Scapa Deep Water Quay
Supplementary Environmental Information Report

May 2025

CONTROL SHEET

Client:	Orkney Islands Council Harbour Authority
Project Title:	Scapa Deep Water Quay
Report Title:	Supplementary Environmental Information Report
Document number:	15243
Project number:	679084

Issue Record

Issue	Status	Author	Reviewer	Approver	Issue Date
1	Draft	Various	G Duff	D Fleming	23/05/2025
2	Final	Various	G Duff	D Fleming	30/05/2025

EnviroCentre Limited Office Locations:

Glasgow **Edinburgh** **Inverness** **Banchory**

Registered Office: Craighall Business Park 8 Eagle Street Glasgow G4 9XA
Tel 0141 341 5040 info@envirocentre.co.uk www.envirocentre.co.uk

EnviroCentre Limited is registered in Scotland under no. SC161777.

VAT no. GB 348 6770 57.

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1 INTRODUCTION

1.1 Background

Orkney Islands Council Harbour Authority (OICHA) (the applicant) submitted an application to Marine Directorate - Licensing Operations Team (MD-LOT) and Orkney Islands Council (OIC) to construct and operate Scapa Deep Water Quay (SDWQ) at Deepdale, Scapa. During the consultation period, a number of additional information requests were issued. In addition, since the initial application was submitted the design of the structure has changed as detailed in Chapter Two of this document. The following summarises the submission history to date:

EnviroCentre Ltd were appointed by OICHA to undertake an Environmental Impact Assessment (EIA) of the proposed SDWQ. The Environmental Impact Assessment Report (EIAR) comprised the written findings of the EIA process undertaken under both the Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations') and the Marine Works (Environmental Impact Assessment (Scotland) Regulations 2017 ('the Marine EIA Regulations').

An application which included an EIAR was made to MD-LOT (Reference Number: 00010511) on 18 September 2023. Additional information was submitted September 2024 and validated in 17th October 2024. A further request for information from MD-LOT was issued 15thApril 2025 (Appendix A).

A planning application which included an EIAR (August 2024 (Document Number 13254)) (reference No. 23/289/NATEIA) was validated on 25th September 2023 and a request for further information was issued by OIC on 22nd April 2024. An updated EIAR was submitted to OIC on 27th August 2024, providing additional and revised information. A further request for information from OIC was issued on 6th March 2025 Appendix A.

Following the March 2025 request for information, this Supplementary Environmental Information (SEI) Report has been produced to provide the requested information for the various technical topics included in the EIAR. This report is referred to as the SEI Report (May 2025) and should be read in conjunction with the EIAR dated August 2024.

This SEI report has been prepared for the following reasons:

- To provide additional information addressing points raised by consultees after submission of the application. This information supplements the findings of the EIA in the EIAR which accompanied the marine licencing application and the planning application.
- To introduce and evaluate the environmental effects of proposed changes to elements of the design that formed the 2023 marine licencing application and the planning application, and also new and additional design proposals that have been developed since submission of the planning application.
- To present supplemental information that was either not available at the time of the marine licencing application and the planning application,or is now required in support of the proposed design changes.

The SEI Report details the likely significant environmental effects including updated environmental information and consideration of changes to the scheme assumptions.

1.2 Structure of the SEI Report (May 2025)

The following sections of this SEI Report (May 2025) follow the same numbering as the EIAR dated August 2024.

2 PROPOSED DEVELOPMENT DESCRIPTION

2.1 Proposed Development

As noted within the EIARs produced in July 2023 and updated in August 2024, the proposed development is to construct a deep water quay including a 597 metre, 2.7 hectare quayside and quay extension, excavate landform and reclaim land to create an 18 hectare laydown including rock armour revetments, construction of an access road, vehicle parking, water tanks and associated infrastructure.

2.2 Alternatives - SDWQ Design Mitigation and Project Description

There have been various changes to the proposed development since the original SDWQ EIAR was produced in July 2023, and these are detailed below. It should be noted that these changes do not affect the assessments within the existing EIAR.

Based on consultee feedback the project team has taken proactive steps during the design and environmental assessment process to reduce the potential negative impacts of the project, a crucial part of responsible project management (mitigation by design), aiming to prevent or minimise environmental impacts before they arise. It must be noted that the overall development footprint and dredge area remain unchanged from the previous exemplar design.

2.2.1 Design

EIA is generally considered an iterative process, meaning it is not a one-time only assessment undertaken after a project is designed. Rather, it's a continuous process where findings from the EIA inform and influence the design of the project throughout its development. In the case of SDWQ, EIA assessments identified potential impacts on certain habitats and wildlife. Based on these findings, the design has been modified. Detail on the design options considered are provided below

Option 1: Original Exemplar Design

The original exemplar design comprised a 597m long main quayside berth face constructed of steel tubular piles with interlocking sheet piles forming a combi wall solution with a further inner tied sheet pile anchor wall. The anticipated tubular steel piles (approx. 2.1m dia.) for the quay wall required drilled rock sockets to provide suitable pile toe below -15m Chart Datum (CD) dredge level. These works would incorporate Bauer BG41 Drill rigs or similar working over water from temporary piling platforms from the reclamation bund or a jack up barge with silt booms placed to the seaward side. This combi quay wall was to support a concrete cope and deck directly behind followed by general hardcore surfaced laydown reclamation area and drainage.

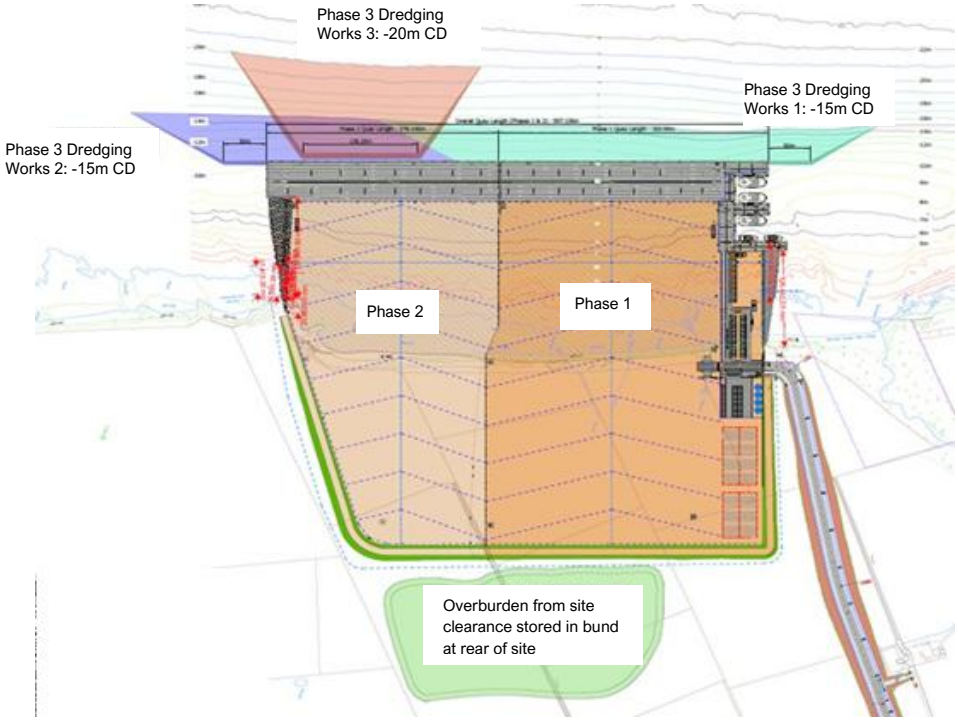
This design solution was initially assessed as appropriate at the scheme design stage, however, as stated within Volume 3: Technical Appendix 2.1 of the EIAR, this design "…*may vary once final design and build tender procurement is progressed and contractors individual construction methods are known"*.

Option 2: Caisson Design

Following further design work an alterative caisson design approach was identified which focuses on an alternative quay typology based on concrete caissons which is suitable given the existing ground conditions and the high operational loads.

A caisson is a large, hollow, precast concrete structure used in marine infrastructure. It is floated to position and then carefully sunk onto a prepared foundation, typically consisting of crushed rock or exposed bedrock. Once in place, it serves as a gravity-based retaining structure capable of withstanding lateral earth and hydrostatic pressures, vessel impacts, and environmental forces. Caissons are particularly suitable for deep-water quays due to their robustness, modularity, and adaptability to various seabed conditions.

The geotechnical assessment based on current ground investigations leads to a materials balance where reuse of component material either dredged or excavated is prioritised.



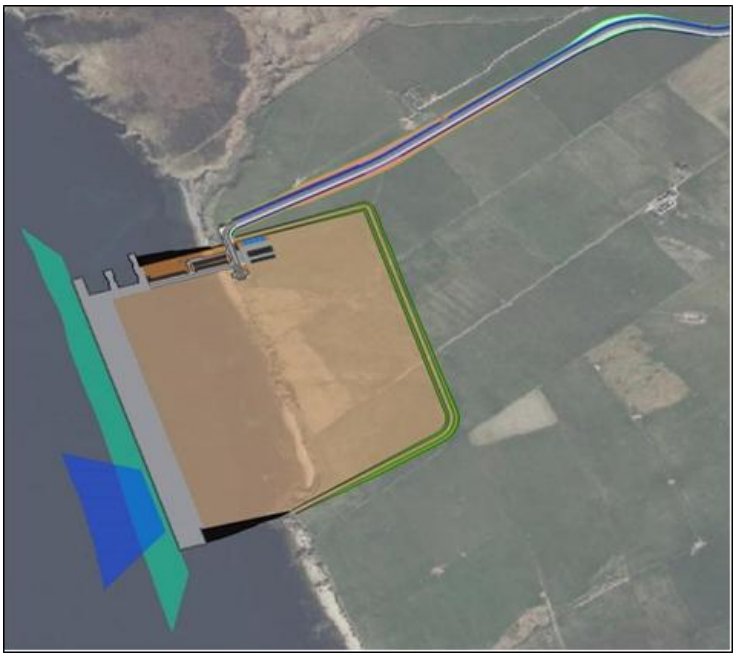


Diagram 2-1: Proposed SDWQ site

Preferred Option

The Caisson Design option has been selected as the preferred option for various reasons, including the mitigation of potential significant environmental effects. The prefabrication of caissons off site in Spain allows for a shortened programme and reduces environmental impacts from underwater and airborne noise and vibrations/impact as there is no requirement for marine piling or drilling for the caisson design solution.

2.2.2 Design Criteria

The design, manufacture, and construction of both temporary and permanent marine works shall adhere to current good practice and comply with all relevant and up-to-date Eurocodes, British Standards, Codes of Practice, and other applicable international standards and regulations. This includes structural, geotechnical, maritime, corrosion protection, drainage, and other discipline-specific codes necessary to ensure safety, durability, and regulatory compliance.

The design of the marine structures for the SDWQ Project is based on a minimum design life of 60 years, ensuring resilience in a highly aggressive marine environment, with salt spray, seawater immersion, and scour action. The quay structure must be designed for a return period of 570 years, while the revetment has a return period of 200 years, reflecting different failure probabilities for each element (10% for the quay and 20% for the revetment).

Key design parameters include:

- **Dredging Requirements:** The operational depths of -15.0m CD and -20.0m CD must be achieved.
- **Environmental Conditions:** Consideration of climate change and sea-level rise scenarios (A projected sea level rise of 0.9 m by 2100 is considered, based on national climate projections), with tidal lag and wave conditions (1/50-year,1/200-year,1/570-year return periods) integrated into the design.
- **Materials:** Concrete and reinforcement materials must comply with Eurocodes and British Standards, with specifications for exposure classes, cement types, and aggregate properties.
- **Caisson Design:** The caissons are designed with a focus on durability, using concrete that is resistant to corrosion in marine environments. Concrete properties, cement types, and aggregate characteristics have been carefully specified to ensure a long lifespan (Diagram 2-2).
- **Foundations and fill:** Crushed igneous rock is used as the foundation layer, with strict controls on durability and strength. Fill materials inside and behind caissons are selected for high density and internal friction to ensure stability.
- **Scour Protection:** Concrete scour protection mattresses and rock armour is installed to mitigate seabed erosion caused by vessel thrusters and propellers near the quay (Diagram 2-3)
- **Load types considered:** Includes structural dead loads and imposed loads, wave loads, buoyancy effects, hydrostatic pressures, vessel impacts, and backfill pressures
- **Structural Stability**: The strength and stability of the marine works are evaluated for failure modes such as sliding, overturning, bearing capacity, and structural integrity following BS 6349, Eurocode, and PIANC guidelines. Additional considerations include buoyancy, hydrostatic pressure, and surcharge loads.

These criteria form the foundation for the design of a robust, long-lasting marine structure, ensuring safety, stability, and durability under challenging environmental conditions.

