



Appendix D

First Iteration Environmental Management Plan (FIEMP)

On behalf of



**Shetland
Islands
Council**

Project Ref:332511168| Rev: A | Date: March 2023

Front Cover Photograph provided by Brian Gray

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1 Introduction and Background

1.1 Purpose of this Report

- 1.1.1 This Report comprises the first iteration Environmental Management Plan (fiEMP) for the design stage of the Grutness Pier Improvement Scheme (hereafter referred to as ‘the Proposed Development’). It relates to and accompanies a full planning application and applications for associated marine consents (MS-LOT) for the improvements to the existing ferry port at Grutness, Shetland (hereafter referred to as ‘the Site’) to facilitate a new ferry linking the port with Fair Isle. The Site is located within the administrative boundary of Shetland Islands Council (SIC).
- 1.1.2 Whilst the works do not constitute an Environmental Impact Assessment (EIA) development (as described in the Town and Country Planning (Scotland) (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) for works on land and to the mean low water springs mark, and The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended), for the Marine Scotland Act 2010 (Marine Licenses) to be consented by Marine Scotland for the deposit or removal of a substance or object below the mean high water springs mark.), supplementary environmental reporting and mitigation measures were requested by SIC and Marine Scotland to be submitted within the Screening Report which determined relevant EIA issues relating to the Proposed Development (Stantec April 2022).
- 1.1.3 This fiEMP has been produced at an appropriate and proportionate level of detail for the design stage of the proposed Development. The fiEMP will be developed into the second, more detailed iteration of the EMP (siEMP) by the Principal Contractor (when appointed) once the Proposed Development detailed design has been finalised, and the appropriate consents being granted. The siEMP will be used on site to manage environmental measures and commitments. Prior to construction being completed, the siEMP will be finalised to support future management and operation of the Scheme. The Proposed Development will then be operated and maintained in accordance with the finalised siEMP issued at the completion of construction. **Table 1.1** provides a summary.

Table 1.1: Summary of stages of the Environmental Management Plan

Project Stage	Iteration	Produced / refined
Design	The fiEMP (previously called the Outline EMP) is produced during the design stage of the Proposed Development.	Produced
Construction (refined for the consented Scheme)	The siEMP (previously called the construction EMP) is refined during the construction stage.	Refined
End of construction	Finalise the siEMP at the end of the construction stage to support the future management and operation of the Proposed Development.	Refined

- 1.1.4 The predicted environmental effects of the Proposed Development are identified in the Environmental Report which accompanies the consent and planning applications. The related actions and mitigation measures are listed in **Section 3** (Register of Environmental Actions and Commitments) (REAC) and contained in **Table 3.2** of this document. These have formed the basis of this fiEMP.

- 1.1.5 This fiEMP provides details of how the environmental effects of the Proposed Development will be managed during construction and subsequent operation of the Scheme by:
- Ensuring that all identified actions and mitigation measures identified in the Environmental Report and contained in the REAC are implemented;
 - Ensuring compliance with environmental legislation; and
 - Ensuring good practice environmental management measures are implemented.
- 1.1.6 Measures within this fiEMP include design, pre-construction, construction and operational mitigation. Required monitoring and enhancement opportunities are also captured within it

1.2 The Proposed Development

- 1.2.1 Whilst the precise characteristics of the Proposed Development still require to be confirmed, in overall terms the proposed scope of works comprises:
- An extension to the existing pier (sheet piled structure) and rock armour protection in a 'dogleg' shape to provide shelter for a new linkspan structure (steel deck with concrete supports) that will be used by the new roll-on roll-off (Ro-Ro) vessel;
 - An increase to the height of the existing rock armour to the north of the pier to reduce the frequency and severity of swell overtopping during storm events;
 - Dredging to provide a sufficient water depth for new vessel around the proposed pier extension and linkspan; and
 - Improved marshalling facilities.
- 1.2.2 The new Ro-Ro vessel will be a maximum of 24 m in length and the draught is likely to be similar to the existing vessel (the Good Shepherd IV which has a service draught of 2.7m) with the aim of limiting dredging through appropriate vessel design choice.
- 1.2.3 Initial (capital) dredging will also be required to provide a sufficient water depth for the manoeuvring of the new vessel around the pier. If this is required, a separate consent will be obtained from Marine Scotland. The size of the area that would be dredged at Grutness is approximately 12,000 m² including transition slopes between the dredge pocket (dredged area) and the existing seabed. This area is an estimate based on indicative drawings and is subject to change once the designs and position of the pier extension is finalised. The final dredged depth will also be based on the vessel draught but it is likely to be approximately 4 to 4.5 m below chart datum (BCD). The vessel design will seek to minimise any increase in draught to avoid maintenance dredging during operation where possible.
- 1.2.4 **Figure 1.1** shows land-based and water-based boundaries. Area 1 Water-based boundary (shown in green) measures 14,356m² (1.44ha), Area 2 Land-based boundary (red) measures 2,091m² (0.21ha)

