.

- All staff will undergo toolbox talks regarding pollution prevention.
- The Principal Contractor will set-up a monitoring and response programme to determine the effectiveness of measures applied to control water movement in and around the site. This shall include undertaking and recording visual inspections of waterbodies, any steps taken to control surface water, any scientific analysis of water samples and any communications with regulatory authorities.
- The Principal Contractor's Site Agent shall undertake a site walkover on a daily basis and make notes on anything affecting the water environment. These inspections will be recorded in the site-specific environmental diary.
- Daily and weekly operators check/inspections will be undertaken by the Principal Contractor's Environmental Manager.
- All site personnel shall be encouraged to identify potential pollution or hydrological problems or concerns and report them to the Principal Contractor's Environmental Manager. The cause of any pollution incident will be investigated, and measures or corrective actions put in place in order to prevent its reoccurrence.
- The Principal Contractor will monitor licence/consent requirements for compliance, i.e. implement regular inspections of controls to monitor for colour changes, oil, and suspended solid load. This will be recorded at least twice daily on either a site-specific inspection sheet or the site diary. If a breach of consent is identified, work will be stopped immediately.
- All applicable vessels that travel to the site from outside of UK waters will comply with the IMO Ballast Water Management (BWM) Convention 2004 which establishes standards and procedures for the management and control of ships' ballast water and sediments. Under the Convention, all ships of 400 gross tonnes (gt) and above in international traffic are required to manage their ballast water and sediments to a certain standard, according to a ship-specific ballast water management plan. All ships will also have to carry a ballast water record book and an international ballast water management certificate.
- All vessels will also comply with the Merchant Shipping (Anti-fouling Systems) Regulations 2009, which prohibit the use of harmful organotin compounds in anti-fouling paints used on ships and establish a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems and places into UK law Regulation (EC) 782/2003 on the prohibition of organotin compounds on ships.
- All vessels will ensure compliance with standard marine vessel policies, such as the Convention for the Prevention of Collisions at Sea (COLREGs) (International Maritime Organisation (IMO), 1972), International Convention for the Prevention of Pollution from Ships (MARPOL)(IMO, 1997), and the Convention of the Prevention of Marine Pollution by Dumping of Wastes and other matter (IMO, 1996).

8.1.3 Water Supply

During construction, temporary water supply for Principal Contractor's welfare facilities will be provided within the CDM compound will be from a nearby water supply. The Principal Contractor will apply to Scottish Water for a temporary water supply and any temporary water supply pipeline will be contained on-site and removed by the Principal Contractor when completed.

8.2 Site Waste Management Plan

The purpose of a Site Waste Management Plan (SWMP) is to ensure that waste is managed in a structured and auditable manner to minimise the generation of waste and maximise the reuse of materials. In addition, it ensures that the waste produced during the construction phase is dealt with in accordance with the relevant requirements of Scottish legislation, as well as any other requirements specified by the relevant regulatory authorities.

8.2.1 Types and Predicted Volume of Waste

The main activities that will lead to waste being generated are:

- Wastes arising from dredging works
- Wastes arising from construction and replacement of assets; and
- Wastes arising from plant maintenance

It is anticipated that the majority of waste would come from dredged material which is estimated to be approximately 10,000m³.

As identified within the BPEO Report (105612-MMD-KE-ZZ-RP-O-0006-S2-P01), it is anticipated that dredged material would be deposited at the nearest disposal site at sea. The closest disposal sites are approximately 60km west of the Proposed Development, on the south side of the Island of Islay (Site ID MA035 south of Port Wemyss). Where possible, any suitable dredged material obtained on site will be re-used on site as infill, however, the volume of this is expected to be minimal in comparison to the overall dredged material which requires disposal.

8.2.2 Waste Storage

All waste materials will be handled and disposed of in compliance with waste management legislation. All storage of waste will be established, implemented, and maintained according to best practice as set out in current GPPs/PPGs² with regard to containment at source.

For non-dredged material, a waste management storage area will be designated by the Principal Contractor to facilitate the segregation of waste prior to removal from the site for final disposal at appropriately licenced facilities and this will be shown on the site environmental plan. This area will be delineated and separate from where new material is stored with recycling and waste bins kept clean and clearly marked in order to avoid cross-contamination of materials.

For dredged material, this will be stored on a barge in accordance with the methods outlined in Section 2.

Any special (hazardous) wastes requiring remediation or removal will be kept separate from other construction waste materials in order to avoid further contamination and will be classified in accordance with the Waste (Scotland) Regulations 2012. They will be stored in separate containers that are appropriately labelled. In accordance with the Landfill (Scotland) Regulations (as amended) mixing inert, non-hazardous and special wastes will not be permitted.

Site offices and canteens will also generate waste, much of which are recyclable. Separate waste bins will be available in the site offices to facilitate collection of recyclables such as paper, cardboard, aluminium cans and plastic bottles. Site Operatives will be regularly reminded of the office/ canteen waste recycling procedures and bins will be labelled to assist in their correct usage.

² Including GPP1, GPP2, PPG3, GPP5, PPG6, GPP8, GPP13, GPP21, GPP22 and GPP26

Any other waste storage requirements will be agreed with the Principal Contractor's Environmental Manager.

8.2.3 Waste Controls and Handling

Transfers of non-hazardous waste will be accompanied by a waste transfer note (WTN). The Principal Contractor's Environmental Manager will ensure these are checked and include the necessary information e.g. a written description of the waste and appropriate EWC code(s), in line with Duty of Care responsibility as correct coding on its own is not sufficient to adequately describe the waste. A clear written description is also necessary to ensure safe onward management of the waste. The Principal Contractor's Environmental Manager will ensure the WTN includes:

- A description of the waste;
- Any processes the waste has been through;
- How the waste is contained or packaged;
- The quantity of the waste;
- The place, date and time of transfer;
- The name and address of both parties;
- Details of the permit, license or exemption of the person receiving the waste;
- The appropriate European Waste Catalogue (EWC) code for waste; and
- The Standard Industry Code of the business.

Only registered carriers of waste will be employed for transport purposes and copies of all waste management permits, licences, and exemptions will be obtained and held on site prior to any movement of waste taking place. For all waste transfers, the Principal Contractor will obtain a copy of the receipt, or a copy of the invoice, from the authorised disposal site as proof that the waste reached the proposed destination.

All controlled waste transfer notes will be filed on site for a minimum of two years and hazardous waste transfer notes for a minimum of three years. Each consignment of waste taken from the site will be subject to documentation to ensure full traceability of the material to its final destination.

8.2.4 Waste Exemptions and Licensing

The Principal Contractor will ensure that a register of waste management licence (WML) and waste management exemptions (WME) is created and maintained in line with SEPA regulatory and duty of care requirements. This information will be sought from all waste carriers and if relevant any subcontractors.

8.2.5 Waste Monitoring and Reporting

The Principal Contractor's Environmental Manager will record all waste removed from the site using an appropriate management tool and the following information will be provided:

- The identity of the person removing the waste;
- The waste carrier registration number of the waste carrier;
- A copy of, or reference to, the written description of the waste;
- The site that the waste is being taken to; and
- Whether it is a permitted or exempt site must also be recorded.

9 Environmental Mitigation

9.1 Environmental Setting and Key Constraints

The following environmental appraisals and assessments were undertaken prior to the production of this outline CEMP.

- Kennacraig Enabling Works Otter Survey Report (Mott MacDonald, 2022).
- Kennacraig Otter European Protected Species Licence Application: Licence Application and Otter Species Protection Plan (Mott MacDonald, 2022)
- Habitats Regulations Appraisal (HRA) (105612-MMD-KE-ZZ-RP-O-0002-S2-P01-Kennacraig Ferry Terminal Habitat Regulation Assessment Report)
- Enabling Works Kennacraig Underwater Noise Assessment (105612-MMD-00-ZZ-RP-O-0004-S2-P01-NIV Enabling Works Kennacraig Underwater Noise Assessment)
- New Islay Vessel Enabling Works Kennacraig Dredge Dispersion Modelling Report (105612-MMD-KE-ZZ-RP-O-0007-S2-P01-New Islay Vessel Enabling Works Kennacraig Dredge Dispersion Modelling Report)

The following sections summarise the key environmental constraints which must be considered within this CEMP.