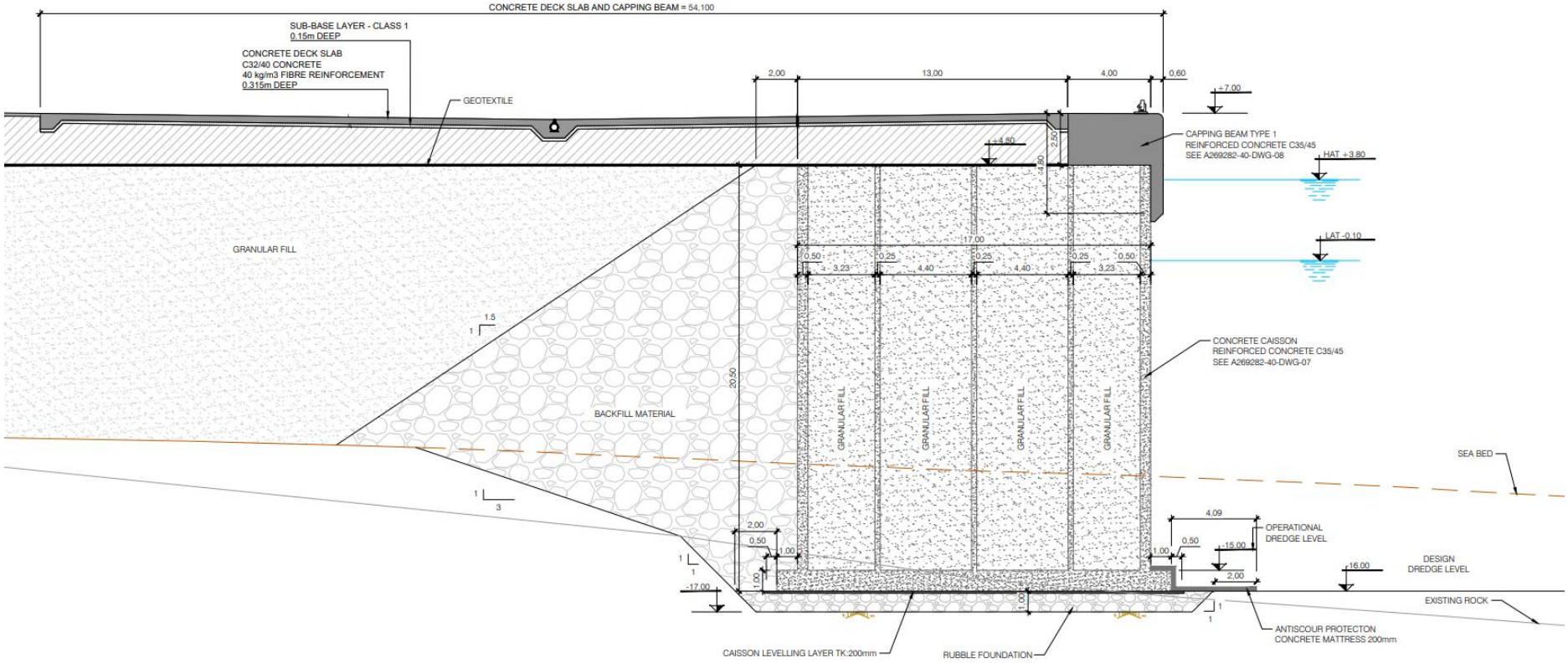


Diagram 2-2: Typical Cross Section

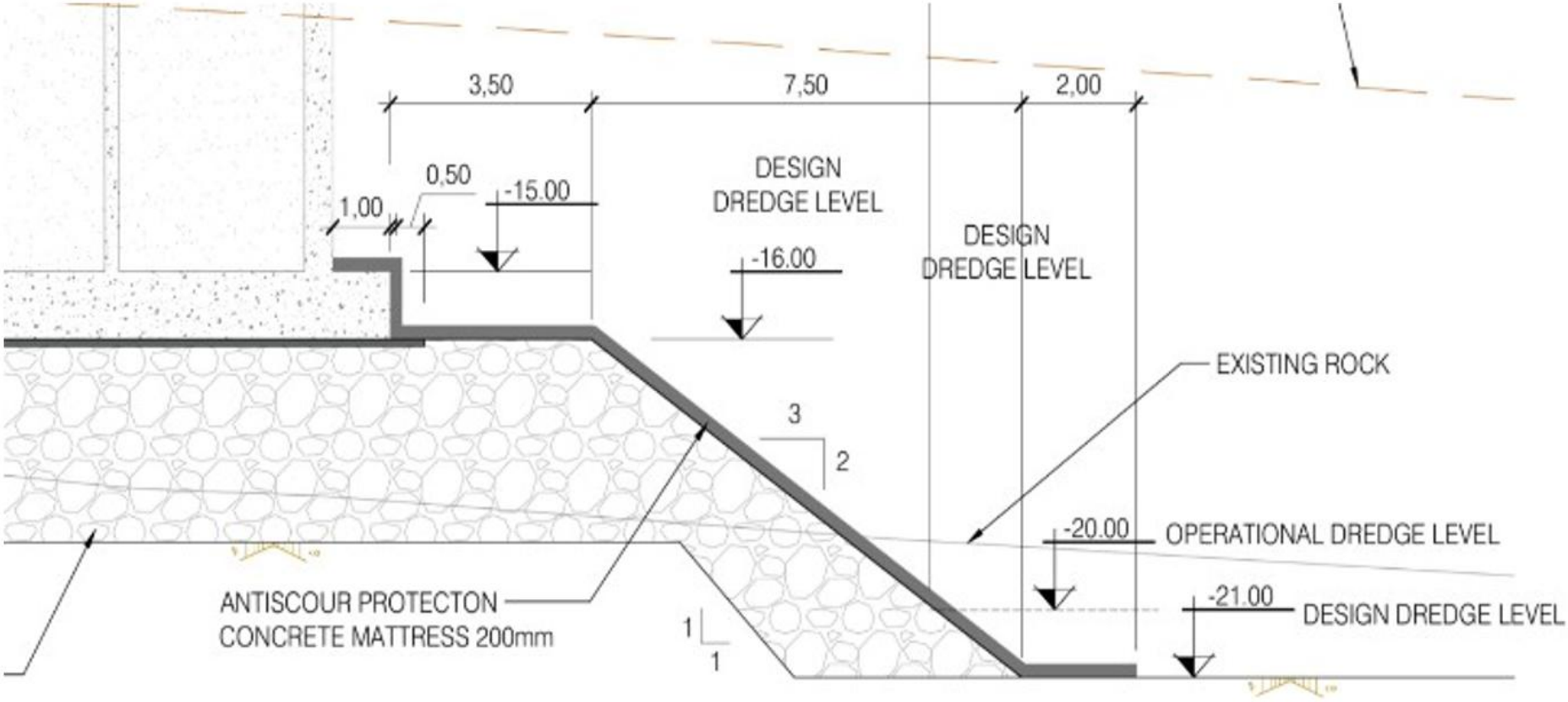


Diagram 2-3: Concrete mattress on rock

2.2.3 CAISSON DESIGN SUMMARY

- The main quay is composed of nine large reinforced concrete caissons, with a smaller caisson at the south end that ties into the south revetment.
- Different caisson cross-sections are used along the alignment to adapt to dredging depths and variable geotechnical conditions.
- The quay top level is at +7.00m CD and dredging in front of the quay reaches -15.00m CD, with a 1m over-dredge allowance for design purposes.
- A specific 140m section includes a deeper dredge pocket of -20.00m CD, offset 10m from the quay face. This will be confirmed with the developed design.
- At the north end, the OICHA tug and pilot boat berths are formed by four caissons, and one berth (62m long) uses a blockwork wall due to shallower seabed depth.
- Dredging design considers slopes based on soil type, ensuring foundation levels reach engineering rock.
- Geotechnical stability of caissons is checked against sliding, overturning, bearing capacity, and overall stability, using standard analytical methods and software tools such as SLOPE/W.

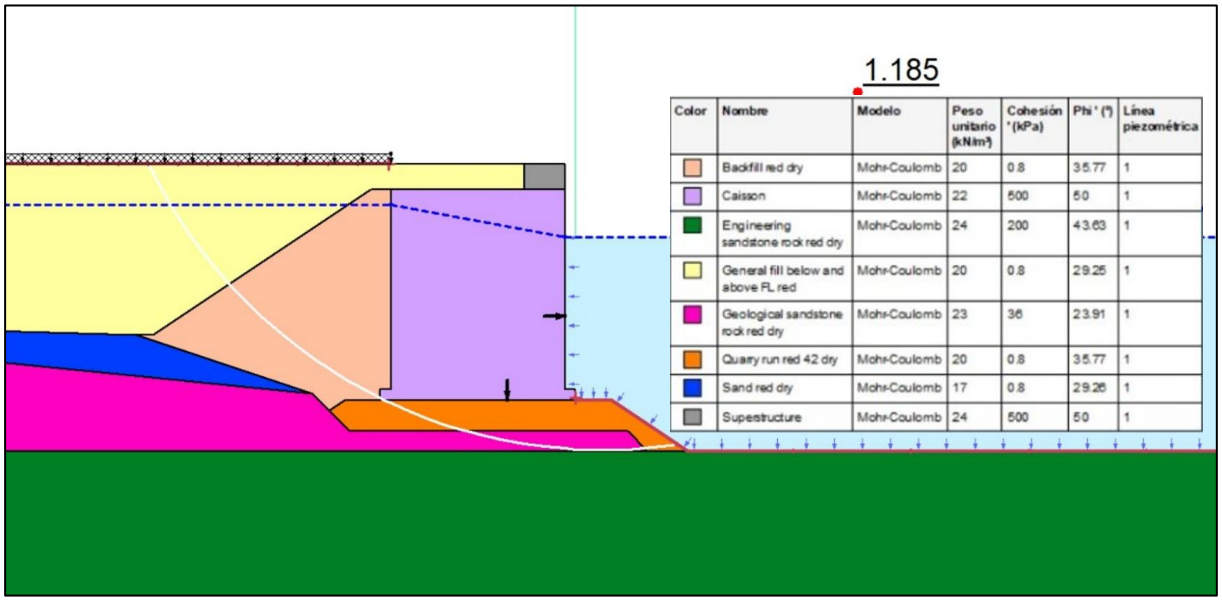


Diagram 2-4: Example of results of the geotechnical stability analysis for bearing capacity and overall stability using SLOPE/W and Plaxis software

- Structural analysis is based on a representative caisson (A1) using FEM.. Reinforcement is currently unified across all caissons but may be optimised later.
- In areas where the foundation is not directly on rock, scour protection is provided with a concrete mattress, adjusted based on the seabed material and vessel propeller forces.
- The geometry of the caissons has been standardized as much as possible, especially in the main quay (all 17 m wide and 20.5 m high for types A1–A3), to simplify construction and allow reuse of formwork. Caissons in the tug and pilot berth areas (types B1–B4) have lower heights, adapted to specific site and operational conditions. Some include multilevel steps for vessel access.
- Buoyancy stability was analysed to ensure safe transport and installation, by adjusting internal ballast water to maintain appropriate draft and stability.
- A range of cross-sections have been developed to match site conditions, particularly for the tug and pilot berths, which include pre-and post-tender bulletin design options. Key design assumptions include:
    - 1m over-dredge applied throughout
    - Rock profiles interpolated from borehole data

- Slope angles based on material type (e.g. 3:1 for granular soils)
- Caisson foundations in the main quay resting on engineering rock where feasible

2.2.4 Wave Modelling Study

A detailed wave model (MIKE 21 SW) was used to predict wave behaviour over a 26-year period. The model confirms that local wind waves dominate, though some swell reaches the site.

Wave data from multiple return periods (up to 1:570 years) were generated to guide the design of the quay, revetments, and other structures.

Conditions during storm events were simulated to understand their effect on wave heights and construction planning.

2.2.5 Dredging works

In addition to the dredging required at the berth pockets, the caisson design approach requires additional dredging for the caissons/block wall foundations. The design assumes that the structures will be founded on hard bearing strata, requiring the removal of superficial soils and hard strata from approx. -15m CD down to a maximum depth of -20.5m CD. The dredged area edge slopes depend on the material type ranging from 1:3 in superficial soils to 1:1 in engineering rock, whilst the dredging berth pockets are required to be operative for elevations of -15m CD and -20m CD. The structures have been designed to accommodate an over-dredge of 1m.

Refer to the dredging section below for dredge volumes, particularly disposal to sea. The Best Practicable Environmental Option (BPEO) report has been updated to take account of updated dredge volumes (Appendix G).[1]

2.2.6 Dredging

Dredging will be performed as one of the first construction activities in a single campaign. It is proposed to be executed by a combination of different methodologies that can tackle the scope while minimising impacts on the environment and coordinated with the critical path activities.

For reference, the dredge volumes associated with the **exemplar design** were as follows.

Table 2-1: Dredging Area and Sediment Quantities (Exemplar Design)

Dredging Phases	Area (m^2)	Est. Quantities (m^3)
Phases 1 and 2 - Initial to -15m CD	39,000	86,000
Phase 3 -20m CD berthing pocket	26,000	90,000

Of the 176,000m^3 dredge material noted above, 25,000m^3 was intended to be disposed offshore. Sea disposal was originally calculated using a barge expected to carry material up to 1,000m^3 volume, therefore 50 return trips (100 vessel movements in total).

As a result of the modified **caisson design**, additional dredging volume is required compared to the exemplar design to provide the caisson foundations. The revised total dredge volume is detailed in Table 2-2.

[1] Rev 2 (May 2025)

Table 2-2: Dredge Material (Caisson Design)

Material type	Total volume dredged (m^3)	Volume reused on site (m^3)	Volume disposed offshore (m^3)
Sand	249,859	49,972	199,887
Clay	53,022	0	53,022
Rock	61,627	61,627	0
TOTAL	**364,508**	**111,599**	**252,909**

Dredging methods: Sand and clay will be dredged either by hydraulic dredging using a trailer suction hopper dredger (TSHD) or mechanically using backhoe or grab dredgers. Rock will be dredged using a cutter suction dredger (CSD) or mechanical equipment such as backhoe dredgers equipped with rock rippers.

Dredging Caisson trench: Additional dredging is required to accommodate the caisson section (rock foundation, scour protection and caisson). Different levels have been considered following assumptions of founding the caisson on suitable hard bearing strata along the full length of the quay line. The width of this trench at the lowest level is 24 m from toe to toe.