Figure 1.1 Land based and water-based boundaries



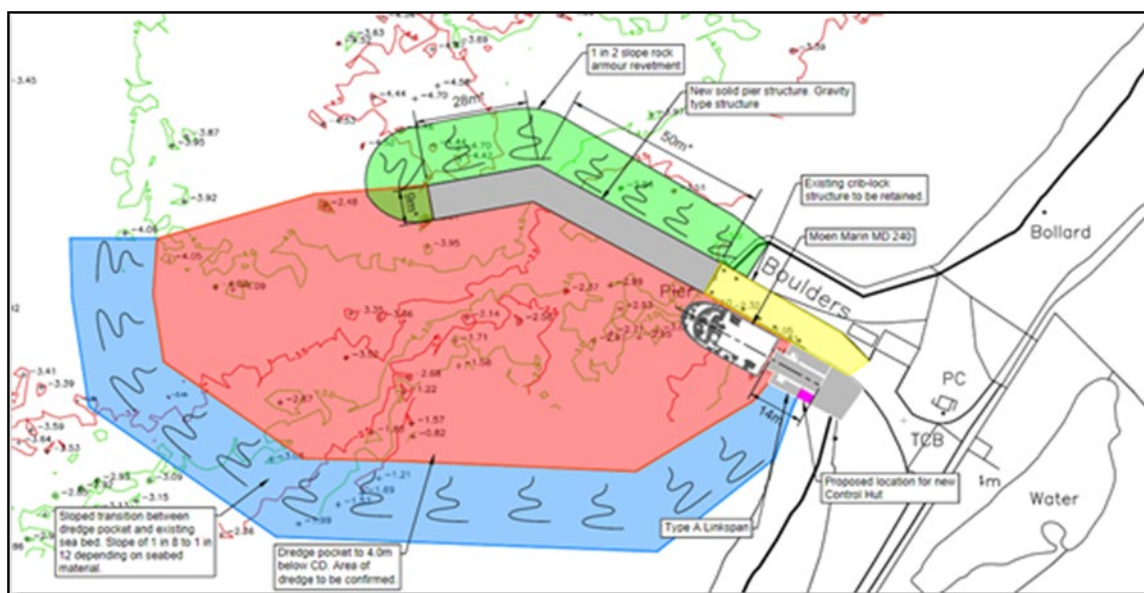
- 1.2.5 It is expected that up to 328 sheet piles driven into the sea bed will be required to construct the extension to the pier. While there will likely be a mixture of impact from vibro piling, as a worst-case scenario it is assumed that impact piling will be required throughout the duration of the construction period. It is anticipated that piling activities will likely be spread out allowing 4 days of piling for each section (cell) of the pier, followed by 12 days of non-piling activities to complete that cell and move on to the next (3 days to install waling beams¹, 2 days to install tie rods, 3 days to backfill, 4 days to set up temporary works for next cell).
- 1.2.6 Piling activity will be carried out for a maximum of 10 hours per day (between 07:00 and 19:00) for an anticipated 4 days, followed by 12 days of non-piling activities, repeated for up to 10 cells. The proposed methodology is to install piles “end over” using land-based piling plant sitting on the end of the existing pier. As each cell is completed and backfilled, the plant can move onto the cell and construct the next. It is estimated that piling activities will take a maximum of 6 months, between April and September and will start no later than the 7th May.
- 1.2.7 While it is assumed that piling would be carried out from the land side (on pier), if the contractor prefers to use a barge-mounted piling rig, the total duration of piling will be approximately 3 months. However, as a worst-case option, the Report to Inform Appropriate Assessment (RIAA) assumes that piling activities would be 6 months.
- 1.2.8 The maximum size of the area to be dredged at Grutness is approximately 12,000 m², which will be the Capital dredging for the works, including transition slopes between the dredge pocket and the existing seabed. This area is only an estimate based on indicative drawings and is subject to change once the designs and position of the pier extension is finalised. The final dredged depth will also be based on the vessel draught and will unlikely exceed 4.5 m below chart datum (BCD). However, the vessel design will look to minimise an increase in draught to avoid dredging where possible.
- 1.2.9 As with piling, dredging activity will be carried out for a maximum of 10 hours per day (between 07:00 and 19:00) using up to two barges working simultaneously. Allowing for weather downtime the maximum duration of dredging activities would be 7 months, between April and October, acknowledging that this would not be continuous.
- 1.2.10 It is estimated that the dredged volume of material will not exceed 15,000m³. It is currently anticipated that dredged material will be removed by a combination of backhoe dredger (for soft material) and excavator for rock and transported by barge to an offshore disposal site, likely Scalloway, Shetland. There may also be a requirement to inject rock with liquid CO₂

¹ Waling beams are used in combination with tie bars for anchoring sheet pile walls. They allow to spread the load on sheet pile and to concentrate them onto the tie bars.

(Cardox) and then 'pecker' or "rip" to remove rock material. A separate dredging license will be applied for following the results of the Ground Investigation work.

- 1.2.11 While there is potential for the dredging activity to happen concurrent with the piling activity over a single year, for bird receptors (including Arctic Tern and Fulmar) a worst-case scenario has been assumed, namely that these activities will take place in separate years (piling in 2024, dredging in 2025) as otherwise this would result in an increased potential for disturbance/displacement effects on seabirds. However, for marine mammal receptors (harbour seal) consideration is given to both scenarios (piling and dredging occurring in a single year and in separate years) and their potential for disturbance/displacement effects from underwater noise and presence. **Figure 1.2** shows the construction details.

Figure 1.2 Showing Construction details



- 1.2.12 As it is yet to be determined how much of the work will be carried out from sea and the likely requirements for vessel movements, a worst-case scenario has been adopted which assumes the following for marine based vessel activity:

2024

- Barge mounted piling rig (on site for 3 months);
- Vessel movement for delivery of materials/equipment/plant (on average two vessels maximum per week from February to October); and
- Two dredgers on site for 7 months (assuming dredging runs concurrently).

2025

- Two dredgers on site for 7 months; and
- Vessel movement for delivery of materials/equipment/plant (on average two vessels maximum per week from March to September).

- 1.2.13 Although a detailed construction methodology is yet to be determined, it is reasonable to assume that in addition to the marine works outlined above, the construction is likely to utilise lorries and plant associated with road construction including material deliveries and removal,

road pavers and rollers, excavators, dozers and dump trucks. The precise nature and quantity of plant employed during construction will vary with each stage of the project.

1.3 Site Description

- 1.3.1 The Grutness ferry terminal is located near Sumburgh Head on the southern tip of the Shetland Mainland, opposite Sumburgh Airport. The harbour is generally sheltered from the south and west by land and open to the north and east. The harbour is very exposed from the east through to the north-east. An aerial photograph is shown below to identify the site in relation to neighbouring land.
- 1.3.2 The current operation of the Good Shepherd IV carries twelve passengers, the journey takes about two and a half hours. In summer the ferry sails three times a week to /from Grutness (Tuesday, Thursday and Saturday) and once a fortnight it sails to Lerwick. In winter there is only one sailing per week (Tuesday).
- 1.3.3 Existing harbour facilities at the site include:
- 30m long berthage;
 - 2.1m water depth shown on Admiralty Chart (however it is known that the berth has been dredged to remove the tidal restriction, although it is not known when or to what extent the berth was dredged);
 - A single track access road with limited space for parking / marshalling and a bus pickup; and
 - Heated waiting room (portacabin), stores block, toilet block and waste disposal skips.
- 1.3.4 The quayside storage unit has capacity for about a week's worth of deliveries for almost all goods, including retail, coal, timber etc. The store is always locked but suppliers are able to access the key to the unit when required. For larger loads that cannot be held in the storage unit, hauliers keep in contact with the ferry operator and coordinate the delivery of these loads to meet the ferry when she operates. The island population and businesses rely on these deliveries fundamentally for their survival on the island.

Figure 1.3 Aerial Photograph showing Grutness Ferry Terminal and Sumburgh Airport



- 1.3.5 The area of intended works within the existing harbour has been set through the EIA Screening process at a maximum of 1.65ha.

1.4 The Surrounding Area

- 1.4.1 Grutness is a small settlement and headland at the southern tip of the main island of the Shetland Islands. The settlement is within the parish of Dunrossness. It is located close to Sumburgh Head and is the terminus of the ferry service between the Shetland Mainland and the Fair Isle.
- 1.4.2 Sumburgh Airport is the main airport serving Shetland and is located to the north-west of the harbour. There are approximately 7 scheduled passenger flights per day arriving at the airport, with the same number departing, plus helicopter traffic servicing the Oil and Gas industry (with over 100 flights each month) and cargo flights each day.
- 1.4.3 The geography of the area around Grutness is a complex series of deeply indented bays, cliffs, beaches and settlements. Adjacent to the site is a stony beach.

Environmental Context and Constraints

- 1.4.4 A summary of the environmental setting of the Site is set out in this section. The site is situated within an area with the following nearby or overlapping designations:
- Sumburgh Head Special Protection Area (SPA) – designated for breeding Arctic Tern, Kittiwake, Fulmar and Guillemot (boundary overlaps with proposal site);
 - Sumburgh Head Site of Special Scientific Interest (SSSI) – notified for its geological interest and breeding colonies of Puffin, Shag, Guillemot, Kittiwake, Fulmar and Arctic Terns (approx. 30m from the proposal site); and
 - Grutness lighthouse store, including boundary wall, gate and gate piers (LB44543) is a listed building category C, which is approx. 200m from the existing pier.
- 1.4.5 There are no other statutory designations covering any part of the site or the immediate surrounding area. The RIAA prepared to accompany the planning application refers to this.