9.1.1 Ecology

9.1.1.1 Designated Sites

There are a number of Statutory Designated Sites within 10km of the Proposed Development boundary. The closest site is the Sound of Gigha Special Protection Area which is within the footprint of the Proposed Development. The designated features / qualifying interests include Non-breeding birds: eider (*Somateria mollissima*), great northern diver (*Gavia immer*), red-breasted merganser (*Mergus serrator*) and Slavonian grebe (*Podiceps auritus*).

9.1.1.2 Ornithology

Winter bird surveys were conducted at Kennacraig Ferry Terminal. Surveys were conducted twice monthly across the core winter period of November 2022 to February 2023.

In order to provide the HRA with quantitative thresholds of significance, the mean peak counts of SPA qualifying features recorded across all 2022/23 survey visits were calculated and assessed against a threshold of 1% of the cited peak winter count numbers of SPA species.

One qualifying feature, red-breasted merganser, was recorded as being present in 'significant' numbers within the anticipated Zone of Influence (Zoi) of the Proposed Development. A mean of peak counts of 5.75 individuals (4.9% of cited SPA population) was calculated from observations across all survey visits, which is above the 1% significance threshold of 1.1 birds.

No Slavonian grebe were recorded within the survey area during the 2022/23 winter surveys. The desk study data provided by the Argyll Bird Club has provided records of the species presence at Kennacraig Ferry Terminal, with up to six individuals recorded in March 2019. If present within the survey area, six individuals would comprise a significant 16.2% of the estimated SPA population of only 37 individuals.

Great northern diver was recorded within the survey but not in significant numbers. A mean of peak counts of 1.5 individuals was calculated from observations across all survey visits, which is below the 1% significance threshold of 5 birds.

Eider was recorded within the survey area on a single survey and not in significant numbers. The desk study has provided records of low numbers of the species at the ferry terminal, with a peak count of four individuals recorded in November 2021. If present within the survey area, four individuals would comprise only 0.3% of the estimated SPA population of only 1,295 individuals.

9.1.1.3 Otter

An otter survey was undertaken of the site

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

Source: MML (2022)

[Redacted]

9.1.1.4 Marine Mammals

From review of the data in Hague et al. (2020) and use of the Hebridean Whale and Dolphin Trust recent sightings data (HWDT, 2023) that the following protected species are anticipated within the region:

- Harbour Porpoise (*Phocoena phocoena*)
- Harbour Seal (*Phoca vitulina*)
- Grey Seal (*Halichoerus grypus*)
- Minke Whale (*Balaenoptera acutorostrata*)
- Bottlenose Dolphin (*Tursiops tuncates*)

- Basking Shark (*Cetorhinus maximus*)³.

9.1.1.5 Priority Marine Features

Desktop review was conducted for Priority Marine Feature (PMF) habitats and species within 10km of the Proposed Development. PMFs that would be at risk from the project were identified in Table 9-1 Table 9-12 below. The PMFs are sequenced with the most vulnerable features⁴ first, then according to distance from their closest recordings to the works as well as their sensitivities to impacts.

Table 9-12 Summary of PMF Habitats around Kennacraig Ferry Terminal

Priority Marine Feature	Number of recordings	Distance from the closest recording to the works	Mobility ⁽¹⁾	Sensitivity to Work-related Impact
Native oyster bed	1	Within 1km	Sedentary	High Sensitivity: <ul style="list-style-type: none"> ● Physical change (to another seabed type) ● Physical loss (to land or freshwater habitat) ● Introduction or spread of non-indigenous species & translocations (competition) ● Introduction of microbial pathogens (disease) ● Physical removal (extraction of substratum) ● Siltation changes (high & low) ● sub-surface abrasion/ penetration and surface abrasion ● Wave exposure changes Medium Sensitivity: <ul style="list-style-type: none"> ● Genetic modification & translocation of indigenous species ● Surface abrasion Sensitive: <ul style="list-style-type: none"> ● Synthetic compound contamination ● Non-synthetic compound contamination
Blue mussel beds	5	2km northwest	Sedentary	Sensitive: <ul style="list-style-type: none"> ● Nitrogen & phosphorus enrichment ● Siltation changes (high & low) ● Water clarity changes ● Synthetic compound contamination ● Non-synthetic compound contamination
Seagrass beds	2	4km northeast	Sedentary	High Sensitivity: <ul style="list-style-type: none"> ● Siltation changes (high & low) ● Water clarity changes Medium Sensitivity: <ul style="list-style-type: none"> ● Water flow (tidal current) changes ● Wave exposure changes

³ NatureScot, 2022 [Online] Available at [Basking sharks | Marine Scotland Information](#) and [GeMS - Scottish Priority Marine Features \(PMF\) - Natural Spaces - NatureScot \(snh.gov.uk\)](#).

⁴ Scottish Government. Priority Marine Features. The 11 most vulnerable PMFs are: blue mussel beds, cold water coral reefs, fan mussel aggregations, flame shell beds, horse mussel beds, maerl beds, maerl or coarse shell gravel with burrowing sea cucumbers, native oysters, northern sea fan and sponge communities, seagrass beds, serpulid aggregations. Accessed on 16 March 2023. <https://www.gov.scot/policies/marine-environment/priority-marine-features/>

Priority Marine Feature	Number of recordings	Distance from the closest recording to the works	Mobility ⁽¹⁾	Sensitivity to Work-related Impact
				<ul style="list-style-type: none"> ● Introduction or spread of non-indigenous species & translocations (competition) Sensitive: <ul style="list-style-type: none"> ● Synthetic compound contamination ● Non-synthetic compound contamination
Maerl beds	1	10km south	Sedentary	High Sensitivity: <ul style="list-style-type: none"> ● Siltation changes (high & low) ● Water clarity changes Medium Sensitivity: <ul style="list-style-type: none"> ● Water flow (tidal current) changes ● Wave exposure changes ● Introduction or spread of non-indigenous species & translocations (competition) Sensitive: <ul style="list-style-type: none"> ● Synthetic compound contamination ● Non-synthetic compound contamination
Low or Variable salinity habitats	5	1.3km west	Sedentary	Medium Sensitivity: <ul style="list-style-type: none"> ● Introduction or spread of non-indigenous species & translocations (competition) Sensitive: <ul style="list-style-type: none"> ● Synthetic compound contamination ● Non-synthetic compound contamination
Kelp bed	1,	10km southwest,	Sedentary	Sensitive: <ul style="list-style-type: none"> ● Synthetic compound contamination
Kelp and seaweed communities on sublittoral sediments	3	1.3km east		<ul style="list-style-type: none"> ● Non-synthetic compound contamination
Burrowed mud	1	5km southwest	Sedentary	Sensitive: <ul style="list-style-type: none"> ● Synthetic compound contamination ● Non-synthetic compound contamination

Note: (1) Reference: Tyler-Walters, H., James, B., Carruthers, M. (eds.), Wilding, C., Durkin, O., Lacey, C., Philpott, E., Adams, L., Chaniotis, P.D., Wilkes, P.T.V., Seeley, R., Neilly, M., Dargie, J. & Crawford-Avis, O.T. 2016. Descriptions of Scottish Priority Marine Features (PMFs). Scottish Natural Heritage Commissioned Report No. 406.

9.1.2 Air Quality, Noise and Vibration and People

There are no declared AQMAs within the Argyll & Bute Council area. The Proposed Development is not within a noise management area.