Disposal at sea: As stated above, the volume of material (predominantly sand with some clay) to be disposed of at sea has increased to a maximum of 252,909m^3 (this figure may be reduced once additional geotechnical information is available). Further information about sea disposal is provided in the updated BPEO. It is assumed that 4,000m^3 capacity barge(s) will be used to transport material to the offshore disposal site. Therefore, the revised estimated dredge disposal vessel movements will increase from 50 round trips (100 vessel movements in total over a two-month period or almost 1 vessel movement each day) to approximately 63 round trips (126 vessel movements in total) over 33 weeks between end of October 2026 and end of May 2027. This equates to approximately 4 vessel movements each week.

It should be noted that dredging vessel routes to the sea disposal site are within existing shipping lanes. Much of the barge movements shall be within harbour limits and therefore speeds shall require to be adhered based on the Ports requirements.

2.2.7 Quay Wall

The quay wall will be formed from reinforced concrete caissons installed on a rock bed foundation, as shown on Diagram 2-5)

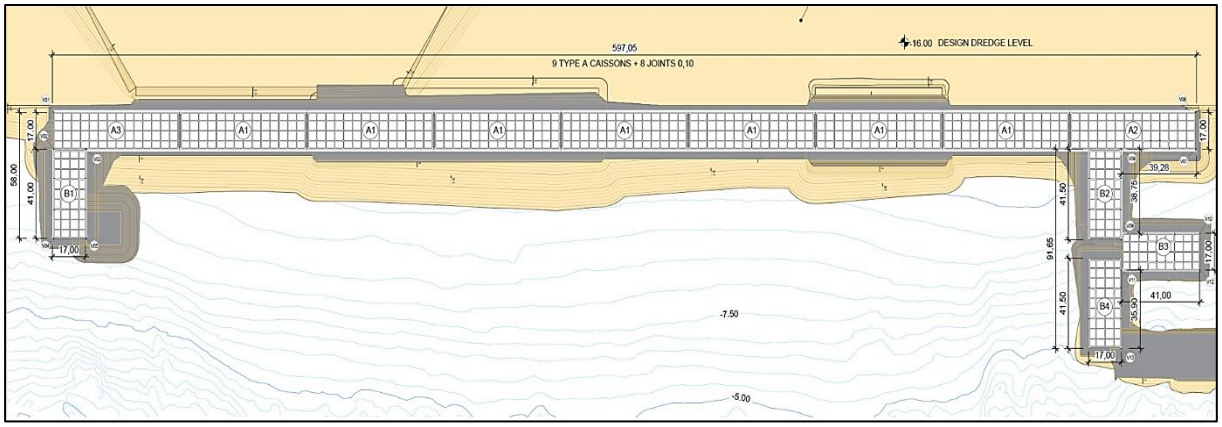


Diagram 2-5: General arrangement

The main quay is composed of nine large reinforced concrete caissons, with a smaller caisson at the south end that ties into the south revetment.

At the north end, the OICHA tug and pilot boat berths are formed by four caissons. At the innermost berths of the tug and pilot boat area, where seabed levels are shallow, concrete block walls are used instead of caissons. Another block wall acts as a retaining structure behind the southern end of the main quay. The block walls are built using large interlocking concrete blocks reinforced with vertical steel bars for added stability.

2.2.8 Caisson Transport and Unloading

Following the fabrication of caissons in a floating dock in Spain, they will be towed to a sheltered area within the port basin. There, they will be stored in a floating condition until the arrival of the semisubmersible vessel, which will transport them to the SDWQ site. It is anticipated that 3 or 4 four trips using a semi-submersible vessel will be required to deliver all caissons to the SDWQ site. The estimated transit time for the transfer of the caissons to SDWQ is 8 days (round-trip). Consecutive trips will be undertaken to transport all caissons.

A Biosecurity Plan will be produced as part of the Detailed Construction Environmental Management Document (CEMD) which will set out the measures to prevent introduction of invasive non-native species, in accordance with relevant legislation and best practice.

Diagram 2-6: Image of a previous caisson loading operation onto semisubmersible vessel at Langosteira Port.

2.2.9 Caisson Unloading

The unloading operation (Diagram 2-9) at Scapa Flow requires water depths over 27m due to the draft of the vessel and caissons, and favourable metocean conditions (Table 2-3)

Table 2-3: Required metocean conditions for vessel loading/unloading

Limiting weather criteria for loading/discharge operations		
Maximum 10-minute sustained wind speed	15	knots
Maximum significant wave height	0.5	m
Maximum swell	0.3	m
Maximum swell period	7	seconds
Maximum current	1	knots

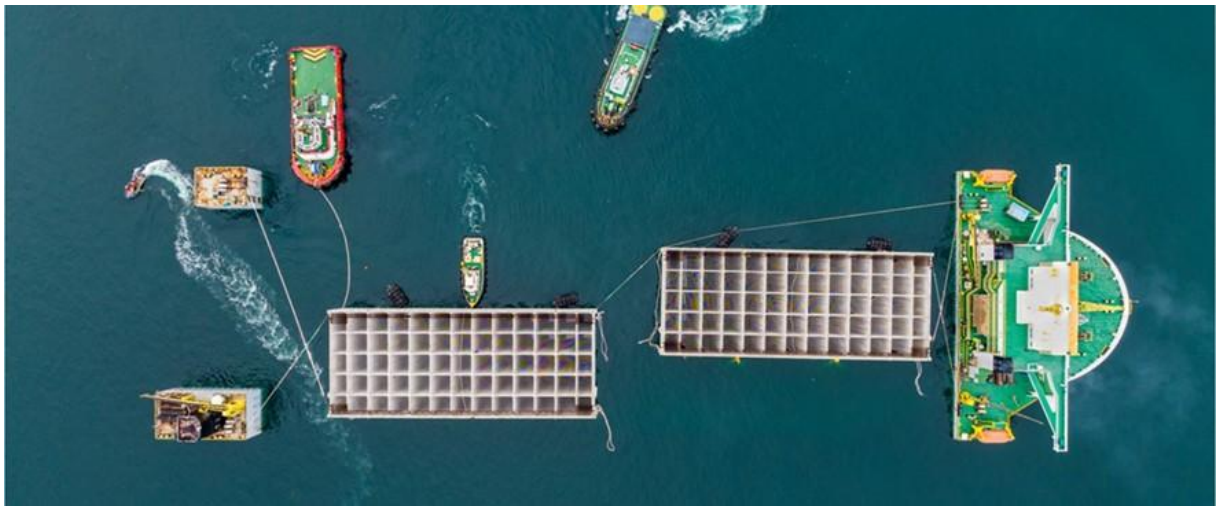


Diagram 2-7; Caisson loading into the semi submersible vessel

The three/four batches of caisson deliveries will be unloaded using 3 tugboats of at least 4000 Horsepower which will be hired locally, with the operation carried out in one to two good weather days per shipment.

Caissons will be unloaded from the semisubmersible vessel to the quay location and stored within the project area, as shown in Diagram 2-8. They will be prepared with the installation of auxiliary equipment such as winches, mooring ropes and anchors, walking platforms, ballast systems, topographic prisms and fenders. Once the weather conditions permit, they will be sunk into their final positions. Alternatively, caissons can be temporarily stored onto the foundation at the quay line and refloated to install within tolerance later. Any temporary storage will be within the project boundary.

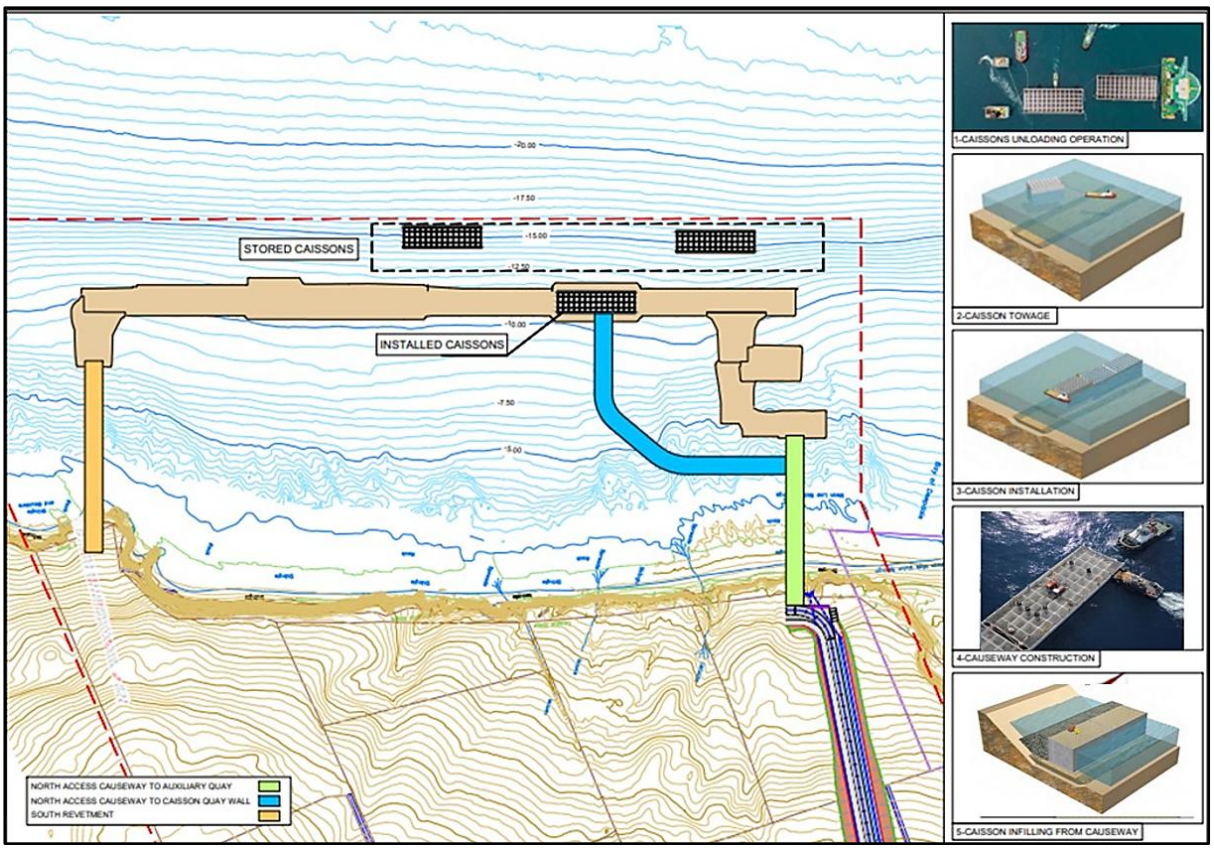


Diagram 2-8: Storage area for caisson within project boundaries.

2.2.10 Caisson Installation

The process to install a caisson is typically performed in around 6-8 hours given suitable metocean conditions. Caissons will be towed individually from their temporary storage location to the quay line. Typically, one tugboat will be sufficient, with the same tug used to assist the installation operation.

Diagram 2-9: Caisson control platform and equipment to position and sink them.

The caisson will be positioned while sinking, using tugs and winches until a final controlled touchdown on the rock foundation. Each caisson has independent and watertight groups of cells. During the operation, each group of cells is filled simultaneously with sea water either using a pump or a valve, with surveyors monitoring the level in each group to ensure that the installation process is performed in a controlled manner.

The caissons arrive dry and any ballasting uses water introduced locally and not imported. Each caisson is ballasted with seawater until touchdown on the gravel foundation. If the final positioning is within specified tolerances, ballasting continues until the caisson is filled with seawater. Where tolerances are not achieved, the caisson is re-floated by de-ballasting water and repeating the operation, until tolerances are met. It is typical for a single operation to achieve successful installation within tolerance.

The installation process requires specific conditions to ensure the operation is safely and accurately completed as shown in Table 2-4.

Table 2-4: Required metocean conditions for installation

Limiting weather criteria for caisson sinking operations		
Maximum 10-minute sustained wind speed	10	m/s
Maximum significant wave height	0.8	m
Maximum swell	0.3	m
Maximum swell period	8	seconds
Maximum current	0.5	m/s

2.2.11 Revetments

Rock-armoured revetments will be constructed to protect the north and south sides of the site from wave action, as shown in Diagram 2-8. Armour layers will consist of 2.5 tonnes (north) and 4.5 tonnes (south) of imported rock with appropriately sized underlayers and geotextiles.

2.2.12 Sea Filling

Once caissons are installed, filled and backfilled, and the revetments are also in place closing the perimeter, general infilling will commence. Reclamation material is comprised of dredged material and land-based excavated material (which will be screened on site to remove fines before placement). Substantial marine area containment will be achieved before land reclamation fill is progressed, thus minimising sediment discharge outside the works. It should be noted that OICHA intend to install turbidity meters to measure any rouge emissions, which will be included within the supporting outline CEMD, and will be detailed in full within the final working version to be prepared by the contractor once commissioned i.e. post-consent.

This element of the project is largely unchanged when considering the exemplar design and the new development proposals (caisson design).

2.2.13 Site Setup and Access Road Construction

The access road design utilises the exemplar design alignment retaining the swale on the northern side and footpath on the southern side. The road surface has been modified to a fully flexible solution to meet the requirements of the proposed design vehicle and loading. To ensure stability of the slope in the fill sections the swale has been designed to incorporate a High-Density Polyethylene (HDPE) liner.

A safety barrier assessment indicates that H1/W2 safety barriers are required at the bend to the compound entrance access road, signage, lighting utility connections and stock fencing have all been reviewed and the design updated as required.

The access road is prioritised as a critical path activity as its completion triggers the commencement of the esplanade cut and fill operations. The contractor will require temporary service connections to the esplanades early in the programme to facilitate blasting, quarrying and earthworks operations.

Access will be formed from the realigned highway. Safe access and egress from the A961 will be achieved with reflective signage, 2-way lights as necessary, and the utilisation of banksmen.