1.4.6 Otters [redacted] **(Within Appendix C of the Environmental Report: Otter Survey Report)**. For this reason a survey will be required prior to construction (Year 1) to confirm presence and European Protected Species (EPS) licence will be sought if required.

1.4.7 Further afield from the proposal area are:

- Pool of Virkie SSSI – notified for its intertidal mudflats (approx. 1km outside of the bay and along the coastline to the north)
- Moussa to Boddam MPA – designated for Sandeel (approx. 4km to the northwest of the proposal site)

1.4.8 In relation to planning policy, the site is covered by the Shetland Local Development Plan (LDP) 2014 which was adopted by the SIC on 26th September 2014 and is the established planning policy for Shetland. SIC is currently preparing an updated LDP, which has recently been out for consultation. SIC is currently reviewing consultation responses.

1.5 Projected Timescales

1.5.1 The project timescales will be based on funding decisions and also the scale of the pier extension required which will be determined on completion of the wave modelling and more detailed design work. The current indicative programme proposed is:

- Contractor mobilising – February / March 2024;
- Construction Phase 1 (pier extension and piling) April to October 2024 (Piling to start no later than 7th May); and
- Construction Phase 2 (linkspan installation, dredging, surfacing of marshalling area) April to September 2025.

1.5.2 Construction is expected to take place on Monday to Friday 07.00 to 19.00 and Saturday 07.00 to 13.00, with no working on Sundays or Bank Holidays. The workforce will arrive about 15 minutes before shift start and leave some 15 minutes after the shift finishes.

1.5.3 By exception some construction activities may need to be undertaken outside these hours, for which agreement would be sought from SIC (Planning Team) and MS-LOT.

1.5.4 During this period there will be a combination of Heavy Goods Vehicles (HGVs) for the component deliveries and Light Goods Vehicles (LGVs) for construction staff. Material/component delivery times will be limited to between 08:00 and 17:00 Monday to Friday and 08:00 to 12:00 on Saturday.

1.5.5 Any additional traffic movements will likely be restricted to construction workers getting to site outside the hours stated above. The Construction workforce is likely to be approximately 8-10 workers and they are likely to car share from their accommodation so will not result in a significant amount of additional traffic at Grutness.

1.5.6 Outside of these times, works will be limited to those required in an emergency where there is the potential of harm or damage to personnel, plant, equipment or the environment, provided that the Principal Contractor (yet to be appointed) retrospectively notifies of such works within 24 hours of their occurrence.

1.6 Project Objectives

1.6.1 The ferry service plays a critical role in meeting Fair Isle's supply-chain, service and personal travel needs. If it is not replaced in the short-term, irreparable damage will be done to the economy of the island, threatening the long-term sustainability of the community. As well as

the supply-chain and travel impacts, the seven crew are amongst the few salaried employees on the island, fulfilling multiple roles including the provision of airfield fire cover. In the event that the ferry service ceased to operate from the island, a proportion of the crew and their families would likely leave, causing skills shortages in key roles and undermining local services such as the primary school. A new, reliable and accessible island-based ferry, including harbour infrastructure at both Grutness and Fair Isle is therefore essential to the future survival of the island.

1.7 Structure of this fiEMP

1.7.1 The structure of the fiEMP is as follows:

- **Section 2: Project Team Roles and Responsibilities.** This section defines the roles which a Principal Contractor will identify within the EMP, to deliver the environmental commitments during construction.
- **Section 3: Register of Environmental Actions and Commitments (REAC).** This section identifies the environmental commitments and mitigation to reduce and manage the environmental effects of the Proposed Development.
- **Section 4: Consents and Permissions.** This section provides a summary of anticipated consents / permissions required to deliver the EMP during construction.
- **Section 5: Environmental Asset Data and As-Built Drawings.** Provides a description of submission arrangements for providing as-built drawings and environmental asset data to SIC, and a list of species surveys obtained to date.
- **Section 6: Details of Maintenance Activities and EMP Monitoring Activities.** Details of maintenance and EMP monitoring activities. This section provides procedures for monitoring and reviewing compliance within the EMP and procedures for rectification of breaching or failings of EMP measures.
- **Section 7: Induction, Training and Briefing Procedures for Staff.** This section provides a description of construction staff training procedures.

2 Project Team Roles and Responsibilities

2.1 Project Management Organisation

- 2.1.1 SIC (Project Team) will be responsible for overseeing management of the Proposed Development. SIC will delegate some roles and responsibilities to specialist consultants to supervise, monitor or check the Principal Contractor’s method statements including sensitive activities where required. The key roles for SIC and the Principal Contractor are listed in **Table 2.1**.

Table 2.1: General site roles

Role
SIC Project Manager
Principal Contractor Site Manager
Principal Contractor Environmental Manager
Principal Contractor Environmental Clerk of Works
Principal Contractor Ecological Clerk of Works (ECoW)
Principal Contractor Community Liaison

- 2.1.2 Contact details for the individuals undertaking these roles will need to be confirmed by SIC Project Team prior to the commencement of the construction phase.

2.2 Site Roles and Responsibilities

- 2.2.1 The site-based roles and responsibilities in relation to environmental management are summarised in **Table 2.2**. The responsibilities defined in the table include those relating directly to the development and implementation of the EMP and the wider environmental responsibilities. The Principal Contractor will be required to delegate responsibilities to experienced on-site personnel within the key areas of the Site. The delegation of responsibilities will be clearly identified within relevant Scheme documents and site files.
- 2.2.2 Individual names and contact details will need to be confirmed and inserted into siEMP, where applicable by SIC Project Team and the Principal Contractor prior to construction. The Principal Contractor will establish a management structure that includes an organisational chart encompassing all staff responsible for delivery of environmental mitigation measures, and that will include the organisational chart within the siEMP. The organisational chart will include all roles listed in **Tables 2.1 and 2.2**.

Table 2.2: Roles and Responsibilities

Roles	Responsibilities
SIC Project Manager	Ensures that the Principal Contractor and the statutory undertakers comply with all relevant legal requirements, commitments and targets agreed for the Scheme.