The nearest receptors to the Proposed Development boundary are located approximately 600m south-west of the Proposed Development (Kennacraig Farm).

9.1.3 Water Environment

The Proposed Development is located within an area where each year there is a 10% chance of flooding from coastal sources.

The Proposed Development is located within the West Loch Tarbert (Kintyre) coastal water body (ID:200307) in the Scotland river basin district. It is 17.6 km² in area and classified as Good overall status (2018).

There are no Bathing Waters in the vicinity of Kennacraig as designated under the Bathing Waters (Scotland) Amendment Regulations 2012.

The Proposed Development falls within Loch Tarbert Shellfish Water Protected Area. However, no active aquaculture sites, including shellfish sites, are present within the vicinity of the Proposed Development.

9.1.4 Cultural Heritage

There is one Scheduled Monument (Eilean Àraich Mhòir, dun 730m NNW of Tigh na Croit. Approximately 320m south west) within 1km of the Proposed Development boundary. Additionally, there are three maritime non-designated heritage assets within 500m of the Proposed Development boundary (see Map 1, Appendix B).

The closest assets include:

- Unknown, Barge (ID: 324524), within the footprint of the Proposed Development. Whilst listed on Canmore, it is understood that this sunken barge adjacent to the existing linkspan was removed during previous works in around 2010/11;
- West Loch Tarbert, Kennacraig, Pier (ID: 158636) approximately 135m north of the Proposed Development; and
- Unknown, Eilean Araich Mhoir, West Loch Tarbert, Sound of Gigha, Atlantic (ID: 102479) approximately 440m south west of the Proposed Development.

9.1.5 Landscape

The Proposed Development and onshore areas are within Landscape Character Type 39: Plateau Moor and Forest - Argyll. The nearest visual receptors to the Proposed Development boundary are located approximately 600m south west of the Proposed Development (Kennacraig Farm).

9.2 Relevant Legislative Requirements

All construction work will be carried out in compliance with the relevant requirements of UK environmental law, which includes but is not limited to the following:

- Marine (Scotland) Act 2010;
- Marine and Coastal Access Act 2009;
- Environmental Protection Act 1990;
- The Water Environment and Water Services (Scotland) Act 2003;
- The Water Environment (Controlled Activities) (Scotland) Regulations (2011) and amendment regulations (2013), more commonly known as the Controlled Activity Regulations (CAR);
- The Water Environment (Shellfish Water Protected Areas: Designation) (Scotland) Order 2013;
- Groundwater Regulations 1998;
- The Flood Risk Management (Scotland) Act 2009;
- Nature Conservation (Scotland) Act 2004;
- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended In Scotland);
- Nature Conservation (Scotland) Act 2004 (as amended);
- Wildlife and Countryside Act 1981 (as amended);
- Land Reform (Scotland) Act 2003;

- Ancient Monuments and Archaeological Areas Act (AMAAA) 1979;
- The Environmental Protection (Duty of Care) (Scotland) Regulations 2014;
- The Waste (Scotland) Regulations 2012;
- The Waste Management Licensing Amendment (Scotland) Regulations 2011;
- Air Quality Standards (Scotland) Regulations 2010 as amended;
- The Water Environment (Oil Storage) (Scotland) Regulations 2006; and
- Environmental Noise (Scotland) Regulations 2006.

The Principal Contractor will be responsible for complying with all legislative requirements as well as any other requirements specified by the relevant regulatory authorities including Marine Scotland, NatureScot, SEPA and Argyll and Bute Council

9.3 Consents and Permissions Required

The Proposed Development will require consents/licences and exemptions from various regulatory bodies in advance of construction activities including:

- Marine Licence for Construction Projects
- Marine Licence for Dredging and Sea Disposal;
- European Protected Species (EPS) Licence for Otter (note this licence was granted (Licence Number 218155);
- EPS Licence for Marine Mammals;
- Basking Shark Licence; and
- Marine noise registry application draft (see application number 3381, 3382, 3383, 3384, 3422 and 3423).

Copies of legal consents, permits assents and licenses of exemptions obtained will be held in the site environmental file by the Principal Contractor's Environmental Manager.

9.4 Environmental Management

The Principal Contractor's Environmental Manager will prepare and maintain an Environmental Risk Register (ERR) which will cover the Principal Contractor's compliance with legal requirements, project environmental commitments and potential aspects of works to cause significant environmental impact. The risk register will be reviewed and updated both prior to and during construction.

At this stage, environmental management plans and mitigation measures have been provided for the following environmental topics given the environmental constraints on site, shown in Section 9.1. These plans will be further expanded upon and developed in more once the Principal Contractor has been appointed, and developed to ensure the methodology statements are in line with these plans.

9.5 Ecology Mitigation Plan

9.5.1 Otter

A European Protected Species mitigation licence from NatureScot with regard to disturbance of otters
[Redacted]

1st September 2022 to 31st December 2024.

The licence is accompanied by a project specific Otter Species Protection Plan (Appendix C.1.1.1) which details the measures which must be implemented by the Principal Contractor. A

summary of the measures which must be implemented are set out in Section 9.5.1 to 9.5.3 below. Further details are shown in Appendix C.1.1.1.

9.5.1.1 Requirements for European Protected Species Licence for Works Affecting Otter

- Prior to the commencement of the vessel enabling works, a review of the EPS mitigation licence, including Species Protection Plan (Appendix C.1.1.1) will be undertaken. Where appropriate, this will be informed both by the final design (e.g. capturing any minor amendments) and an updated Pre-Works Otter Checking Survey, as outlined in Section 9.5.2.
- Upon completion of the licensable works, a licence return form will be completed and submitted to NatureScot within four weeks. Additionally, in any event of delays an extension of the EPS licence duration will be required ahead of its expiration. This is a statutory requirement and a licence condition of the EPS licence.

9.5.1.2 Pre-Works Otter Checking Survey

- To update the baseline in relation to otter, a pre-works otter checking survey will be undertaken by an appropriately qualified ecologist(s) no later than 2 months prior to the commencement of the works programme.
 - The aim of the pre-works survey will be to confirm presence/absence of any additional otter shelters within the zone of influence of the vessel enabling works, as well as confirm the status of known otter shelters.
 - Upon completion of the checking survey, an appropriate qualified ecologist will review the existing EPS Licence, including Species Protection Plan (Appendix C.1.1.1), to identify any requirements to amend the EPS Licence.
 - Otter surveys must be conducted every 12 months throughout the licence period by a suitably qualified and experienced ecologist to identify any new holts or resting places and any change in use of existing active holts or resting places. Surveys must extend for a minimum of 200m beyond the working areas, including access tracks. If new holts or resting places are found, no further works are permitted until NatureScot has been consulted and agreed an appropriate course of action. Results of the otter survey must be submitted as part of the annual licence return to NatureScot.
 - If evidence of breeding or young is found within 200m of the development site at any time, no further works must be carried out until all cubs can be shown to be sufficiently mobile to make use of alternative holts, unless agreed by an NatureScot licensing officer.

9.5.1.3 Mitigation Measures and Appropriate Working Methods

- Prior to the commencement of the vessel enabling works programme, a site-specific Toolbox Talk will be briefed to all Contractors as part of their overall Site Induction Package.
 - The aim of the Toolbox Talk will be to inform all site personnel of the presence of otters at the site, the legal status of otters, mitigation measures to be employed on site to minimise the risk and disturbance/obstruction to otters (including the planned use of protection zones) and what to do if an otter is observed within working areas. This will be extended to all boat/water-based operations, to ensure all boat operatives are made aware of the otter rest sites and the potential for otter within the water.
 - A plan of the site showing the locations of all confirmed otter shelters will be maintained throughout the duration of the investigation works programme at an appropriate location at the site compound, to promote awareness of the locations of legally protected otter shelters.
- A 30m protection (exclusion) zone will be implemented for the duration of the vessel enabling works programme. Only elements of works (e.g. dredging barge and terrestrial access to working zones) that cannot be avoided shall be permitted within protection zones.