The contractor will carry out the topsoil strip, overburden removal and elements of rock cut for the new access road. The contractor will place the subbase and surcharge it to act as a robust haul road during the construction programme. This will take cognisance of Scottish Environment Protection Agency (SEPA) comments on the need to protect Groundwater Dependent Terrestrial Ecosystems (GWDTE) in Deepdale.

The contractor will install the service trenching, drainage and ducting as the works progress to ensure water is managed effectively, services can be connected to the esplanade and a safe road is completed prior to temporary traffic using it. Upon completion of the project, the contractor will trim the surcharge and carry out the final surfacing.

The following drawings show the outline General Arrangements for the proposed temporary construction access for the SDWQ along with visibility assessment.

SDWQ-ACM-XX-XX-DR-C-010000-P01 – General Arrangements

SDWQ-ACM-XX-XX-DR-C-010001-P01 – Visibility Splays

SDWQ-ACM-XX-XX-DR-C-010002-P01 – Visibility Along Existing Road

2.2.14 Excavation Platform

The excavation of soft soils on land will be excavated by mechanical means, and the rock will be excavated by drilling and terrestrial blasting consisting of approximately one blast per week over 35 weeks (no marine blasting is proposed). Initially, the contractor will install pre-earthworks drainage to control surface water run-off. After installing perimeter cut off V ditches and ahead of main land excavation and land blasting, a 6m high bund will be formed at the seaward boundary of the site by retaining the existing land and excavating behind. This will create a natural noise screen and sediment runoff retention barrier. This natural bund will be removed once the remainder of the site is excavated to create the final profile.

2.2.15 Programme

The project contractor will deliver the Project ten months early when compared with the exemplar design duration of 52 months. This will be achieved through an innovative and robust off-site caisson manufacturing methodology, which delivers a de-risked project solution and minimises disruption to the Orkney Islands residents and environment.

A summary of the main programme milestones is included below (Diagram 2-10)

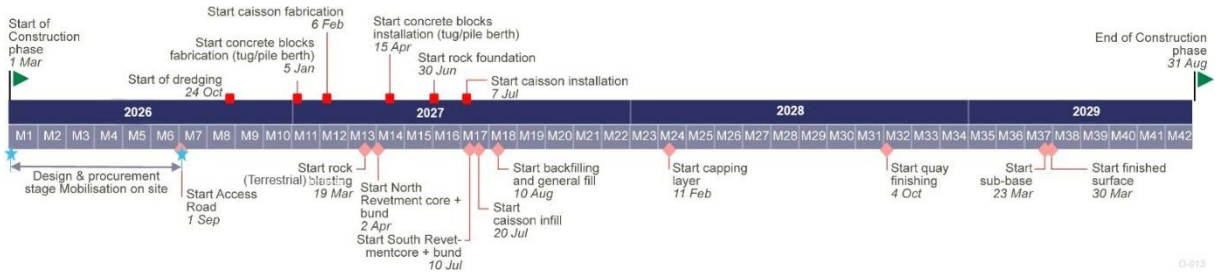


Diagram 2-10: Proposed Programme

The proposed programme is comprehensive, feasible and delivers a low risk and quicker approach to the design and construction of the Project by:

- Progressing the construction of the quay wall using an offsite caisson fabrication solution while the dredging and earthworks progress concurrently on site
- Installing 13 caisson units instead of approximately 1800m of combi-wall/sheet pile wall, significantly reducing the volume of activities on site and the associated exposure to downtime risk from seasonal weather (especially wind and the effect on craneage operations)
- Using the time savings (Diagram 2-10) from the caisson solution and concurrent working approach to: – De-risk the critical path by creating a programme float of ten months.
- Propose 1st of March 2026 as the Start Date to enable continuous works sequencing for summer transport and installation of caissons.

Diagram 2-11: Critical path through programme

3 EIA METHODOLOGY AND SCOPE

3.1 Purpose of this SEI

An application which included an EIAR was made to MD-LOT (Reference Number: 00010511) on 18 September 2023. Additional information was submitted September 2024 and validated in 17th October 2024. A further request for information from MD-LOT was issued 15thApril 2025 (Appendix A).

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- To present supplemental information that was either not available at the time of the marine licencing application and the planning application, or is now required in support of the proposed design changes.

As noted in Chapter 2 there have been design changes following the submission of the the marine licencing and planning applications. In some cases, these proposed changes have arisen from the continued development of the design, a desire to enhance construction or design performance taking account of likely significant environmental effects, and as a result of feedback received during consultation.

It is important to note that this SEI report should be read in conjunction with the amended August 2024 EIAR. In most instances, the amended August 2024 EIAR remains unaffected by the proposed changes, and therefore much of the original documents remain valid. Where appropriate, this SEI report directs the reader to where in the August 2024 EIAR further relevant information is available to support the content and conclusions contained in the SEI report. Similarly, where descriptions and findings contained in the August 2024 EIAR have been superseded by amendments to the proposals or other outcomes following the the marine licencing application and planning submission, these are explained with reference to which sections of the August 2024 EIAR are now obsolete.

4 WATER ENVIRONMENT

4.1 Introduction

This section updates some aspects of Chapter 4. Water Environment of the August 2024 EIAR, which describes the baseline environment and the potential impacts arising from construction activities on water quality, tidal water levels, coastal processes and flood risk.

4.2 Updated Baseline Conditions

There are no updates to the baseline conditions detailed in Chapter 4 of the EIAR (July 2023 and updated in August 2024).

4.3 Future Baseline

There are no updates to the future projections, including the effects of climate change, detailed in Chapter 4 of the EIAR (July 2023 and updated in August 2024).

4.4 Updated Potential Effects

The majority of the proposed development remains the same as the previously assessed exemplar design. Therefore it is considered the potential effects assessed in Chapter 4 of the EIAR (July 2023 and updated in August 2024) remain the same, except for potential water quality effects resulting from dredging works, as outlined below.

As described in Chapter 2, the main change from the exemplar design is a construction method variation, with the use of caisson structures instead of a piled quay. The caisson design will necessitate a larger capital dredge than previously assessed in order to enable caisson placement, as outlined in section 2.2.6. The finished development will have the same footprint as the exemplar design and the finished dredge pockets will remain the same as the exemplar design. Therefore, the main potential change in potential effects is from sediment discharge and dispersion during dredging works.

Dredge plume dispersal modelling has previously been undertaken for the exemplar design, utilising a hydrodynamic model, as described in Technical Appendix 4.1, Volume 3 of the EIAR (July 2023 and updated in August 2024). The model results highlight that due to the relatively coarse nature of the dredge budget, and the weak tidal currents within the vicinity of the proposed dredge pockets, plumes generated as a result of the dredging works will be very localised and short term in duration. Due to the low current speeds, any sands and gravels lost to the water column during dredging will fall out of suspension immediately, within the dredge footprint. Clay and silt lost to the water column during dredging will remain in suspension for longer, being dispersed gradually over the tidal cycle, with the residual dominance of ebb tide currents resulting in net northwards plume dispersal. Total suspended solids concentrations are predicted to be low, highest within the dredge zone and immediate surrounds of the dredger, decreasing towards the plume limits.

The new proposed dredge volume is 364,508 m^3, an increase of 188,508 m^3 from the previously proposed dredge volume of 176,000 m^3. However, the volume of fines within the proposed dredge budget is 53,022 m^3 versus a previously assessed fines volume of 40,540 m^3. This represents an increase in fines dredge volume of 12,482 m^3, but a decrease in fines as a percentage of total dredge volume

from 23.3% to 14.5%. The duration of the proposed dredge campaign has increased from 102 days to 231 days, meaning that despite the increase in proposed dredge volume, the proposed dredge rate has reduced from 1,694 m^3/day (or 70.58 m^3/hr) to 1,578 m^3/day (or 65.75 m^3/hr). There is therefore considered to be a reduction in average fines dredge rate from 16.45 m^3/hr to 9.53 m^3/hr.

Due to the reduction in proposed dredge rates from the exemplar design, it is considered that any sediment plume resulting from the dredging campaign will be reduced versus that assessed in the previous modelling study, Technical Appendix 4.1, Volume 3 of the EIAR (July 2023 and updated in August 2024). The previous model results are therefore considered to remain valid as a conservative assessment of potential impact.

Therefore overall, it is considered that prior to mitigation the magnitude of the impact of sediment discharge and dispersion from dredging works to coastal waters (high sensitivity) will remain low, as previously assessed, within the dredge area and immediate vicinity, and negligible out with this area, giving rise to effects of moderate and negligible significance respectively, before mitigation.

4.5 Mitigation Measures

It is expected that the mitigation measures already identified within Chapter 4 and Chapter 11 (Schedule of Mitigation) of the EIAR (July 2023 and updated in August 2024) will remain appropriate.

As a precautionary measure, OICHA proposes to undertake turbidity monitoring to protect water quality and ensure minimal environmental impact. OICHA propose to monitor sediment re-suspension levels to prevent damage to the local ecosystem and aquaculture as high suspended sediment concentrations can contribute to suboptimal conditions and may harm fish since it affects the overall ecological balance. High turbidity can reduce photosynthetic activity, leading to lower oxygen levels, which in turn affects aquatic organisms. By monitoring turbidity, OICHA can review the site works to confirm that the works are resulting in similar conditions to that predicted in the dredge plume modelling and review the findings to confirm that there are no significant impacts associated with the works. Should the review identify turbidity levels that are higher than were predicted in the modelling works then corrective actions will be implemented.

4.6 Updated Residual Effects

There are no updates to the residual effects detailed in Chapter 4 of the EIAR (July 2023 and updated in August 2024).

4.7 Summary and Conclusions

Chapter 4 Water Environment of the July 2023 and August 2024 EIA Reports described the baseline environment and the potential impacts arising from proposed construction activities on water quality, tidal water levels, coastal processes and flood risk. There are no updates to the baseline conditions or future projections detailed in the EIAR chapter.

The main change from the previously assessed exemplar design is a construction method variation, with the use of caisson structures instead of a piled quay, necessitating a larger capital dredge. However, the proposed capital dredge will take place over a longer dredge programme, with resulting lower dredge rates. It is considered that the previous assessment of dredge plume dispersal therefore remains valid as a conservative assessment of potential impact.

As per the findings of Chapter 4 of the EIAR (July 2023 and updated in August 2024), the residual effects are considered to be negligible, except for effects on GWDTEs which are considered to be minor. Accordingly, no significant effects on the water environment or coastal processes have been identified.

5 BIODIVERSITY

5.1 Introduction

This section updates some aspects of Chapter 6. Biodiversity of the July 2023 and August 2024 EIARs, which describe the baseline environment and the potential impacts arising from construction activities. As noted in Chapter 5 of the EIARs, the Applicant has committed to delivering a shadow Habitats Regulations Appraisal, Marine Mammal Protection Plan, Basking Shark Risk Assessment. Biodiversity Enhancement and Management Plan (BEMP) which will provide biodiversity enhancement.

Following review of the EIARs statutory consultees requested additional information for ornithology, seals, vessel movements within Scapa Flow and the interaction with birds and seals i.e. disturbance, displacement and potential fatalities and potential terrestrial noise disturbance. Additional information was also requested for Biodiversity Net Gain/ biodiversity enhancement and GWDTEs.

In order to ensure statutory consultees were kept informed of proposed amendments and to allow for discussion on proposed methods etc. (NatureScot in particular) three Consultation Workshops were held on:

- ***21 January 2025:*** Technical workshop to discuss the project, client comments and develop a pathway for resolution (Client Team including OICHA, OIC Planning, NatureScot, Orkney Independent Marine Advisory Group (OIMAG))
- ***05 March 2025:*** Marine Mammals Workshop (Client Team including OICHA, NatureScot, OIMAG)
- ***27 March 2025:*** Ornithology Technical Workshop (Client Team including OICHA, NatureScot, Stantec (on behalf of the contractor))

In addition to the workshops, regular topic specific consultation meetings were held with NatureScot technical teams (ornithology and seals) during April and May 2025. Following the consultation meetings NatureScot were provided with working drafts of the Habitats Regulations Appraisal (HRA) and appendices, and Seal Risk Assessment, for comment prior to the submission of this SEI Report.

This Chapter should be read alongside the following Appendices:

B. Habitat Regulations Appraisal
C. Ornithology Report
D. Seal Risk Assessment
E. Basking Shark Risk Assessment
F. Marine Mammal Risk Assessment
G. Dredging Best Practicable Environmental Option Report

5.2 Updated Policy Context

SEPA updated guidance on '*Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems*' in August 2024. This SEI has been assessed against the best practice guidelines outlined within the guidance.

5.3 Updated Baseline Conditions

The red line boundary for the project remains unchanged and therefore distances from statutory and non-statutory designated sites are also unchanged. Field survey to inform the EIA was undertaken in 2023, however, management activities at the site remain unchanged since the survey, therefore the extent of habitats within the site is considered unchanged.

Inclusion of harbour seal decline was requested by NatureScot. There is a clear decline in harbour seal populations based on reviews of data over the years. The cause for the decline has not yet been identified, however factors such as prey quality and availability, exposure to toxins/ harmful algae and competition for resources from grey seal, whose population size are considered to be at carrying capacity in Orkney waters, are currently considered to be the most likely critical drivers. Although no evidence for coastal developments or vessel movement have been identified, these can't be ruled out as also contributing to declines directly or indirectly.

5.4 Future Baseline

In the absence of SDWQ, it is probable that there would be little or no change to the baseline condition of ecological habitats and features that presently exist within the Proposed Development boundary. Within the boundary, the grassland within a few meters of the cliff top has been enclosed and improved for agriculture. The fields closest to the coast are used for grazing only. The fields further inland have been ploughed, re-seeded and used for silage production. As such, agricultural land-use would be likely to continue, and that activity would continue to exert an attritional influence on habitats present within the Proposed Development site.