Roles	Responsibilities
Principal Contractor Site Manager	Responsible for management of the construction phase of the Scheme. Has overall responsibility for the SIC and the relevant statutory environmental bodies on all environmental matters (as they arise).
Principal Contractor Environmental Manager	<p>Principal Contractor Environmental Manager or the delegate will be responsible for overseeing and maintaining the environmental components and documentation of the Scheme.</p> <p>Obtains environmental permits, licences and consents, as required; ensures compliance with the requirements and conditions of all relevant permits, licences and consents.</p> <p>Acts as the focal point of contact for all environmental issues on the Site and identifies key environmental concerns relating to the Site as the Scheme develops. Coordinates with environmental specialists and ensures Site environmental management compliance.</p> <p>Ensures compliance with environmental legislation, consents, objectives, targets and other environmental commitments, including those from the Environmental Report.</p> <p>Audits the Principal Contractor's Site Environmental Management System and Programmes (e.g. Waste Management Plan and activities associated with on-site waste management).</p> <p>Audits <i>the Principal Contractor's Environmental Management System ISO 14001:2015</i>. Monitors compliance with the environmental requirements of the Scheme.</p> <p>Assists in reviews of method statements.</p> <p>Compiles applications for unexpected authorisations with assistance of the Principal Contractor Ecological Clerk of Works (ECoW) if necessary.</p> <p>Accompanies statutory authorities on site visits (with the Principal Contractor ECoW if necessary).</p> <p>Investigates environmental incidents. Assists with the delivery of environmental training of the workforce.</p> <p>Assesses and check survey results and updates databases and other Scheme environmental material with new information.</p> <p>Identifies cost saving and best practice activities.</p> <p>Liaises with site supervisors, site management team and general construction workers.</p> <p>Liaises with relevant bodies for the application and subsequent implementation of required consents and permits.</p> <p>Liaises with relevant stakeholders.</p> <p>Monitors environmental commitments in the EMP for compliance.</p>
Principal Contractor Environmental Clerk of Works	<p>Supports the Project Team in delivering the ecological component of the works during the construction phase. Records the progress of all the environmental works.</p> <p>Identifies key environmental concerns on the Site as the Scheme develops. Monitors and updates the Principal Contractor Environmental Manager on the progress of pre-construction surveys. Provides inputs to the Health and Safety Team. Leads site induction on environmental</p>

Roles	Responsibilities
	<p>practices, conducts toolbox talks, and oversees specialist surveys and monitoring activities as required.</p> <p>Undertakes day to day monitoring and supervision of construction activities in relation to environmental aspects. Monitors environmental compliance on site. Assists in monthly formal audits with the Principal Contractor Environmental Manager.</p> <p>Assesses and checks survey results and update databases, with new information. Inputs and reviews site-specific method statements.</p> <p>Monitors dust, noise and vibration.</p> <p>Monitors hours of working to meet accepted environmental noise and vibration in consultation with the relevant Environmental Health Officer.</p> <p>Develop and liaise with Principal Contractor Health and Safety Officer management plans, such as the Emergency Spill Response Plan.</p> <p>Immediate reporting of incidents to the Safety, Health and Environmental (SHE) department.</p> <p>Monitor all consents and permit requirements.</p> <p>Liaise with site supervisors, site management team and general construction workers.</p> <p>Provide daily updates to the Principal Contractor Environmental Manager on site progress, compliance, issues, problems, successes, etc.</p> <p>Accompany statutory authorities on site visits (with the Principal Contractors Environmental Manager if necessary). Identify cost saving and best practice activities.</p>
<p>Principal Contractor Environmental Specialist(s)</p>	<p>The Principal Contractor will be required to appoint suitably qualified environmental specialists, such as:</p> <p>Ecologist(s) to supervise works which are potentially impacting on protected species or identified risks during works.</p>
<p>Principal Contractor Community Liaison Officer</p>	<p>Key liaison with all relevant parties including site personnel, other statutory bodies and regulatory authorities, relevant community groups, and business and residents in local communities.</p> <p>Notifies occupiers of nearby properties of the nature and anticipated duration of planned construction works that may affect them.</p> <p>Establishes a dedicated freephone telephone helpline together with a dedicated email address and postal address for enquiries and complaints during the construction phase. The relevant contact numbers, email and postal addresses will as a minimum be displayed on signs around the construction site and will be published on the project website.</p> <p>Maintains and develops a Community Relations Strategy</p> <p>Maintains comment and enquiries log; disseminates identified comments for response and action.</p>

2.3 Detailed Principal Contractor Responsibilities

Pre-Construction

- 2.3.1 The Principal Contractor is responsible for approving the appointment of the Environmental Manager and any environmental specialists prior to any work starting on site.
- 2.3.2 The Principal Contractor is responsible for the following prior to construction commencing:
- Developing the fiEMP into the siEMP.
 - Defining roles and responsibilities for their own and their key subcontractors' personnel relating to environmental issues.
 - Developing an environmental training plan covering all personnel.
 - Developing a programme of internal and subcontractor inspections/ monitoring.
 - Developing Scheme-specific emergency procedures for environmental incidents (these will be outlined within the siEMP).
 - Finalising and implementing a programme for works to allow all preconstruction surveys to be arranged and completed within the required time frame.
 - Agreeing a non-compliance reporting procedure with SIC Planning Team to manage any environmental incidents or non-compliance events for the Scheme.
 - Developing the required Environmental Control Plans (ECPs). These will be updated as required up to construction commencement to reflect any new, relevant information provided by SIC Planning Team or other statutory consultees (e.g., further consent conditions, landowner agreements) or through design development, construction planning, pre-construction surveys etc.

Construction

- 2.3.3 The Principal Contractor is responsible on site for delivering the commitments in the REAC, as described within the Scheme design and controlled by the EMP.
- 2.3.4 The Principal Contractor will implement the procedures set out in the EMP with technical advice from competent environmental specialists. They are responsible for all their subcontractors on site and for ensuring that those subcontractors comply with the requirements of the EMP.
- 2.3.5 The Principal Contractor is responsible for monitoring compliance with legislation, and that good practice is followed throughout the duration of the construction.
- 2.3.6 The Principal Contractor must ensure that all onsite works are adequately monitored.
- 2.3.7 The Risk Assessments and Method Statements (RAMS) and ECPs will be used to ensure that all environmental commitments are delivered on the Site. The success of implementing the requirements of the RAMS, ECPs and delivery of mitigation measures relating to the Scheme will be the responsibility of the Principal Contractor.
- 2.3.8 Any improvements or deviations relating to environmental matters required to the RAMS and/or ECPs shall be approved by the Principal Contractor Environmental Manager and will be subject to SIC consent where required. The Principal Contractor will provide regular

feedback and information to the SIC Project Team and Principal Contractor Environmental Manager on the progress and success in delivering all mitigation and commitments on site.

- 2.3.9 The REAC will be updated to demonstrate progress to date and for environmental auditing purposes, with updates periodically sent to the relevant SIC management personnel.
- 2.3.10 All site personnel will have the responsibility and authority to halt works in any activity where environmental commitments are not being successfully delivered or to prevent legal requirements from being breached.
- 2.3.11 All site personnel will be encouraged to draw attention to any environmental risk or potential environmental risk arising on site (for example, refuelling being carried out too close to a watercourse or working outside the agreed limits of deviation for any aspect of the works). This approach will be promoted in all site inductions and training.
- 2.3.12 Any incidents or non-compliance with commitments will be recorded using the Principal Contractor management processes and will be required to contain the following information:
- How to classify incidents/hazards;
 - How to manage minor incidents; and
 - How to manage major incidents.

The Principal Contractor will also:

- Have sole responsibility for successful implementation of pollution prevention measures;
 - Take all reasonable precautions and undertake all reasonable measures within their control to ensure that all legal requirements are complied with and that no unnecessary damage, disturbance or pollution results from undertaking the works; and
 - Be available for environmental audits monthly.
- 2.3.13 Immediately prior to construction, SIC's Employer's Agent (or equivalent) and the Principal Contractor's nominated person will undertake a site condition survey of each section of the Scheme. This survey will usually include a photographic record. This will be used to ensure effective reinstatement following completion of the works and provide a 'baseline' to assess any compensation claims with landowners.
- 2.3.14 The Principal Contractor is responsible for delivering the Scheme environmental training programme, including toolbox talks, throughout the construction works, ensuring that all staff are trained adequately and to the agreed level prior to starting work on site.
- 2.3.15 The environmental aspects of the works shall be inspected on a regular basis in accordance with the Principal Contractor's processes which cover the following aspects:
- How to plan and undertake contract targeted risk monitoring;
 - Targeted risk monitoring planner; and
 - Risk-based monitoring check sheet.