- Contractors will avoid storage of equipment/ materials etc. where feasibly possible within 30m protection zones for the duration of the investigation programme.
- All works within 30m of an otter couch or holt must be carried out during daylight hours, restricted to between two hours after sunrise and two hours before sunset from 1st March to 31st October, and restricted to between one hour after sunrise and one hour before sunset from 1st November to 28th February.
- All works carried out within restricted works zones must be under the direct supervision of a suitably experienced ecologist.
- An otter shelter must only be destroyed once a suitably experienced ecologist has established beyond reasonable doubt that no otters remain within the structure. The destruction of a shelter must be carried out under the direct supervision of the ecologist.
- To prevent entrapment or harm to otters, any excavated/exposed working locations will be covered using protection boards outside of working hours.
 - Where this is not possible a mammal ladder will be installed within the excavated area to allow for a means of escape or fencing shall be placed around the excavation to prevent access.
 - Excavations will be checked by the contractor each morning.
- Any construction and operational site lighting used on site will be directed away from the identified otter shelter. Where appropriate, lights will have lighting hoods and cowls to avoid any light spillage into surrounding habitats.
- Pollution prevent measures will be implemented on site to negate adverse impacts to the aquatic habitats. Measures will include current Scottish Environment Protection Agency (SEPA) and Construction Industry Research and Information Association (CIRIA) guidance.
- Good housekeeping practices will be implemented on site at all times, any areas where hazardous substances have been used e.g. concrete will be sufficiently covered at the end of each day.
- All vehicles will be maintained to a high standard to minimise noise and vibration generated during the works. They will also be switched off when not in use to minimise noise and reduce air pollution.
- All terrestrial vehicles will be limited to a maximum speed of 10mph when using the access road. Boats will be subject to a minimum speed requirement when operating within surrounding water to the Port.
- Prior to the use / removal of any equipment on site, Contractors will undertake a thorough check to ensure no otters are present within working areas.
- If at any stage an otter is encountered within the working area, all works will be temporarily halted until the otter has naturally dispersed. In particular, this includes temporary suspension of vehicle movements (including boat), particularly within the vicinity of where the otter has been encountered.

9.5.2 Birds

9.5.2.1 Vessel Strike

To minimise risk of vessel strike and airborne noise impacts on birds the following mitigation measures will be implemented:

- In line with the Scottish Marine Wildlife Watching Code (SMWWC)⁵:

⁵ NatureScot, 2017 [Online] Available at: [The Scottish Marine Wildlife Watching Code SMWWC | NatureScot](#)

- Where birds are observed to be rafting⁶ the vessel will avoid driving through the aggregated birds and maintain a 50m separation where practicable and safe to do so.
- Where there are birds situated on the water, the vessel shall maintain a speed below 6 knots where safe to do so.
- See measures under Section 9.7 construction noise management plan to minimise airborne noise.

The risk of vessel strikes on Common Eiders is considered unlikely. However, if dredging activities are undertaken between July and September (the sensitive period for post moult eiders) the following mitigation will be implemented:

- A checking survey will be conducted by a suitably experienced ornithologist immediately prior to dredging works commencing to ensure that no moulting common eider are present.
- If common eiders are identified within or are approaching 200m of the planned working areas, movement of the dredger or hopper barge will be delayed until all birds have naturally left the area and (or) are not showing signs of disturbance (swimming, diving away and flapping)⁷.
- All dredging works will be undertaken under the supervision of a suitably experienced ornithologist (Ornithological Clerk of Works; OCoW) and will be preceded by a toolbox talk to brief contractors on the potential for disturbance to common eider during sensitive periods.
- The tidal state and (or) weather conditions such as strong winds will also be considered prior to the commencement of works, as it may push birds closer to the coastline.

9.5.2.2 Airborne Noise

To minimise airborne noise the mitigation measures outlined in the Construction Noise Management Plan Section 9.7 will be implemented.

9.5.2.3 Underwater Noise and Vibration

To minimise risk of underwater noise and vibration impacts on birds the following mitigation measures will be implemented:

- All equipment will be maintained to a high standard to minimise noise and vibration generated during the works. They will also be switched off when not in use to minimise noise and reduce air pollution.
- Toolbox talks for contractors on relevant designated features will take place.
- Prior to starting any noise-generating activities a 500m zone around non-impulsive sources and 1km zone around impulsive sources shall be monitored for diving birds for 30 minutes in good daylight conditions (Beaufort Sea state 3 or less) by suitably trained (JNCC methods) and dedicated observers.
- Should diving birds be observed, the start of operations will be delayed until 20 minutes after the last sighting of a diving bird within the buffer zone.
- Where possible equipment shall be soft started with either a ramp up in energy or gradual decreasing intervals between strikes over a period of 20-40 minutes duration. In the case of Cardox, detonations will be conducted with sequential delays between detonations to minimise shockwaves.

⁶ Rafting is a behaviour where birds sit, often in groups, on the water close to their colony or nests.

⁷ Goodship, N.M. and Furness, R.W. (MacArthur Green) Disturbance Distances Review: An updated literature review of disturbance distances of selected bird species. NatureScot Research Report 1283. Accessed from: [here](#)

- The Scottish Marine Wildlife Watching Code (SMWWC)⁸ will also be adhered to during any vessel-based operations and activities which generate less noise will precede the noisier activities.
- No piling or rock breaking work shall take place from dusk to dawn nor in poor weather condition (ie greater Beaufort sea state 3 and less than 500m visibility).
- See measures under Section 9.7 construction noise management plan to minimise airborne noise.

9.5.2.4 Pollution Events

To avoid potential pollution events the mitigation measures outlined in Section 8.

9.5.2.5 Changes in Turbidity/Resuspension of Contaminants

To avoid the introduction of contaminants to the environment during construction, pollution prevention best practise measures listed under Section 8 will be implemented and the following measure will also be implemented:

- A full closure bucket will be attached to the backhoe dredger to minimise spillage.

9.5.2.6 Visual Disturbance

To minimise the risk of visual disturbance to birds, the following mitigation measures will be implemented:

- Where deemed appropriate (through risk assessment), physical barriers will be erected around terrestrial activities that are expected to generate particularly high noise levels (which lowers receptors threshold to visual disturbance) or large amount of movement to provide screening. Care will be taken to optimise the position of any barriers proposed where practicable and may be considered in conjunction with noise barriers that also provide visual screening;
- The use of sensitive lighting when working during hours of darkness will be implemented to reduce light spill onto marine habitats (such as directional lighting, hoods and cowls); and
- Toolbox talks given to all workers to advise on how best to minimise disturbance.

9.5.3 Marine mammals and Basking Sharks

9.5.3.1 Underwater Noise and Vibration

To minimise underwater noise and vibration the following mitigation will be implemented in addition to those listed in Section 9.5.2:

- Toolbox talks for contractors on relevant marine mammals will take place.
- Passive acoustic monitoring shall also be used to aid monitoring of the mitigation zones for vocalising species.
- Should marine mammals be observed, the start of operations will be delayed until 20 minutes after the last sighting of a marine mammal within the buffer zone.

9.5.3.2 Vessel Strike

To reduce incidental collisions occurring between marine mammals and reduce effects of propeller cavitation, the following mitigation is proposed:

⁸ NatureScot, 2017 [Online] Available at: [The Scottish Marine Wildlife Watching Code SMWWC | NatureScot](#)

- Vessels in transit and manoeuvring in coastal waters during construction will be within speeds outlined by Maritime and Coastguard Agency's (MCAs) legislation and guidance⁹.
- The SMWW will be adhered to, measures include:
 - All vessels and equipment will be well maintained and be inspected prior to use to minimise unnecessary noise.
 - Should a marine mammal be encountered whilst underway outside of noise emitting operations, the vessel shall avoid sudden unpredictable changes in speed, direction and engine noise.
 - The vessel shall seek to maintain a minimum of 100m separation unless directly approached whereupon the vessel shall maintain a steady speed and course whilst not presenting propellers to the approaching animal.
- The use of a suitable Code of Conduct, such as the WiSe Scheme¹⁰; primarily for wildlife watching however, outlines measures for vessel operation around marine wildlife and will be considered for use as mitigation for any collision risk posed to marine mammals during construction works and transit.