5.5 Updated Potential Effects

The proposed development remains the same as the previously assessed exemplar design. Therefore it is considered the potential effects assessed in Chapter 5 of the EIAR (July 2023 and updated in August 2024) remain the same.

As described in Chapter 2, the main change from the exemplar design is a design variation, with the use of caisson structures instead of a piled quay. The caisson design will reduce underwater noise as there is no need for piling or drilling within the marine environment, a significant environmental benefit.

The following sections seek to address consultee comments and requests for additional information which can be found in the attached Habitat Regulations Appraisal (Appendix B), Ornithology Report (Appendix C), Seal Risk Assessment (Appendix D), Basking Shark Risk Assessment (Appendix E) and Marine Mammal Risk Assessment (Appendix F).

5.5.1 Appropriate Assessment

A Habitats Regulation Appraisal (HRA) has been undertaken to determine whether the construction of a proposed development of SDWQ will have any adverse impact on the integrity of any European designated sites.

Likely Significant Effects (LSE) on Scapa Flow Special Protection Area (SPA), North Orkney SPA, Orkney Mainland Moors SPA, Hoy SPA, Loch of Stenness Special Area of Conservation (SAC) and Sanday SAC could not be ruled out during the screening stage of the assessment; and so an Appropriate

Assessment (AA) has been conducted to ascertain whether the proposed works will adversely affect the integrity of the sites' qualifying features.

During the AA process it was possible to rule out adverse effects from impacts to the assessed designated sites.

Potential impacts to SPA qualifying bird species and harbour seal (designated feature of Sanday SAC) include disturbance as a result of noise, human presence and light pollution during construction activities, indirect impacts from accidental pollution incidents or increased sedimentation and turbidity during works impacting water quality and therefore food availability, and harbour seals could be subject to injury caused by underwater noise or collision with vessels during works. However, assuming mitigation during the construction phase is implemented, the works are not considered to impact the integrity of sites or designated feature.

5.5.2 Vessel Movements (Existing Baseline for Scapa Flow)

As noted within the HRA, the existing baseline for Scapa Flow which was determined as part of the Navigational Risk Assessment undertaken for this Proposed Development, raw AIS data on vessel movements in Scapa Flow was purchased. The data contains information on vessel movements for a two-week period in August 2023 (14th-28th), representative of a summer period and for a two-week period in February 2024 (12th-26th), representative of the winter period. The data for these are within Table 4.1 and 4.2 of the HRA. It is important to note the baseline vessel movements are unchanged from the previous EIAR and are reproduced here for ease of reference.

Table 4.1 in the HRA indicates there were 1,442 Movements/month and Table 4.2 in the HRA indicates there were 1,252 Movements/month

As noted in the HRA, a valid assumption is that the volume of vessel traffic over a two-week period is replicated for the month. Therefore, the total volume of vessel movements within Scapa Flow during August is 2,884 and the total volume of vessel movements during February is 2,504.

Extrapolating further, these movements can be replicated for both the summer (April to September) and winter (October to March) periods. This would give the following total of number of vessel movements within Scapa Flow:

- Summer period – 15,342 vessel movements
- Winter period – 13,062 vessel movements

OICHA have provided information on the current typical monthly vessel movements experienced within the eastern area of Scapa Flow. This is summarised below:

- One Flotta fuel tanker;
- 5 Ship to Ship Operations;
- 3 tugs, each with 11 trips in and out of Scapa Pier;
- Escort duties for 1 tug with 12 trips in and out of Scapa Pier;
- 22 pilot boat trips: and
- Occasional workboats to the rigs.

This equates to 124 vessel movements each month in the vicinity of the SDWQ site. This is approximately 5% of the total volume of vessel movements within Scapa Flow.

5.5.3 Vessel Movements Associated with Construction

The new caisson design will see the following vessel movements during construction (Table 5.1).

Table 5-1: Number of Predicted Vessel Movements During Construction

Vessel	Predicted Number of Vessel Movements.	Timescales
Caisson delivery	8 (4 deliveries) using semi-submersible vessel	June to August 2027
Caisson offloading (3 tugs for 13 caissons)	39	June to August 2027
Caisson installation (1 tug for 13 caissons)	26	June to August 2027
Scour protection	10 trips (20 movements)	Unknown. Taking precautionary approach, these will be undertaken between October and March.
Caisson infilling	15 trips (30 movements)	July 2027 – March 2028. Equates to 1 movement each week.
Dredging	63 trips (126 movements)	October 2026 – May 2027. Equates to 4 movements each week
Total	**249**	

The 249 vessel movements during construction are a 91% increase on the previous submission using the exemplar design. However, split between seasons (103 during summer and 146 during the period October to May when SPA qualifying species are still present) represents an increase of 0.7% increase over the whole of Scapa Flow and an increase in monthly summer vessel movements within the eastern area of Scapa Flow of 13%. During winter, these additional vessel movements represent a 1/1% increase over the whole of Scapa Flow and an 13% in monthly winter vessel movements within the eastern area of Scapa Flow.

5.5.4 Vessel Movements associated with Operation

The size and number of vessels anticipated to utilise the quay will effectively occupy a water surface area of 39,000 m^2, when fully occupied, which is additional lost habitat to waterfowl species. Full occupation of the berths is expected to occur for about 100% of the time (worst case scenario).

The vessel movements associated with operation of the quay will comprise both large commercial vessels delivering and towing/taking away goods and the much more frequent movements of the Harbour Authority tugs and pilot boats.

The Navigational Risk Assessment (NRA), provided in EIAR Technical Appendix 2.3, outlines the predicted vessel traffic associated with the operation of the new quay. Previous iterations of this HRA detailed that the West of Orkney Offshore Wind Farm would be a project that is hoped that SDWQ will be able to support. The NRA provided for the windfarm stated that there would predicting 1722 vessel movements for each of the four years of construction and then 468 movements annually throughout the lifetime of the wind farm. However, it should be noted that only a small percentage of these vessel movements would be into and from SDWQ.

Updated estimates, informed by ongoing dialogue with offshore wind developers interested in using the quay, representing full deployment of the facility, are as follows:

- 2028: No vessel calls currently expected unless early construction proceeds; in that case, up to 6 delivery vessel calls may occur
- 2029: 12 delivery vessel calls and 6 installation vessel calls
- 2030: 12 delivery vessel calls and 4 installation vessel calls
- 2031: 12 delivery vessel calls and 6 installation vessel calls

In addition to these larger vessel movements, the quay is expected to receive smaller vessel calls at an average of one per month throughout this phase.

While the quay is a major strategic facility, its operational profile is characterised by the infrequent arrival of large vessels, aligned with the integration and deployment schedules of major offshore wind developments described elsewhere.

The majority of pilot vessels and tugs will relocate from the existing Scapa Pier to SDWQ. Extrapolating the baseline data on pilot vessels and tug movements in Section 4.1, this equates to approximately 2,040 vessel movements per year (816 in the summer and 1,224 in the winter months). It should be noted that these are existing vessel movements that will be operating from a different location, not new vessel movements.

It is acknowledged that the relocation of port services vessels (mainly tug and pilot boats) from the existing site at Scapa Pier to SDWQ will result in near total displacement of birds within this area of new/novel vessel routes (plus the proposed development footprint). This area is 167Ha (taken as a worst-case scenario as vessels do currently use part of this route. However, by relocating from Scapa Pier, there will be a net gain in the available optimal (undisturbed) habitat for SPA qualifying species (see Appendix B). Port Services vessels make up the vast majority of vessel movements in and out of Scapa Pier. Relocating to the proposed SDWQ would create an area of 785Ha (taken as out to 2km from the shoreline) that would receive a significant reduction of these vessels. This is an increase of 4.5 times the available optimal (undisturbed) habitat that would be lost from the proposed development. This area, from Scapa Pier and west along the north coastline, is an important and regularly used area for the majority of the SPA qualifying species, including Black-throated Diver. There would still be use of Scapa Pier by a small number of tankers (one a week) and recreational vessels (which will largely be operating during the summer months when the majority of SPA qualifying species are absent – 24 per month during winter and 108 per month during summer) but overall usage of this area will be significantly reduced.

5.5.5 General Disturbance (Seals)

With reference to the HRA (Appendix B) and the Seal Risk Assessment (Appendix D), both harbour seal and grey seal are priority marine features and Annex II species and can be seen all around Scotland, predominantly on many of the offshore islands and along much of the west mainland coast.

Two Special Areas of Conservation (SAC) and three Sites of Special Scientific Interest (SSSI) designated for harbour and grey seals and 60 haul out sites are considered within influence of the development and dredge disposal site. However, due to distance, the development is not considered to directly impact any of these sites.

There is a clear decline in harbour seal populations based on reviews of data over the years. The cause for the decline has not yet been identified, however factors such as prey quality and availability, exposure to toxins/ harmful algae and competition for resources from grey seal, whose population size are considered to be at carrying capacity in Orkney waters, are currently considered to be the most likely

critical drivers. Although no evidence for coastal developments or vessel movement have been identified, these can't be ruled out as also contributing to declines directly or indirectly.

The construction methods of the proposed development do not require marine blasting, piling or drilling. Underwater noise modelling identified dredging activities have short risk ranges for seals, with Permanent Threshold Shift (PTS) of <50m. Temporary Threshold Shift (TTS) risk ranges from 70m – 250m dredging.

General disturbance to seals in water may occur as a result of works. It is expected that seals would be likely to exhibit a behavioural change due to the noise, when in water (fleeing from noise source/ vocalisations/ splashing), with physiological stress likely to also occur. This could impact seals energy and fitness levels through disturbing foraging or causing avoidance of feeding areas for periods of time. A precautionary 5km radius buffer for disturbance has been applied to quantify the number of individuals that may be disturbed as a result of construction works. Quantitative data identified a total of 19 grey seals and 4 harbour seals at sea within the disturbance area of the construction works. These numbers are considered low and the 5km is a 'worst case' scenario, therefore the potential for disturbance is considered to be limited.

Disturbance of seals on land or when 'bottling', caused by noise associated from terrestrial blasting, was also considered. As a 6m high bund will be created and a 6dB noise reduction is expected as the distance from the source doubles, it is considered unlikely that seals using regular haul out spots (closest being 7km west), or those at sea at the waters surface (bottling) will be negatively impacted to a population level from terrestrial noise associated with blasting.

The dredge disposal site is < 4.5km from a designated seal haul out site (Selwick) for grey and harbour seals, therefore both seal species associated would likely forage and commute as well as haul out on land in proximity to the disposal site. However, the last counts for the Selwick haul out site recorded only 17 harbour seal, with numbers generally considered low. In addition, the disposal site has been active since 2020, and therefore it is likely that seals within the Selwick haul out site would have become relatively used to vessels travelling to and disposing dredge materials over the past five years it has been open.

Due to protocols, controls and mitigation outlined in section 5 of the Seal Risk Assessment and Chapter 12 of this SEI Report, it is considered unlikely that seals will be negatively impacted from dredging or vessel movements during the construction phase.

5.5.6 Construction (Airborne) Noise

The Construction activities have been highlighted in the Airborne Noise Report (Technical Appendix 9.1 of the EIAR dated August 2024) and noise contour maps have been prepared (see Appendix B of the HRA (Appendix B of this SEI Report)), which demonstrate noise creation levels of between 70 and 90dB at 10m from source, with noise levels decreasing over distance. With the creation of a 6m bund on the seaward side of the working area, the noise maps demonstrate that noise levels beyond the seaward bund would be between 40-50dB in the immediate vicinity of the bund and dissipate to <35dB at 250m. A study compiled by the Institute of Estuarine and Coastal Studies (IECS), University of Hull (2009) found that construction noise emissions below 50 dB had a low effect and no impact on waterbirds. Disturbance noise above 70 dB resulted in a moderate to high effect to birds resulting in movement within the feeding zone. The study concluded that construction noise levels should be restricted to below 70 dB.

Bird heat maps and noise contour maps have been created for the following:

- Great Northern Diver
- Slavonian Grebe

- European Shag
- Eider
- Red-breasted Merganser
- Long-tailed Duck
- Red-throated Diver

5.5.7 Terrestrial Blasting

Terrestrial blasting activities will occur on site. There will likely be one blast per week over 35 weeks.

Terrestrial blasting associated with the construction phase could cause disturbance to Great Northern Diver via noise. However, routine blasting operations regularly generate air overpressure levels at the closest point to blast area of around 120 dB but the intensity of these noise levels experienced at a distance from the blast site are affected by a range of meteorological conditions (wind speed and direction, temperature, cloud cover and humidity) and in general reduce by 6 dB as the distance from the source doubles, and when the sound waves pass a given position, the pressure of the air rises very rapidly then falls more slowly then returns to the ambient value after a number of oscillations.

BS 6472-2:2008 (Guide to evaluation of human exposure to vibration in buildings - Blast-induced vibration) states that "*Accurate prediction of air overpressure (from blasting) is almost impossible due to the variable effects of the prevailing weather conditions and the large distances often involved*."

As referenced by guidance, it is not possible to predict with accuracy the likely levels of air overpressure that will be generated at receptors by the proposed blasting due to high level of variables involved. The best way to control air overpressure is through good blast design and an appreciation of how local weather conditions can influence levels and impacts. Best practice measures will be recommended to minimise vibration and air overpressure generation due to blasting. It should be noted, however, that once a blasting contractor is commissioned a blast strategy will be prepared and issued to Regulators as part of the detailed CEMD.