Post-Construction

- 2.3.16 The Principal Contractor is responsible for correcting defects (as defined under the main construction contract) for 12 months following contract completion. This is known as the

'defects period'. The defects period applies to relevant works following completion of the main construction works and completion of a subsequent five-year period where the Principal Contractor has responsibility for aftercare and management of environmental works.

2.4 Communications

- 2.4.1 The Principal Contractor will direct all queries regarding the EMP and actions within it through SIC prior to initial contact with statutory consultees (e.g., NatureScot and Marine Scotland). They will also typically then act as the primary contact with statutory consultees leading up to and during the construction phase.
- 2.4.2 The Principal Contractor will establish and maintain procedures for internal communications between the various levels and functions of the team during construction. Internal communications include:
- Advising of non-conformances to relevant managers;
 - Communicating environmental commitments to the construction team;
 - Communicating the environmental policy to the construction team;
 - Raising awareness of environmental issues to the construction team; and
 - Reporting incidents to relevant managers.
- 2.4.3 The Principal Contractor will maintain an ongoing liaison with the statutory/regulatory bodies during the construction phase.

Stakeholders

- 2.4.4 In meeting the requirements of this EMP there are several key stakeholders to be engaged prior to and during the construction of the Scheme. These include:
- Shetland Islands Council;
 - Marine Scotland (MS-LOT);
 - NatureScot;
 - Local residents and businesses; and
 - Affected landowners.

Complaints Procedure

- 2.4.5 There will be a complaints procedure put in place in the SiEMP to receive and act upon complaints. A complaints log will be maintained, and a monitoring system implemented throughout the works. This enables all complaints to be addressed and a satisfactory outcome reached for all parties involved.

2.5 Reviews

- 2.5.1 The EMP process will be subject to periodic review throughout the construction and handover periods. The timing of reviews will be agreed with SIC Project Manager.

3 Register of Environmental Actions and Commitments

- 3.1.1 The Register of Environmental Actions and Commitments (REAC) identifies the environmental commitments made during the design stage to address the potential environmental effects of the Scheme.
- 3.1.2 The REAC described in **Table 3.2** presents a register which has been developed using information presented in the Environmental Report. The REAC will be updated by the Principal Contractor when preparing the siEMP and then ‘as required’ as the Scheme progresses. Each EMP will be prepared in accordance with the principles of this EMP (design).
- 3.1.3 The REAC provided in **Table 3.2** includes:
- A clear and specific description of the action;
 - The objective of the action;
 - How the action is to be implemented/achieved;
 - The source of the action, including references for source documentation e.g. Environmental Report;
 - Naming of the person responsible for the action;
 - Achievement criteria and reporting requirements;
 - The project stage, date or implementation and achievement; and
 - Details of any monitoring required and corrective action.
- 3.1.4 **Table 3.1** provides a summary of the scope of each column within the REAC.

Table 3.1 Explanatory guide to REAC table columns

Column	Explanation
Reference (ref.)	A unique identifier defined within these REAC tables to enable simple reference to individual measures
Action/commitment	Clear and specific description of the action/commitment is defined, including the specific location. The location for the action is scheme wide, unless otherwise stated
Assumptions	The assumptions on which the action/commitment is based
Objective	The objective of the action/commitment, including alignment with Project Objectives in section 1.3 Reference to relevant legislation requirements
How the action/commitment will be implemented/secured	How the action is to be implemented/secured including details of risk management

Column	Explanation
Source reference (source ref.)	<p>The source of the action (e.g., mitigation reference in the Environmental Report, Habitat Regulations Assessment) including confirmation of commitments agreed with stakeholders</p> <p>Where no source reference is given, the measure is normally one which is relevant across a range of technical areas and is a broader control measure (e.g., working hours)</p>
Responsible person(s)	<p>The person or body responsible for delivery of the action/commitment, which will often be the Principal Contractor</p>
Achievement criteria and reporting requirement (if applicable)	<p>The criteria which define the successful implementation of the action/commitment, such as a document approval which confirms that the action has been undertaken</p> <p>This will be populated by the Principal Contractor's Environmental Manager in the siEMP</p>
Project stage	<p>The anticipated project stage, date of implementation or achievement</p> <p>P = Pre-construction C = Construction O = Operation A = All</p> <p>This will be populated by the Principal Contractor's Environmental Manager in the siEMP</p>
Monitoring requirements	<p>Details of any monitoring that is required in relation to the action/commitment (including in relation to likely significant adverse effects). This will be populated by the Principal Contractor's Environmental Manager in the siEMP</p>

Table 3.2: Record of environmental actions and commitments

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
General							
G1	Appoint Environmental Manager and ECoW to manage all environmental issues during construction.	To ensure environmental measures that have been committed are implemented. The assumption is that the Environmental Manager and ECoW will be appointed during the construction preparation phase.	N/A	Principal Contractor	Environmental Manager and ECoW appointed.	P	N/A
G2	The Principal Contractor shall have an Environmental Management System (EMS) certified to BS EN ISO 14001. The Principal Contractor's EMS will define appropriate control measures and monitoring systems to be employed during the planning and construction of the works for all relevant topic areas. The Principal Contractor's EMS shall cover the activities of all their sub-contractors. The Principal Contractor will also be required to coordinate with other contractors and relevant parties that may affect their works. This will be documented in their EMS, as appropriate. As part of their EMS, the Principal Contractor will commit to planning works in advance to ensure that, in so far as is reasonably practicable, that measures to reduce environmental effects are integrated into the construction methods.	To ensure the EMP is appropriate to the Scheme phase and the scope of works delivered by the Principal Contractor. The assumption is that the siEMP will be implemented throughout the construction of the Scheme.	N/A	Principal Contractor	Completion of siEMP.	P	Review/approval

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
G3	The Principal Contractor shall prepare a siEMP for the Scheme, in accordance with this fiEMP, prior to the commencement of construction. The siEMP and will be finalised at the end of the construction stage to support the future management and operation of the Scheme.	To ensure that the EMP is appropriate to the Scheme phase and the scope of works delivered by the Principal Contractor. The assumption is that the siEMP will be implemented throughout the construction of the Scheme. This will then be finalised at the end of construction.	Environmental Report	Principal Contractor	Preparation of siEMP	P/C	N/A
G4	Designated waste management procedures and segregation of waste in compliance with Waste Management Regulations, develop a Site Waste Management Plan. This plan will be prepared by the Principal Contractor during the detailed design stage and will append the siEMP.	To ensure waste is disposed or appropriately and recycled where possible and managed. The assumption is that the siEMP will be implemented throughout the construction of the Scheme.	Good practice	Principal Contractor	Site Waste Management Plan	P	N/A
G5	Develop a Materials Management Plan (MWP) for the Scheme in accordance with good practice. This MWP will be prepared by the Principal Contractor during the detailed design stage and will be appended the siEMP.	To ensure that materials are managed. The assumption is that the siEMP will be implemented throughout the construction of the Scheme.	Good practice	Principal Contractor	Material Management Plan	P	N/A
G6	The Principal Contractor will prepare Environmental Method Statements for environmental topic areas at the detailed design phase (for example, site piling) for construction, as required. These will be appended to the siEMP.	To ensure that the EMP is appropriate to the Scheme phase and the scope of works delivered by the Principal Contractor.	Good Practice and Environmental Report	Principal Contractor	Environmental Method Statements	P	N/A