9.5.3.3 Pollution Events

To avoid potential pollution events the mitigation measures outlined in Section 8.

9.5.3.4 Introduction/spread of INNS

The works have the potential to introduce and/or spread INNS to the site. In order to mitigate for the introduction and/or spread of INNS during the construction of the Proposed Development, certain biosecurity protocols need to be adhered to. These include the following:

- Pre-construction walkover surveys to look for presence of existing INNS across accessible areas of the Proposed Development will be undertaken. If identified, the location of INNS will be communicated to site workers and suitable buffers set up around them to avoid potential spread through the site.
- Toolbox talks will be held with site workers to raise the awareness of how to avoid, deal with and identify INNS (if present).
- Production of a marine biosecurity plan (Section 9.6) which would include measures to reduce/eliminate the risk of introducing or spreading INNS on site. The Principal Contractor's Biosecurity Manager or Environmental Clerk of Works (ECoW) will update and maintain a site-specific Marine Biosecurity Plan. Measures include the following:
 - Sections of the plant that would come into direct contact with the intertidal area (track/wheels) will be thoroughly cleaned before and after use to avoid the spread of any INNS (e.g. wheel washing facilities will be provided).
 - Where possible, existing material will be reclaimed, therefore lowering the risk of the introduction of invasive species. Any brought in material will be bespoke. If this is not possible, it will be ensured that brought in material hasn't been utilised in the marine environment previously. Again, if this is not possible, material brought in will be screened for INNS ahead of its use on site.
 - Vessels will comply with relevant ballast water management requirements including where traveling to the site from outwith UK waters the IMO Ballast Water Management (BWM) Convention 2004, which establishes standards and procedures for the management and control of ships' ballast water and sediments. Measures within the

⁹ Maritime and Coastguard Agency, May 2014. Active marine guidance notes (MGNs) [Online] Available at: [Active marine guidance notes \(MGNs\) - GOV.UK \(www.gov.uk\)](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/292427/Active_marine_guidance_notes_(MGNs)_-GOV.UK.pdf)

¹⁰ See [Home | The WiSe Scheme](#)

ballast water management plan will include detail of vessel specific measures, require vessel to complete a ballast water record book, conduct regular inspection, and where necessary hold an international ballast water management certificate.

9.6 Marine Biosecurity Plan

9.6.1 Overview

This outline of the Marine Biosecurity Plan is produced with biosecurity risks initially assessed and control measures suggested. The Principal Contractor's Biosecurity Manager or Environmental Clerk of Works (ECoW) will update and maintain a site-specific Marine Biosecurity Plan. The plan will be based on construction method statement for considering more specific details, such as all vessel types, on-site equipment, site activities and tasks. The plan will aim for managing marine biosecurity on the site operations in order to reduce the likelihood of introducing non-native species (NNS), and to determine when the control measures will be applied.

According to guidance¹¹, the Marine Biosecurity Plan will contain:

- Site Name or Description of Operation
- Site/Operation Location:
- Plan period
- Biosecurity Manager or ECoW (to be appointed by the Principal Contractor) who will be the main point of contact relating to NNS, undertake biosecurity inspection, surveillance, recording, and update this plan as required
- Site features affecting biosecurity (brief description of salinity, submerged structures and non-native species known to be present)
- Vessel types using the site/involved in the operation
- Site activities which have a significant risk of introducing or spreading NNS
- Biosecurity Control Measures – instructions for staff/contractors/site users (Who, What Where, When)
- Site surveillance and reporting procedure
- Action/Contingency Plan (Action, Responsibility, Location of Equipment)
- Location of biosecurity logbook
- Biosecurity Plan Review Date

○ Legislation

9.6.1.1 International Convention for the Control and Management of Ships' Ballast Water and Sediments

All applicable vessels that travel to the site from outwith UK waters will comply with the IMO Ballast Water Management (BWM) Convention 2004 which establishes standards and procedures for the management and control of ships' ballast water and sediments.

¹¹ Payne, R.D., Cook, E.J. and Macleod, A. (2014). Marine Biosecurity Planning – Guidance for producing site and operation-based plans for preventing the introduction of non-native species. Report by SRSL Ltd. in conjunction with Robin Payne to the Firth of Clyde Forum and Scottish Natural Heritage 39 pp. https://www.webarchive.org.uk/wayback/archive/20210929132843mp_/https://www.nature.scot/sites/default/files/2019-02/Marine%20Biosecurity%20Planning.pdf

Under the Convention, all ships of 400 gross tonnes (gt) and above in international traffic are required to manage their ballast water and sediments to a certain standard, according to a ship-specific ballast water management plan.

All ships will also have to carry a ballast water record book and an international ballast water management certificate.

9.6.1.2 Wildlife and Countryside Act 1981 & The Wildlife and Natural Environment (Scotland) Act 2011

Section 14 of the Wildlife and Countryside Act 1981 & The Wildlife and Natural Environment (Scotland) Act 2011 made significant amendments to the law in Scotland and strengthened the legal requirement for everyone to take all reasonable steps to ensure biosecurity. This legislation is about prevention rather than cure and contains the following relevant offences:

- Releasing an animal to a place outwith its native range
- Otherwise causing an animal outwith the control of any person to be at a place outwith its native range
- Otherwise causing a plant to grow in the wild at a place outwith its native range

9.6.1.3 The Merchant Shipping (Anti-fouling Systems) Regulations 2009

The Merchant Shipping (Anti-fouling Systems) Regulations 2009 prohibit the use of harmful organotin compounds in anti-fouling paints used on ships and establish a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems and places into UK law Regulation (EC) 782/2003 on the prohibition of organotin compounds on ships.

The Regulations provide powers for the Maritime Coastguard Agency to issue an International Anti-fouling System Certificate to ships of 400gt or above and every ship which is certified to carry 15 or more persons.

9.6.2 Non-native Species Known to be Present

According to the marine NNS assessment data from 2018 by Marine Scotland¹², there are three verified high-impact NNS records in the Argyll region, as listed below:

- Leathery sea squirt (*Styela clava*)
- Common cord-grass (*Spartina anglica*)
- Carpet sea squirt (*Didemnum vexillum*)

There are also two verified records of “medium, low and unknown impact NNS” in the Argyll marine region which are wireweed (*Sargassum muticum*) and Pacific oyster (*Magallana gigas*).

Other marine invasive NNS that are widespread and well established in Scotland¹³ are listed below:

- Green sea-fingers (*Codium fragile subsp. fragile*)
- Red alga (*Heterosiphonia japonica*)
- Acorn barnacle (*Austrominius modestus*)
- Japanese skeleton shrimp (*Caprella mutica*)

¹² The Scottish Government (2023). Non-native species. https://marine.gov.scot/sma/sites/default/files/sma2020_-_non-native_species_-_healthy_and_biologically_diverse.pdf. Accessed 17th March 2023.

¹³ NatureScot (2023). <https://www.nature.scot/professional-advice/land-and-sea-management/managing-coasts-and-seas/marine-non-native-species>. Accessed 17th March 2023.