Disturbance of seals on land or when 'bottling', caused by noise associated from terrestrial blasting, was also considered. As a 6m high bund will be created and a 6dB noise reduction is expected as the distance from the source doubles, it is considered unlikely that seals using regular haul out spots (closest being 7km west), or those at sea at the waters surface (bottling) will be negatively impacted to a population level from terrestrial noise associated with blasting.

5.5.8 HRA in Combination Effects

At the request of NatureScot, a more robust cumulative assessment was required, including, but not limited to, aquaculture sites, renewables energy developments and other harbour developments.

It is a requirement of Appropriate Assessment that the cumulative or in-combination effects of the proposed development together with other plans or projects are assessed. Cumulative impacts can be defined as a project/plan/programme likely to have a significant effect thereon, either individually or in combination with other plans or projects. In- combination effects associated with the construction phase only were considered. It was agreed in- combination operational impacts would be considered as a separate assessment, as the project details developed [2].

In order to adequately assess in-combination effects, a thorough search of both the MD-Lot planning portal and the Orkney Islands Council planning applications portal. By default, all aquaculture sites within

[2] Agreed during design team meeting with NatureScot 19th December 2024.

Scapa Flow SPA are included, regardless of time since the application was decided. In addition, aquaculture sites elsewhere in Orkney that could cause impacts to the qualifying features of Sanday SAC are also included. Given that harbour seals can travel up to 50km from haul out and pupping sites, a 50km radius was used for determining projects to screen for in-combination assessment. The MD-Lot planning portal does not have a map search feature to enable a quick search for planning applications within this distance, so best judgement based on site names and project descriptions was made.

For other development sites, a search of both planning portals for developments since 2022 was undertaken and a determination made whether to screen them in or out for assessment. Projects were screened out if there was no information on project specifics such as impacts or adverse effects on SPA/SAC qualifying features or if projects were deemed to have been completed (ie marine licence expiry).

Table 12.1 within the HRA (Appendix B) below the sites taken forward for in-combination effects and provides information and predicted impacts on designated sites.

In isolation, with mitigation, the Proposed Development will not have an adverse impact on the integrity of the designated sites assessed. From a review of the other projects assessed as part of this process, no significant impacts are predicted. Therefore, it is considered highly unlikely that the Proposed Development would contribute cumulatively to adverse effects on the integrity of these designated sites A search of all existing and planned aquaculture sites with the potential for adverse effects on the integrity of Scapa Flow SPA, North Orkney SPA and Sanday SAC was undertaken, along with a search for proposed renewable sites and harbour developments. The list below provides the results of that search, and which are taken forward for an assessment of in-combination effects:

- Hatston Orkney Logistics Base: Planning Application 23/256/NATEIA
- Westbister Fish Farm: Planning Application 15/409/MAR
- Veantrow Bay, Shapinsay Orkney Fish Farm: Planning Application 24/423/MARMAJ
- Bring Head Fish Farm: Planning Application 21/411/MAR
- Toyness Fish Farm: Planning Application 21/410/MAR
- South Cava Fish Farm: Planning Application 17/134/MAR
- Chalmers Hope Fish Farm: Planning Application 20/231/MAR
- Lyrawa Bay Fish Farm: Planning Application 18/057/MAR
- Pegal Bay Fish Farm: Planning Application 18/058/MAR
- Hunda North Fish Farm: Planning Application 17/198/MAR
- Noust Geo Fish Farm: Planning Application 14/202/MAR
- Wyre Fish Farm, Gairsay Sound: Planning Application 23/183/MARPN
- Quanterness Fish Farm: Planning Application 24/216/MAR
- Warebeth And Seabed Offshore, Stromness, Orkney: Planning Application 25/117/WL

5.5.9 Groundwater Dependent Terrestrial Ecosystems (GWDTE) and Biodiversity Net Gain (BNG)

SEPA provided comments on the 4th November 2024, relating to two specific issues, the creation of tufa springs and the feasibility of achieving Biodiversity Net Gain (BNG). The below points relate to the perceived issues regarding tufa springs within the SDWQ site:

1. We requested that the applicant provide evidence that the mitigation proposal is feasible, given the specific conditions at the site, and to demonstrate that a similar approach has been successful elsewhere. The information provided does not answer any of our concerns regarding the proposed mitigation for the tufa forming springs.
2. The engineering options suggested do not provide a considered solution and also have not been shown to be successful elsewhere.

3. It remains unclear whether the bedrock face is to be cleared as an integral part of the works or purely to provide the opportunity to create compensatory habitat. The impact of exposing the bedrock on existing habitat or rock conditions must be considered.

The below point relates to the BNG undertaken for the SDWQ site.

4. The compensatory habitat creation would be acceptable if it is restoring something previously damaged or enhancing a habitat so it has more ecological value but the applicant would need to prove that this is the case and that it is feasible.

GWDTE

Additional information and updated assessment of effects associated with amendments to the Proposed Development or in response to statutory consultee comments are outlined below:

The Deepdale Vegetation Survey (Phase 1 and National Vegetations Classification (NVC)) Report (October 2022) identifies tufa forming springs along the cliffs within the site (considered equivalent to M37 and M38 *Cratoneuron Springs*) as being clearly fed by groundwater emerging from bedrock and are described as highly calcareous because of surrounding bedrock composition.

The tufa forming spring communities will be lost because of the Proposed Development during creation of the laydown area. As a result of the location of these communities on the cliff face (near full extent of the coastline within the site boundary), it is not possible to avoid these communities or mitigate impacts through design (answering Point 3 above). Therefore, the proposed development is assessed as having a High impact on Ground Water Dependant Terrestrial Ecosystems (GWDTE) (Medium sensitivity) giving rise to effects of Major significance prior to mitigation.

As such it is proposed that the loss of these communities is offset by compensatory habitat creation within the cut faces of the laydown area in the northeast of the site. The same bedrock unit extends throughout the site, and it is considered that by exposing the bedrock face this will provide suitable opportunities for the creation of compensatory habitats. By design, the tufa forming springs may be re-created within the development as the rock face at the rear of the laydown area is the same as the existing cliff face and is likely to have the same ground water intrusions flowing through.

The act of removing the existing cliff face, may expose bedding planes (interfaces between rock layers) and create or enlarge fractures in the rock, which can act as pathways for groundwater flow, leading to the emergence of springs and tufa deposition. The re-establishment of tufa deposition has been recorded in limestone quarrying, such as at the Shapfell Quarry in Cumbria. Blasting ceased at the Shapfell Quarry in 2009 and by 2019, gour pools which represent deposition of tufa had formed (answering Point 1 and 2 above). The speed of formation and pristine nature of tufa deposition was noted by geologists studying the now redundant quarry. This highlights that the proposed compensatory habitat creation as part of the SDWQ, may be successful and that the timeframe for establishment of the tufa springs may be relatively quick, circa, 10 years.

BNG

Regarding BNG, the Feasibility Assessment undertaken in June 2024 identified that to achieve a 10% gain, both onsite and offsite habitat enhancement and creation would be required. At the time of writing the BNG Feasibility Assessment and this SEI, land within the control of the OICHA and suitable for the application of enhancement and creation measures, has been identified at Hatston Pier, Orkney (Grid Reference: HY 43095 12969). Additionally, habitat restoration at the community led, Quarterness Windfarm[3] is being considered as an opportunity to achieve BNG. Quarterness is near Hatston Pier

[3] Quarterness Windfarm. Available at: https://orkneywindfarms.co.uk/quanterness (Accessed May 2025)

(approximately 2.4km west). Further opportunities for habitat enhancement and creation have also been identified by the Environmental Planner for Orkney Islands Council at Papdale East Park (Grid Reference: HY 45863 10498) and Balfour Hospital, Kirkwall (HY 44458 10109).

Additional sites identified by OICHA who as the responsible legal entity have a firm commitment to biodiversity enhacement, include redundant quarries which are in need of restoration, and several potential sites associated with proposals such as those to enhance biodiversity and reduce maintenance within the Grainebank SuDS areas (subject to consultation and permission).

Within the Scottish context, BNG is a concept where development projects are designed to achieve greater biodiversity value than before the development. It is not yet mandatory within Scottish legislation, but its principles are promoted through the National Planning Framework and Guidance. Therefore, regarding the SDWQ context, there may be an opportunity for a bespoke suite of habitat enhancement and creation measures, both onsite and offsite to achieve BNG. The measures may not directly align with trading rules stipulated within the Statutory Metric but if ambitious and well-designed landscaping measures, tailored to each location are created and appropriately managed, an overall BNG in the wider Orkney context can be achieved (answering Point 4 above).

There is a commitment to provide further detail creation and delivery of habitat features within the rock armour, on the quay wall and the installation of Guillemot next boxes within the Biodiversity Enhancement Management Plan. It has been agreed in principle with OIC Planning that BNG commitments will be agreed post-consent, enforced by condition, should planning permission be granted.

Intertidal/Rocky Shore Surveys

Ongoing Scapa Deep Water Quay intertidal/Rocky Shore surveys have been undertaken on 22/23 May 2025 by a team led by Jenni Kakkonen, Orkney Independent Marine Advisory Group (OIMAG).

The results of these surveys could feed into future detailed BNG plans that will be produced post-consent and consulted upon with OIC Planning and relevant stakeholders.

5.6 Mitigation Measures

The following mitigation will be employed to avoid and minimise impacts occurring both during the construction and operational phases of the proposed development:

- Ornithological monitoring to be undertaken during the construction phase and during years 1, 2, 3, 5 and 10 of operation to assess whether the populations of SPA species has been maintained. This will focus on the area around the proposed development (where the new/novel vessel route is situated and around Scapa Pier and surrounding areas where there will be a significant reduction in port services vessels). The monitoring methods and reporting outcomes will be discussed and agreed with NatureScot, along with any required mitigation measures depending on survey results;
- Production of a Vessel Management Plan, with input from NatureScot, for the Construction phases which will detail vessel routes, speeds etc to minimise, and where possible, avoid any disturbance impacts;
- Adherence to measures set out in the Construction Environmental Management Document (CEMD), Biodiversity Action Plan (BAP) and Biodiversity Net Gain (BNG) document.
- Deployment of an Ornithologist and marine mammal observer to monitor for the presence of qualifying species of the Scapa Flow SPA, and cetaceans and pinnipeds (in particular harbour seal) in the vicinity of the Proposed Development during terrestrial blasting and dredging works;
- Production and adherence to detailed Seal Protection Plan (SPP);
- Production and adherence to a detailed Pollution Prevention Plan;

- A silt boom to contain fine sediments will be used whilst reclamation work activities are undertaken.
- Controls and mitigation measures will be implemented when undertaking terrestrial blasting, including screens and bunding to dampen sound, this will also reduce the effects of noise on seals on land. The CEMD will detail mitigation measures to avoid significant impacts on marine bird species, including Great Northern Diver. This includes the presence of an ornithologist to monitor for the presence of SPA qualifying species within 500m of the Proposed Development and record behavioural responses within this zone. If impacts are recorded, then the disturbance zone shall be increased.
- The seal mitigation will comprise a standard Marine Mammal Observation Protocol (MMOP) as per JNCC guidance will be implemented during dredging operations in sea states less than 4 and during times of optimal visibility.
- The Seal Observation Protocol (SOP) will be implemented so that the construction and dredging works do not cause injury or unnecessary disturbance to seals.
- A mitigation zone (a pre-agreed radius) around dredging site prior to any works is implemented. The radius of the mitigation zone should be 500m for each activity to cover the PTS and TTS ranges of the activities.
- The MMO protocol implemented for dredging will also be undertaken for terrestrial blasting and (as stated above) a 6m high bund will be formed at the seaward boundary of the site by retaining the existing land and excavating behind, creating a natural noise screen from terrestrial blasting (and other works) and will only be removed once the site is excavated to the final profile. This would reduce the effects of noise on seals on land. Additional mitigation methods for terrestrial blasting that should also be considered to be implemented for terrestrial blasting include:
    - During terrestrial blasting, minimising air overpressure at the source, such that, even under unfavourable weather conditions, all such energy is within acceptable criteria at distance, remains the best practicable approach. It is an approach that all surface mineral sites are obliged to follow under the provisions of The Quarries Regulations 1999.
    - Detonating cord should be used as sparingly as possible, and any exposed lengths covered with as much material as possible. Just a few feet of exposed cord can lead to significant amounts of audible energy and, hence, high air overpressure levels. Stemming release can be controlled by detonation technique, together with an adequate amount of good stemming material. It should be noted however that detonation cord and stemming release have been virtually eliminated with the use of in hole initiation techniques.
    - If the use of exposed detonating cord is avoided the characteristic noise of a blast is no longer a sharp crack but rather a dull thump. This is partly due to the detonating sequence and partly due to natural energy dissipation and reduction. Whilst some of the noise perceived by a neighbouring resident would be directly from the blast itself, the lower frequency components of the air overpressure might well induce secondary rattling of windows and ornaments within a property which could augment the overall effect.
    - Thus, in terms of noise control or reduction in the care and attention to blast design and subsequent implementation, including initiation, necessary for the control of air overpressure is equally applicable to noise.
    - BS 6472-2:2008 states that “The highest [air overpressure] levels normally measured in the United Kingdom are generally less than 1% of the levels known to cause structural damage.” Therefore, by implementation of the best practice measures, effects due to air overpressure generation by the Proposed Development are anticipated to have a negligible effect on seals in terrestrial environments.

- The vessel movement mitigation protocol has remained similar to that of the marine mammals, however there has been an addition to include incorporation of the Scottish Marine Wildlife Watching Code into the vessel management plan.
- Re-establishing natural vegetation, including mosses and other aquatic plants, to help stabilise the tufa deposits and improve habitat quality;
- Reducing nutrient runoff from agriculture and other sources to help improve water quality and protect the sensitive ecosystems in tufa springs;
- Protecting areas around tufa springs from development and other destructive activities for long-term conservation; and
- Regular monitoring of water flow, water quality, and the health of tufa structures is essential for evaluating the effectiveness of restoration efforts and making adjustments as needed.