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
		The assumption is that the siEMP will be implemented throughout the construction of the Scheme.					
G7	Establish a Change Register to list and record all changes made to the EMP. This will be appended to the siEMP.	To ensure that the EMP is appropriate to the Scheme phase and the scope of works delivered by the Principal Contractor. The assumption is that the siEMP will be implemented throughout the construction of the Scheme.	Good practice	Principal Contractor	N/A	P/C	N/A
G8	All statutory consents, permits or licences required for the construction should be obtained in advance of works commencing. Any conditions included in consents/licenses/permits should be documented in the siEMP and considered as part of the planning, design and construction process.	To ensure the EMP is appropriate to the Scheme phase and the scope of works delivered by the Principal Contractor. The assumption is that the siEMP will be implemented throughout the construction of the Scheme.	Environmental Report	Project Team / Principal Contractor	N/A	P/C	N/A (unless monitoring requirements within the conditions of the consents, permits or license.
G9	A copy of all relevant environmental applications and consents/licences/permissions should be kept in a designated Project Environmental File and copies provided to SIC as soon as practical after submission and receipt.	To ensure that the EMP is appropriate to the Scheme phase and the scope of works delivered by the Principal Contractor. The assumption is that the siEMP will be implemented throughout the construction of the Scheme.	Environmental Report	Project Team / Principal Contractor	N/A	P	N/A

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
G10	The Principal Contractor should identify best practices on a regular basis and submit to SIC for consideration and wider circulation.	To ensure that the EMP is appropriate to the Scheme phase and the scope of works delivered by the Principal Contractor. The assumption is that the siEMP will be implemented throughout the construction of the Scheme.	N/A	Principal Contractor	N/A	P/C	N/A
G11	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	To ensure that engagement with stakeholders is appropriately managed. The assumption is that the siEMP will be implemented throughout the construction of the Scheme.	N/A	Principal Contractor	Stakeholder Communications Plan	P/C	N/A
G12	The site supervisor will give general talk/briefing prior to construction starting plus specific tool box talks prior to specific work activities starting. These talks will highlight any sensitive features, including the designated sites (SPA and SSSI) and qualifying features.	To ensure that all staff are trained adequately and to the agreed level prior to starting work on site.	N/A	Principal Contractor	N/A	P	N/A
G13	Adherence with relevant SEPA Guidance for Pollution Prevention (GPPs), including GPP 5 (Works and maintenance in or near water). Pollution Prevention Guidance (PPGs) will be followed if no corresponding GPP is available.	To ensure pollution prevention is followed correctly	Good Practice	Principal Contractor	N/A	C	N/A
G14	Refuelling over bunded areas. Oils, fuels and chemicals to be stored in fully bunded areas.	To ensure spills do not enter the land or sea whilst refuelling	Good practice	Principal Contractor	N/A	C	N/A

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
G15	Provision of spill kits and training for workers on how to use them.	To ensure spills do not enter the land or sea.	Good practice	Principal Contractor	N/A	C	N/A
G16	The contractor will produce a contingency plan for dealing with spills or environmental incidents.	To ensure good practice is a spill or environmental incident occurs.	Good practice	Principal Contractor	A Contingency Plan	C	N/A
G17	The Contractor will ensure vessels and plant involved in the operational activities for the works adhere to the industry recommended guidelines for preventing the introduction of Invasive Non-Native Species (INNS).	To prevent the introduction of Invasive Non-Native Species (INNS).		Principal Contractor	N/A	C	N/A
G18	Appropriate staff will be informed of relevant marine and terrestrial INNS. These staff will also be cognisant of guidance produced by NatureScot for the prevention of introduction of non-native species (Cook et al., 2014) and draft guidance on biosecurity for the Outer Islands (RSPB, 2021).	To prevent the risk of introducing invasive non-native species into Grutness.		Principal Contractor	N/A	P/C	N/A
G19	Produce a Ballast Water Management Plan (if relevant)	To prevent the risk of introducing invasive non-native species into Grutness.		Principal Contractor	Ballast Water Management Plan (if relevant)		N/A
G20	Dampening down any stockpiled materials	To minimise dust during construction	Good Practice	Principal Contractor	N/A	C	N/A
G21	All equipment will be washed and cleaned to ensure that no contaminants are brought into contact with the marine or terrestrial environment.	To minimise air pollution	Good Practice	Principal Contractor	N/A	C	N/A

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
G22	Well maintained and serviced plant and equipment, this also includes marine vessels that are used during construction.	To minimise emissions and spills if plant and equipment are in good condition.	Good practice	Principal Contractor	N/A	C	N/A
G23	Vehicle numbers and movement on the vegetation will be kept to a minimum	To minimise terrestrial and marine disturbance.	Environmental Report	Principal Contractor	N/A	C	N/A
G24	Vessels used for the works will adhere to the general principles in the Scottish Marine Wildlife Watching Code	To minimise marine disturbance.	Good Practice	Principal Contractor	N/A	C	N/A
G25	The Contractor will contact the Sumburgh Head warden prior to works commencing and inform the warden once works have finished	To keep Sumburgh Head warden up to date with construction.	Environmental Report	Principal Contractor	N/A	P/C	N/A
G26	Limits on working hours	Construction is expected to take place Monday to Friday 7am-7pm and Saturday 7am-1pm, with no working on Sundays or Bank Holidays. Some construction activities may need to be undertaken outside these hours, for which agreement would be sought from SIC/MS-Lot.	Environmental Report	Principal Contractor	N/A	C	N/A
G27	Soft start piling – the gradual increase of piling power, incrementally, until full operational power is achieved will be used as part of the piling methodology.	This will give marine mammals (specifically harbour/common seal) the opportunity to move away from the area before the onset of full impact strikes. The duration of the soft start is proposed to be 20 minutes in line	Environmental Report	Principal Contractor	N/A	C	N/A

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
		with the JNCC piling protocol (JNCC, 2010);					
G28	Vibro piling – is proposed to be used where possible (which produces lower peak source noise levels than percussive piling). However, in order to drive the piles to the required design level percussive (impact) piling is likely to be required given the underlying geology and depth of piling that is required to ensure the required structural integrity and stability of the new pier wall.	Reduce or minimise potential significant adverse behavioural effects for marine mammals during piling activities.	Environmental Report	Principal Contractor	N/A	C	N/A
G29	Use of the Marine Mammal Observer (MMO) with agreed timings for last sighting before works can commence	To ensure the presence of marine mammals is known within the area.	Environmental Report	Principal Contractor	N/A	C	N/A
G30	The use of pingers as an Acoustic Deterrent Device (ADD)	To encourage potentially sensitive birds to disperse away from the site.	Environmental Report	Principal Contractor	N/A	C	N/A
G31	Establishment of a 'mitigation zone' of a pre-defined radius (e.g. 500m) from the piling locations, prior to any percussive piling.	Reduce or minimise potential significant adverse behavioural effects for marine mammals during piling activities.	Environmental Report	Principal Contractor	N/A	C	N/A
G32	30 minutes prior to the commencement of percussive piling, a search should be undertaken by the MMO to determine that no marine mammals are within the mitigation zone. Percussive piling activity should not be commenced if marine mammals are detected within the mitigation zone or until 20 minutes	Reduce or minimise potential significant adverse behavioural effects for marine mammals during piling activities.	Environmental Report	Principal Contractor	N/A	C	N/A