- Orange tipped sea squirt (*Corella eumyota*)
- Orange ripple bryozoan (*Schizoporella japonica*)

9.6.3 Risk Factors for Vessel Types Involved in the Construction

The risk of introducing NNS by vessel is considered as high. Slow moving construction barges, equipment or stock arriving at a construction site from another water body could be covered in bio-fouling or containing additional algae/animals. Construction vessels/ barges are one of the vessel types with greater biosecurity risk as they are more likely to have fouling and NNS such as algae, barnacles and sea squirts settling on their hull and anchors.

The site operations will involve backhoe dredger (and potential use of trailer suction hopper dredger) for the dredging process. It may be possible for dredger to take on board ballast waters from different regions of the UK and then dispose of these into local waters, or take on board the UK waters into different regions after dredging completes. Either could result in the introduction or spread of NNS in the form of marine microbes, plants and animals (such as Carpet sea squirt larvae).

9.6.4 Initial Identification of Biosecurity Risk

Site activities which may have a significant risk of introducing or spreading NNS are outlined below:

Overall construction

- Use of construction barges and slow moving vessels, and possibly vessels from locations outside local water body – bio-fouling and NNS settling on hull, tug and anchor

Upgrading fenders, modification of ramp and installation of vessel shore power and gangway

- Breaking of the existing concrete at intertidal/subtidal zone – spread of NNS that typically settling on concrete without anti-fouling coating

Dredging

- Disturbance and movement of sediments and materials containing NNS
- Use of ballast water in dredging – introducing and spreading NNS
- Disposal of dredged materials – spread of NNS

Piling, toe protection and scour protection

- Importation of materials (such as rock armour) – which may be covered in bio-fouling and subsequently introducing NNS
- Upon completion of piling, the new sheet piles and concrete bored piles in the water provide structures that favour NNS settlement, increasing risk of NNS introduction and establishment.

The Biosecurity Manager or ECoW will consider splitting each of these activities into tasks for updating risk assessment and control measures when there are more details from construction method statement.

9.6.5 Biosecurity Risk Assessment

The risk assessment for the biosecurity risk initially identified in Section 9.6.4 is outlined in **Table 9.3**. This assessment is undertaken in a precautionary manner as it relies on the best available information on site operations for the Proposed Development which is provided in Section 2 of this CEMP.

9.6.6 Development of Control Measures and Control Points

Typical control measures for the initially identified biosecurity risks are suggested and listed below. The critical control point, i.e., if control measures are most effectively applied at this stage, will be considered by the Biosecurity Manager or ECoW when the detailed construction method statements are available.

The suggested control measures are also incorporated into **Table 9.3** for the relevant biosecurity risks. General mitigation to be implemented comprises the following:

- Pre-construction walkover surveys to look for presence of existing INNS across the Proposed Development area will be undertaken. If identified, these areas will be made aware to site workers and suitable buffers set up around them to avoid potential spread through the site.
- Toolbox talks will be held with site workers to raise the awareness of how to avoid, deal with and identify INNS.
- Sections of the plant that would come into direct contact with the intertidal area (track/wheels) will be thoroughly cleaned before and after use to avoid the spread of any INNS (e.g. wheel washing facilities will be provided).

Table 9.3: Critical Control Points and Control Measures

Task (site activity for this initial plan)	Initial Risk Assessment – Significant?	Justification	Critical Control Point	Control Measure	Who
Use of construction barges and slow moving vessels	Yes	Overall, it is likely that high impact NNS settled as bio-fouling will be introduced to the waters of the site area.	Yes	<ul style="list-style-type: none"> • Removal of NNS at source: Inspection of vessels (external hull/ tug/ anchor), ballast water and sediment in the tanks immediately prior to entering the waterbody of site, and before leaving the site. • All vessels used on site will ensure they have a copy of their Bio-fouling Management Plan on board with clear information outlining efforts to reduce bio-fouling of the vessel, e.g. through anti-fouling treatments or use of biocides. • Routine inspections of vessels and equipment for NNS and biosecurity measures taken if NNS found. • Checking logs of last inspection of hull and ensuring relatively recent records are kept. • Anchors for vessels used on site will be cleaned when opportunity arises. 	Site Agent and site staff
Breaking of concrete	Yes	NNS typically settle on man-made structures	Yes	<ul style="list-style-type: none"> • Prior to the ramp modification works, the concrete will be visually 	ECoW / Environmental

Task (site activity for this initial plan)	Initial Risk Assessment – Significant?	Justification	Critical Control Point	Control Measure	Who
		in the water without anti-fouling coating, such as the concrete ramp. It is likely that any NNS will be spread during concrete breaking.		<p>inspected for any NNS or bio-fouling as far as practicable.</p> <ul style="list-style-type: none"> NNS and/or bio-fouling will be properly removed and disposed of suitably on land and will not be disposed of within the marine environment. 	Manager and site staff
Dredging process	Yes	This work disturbs the seabed, so it is possible for NNS settled on the seabed to be spread from the dredged materials.	Yes	<ul style="list-style-type: none"> It is suggested to undertake on-site screening for NNS in the dredging area as far as practicable, approximately 6-8 weeks prior to the construction phase commencing (by a suitably qualified marine ecologist). This will provide an opportunity to confirm any NNS on site and for these to be managed suitably prior to works starting. During dredging activities, it is suggested to position the bucket of dredger above water to increase air exposure, as drying out is effective for NNS removal¹⁴. During dredging works, report any suspected NNS sightings to Marine Scotland 	<p>Site Agent and site staff</p> <p>ECoW / Environmental Manager</p>
Ballast water in dredging	Yes	NNS including the high impact species are very likely present in the ballast water and this results in the spread of NNS if not properly controlled and disposed of	Yes	<ul style="list-style-type: none"> All vessels and associated staff must ensure adherence to the Ballast Water Management Convention, 2017 for each vessel required for the works. This legislation outlines the requirements for each vessel to have a ballast water management plan, a ballast water record book and an international ballast water management certificate. Vessels will have an on-board ballast water treatment system, if this is not possible then ballast water will be exchanged 	ECoW / Environmental Manager and vessel staff

¹⁴ GB Non-native Species Secretariat (2023). https://www.nonnativespecies.org/assets/Document-repository/Marine_INNS_Control_Measures-v2.pdf

Task (site activity for this initial plan)	Initial Risk Assessment – Significant?	Justification	Critical Control Point	Control Measure	Who
				mid-ocean and not near the shoreline of the site.	
Disposal of dredged materials	Yes	Any NNS present in the dredged materials will be spread to the marine disposal sites.	Yes	<ul style="list-style-type: none"> Collect those dredged materials with NNS for suitable treatment before transporting to the marine disposal sites 	Site staff
Importation of materials (rock armour) for scour protection	Yes	NNS including high impact species that are settled on rock armour as bio-fouling will be introduced	Yes	<ul style="list-style-type: none"> Where possible, existing material will be reclaimed, therefore lowering the risk of the introduction of invasive species. Any brought in material will be bespoke. If this is not possible, it will be ensured that brought in material hasn't been utilised in the marine environment previously. Again, if this is not possible, material brought in will be screened for INNS ahead of its use on site. Any rock armour delivered to site will preferably be virgin material or appropriately treated material (for example, heat treated), not consist of rocks that has been sourced from other coastal defence schemes. Rocks will also be clean prior to introduction on site. 	Site Agent and site staff
Piling	Yes	Increasing risk of NNS introduction and establishment on the new sheet piles and concrete bored piles in the water	Yes	<ul style="list-style-type: none"> Possible measures for preventing NNS and removing bio-fouling on piles, for example, use of specially formulated concrete or non-toxic anti-fouling paints to prevent NNS¹⁵, and treatment of NNS present by wrapping around the piling to remove NNS¹⁶. 	Site staff

9.6.7 Development of Biosecurity Action Plan

Biosecurity action plan sets out the person/party responsible for carrying out the control measure, the details of action including any materials needed, and when the control measure will be applied.

¹⁵ GB Non-native Species Secretariat (2023). https://www.nonnativespecies.org/assets/Document-repository/Marine_Engineering_Biosecurity_Solutions.pdf. Accessed 10th February 2023.