5.7 Updated Residual Effects

There are no updates to the residual effects detailed in Chapter 5 of the EIAR (August 2024).

5.8 Summary and Conclusions

The potential effects of the proposal on the designated features of the European designated sites were considered as part of a Habitats Regulations Assessment (which included input from a Seal Risk Assessment (Appendix D)).

Likely Significant Effects (LSE) on Scapa Flow Special Protection Area (SPA), North Orkney SPA, Orkney Mainland Moors SPA, Hoy SPA, Loch of Stenness Special Area of Conservation (SAC) and Sanday SAC could not be ruled out during the screening stage of the assessment; and so an Appropriate Assessment (AA) has been conducted to ascertain whether the proposed works will adversely affect the integrity of the sites' qualifying features.

During the AA process it was possible to rule out adverse effects from impacts to the assessed designated sites.

Potential impacts to SPA qualifying bird species and harbour seal (designated features of Sanday SAC) include disturbance as a result of noise, vibration, human presence and light pollution during construction activities, indirect impacts from accidental pollution incidents or increased sedimentation and turbidity during works impacting water quality and therefore food availability and harbour seals could be subject to death or injury through underwater noise or collision with vessels during works. However, assuming mitigation during the construction phase is implemented, the works are not considered to impact the integrity of sites or designated feature.

6 ARCHAEOLOGY AND CULTURAL HERITAGE

6.1 Introduction

This section considers whether any updates are required to the conclusions of the assessment provided in Chapter 6 of the EIAR (July 2023 and updated in August 2024) as a result of the amendments to the Proposed Development.

As noted in the previous EIARs and supprting information further investigation of “Site 2” will be carried out prior to construction commencing.

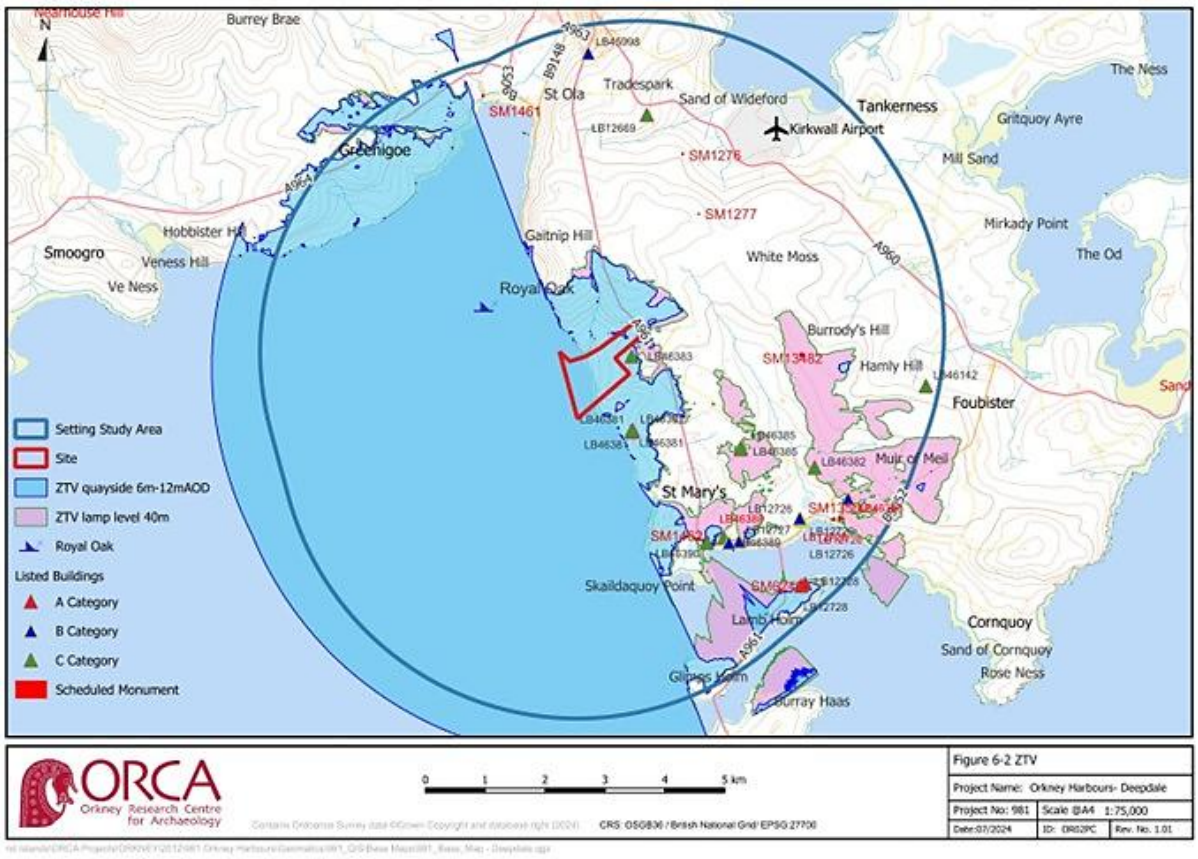
6.2 Updated Baseline Conditions

There are no updates to the baseline conditions detailed in Chapter 6 of the EIAR (July 2023 and updated in August 2024). The Proposed Development footprint for the caisson design does not change from that proposed for the Exemplar Design.

As there are no changes to either the baseline conditions or the Proposed Development, the main assessment presented in Chapter 6 of the 2023 and 2024 EIARs remain unchanged.

Consultation feedback stated ‘*EIAR Figure 6-2 ZTV is a crude image that lacks detail and does not appear to correlate with SLVIA ZTV Figures 7-5 and Figure 7-7 in Volume 2 of the EIAR. No study area has been shown on the figure*.’

An updated Figure 6-2 has been added below.



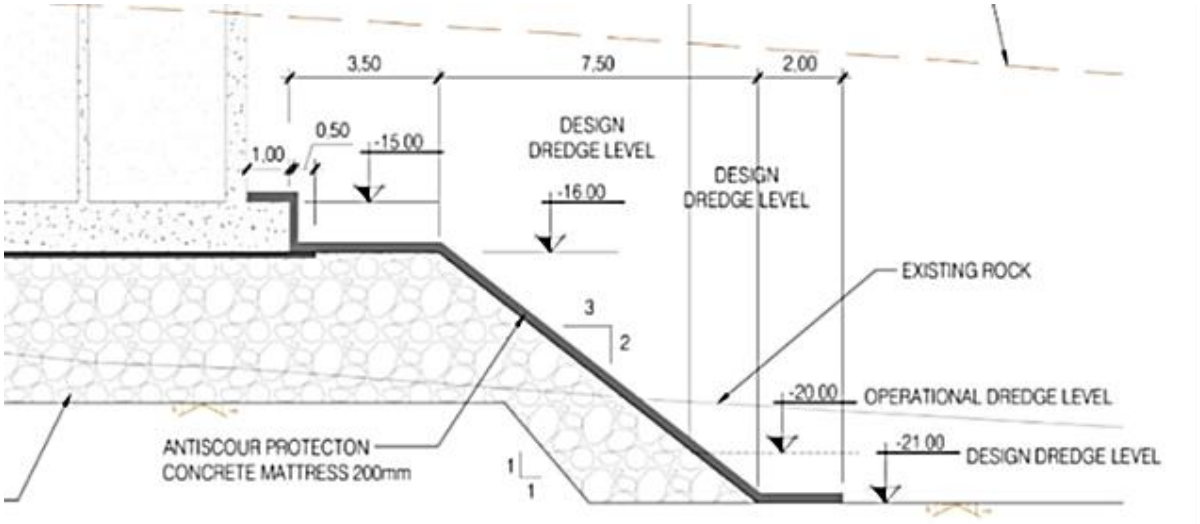
6.3 Future Baseline

In the absence of SDWQ, it is probable that there would be little or no change to the baseline condition of the various heritage assets and features that presently survive within the cultural heritage study area. Within the site, the grassland within a few meters of the cliff top has been enclosed and improved for agriculture. The fields closest to the coast appear to be the least improved, having been used for grazing only. The fields further inland have been ploughed, re-seeded and used for silage production. Within the grazed fields closer to the coast, there are several areas of marshy grassland where sub-surface water emerges and trickle feeds down channels onto the beach. As such, agricultural land use would be likely to continue, and that activity would continue to exert an attritional influence on any buried archaeological remains or deposits that may be present within the Proposed Development site.

6.4 Updated Potential Effects

In line with Orkney Islands Council comments to mitigate the impact of propeller wash and scour on historic assets, rock armour will be installed at SDWQ to mitigate seabed erosion caused by vessel thrusters and propellers near the quay.

Due to natural waves and the movement created by the props and thrusters of ships coming into the facility, the embankment or subgrade material will scour and potentially compromise existing infrastructure. In areas where the foundation is not directly on rock, scour protection will be provided with a 200mm antiscour protection concrete mattress as shown below.



6.5 Mitigation Measures

It is anticipated that the mitigation measures already identified within Chapter 6 of the EIAR (July 2023 and updated in August 2024) will remain appropriate.

As a precaution, a watching brief will be maintained to assess the potential for unrecorded buried archaeological artefacts/remains within the Proposed Development area. Should archaeological remains be identified a Written Scheme of Investigation (WSI) will be developed and agreed with the Regulator(s).

6.6 Updated Residual Effects

There are no updates to the residual effects detailed in Chapter 6 of the EIAR (July 2023 and updated in August 2024).

6.7 Summary and Conclusions

Chapter 6 of the EIAR considered the likely effects of the proposed development on archaeological assets (both onshore and marine), historic buildings, and other aspects of the historic environment.

Baseline conditions were established through a desk-based assessment of existing archaeological and documentary evidence, a site walk-over survey, and an assessment of stratigraphic records of core samples collected during geotechnical survey work.

These studies have established that there are no designated heritage assets within the site or in close proximity to the site and that the proposed development will not have a significant impact on the significance or setting of any designated heritage assets in the surrounding area. No marine heritage assets or sediments of interest for palaeoecological study have been identified within the site.

The baseline studies identified two heritage assets within the site which could be impacted by the proposed development; a dyke and sheep pens and a possible prehistoric mound. The assessment findings within Chapter 6 of the EIAR are unlikely to change as a result of the design changes (exemplar design to caisson design). The mitigation within Chapters 6 and 11 of the EIAR remains valid.

7 SEASCAPE, LANDSCAPE AND VISUAL IMPACT

7.1 Introduction

This section considers whether any updates are required to the conclusions of the assessment provided in Chapter 7 of the EIA Report (July 2023 and updated in August 2024) as a result of the changes to the Proposed Development.

Consultees noted that the design drawings (Volume 2: Contents Figures) make no provision for onsite landscaped areas. These drawings will be developed at detailed design stage and will be submitted for approval. No works shall commence on site until details for the provision for onsite landscaped areas, including trees or other planting have been submitted for approval by OIC.

With reference to consultee comments relating to offshore wind turbine components, there is no information currently available for this activity, however, these activities (if they are to be undertaken at SDWQ) will be subject to permissions outwith this application. This has been consulted on and agreed with project team members within MD-LOT.

7.2 Updated Baseline Conditions

There are no updates to the Landscape and Visual Baseline Conditions detailed in Chapter 7 of the EIAR (August 2024). As stated within Section 2.2 of this SEI Report, based on consultee feedback the project team has taken proactive steps during the design and environmental assessment process to reduce the potential negative impacts of the project, a crucial part of responsible project management (mitigation by design), aiming to prevent or minimise environmental impacts before they arise. It must be noted that the overall development footprint and dredge area remain unchanged from the previous exemplar design.

The design has evolved to introduce caissons as opposed to the exemplar design which incorporated a main quay berth face as a solid quay constructed of steel tubular piles with interlocking sheet piles forming a combi wall solution with a further inner tied sheet pile anchor wall. The anticipated tubular steel piles (approx. 2.1m dia.) for the quay wall required drilled rock sockets to provide suitable pile toe fixity below -15m Chart Datum (CD) dredge level. There would be Bauer BG41 Drill rigs or similar working over water from temporary piling platforms from the reclamation bund or a jack up barge with silt booms placed to the seaward side. This combi quay wall was to support a concrete cope and deck directly behind followed by general hardcore surfaced laydown reclamation area and drainage outside the immediate wall active wedge area. The caisson design replaces the exemplar design.

With reference to consultee comments relating to offshore wind turbine components, there is no information currently available for this activity, however, these activities (if they are to be undertaken at SDWQ) will be subject to permissions outwith this application. This has been consulted on and agreed with project team members within MD-LOT.

7.3 Future Baseline

The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017, require that a "*description of the relevant aspects of the current state of the environment (the "baseline scenario") and an outline of the likely evolution thereof without development as far as natural changes*

from the baseline scenario can be assessed with reasonable effort, based on the availability of relevant information and scientific knowledge".

To ensure that the Proposed Development is assessed against a realistic baseline scenario, i.e., what the baseline conditions are likely to be once the Proposed Development is operational, a description of the likely future baseline conditions is provided within this section.

In the absence of the Proposed Development proceeding on the site, the land is considered most likely to remain in its present condition, agriculture would continue as the principal land use. New Government policies may result in different agricultural practices being subsidised so that land uses and land management practices can, for example, reduce or offset carbon emissions. There may also be increases in food production in the UK to reduce the need to import, which may also change farming infrastructure and practices. Whilst it is acknowledged that there may be some change in the future baseline, the LVIA has not assessed these due to the uncertainty surrounding the nature, type and/or timing of changes to the baseline.