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
	after the last visual detection. However, if marine mammals arrive in the works area once works commence then works can continue as mammals have moved into the area with a known noise level being generated.						
G33	During percussive piling, the MMO should observe the mitigation zone to determine that no marine mammals are within this area. Construction workers will be alerted if marine mammals are identified, and piling will cease whilst any marine mammals are within the mitigation zone. Piling can recommence when the marine mammal exits the mitigation zone and there is no further detection after an agreed period of time (suggested to be 20 minutes)	Reduce or minimise potential significant adverse behavioural effects for marine mammals during piling activities.	Environmental Report	Principal Contractor	N/A	C	N/A
G34	If there is a pause in percussive piling operations for any reason over an agreed period of time, then another search (and soft-start procedures for piling) should be repeated before activity recommences. If, however, the mitigation zone has been observed while piling has ceased and no marine mammals have entered the zone, piling activity can recommence immediately. However, if marine mammals arrive in the works area once works commence then works can continue as mammals have moved into the area with a known noise level being generated.	Reduce or minimise potential significant adverse behavioural effects for marine mammals during piling activities.	Environmental Report	Principal Contractor	N/A	C	N/A

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
G35	<p>The following additional mitigation measures should be implemented 15 April – 1 August in each construction year:</p> <p>A buffer zone will be established along the eastern edge of the proposal boundary (as demarcated by an existing stone wall adjacent to the road). The Contractor will ensure that workforce and equipment/plant do not cross this buffer zone.</p> <p>A gradual ramping up of construction activities will take place between the hours of 07:00 and 08:00 each morning, with no work activity before 07:00 and after 19:00 in any given day under normal operations.</p> <p>A suitably qualified observer (ECoW with relevant bird monitoring experience) must be present to monitor for disturbance and ensure that the above measures are adhered to.</p>	To minimise disturbance of the Arctic Tern	Environmental Report	Principal Contractor	N/A	C	N/A
G36	The Contractor will ensure that piling operations will commence no later than 7 May in any given year.	To minimise disturbance of the Arctic Tern	Environmental Report	Principal Contractor	N/A	C	N/A
G37	A soft start to piling operations at the beginning of the working day will be followed for a minimum of 20 minutes. Piling power will be gradually increased, incrementally, until full operational power is achieved.	To minimise disturbance of the Arctic Tern	Environmental Report	Principal Contractor	N/A	C	N/A

Ref	Environmental Action/commitment	Objective and assumption of which the action / commitment is based	Source ref	Responsible person(s)	Achievement criteria and reporting requirements (if applicable)	Project stage	Monitoring requirements
G38	The Contractor will contact the site warden a minimum of 4 weeks before planned commencement of the works. The Contractor will outline the planned steps to the works and the measures (management and/or mitigation) which will be adhered to during the works.	To minimise disturbance of the Arctic Tern	Environmental Report	Principal Contractor	N/A	P/C	N/A
G39	A watching brief is likely during excavation, and any other intrusive groundworks – A watching brief will ensure archaeological remains are identified, investigated and recorded.	To record archaeological remains are identified, investigated and recorded	Environmental Screening Opinion	Principal Contractor	N/A	P/C	N/A
G40	A Written Scheme of Investigation (WSI) must be prepared for the works to set out procedures for managing any features that appear to be of archaeological importance that are discovered in the course of construction works. The WSI will ensure compliance with the relevant legislation and will be finalised and agreed with consultation with Shetland Amenity Trust (SAT) prior to construction works.	To record archaeological remains are identified, investigated and recorded	Environmental Screening Opinion	Principal Contractor	N/A	P/C	N/A

4 Consents and Permissions

4.1 Regulations

- 4.1.1 The principal consent for the Scheme is sought via the Town and Country Planning (Scotland) Act 1997 and Marine Scotland Act 2010 (Marine Licenses). This provides development consent for the works and enables land acquisition and possession, along with many consents and powers which are enacted at the same time. However, there is a need to supplement the consent with additional permissions that relate directly to measures within this EMP.
- 4.1.2 It will be the responsibility of the Principal Contractor and the statutory undertakers and their contractors to ensure that all licences, consents and permits are obtained within the relevant timescales; and that all conditions of these licences, consents and permits are complied with.
- 4.1.3 **Table 4.1** lists the anticipated consents, permits and licenses that will be required during construction of the Scheme. This will be reviewed and updated by the Contractor as required throughout the construction phase.

Table 4.1 Anticipated Consents, Licenses and Permits Required

Type of license and reference	Issuing authority	Requirement	Comments / actions
European Protected Specie License - Otter	NatureScot	To be confirmed as otter currently use the existing breakwater as a resting place.	Discussions with NatureScot to be confirmed
European Protected Species License Marine Mammal	Marine Scotland		

4.2 Recording

- 4.2.1 A register of environmental permits and a record of all consents, licences and permits relating to construction activities will be maintained and updated by the Principal Contractor and made available for audit to SIC and the Principal Contractor Environmental Manager.

5 Environmental Asset Data and as Built Drawings

5.1 Collection and Submission of Environmental Data

- 5.1.1 The collection and submission of environmental data is an ongoing process. At this (design) stage of the Scheme, environmental data has been submitted through the publication of the Environmental Report (**Document Reference Grutness Pier Improvement Works Final Environmental Report, March 2023**) which forms part of the suite of documents accompanying the planning application. This includes the results of all species surveys undertaken to date.
- 5.1.2 Where environmental data are expected to be required during the pre-construction and construction phases, the Principal Contractor is responsible for collating and submitting these data to SIC and any relevant stakeholders. During these stages, the Principal Contractor should update this section of the fiEMP to detail the submission of data.
- 5.1.3 **Table 5.1** summaries the ecology surveys undertaken to inform the Environmental Report.

Table 5.1 Summary of species surveys obtained to date

Survey Type	Document reference	Date(s) undertaken	Location
Otter Survey	Appendix C Environmental Report	November 2021	Grutness Pier
Benthic Surveys	Appendix G Environmental Report	July 2022	Marine environment surrounding Grutness Pier

5.2 As-Built Information

- 5.2.1 The process for preparing, submitting and reviewing as-built information relevant to the environment will be detailed within the siEMP.
- 5.2.2 The Principal Contractor would undertake both the design of the temporary works and construction of the Scheme. Engineering data, including design drawings, used in the Environmental Report will be made available to the contract tenderers and/or the appointed Principal Contractor as appropriate.
- 5.2.3 The Principal Contractor would be required to submit design drawings for the temporary works and as-built drawings on completion to SIC as required.