¹⁶ Cook, E.J., Payne, R.D. & Macleod, A. 2014. Marine biosecurity planning – Identification of best practice: A review. Scottish Natural Heritage Commissioned Report No. 748.

Table 9.4: Biosecurity Action Plan

When	How	Who
At entry of construction vessels and barges	<ul style="list-style-type: none"> ● Check the copy of Bio-fouling Management Plan on board of each vessel and barge ● Inspect the vessels (external hull/ tug/ anchor), ballast water and sediment in the tanks prior to entering 	Site Agent
Use of construction vessels and barges on site throughout the construction phase	<ul style="list-style-type: none"> ● Routinely inspect vessels and equipment for NNS and biosecurity measures taken if NNS found. ● Regularly check logs of last inspection of hull and ensuring relatively recent records are kept 	Site Agent
	<ul style="list-style-type: none"> ● Clean the anchors for vessels and barges whenever necessary and opportunity arises 	Site staff
Prior to upgrading of existing fenders including breaking concrete for ramp modification	<ul style="list-style-type: none"> ● Arrange visual inspection of the concrete surface for any NNS or bio-fouling 	ECoW / Environmental Manager
	<ul style="list-style-type: none"> ● Remove any NNS and /or bio-fouling and disposed of on land 	Site staff
Dredging	<ul style="list-style-type: none"> ● Check the ballast water management plan, a ballast water record book and an international ballast water management certificate on each vessel 	Site Agent
	<ul style="list-style-type: none"> ● Position the bucket of dredger above water for drying when not in use 	Site staff
	<ul style="list-style-type: none"> ● Adhere to the ballast water management plan ● Proper use of the on-board ballast water treatment system 	
	<ul style="list-style-type: none"> ● Report any suspected NNS sightings to Marine Scotland 	ECoW / Environmental Manager
	<ul style="list-style-type: none"> ● Check the on-board ballast water treatment system and ballast water record book during environmental auditing 	
Disposal of dredged materials	Separate dredged materials with NNS and suitably treat those materials as instructed	Site staff
Importation of rock armour for scour protection	Check the origin of rock armour delivered to site	Site Agent
	Clean the rocks before introduction on site	Site staff
Piling	Implementing anti-fouling treatment for piles as instructed	Site staff

9.6.8 Communication and Reporting Responsibilities

In the event of a potential NNS contamination, it will be immediately reported to either the Environmental Manager or Biosecurity Manager / ECoW. The ECoW will be trained in the identification of NNS. Relevant identification sheets can be found on the Great Britain Non-Native Species Secretariat Website¹⁷. In the event of an emergency, the following procedures will be followed:

- The ECoW must determine if the species reported is a NNS, if necessary, Scotland's Environmental and Rural Services (SEARS) will be contacted immediately at this stage if identification needs confirmation. A sample will be collected, placed in plastic bag and sent to the nearest SEARS location.
- If the NNS is confirmed by the ECoW/SEARS it must be reported to Marine Scotland Licensing Operations Team and Marine Scotland -Science immediately.

¹⁷ Great Britain Non-Native Species Secretariat Identification Sheets: <https://www.nonnativespecies.org/non-native-species/id-sheets/>

- The ECoW will inform other water-users and vessel operators. A construction marine coordinator, if any, will be contacted.
- A record of the findings will be logged and include:
 - The scientific and or common name of the species
 - Location of the find with an accurate grid reference or GPS coordinates
 - How it was found (e.g. attached to equipment)
 - Date
 - Name of individual who identified the NNS and who confirmed the identification (e.g. ECoW)
 - Photographs of the NNS and surrounding area; and
 - Approximate numbers and or area of NNS recorded.
- In the event of a high impact species:
 - Immediate containment measures will be initiated, including restricted vessel movements (to be coordinated by the construction marine coordinator, if any)
 - Wider surveys of vessels and structures will be undertaken
 - In the event of NNS being found, the Environmental Manager will seek further advice from NatureScot

9.7 Construction Noise Management Plan

This Construction Noise Management Plan (CNMP) describes the procedures to control and minimise noise impacts during the construction phase. Noise may cause a statutory nuisance under Section 79 of the Environmental Protection Act 1990. Local Authorities have the power to stop construction activities, or limit working hours for the use of noisy plant and equipment where a nuisance has been reported.

Given the distances between the site and the nearest residential receptors it is considered unlikely that construction noise would have a significant impact on residential receptors.

The impact on sensitive receptors within the vicinity of the Proposed Development can be controlled when undertaken in accordance with good practice as set out in BS 5228 Parts 1 and 2 as described in the following sections.

○ Working Hours

As stated within section 2.2.1.1, working hours are anticipated to be 24 hours each day, Monday to Sunday to accommodate dredging works and minimise disruption to the existing ferry service through allowing some dredging works to be undertaken overnight. However, piling works will be restricted to the hours between 08:00 – 23:00 Monday to Friday and 08:00-12:00 Saturday. No piling works would be undertaken on Sunday.

9.7.1 Best Practicable Means

Best Practicable Means (BPM) are defined in Section 72 of the Control of Pollution Act 1974 and Section 79 of the Environmental Protection Act 1990 as those measures which are:

“reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications”.

BPM will be applied to all construction works and will follow the general guidance contained within the British Standard 5228 ‘Code of practice for Noise and Vibration Control on Construction and Open Sites’ (2009) together with the specific requirements of this CNMP.

Noise from construction processes will be controlled and limited where identified as likely to cause nuisance. Noise-emitting plant will be managed on site, and activities will be programmed and timed sensitively to minimise impact on Noise Sensitive Receptors (NSRs) over the proposed working period. See Section 9.7.2 to 9.7.6 below for further details.

All plant and equipment used will comply with the noise limits quoted in the relevant European Commission Directive 2000/14/EC/United Kingdom Statutory Instrument 2001/1701.

Plant and equipment liable to create noise and/or vibration whilst in operation will, as far as reasonably practicable, be located away from sensitive receptors. The use of barriers to absorb and/or deflect noise away from noise sensitive areas will be employed where appropriate. Where a temporary acoustic barrier is to be used, the barrier material will have a mass per unit area exceeding 7 kg/m² in accordance with the recommendations of BS 5228 – Part 1:2009. For example, plywood panels with a minimum thickness of 13 mm. This will be large enough to obscure the source of noise from the affected NSR and as close as possible to the source taking into account, where appropriate, aspects such as access, electrical and fire requirements, and inlet and exhaust air flows.

All plant, equipment and noise control measures applied to plant and equipment will be monitored by the Principal Contractor's Environmental Manager, maintained in good efficient working order and operated such that noise emissions are minimised. Plant, equipment or items fitted with noise control equipment found to be defective will not be operated until it is repaired.

Vehicles and mechanical plant employed during the construction works will, where reasonably practicable, be fitted with effective exhaust silencers and will be maintained in good working order and operated in a manner such that noise emissions are controlled and limited as far as reasonably practicable.

Machines in intermittent use will be shut down or throttled down to a minimum during periods between works. Static noise emitting equipment operating continuously will be housed within suitable acoustic enclosure.

9.7.2 Noise Control Measures

The Principal Contractor will comply with the recommendations set out in BS 5228-1:2009 and in particular with the following noise requirements:

- Noise levels will be kept to a minimum throughout the works areas by turning plant and machinery off when not in use and avoid unnecessary revving of engines, particularly during the night, so as to minimise disturbance to roosting birds in the local area;
- Avoid unnecessary revving of engines and switch of equipment when not required;
- Ensure site speed limits are adhered to;
- Use rubber linings in, for example, chutes and dumpers to reduce impact noise;
- Minimise drop height of materials;
- Agreement of HGV routes with Argyll and Bute Council through the development of a ;
- Vehicles use smart reversing alarms;
- Quiet equipment is sourced and attenuated, ducted or silenced by best practice means and under manufacturer guidance;
- Screens or fencing will be located as near to the source as reasonably practical;
- Fixed plant will be located as far as reasonably practical away from noise sensitive receptors (NSRs) (human and ecological receptors);
- Any plant which has directional noise propagation will be orientated away from NSRs;

- Soft-start technology will be implemented, where possible over a period of approximately 20 minutes, to enable birds time to flee the area;
- Maintain all equipment so that loose panels and cover plates do not cause unnecessary noise; and
- Keep good relations with the local community and ensure advanced warning is given when any significant noisy activity is undertaken (particularly piling and dredging works).
- Where deemed appropriate (through risk assessment), physical barriers will be erected around activities that are expected to generate particularly high noise levels to provide screening attenuation. Noise barriers are most effective if located close to the noise source or close to the receptor. Care will be taken to optimise the position of any barriers proposed where practicable.

9.7.3 Site Area

All construction work activities will be undertaken within the designated operational site boundaries; including areas designed to accommodate stockpiles and haul routes.

9.7.4 Reversing

The contractor will manage the noise from reversing alarms by means of the following:

- a) The site layout will be designed to limit and where reasonably practicable, avoid the need for the reversing of vehicles
- b) A banksman will be utilised to avoid the use of reversing alarms
- c) Reversing alarms incorporating one or more of the features listed below or any other comparable system will be used: highly directional sounders, broad band signals, self-adjusting output sounders, flashing warning lights

Reversing alarms will be set to the minimum output noise level required for health and safety compliance.

9.7.5 Erection of Physical Barriers

Where deemed appropriate (through risk assessment), physical barriers will be erected around activities that are expected to generate particularly high noise levels to provide screening attenuation. Noise barriers are most effective if located close to the noise source or close to the receptor. Care will be taken to optimise the position of any barriers proposed where practicable.

9.7.6 Training

All site personnel will receive training appropriate to the nature of their roles and responsibility; the training will include specific information in relation to noise and vibration management. If their work activities are assessed as being particularly noise/vibration emission prone, all staff will receive induction training that will incorporate environmental awareness training, plus specific training in relation to noise and vibration. On site toolbox training will enable site workers to understand how their actions will interact with the environment and potentially impact upon sensitive receptors close to their work areas.

9.8 Air Quality Management Plan

This Air Quality Management Plan sets out measures to control dust emissions that may affect local air quality. Construction works have the potential to affect local air quality through emissions from plant and vehicle operations and to generate dust, particularly during dry

weather and strong winds. Good site management is essential to control emissions and respond to weather conditions.

9.8.1 Construction Management and Mitigation Measures

Proactive measures that prevent dust from becoming airborne are the most effective mitigation tools for dust management, along with pre-planning to locate dust generating activities as far as possible from receptors.

The following measures will be implemented during construction to manage the generation of dust:

- Dust generating activities will be located away from sensitive receptors (human and ecological receptors);
- Adequate supplies of water, sourced by the Principal Contractor, will be available at all times for the dust suppression units that will be operated at times of dust nuisance;
- Stockpiles of dust prone materials will be sprayed in periods of dry weather;
- Hand operated or vehicle mounted spray equipment will be used to spray stockpiles of materials, overburden, access tracks and other sources of dust as required;
- Dust suppression techniques will be used expediently, a fine spray will be used to avoid runoff and over-spraying will be avoided;
- Spraying units will be available and in good working order at all times;
- Standby bowsers will be available to be used will the main units be out of service, and as supplementary units in periods of dry weather;
- A 10mph site speed restriction will be observed at all times;
- Material drop heights will be minimised;
- Wheel wash facilities will be located on site, within the construction compound, to be utilised;
- Dust monitoring will be undertaken by the Principal Contractor's Environmental Manager to evaluate the effectiveness of dust suppression measures and to aid the improvement of dust management on site;
- Should dust suppression measures prove inadequate, operations will cease until additional mitigation measures are taken or conditions improve; and
- Adequate supplies of water will be made available at all times for the dust suppression units.

All personnel on site will be aware of the need to control dust emissions and be pro-active in the prevention of airborne dust. During periods of dry weather or extensive dust generating activities the Principal Contractor's Environmental Manager will deliver a toolbox talk to all site personnel.

9.9 Navigation Risk Assessment/Vessel Management Plan

Kennacraig is a Statutory Harbour, for which the Statutory Harbour Authority is Caledonian Maritime Assets Ltd. (CMAL). CMAL's Harbour Master has responsibility for safe navigation within the harbour limits. Kennacraig harbour is operated in full compliance with the Port Marine Safety Code, and members of the CMAL Board undertake the role of "duty holder" under the code. The harbour is operated by CalMac Ferries Ltd. (CFL). As the proposed development is located within an operational harbour, the following measures have been specified and will be implemented by the Principal Contractor to manage navigational risks and manage vessels during the construction of the works:

- The Principal Contractor shall comply with specific constraints and special requirements in relation to Caledonian Maritime Assets Ltd, CalMac Ferries Limited (CFL) and Statutory Bodies. The works shall be carried out in accordance with all statutory requirements or regulations of the Client, or any other competent authority.

- The Principal Contractor shall maintain safe access along, around and through the structures.
- The Principal Contractor shall liaise with CFL's relevant Port Manager / Port Supervisor regarding ferry operations. The Principal Contractor shall liaise with the Terminal Operator and Project Manager at a mutually agreed time daily to update on progress and any changes to the planned works and activities within the harbour.
- Unless an area has been provided to the Principal Contractor for sole use, the Principal Contractor shall provide unhindered access to port and ferry operators staff to facilitate ferry operations. The normal operation of the ferry terminal shall continue during the contract period and the Principal Contractor shall ensure that the normal operation of the ferry terminal is not affected or disrupted by the Works, unless specifically allowed for within this contract.
- The Principal Contractor shall use current published timetables for planning purposes. The Principal Contractor shall liaise with the relevant Port Manager / Port Supervisor to identify deviation from published timetables.
- The Proposed Development Boundary includes areas where the Principal Contractor will have full access and ferry operational areas where access will be limited to timed periods in accordance with the permit system.
- The Principal Contractor shall not block or otherwise impede full operation of the ferry terminal at any time.
- The Principal Contractor is required to stop work and ensure that all shared areas are cleared of personnel and in a fit state for operation of the ferry service at least 30 minutes before scheduled arrival of each ferry. The Principal Contractor may restart work after departure of the ferry.
- The Principal Contractor shall comply with the directions of the Project Manager (as advised by CFL Port Manager / Port Supervisor) in relation to deployment or movement of equipment, whether floating or land based, within the harbour.
- Subject to adequate notice and approval the Principal Contractor shall be permitted a small number of Scheduled Closures and Possessions to complete the Works. Scheduled Closures and Possessions are formal procedures to limit access and suspend ferry operations in an area to permit the Principal Contractor to carry out their activities safely.
- Should the Principal Contractor's floating equipment require an anchor spread then it shall be contained entirely within the Proposed Development Boundary. The location of anchors shall be agreed with the Project Manager (who shall liaise with the Operator). Where the Principal Contractor's equipment and/or methods require an anchor spread, the Principal Contractor shall be required to drop anchors to allow the passage of other vessels using the harbour.

All floating plant shall be appropriately lit and marked, VHF radio shall be provided and appropriate Notices to Mariners shall be issued.

A. Appendix A Proposed Development Drawings

B. Appendix B Environment Constraints Plans

Map 1 Environmental Constraints Plan

Map 2 Ecological Constraints Plan

C. Appendix C Environmental Reports

C.1.1.1 Kennacraig Otter Species Protection Plan

C.1.1.2 Habitats Regulations Appraisal Report

C.1.1.3 European Protected Species Licence (Otter)