6 Details of Maintenance Activities and EMP Monitoring Activities

6.1 Environmental Monitoring Requirements

- 6.1.1 This section describes systems of recording and inspections that will be required to maintain an audit trail of the environmental obligations. This will be managed through the Quality and Safety Management Systems (QMS) and the Environmental Management System (EMS) of the Principal Contractor which will be certified in line with the ISO 14001 standards.
- 6.1.2 The EMS will include methods for monitoring, recording and implementing environmental management on site, and for responding to any noted areas of non-compliance. This will ensure that a high standard of environmental control is maintained through the lifetime of the scheme through the corrective action system managed by the Principal Contractor.
- 6.1.3 Specific monitoring and reporting requirements are still to be developed, some in consultation with third party stakeholders. Confirmed arrangements included in the siEMP.

6.2 Environmental Management Plans

- 6.2.1 The Principal Contractor will be required to provide EMPs which inherently require monitoring of environmental data and the interaction with construction activities. EMPs that are likely to be required as part of the Scheme works include but are not limited to:
- Site Waste Management Plan (SWMP) – provides a structured approach to minimising waste on site and waste management during the construction of the Scheme.
 - Materials Management Plan (MMP) – sets out the relevant regulations and approach for dealing with excavated ground materials as a result of the Scheme.

6.3 Environmental Control Plans

- 6.3.1 Environmental Control Plans (ECPs) are key documents which ensure that the construction-related mitigation measures and actions set out in the REAC are successfully implemented on site. ECPs inform the works and the development of associated task-specific Risk Assessments and Method Statements (which will be included in the siEMP). It is expected that the following ECPs will be prepared then finalised, as appropriate, for the Scheme as part of the siEMP:
- Emergency Spill Response Plan – sets out the procedures for dealing with emergency situations involving loss of containment.
 - Temporary (Construction) Drainage Strategy – details the temporary drainage strategy for the Scheme.
- 6.3.2 As noted above, all ECPs will be developed to their full detail for the siEMP during the detailed design and construction planning phase. ECPs are live documents that are subject to updating and refinement as required changing needs of the works during construction.

6.4 Inspection Checklist

- 6.4.1 As Site owner for the duration of the contract, the Principal Contractor will ensure that environmental mitigation and staff responsibilities are made clear to site managers, sub-contracted staff and site supervisors. This will be managed through site inductions and

specialist training as required. The Principal Contractor will make key staff aware of their responsibilities for undertaking daily routine checks of the site and equipment.

- 6.4.2 It will be essential that the Principal Contractor has processes and protocols in place for environmental aspects to be checked. The Principal Contractor will insert their standard inspection forms and checklists that are associated with their internal EMS into the EMP appendices for information.
- 6.4.3 Once inspection and checks have been completed, they will be logged and corrective actions implemented by the delegated site manager in discussion with the Principal Contractor.

6.5 Monitoring of Proposed Mitigation

- 6.5.1 The Principal Contractor will be responsible for implementing and, where appropriate, monitoring the mitigation measures outlined in **Table 3.2**.
- 6.5.2 As described in **Table 2.2** and **Table 3.2**, the Contractor's compliance with specific mitigation measures will be monitored through a number of different means. Monitoring of compliance and ensuring construction activities are carried out in such a manner to reduce environmental impacts may be conducted by an Environmental Clerk of Works (EnvCoW), an ECoW or an ecologist appointed by SIC. The specific measures that these representatives may take in order to provide this monitoring of compliance will be detailed in the Employer's Requirements in the Contract.
- 6.5.3 The Principal Contractor will keep an overall project record of environmental mitigation monitoring and any potential areas of non-compliance associated with implementation of the EMP. This should be managed and controlled within the standard Project Control Framework (PCF) project filing systems.

7 Induction, Training and Briefing Procedures for Staff

7.1 General

- 7.1.1 The Principal Contractor will develop a programme of training on environmental issues prior to and during the construction stage. On commencement of site mobilisation, the Principal Contractor will be responsible for site inductions and training of all personnel on the site, whether full time staff, subcontractors or visitors.
- 7.1.2 All individuals working or visiting the site will be required to attend the Principal Contractor's site-specific induction. Site inductions for full time staff and subcontractors will be tailored to their working conditions and activities. Site inductions for visitors will be tailored to those areas of the site they are visiting and what activities they are undertaking on site. Further details will be given in RAMS briefings prior to undertaking an activity. Those participating in or near to specific activities that may have an environmental impact may be required to attend additional training or toolbox talks led by the Principal Contractor or environmental topic specialists.
- 7.1.3 The training will equip relevant staff with the necessary level of knowledge on health, safety, community relations and environmental topics. Method Statements will be prepared for specific activities prior to the works commencing, including environmental protection and mitigation measures and emergency preparedness appropriate to the activity covered. Method Statements will be included in the siEMP.
- 7.1.4 All personnel on the Site will be made aware of the Principal Contractor's Environmental Policy, the Register of Environmental Legislation, the REAC and the relevant ECPs included in the EMP.
- 7.1.5 It is a requirement for the site to maintain the standard of environmental management and minimise risks that could negatively impact on the environment. The Principal Contractor must keep a record of training for audit and monitoring purposes.

7.2 Training and Site Induction

- 7.2.1 All site personnel and visitors are to receive site safety induction and environmental awareness training from the Principal Contractor, prior to commencing work on or visiting the site. This will introduce accountability for personnel working on the scheme. Environmental training at the induction will include, but not be limited to, the following:
- Site induction
 - Toolbox Talks where relevant to specific works
 - The Principal Contractor's Environmental Policy
 - Environmental legislation requirements
 - General environmental awareness and environmental site rules
 - Site organisation
 - Spill kit use and locations
 - Emergency Response Plans

- Site traffic protocols and routes
- Wheel wash
- Warning signs
- Waste management and movement
- Ecology and protected species
- Earthworks and excavation
- Definition of materials and storage areas
- Contamination and pollution risk management
- Fuel containment
- Cultural heritage/archaeology
- Dust and emissions control
- Noise and vibration control
- Working in or near watercourses

7.2.2 The list is not exhaustive and the Principal Contractor's Environment Manager on site must highlight requirements for additional training, as the Scheme progresses, to improve and add value to the overall site environmental awareness and compliance.

7.3 Toolbox Talks

- 7.3.1 The Principal Contractor and their subcontractors will conduct toolbox talks such that every employee receives a health, safety and environmental briefing as appropriate. For subcontractors, their supervisors are responsible for conducting these briefings and their implementation will be monitored by the Principal Contractor. Records must be kept of toolbox talks carried out and who attended them. Requests for new or subject-specific Toolbox Talks can be made to the Environment Manager.
- 7.3.2 Toolbox talks will also be posted within common use areas such as welfare units and office reception areas. Key environmental issues linked to the programme will be posted on the daily notice board as an aide memoir to all staff on site. For example, seasonal environmental constraints such as the timing of the bird nesting season.

7.4 Environmental Competencies

- 7.4.1 The Principal Contractor will ensure that all personnel conducting environmental tasks are suitably qualified and/or experienced for the roles and responsibilities that they are employed to undertake.
- 7.4.2 The Principal Contractor will monitor and record that all staff have attended the relevant environmental induction or training listed above (including updated or new training) prior to undertaking any activities on site. The Principal Contractor is required to develop criteria for evaluating the effectiveness of any training.