7.4 Updated Potential Effects

Chapter 7 of the EIAR (July 2023 and updated in August 2024), included a full consideration of the potential landscape effects of the original exemplar design proposal, based on the sensitivity of each landscape receptor to the proposals and the potential magnitude of landscape effects.

It is important to note that the caisson development extent remains unchanged from the exemplar design. A description of the caisson design is provided in Chapter 2 of this SEIR report.

Following the fabrication of the caissons in a floating dock in Spain, they will be towed to a sheltered area within the port basin. There, they will be stored in a floating condition, secured with mooring lines/anchors until the arrival of the semisubmersible and will be transported to Orkney and stored within the project area, as shown in Diagram 2-8. They will be prepared with the installation of auxiliary equipment such as winches, mooring ropes and anchors, walking platforms, ballast systems, topographic prisms and fenders. Once the weather conditions permit, they will be sunk into their final positions.

The process of installing the caissons will take approximately 7.3 weeks and each installation is typically performed in around 6-8 hours given suitable metocean conditions. Any temporary storage will be within the project boundary.

The change from the exemplar design to caisson means the design of lighting columns etc, has not changed at this time, and is as assessed in Section 6.6.2 (Impacts during operation) of the August 2024 EIAR.

To prepare this Chapter of the SEIR the potential effects of the amended Proposed Development upon each of the landscape receptors have been considered afresh. The results of which are summarised below.

7.4.1 Sensitivity of the Landscape Receptors

The overall development footprint of the caisson design remains unchanged when compared to the exemplar design. The value of the receptors, and their susceptibility to the type of development proposed, would not change. As a result, the sensitivity of the landscape receptors as assessed in Chapter 7 of the EIAR (July 2023 and updated in August 2024) would not change.

7.4.2 Magnitude of Potential Landscape Effects

The overall area of the proposed built form, the proposed character and the position of development remain the same as in the original proposal.

Similarly, and as is discussed in relation to visual effects below, the overall extent of the potential visibility of the Proposed Development would be the same as the original, the main change in terms of visual effects would be the removal of interlocking sheet piles forming a combi wall solution with further inner tied sheet pile anchor wall to caissons (as shown in Chapter 2).

As a result of the design change, the size and scale of the effect of the amended Proposed Development on the landscape receptors, and the geographical extent of those effects, would remain the same when compared with the assessments included in Chapter 7 of the EIAR (July 2023 and updated in August 2024). Furthermore, the duration of the construction phases would be reduced significantly as the proposed development will be completed approximately ten months early when compared with the exemplar design duration of 52 months (refer to Section 2.2.14 of this SEIR), and the Proposed Development would remain permanent.

It is therefore concluded that the magnitude of the effect on the landscape receptors would not change from those levels assessed in Chapter 7 of the EIAR (July 2023 and updated in August 2024).

7.4.3 Assessment of Landscape Effects During Construction and Operation

It is concluded that the assessment of landscape effects in the Construction and Operation Phases, as set out in Chapter 7 of the EIAR (July 2023 and updated in August 2024), would not change as a result of the amendments to the Proposed Development.

7.5 Mitigation Measures

The mitigation and monitoring would not change as a result of the amended Proposed Development and is as set out in Chapter 7 and Chapter 11 (Schedule of Mitigation) of the EIAR (July 2023 and updated in August 2024).

Design drawings will be developed at detailed design stage and will be submitted for approval. No works shall commence on site until details for the provision for onsite landscaped areas, including trees or other planting have been submitted and approved by OIC.

7.6 Updated Residual Effects

There would be no change to the residual landscape effects as set out in Section 7.8 of the EIAR (July 2023 and updated in August 2024).

7.7 Summary and Conclusions

The proposed change from the exemplar design to the caisson design, and the overall extent of the amended Proposed Development, would result in no changes to the construction, operation and residual landscape effects as assessed in Chapter 7 of the EIAR (July 2023 and updated in August 2024).

As noted within Chapter 2 of this SEIR, the duration of the construction phases would be reduced significantly as the proposed development will be completed approximately ten months early, when

compared with the exemplar design duration of 52 months. Caissons will be unloaded from the semisubmersible vessel to the quay location and stored within the project area, as shown in Diagram 2-8. They will be prepared with the installation of auxiliary equipment such as winches, mooring ropes and anchors, walking platforms, ballast systems, topographic prisms and fenders. Once the weather conditions permit, they will be sunk into their final positions.

Seascape, coastal, landscape and visual effects would remain significant and adverse during both the construction and operational phases of the proposed development. Significant effects during construction would be localised and largely associated with visual effects on nearby residential properties. Significant operational effects would be more widespread. The proposed lighting would be a particular source of adverse landscape and visual effects both at a local, i.e. within 2km from the site, and wider scale.

The significant effects on seascape, coastal and landscape character would be associated principally with landscape and coastal areas on the eastern side of Scapa Flow in the southern part of the Mainland. Significant seascape, coastal and landscape effects would not extend to areas to the north, south or west of Scapa Flow as a result of the caisson design.

The significant coastal and landscape effects associated with the caisson design would remain as they were with the exemplar design, and would continue to be associated with areas within approximately 2km of the site at the Bay of Deepdale coastal pastures (the host landscape area and coastline) but also extend to adjacent areas on the southern slopes of Gaitnip Hill, immediately to the north, as a consequence of views down across the site. The significant effects relate to the relatively undeveloped nature of this area with an absence of large-scale infrastructure. Although anchored rigs are often positioned out to sea, the coastline itself is relatively undisturbed and inaccessible.

The Caisson design as per the exemplar design would not have a significant effect on the Hoy and West Mainland National Scenic Area (NSA).

Major adverse and significant visual effects would remain the same and principally be associated with residential locations within approximately 2km of the site, however, would extend more widely where sensitive views exist. Five of the seven principal representative viewpoints assessed would be subject to long term residual significant visual effects (moderate and major). The exception to this would be the more distant views from Scorra Dale and South Ronaldsay from where the currently undeveloped character of the coastline between Scapa Pier and Howequoy Head is less apparent. The undeveloped nature of this section of coastline is, however, more apparent in views from distances of up to 5km to 7km, such as at Wester Greenigoe and Burray, especially where the foreground comprises open sea or undeveloped coastline. Residential locations within 2km of the site subject to major adverse and significant visual effects would remain as those identified during the exemplar design assessment i.e. at RL1 Fernbank, RL2 Rashieburn, RL3 Netherbutton, RL7 Quoylobs and RL9 Backakelday.

Opportunities to mitigate adverse landscape and visual effects are limited due to the scale of the proposed development and the visually open character of Orkney. Screening the proposed development using either bunded material or planting is not feasible due to the exposed coastal location and topographical context. Design drawings will be prepared and submitted to the Regulator specifying onsite landscaped areas, including trees or other planting. These drawings shall detail where landscaped areas will be established, and how these landscaped areas will be integrated with the proposed drainage, transport, access, active travel and biodiversity enhancement provisions.

8 SOCIO-ECONOMICS

8.1 Introduction

This section considers whether any updates are required to the conclusions of the assessment provided in Chapter 8 of the EIAR (July 2023 and updated in August 2024) as a result of the amendments to the Proposed Development.

8.2 Updated Baseline Conditions

For the purposes of this SEIS (May 2025), and consistency with the rest of the SEIR, it is assumed there are no changes to the baseline socio-economic conditions. There are therefore no updates to the assessment baseline criteria detailed in Chapter 8 of the EIAR (July 2023 and updated in August 2024).

8.3 Future Baseline

Based on the Socio-Economics assessment within Chapter 8 of the EIAR (July 2023 and updated in August 2024) construction of the exemplar proposed development was considered likely to provide beneficial increased employment impacts for the local study area (see Tables 8-12 and 8-13 within Chapter 8 in the August 2024 EIAR).

Due to the scale of the proposed exemplar development (estimated overall project cost of £218.5m) the design team anticipate it is likely that the construction workforce will comprise a mix of local, mainland Scotland and international workers. Therefore, there is likely to be leakage in terms of additionality, whereas the temporary recruitment of construction workers outside of Orkney will likely have a direct minor benefit to the wider economy of mainland Scotland and to a lesser extent the UK and EU (likely negligible).

As part of the consultation engagement, local residents raised concerns regarding an increase in construction personnel in the local study area and the impact on the capacity of local hotels and other available accommodation. Based on the caisson development option, the duration of the construction phases would be reduced significantly as the proposed development will be completed approximately ten months early when compared with the exemplar design duration of 52 months and reduce construction personnel on site. In addition, the caissons will be manufactured off site in Spain and this will again reduce the number of construction personnel on Orkney.

Based on the amended caisson design, at this stage, there is insufficient detail on the value of the jobs, the amount of employment, the opportunities and training for locals, and the temporary nature of construction jobs, this is considered of minor magnitude.

Once operational, increased capacity at SDWQ as a result of the proposed development would likely facilitate provision for new industry at the harbour.

As noted within Chapter 8 of the August 2024 EIAR, employment impacts including Gross Value Added (GVA) are now anticipated to be greater than assessed in the Outline Business Case (OBC) for Orkney Harbours Masterplan Phase 1 Projects. The Floating Offshore Wind Manufacturing Investment Scheme (FLOWMIS, 2023) estimates Present Values of the labour market, wage premium, and carbon savings benefits of approximately £263m calculated in the FLOWMIS business case, with a Present Value of direct benefits of £394m.

Other key benefits include agglomeration, supply chain enhancement and clustering effect. An increase in business opportunities across a range of competencies focussed on port operations, renewable energy and technology can be expected.

This is likely to have a beneficial impact on the local economy but it is unknown if the capacity in the local economy would facilitate a material change for key receptors. It is therefore considered at a minimum a minor impact.

8.4 Updated Potential Effects

Chapter 8 of the EIAR (July 2023 and updated in August 2024), included a full consideration of the potential socio-economic effects of the original exemplar proposal.

The Proposed Development, as amended, will continue to deliver SDWQ that aims to meet the needs of the future Orkney population, and therefore by its nature includes a degree of embedded mitigation in relation to socio-economics.

The contractors' delivery strategy simplifies logistics and programme stress by fabricating caissons off site at Langosteira Port in Spain. The caissons will be transported to the site as complete units. This reduces the duration and volume of on-site equipment, resources and potential accommodation requirements. The key aspects of the logistics strategy are highlighted below:

8.5 Mitigation Measures

There is no change to the mitigation measures during the construction or operational phases to those identified in Chapter 8 and Chapter 11 of the EIAR (July 2023 and updated in August 2024).

8.6 Updated Residual Effects

There are no changes to the previous assessment (Chapter 8 of the EIAR (July 2023 and updated in August 2024).

8.7 Summary and Conclusions

The amended caisson development includes a shorter project timescale by approximately ten months early, when compared with the exemplar design duration of 52 months which would mean SDWQ would be operational well ahead of target. In EIA terms, there is little change to the effects identified in Chapter 8 of the EIAR (July 2023 and updated in August 2024).

9 AIRBORNE NOISE

9.1 Introduction

Consultee comments were received for this topic and relate to disturbance to SPA qualifying bird species and harbour seal, therefore, the chapter is considering design changes. For disturbance to birds and harbour seals please refer to Appndix B (Habitat Regulations Appraisal) and Appendix D (Seal Risk Assessment).

This Chapter therefore, considers whether any updates are required to the conclusions of the assessment provided in Chapter 9 of the EIAR (July 2023 and updated in August 2024 and Technical Appendix 9.1) as a result of amendments to the Proposed Development.

9.2 Updated Baseline Conditions

For this SEI Report (May 2025) there are no changes to the baseline noise conditions as stated within the Noise Impact Assessment (NIA) (July 2023).

As noted within the NIA (July 2023) background noise was associated with road traffic passing on the A961. During breaks in passing traffic, some low frequency rumble and faint tonal components were heard from vessels in Scapa Flow. Some bird calls and aircraft approaching Kirkwall Airport were also heard.

9.3 Future Baseline

With reference to the Institute of Environmental Management and Assessment (IEMA) *Guidelines For Environmental Noise Impact Assessment,* it is stated that '…*when considering future baseline noise levels it is considered good practice not to include the influence of the scheme itself; although 'organic' changes due to sources that are not associated with the scheme can be taken into account*.'

The future baseline scenario of the Development Site therefore refers to the likely future background noise levels at nearby Noise Sensitive Receptors (NSRs), without the Proposed Development. To establish what this is likely to be, the current state of the environment (i.e. the baseline scenario) is considered and natural changes from this can be derived using available environmental information.

The future background noise levels at the NSRs will depend on the contributing noise sources. It is not possible to know whether the contributing noise sources will change over time. The future baseline scenario is therefore limited by the assumption that the noise sources observed to be contributing during the measurements will continue to be dominant in the future.

Changes in road traffic flows are considered to have the greatest potential to affect the future baseline noise levels at the Development Site. Changes in road traffic occur due to natural population change and/or new developments and infrastructure within the local and wider area.

9.3.1 Updated Potential Effects

The prefabrication of caissons off site in Spain allows for a shortened programme and reduces environmental impacts from airborne (and underwater) noise as there is no longer a requirement for marine piling or drilling for the caisson design solution.

Following a Noise Workshop on 14th May 2025 (Noise Model Data) with the contractor it was confirmed that the assumptions in the modelled plant tables within the Noise Impact Assessment (NIA) are reasonable and present a conservative approach, except for the suggested inclusion of two trommels. The trommels were added to the model based on the MDS M515 Track Trommel data sheet (Diagram 9-1). The addition of the two trommels' noise levels at the surrounding NSRs is within 1dB of those reported in Technical Appendix 9.1 (Volume 3 of the SDWQ EIAR dated August 2025). This change is not significant, and the levels at all receptors remain well below the threshold for impact.

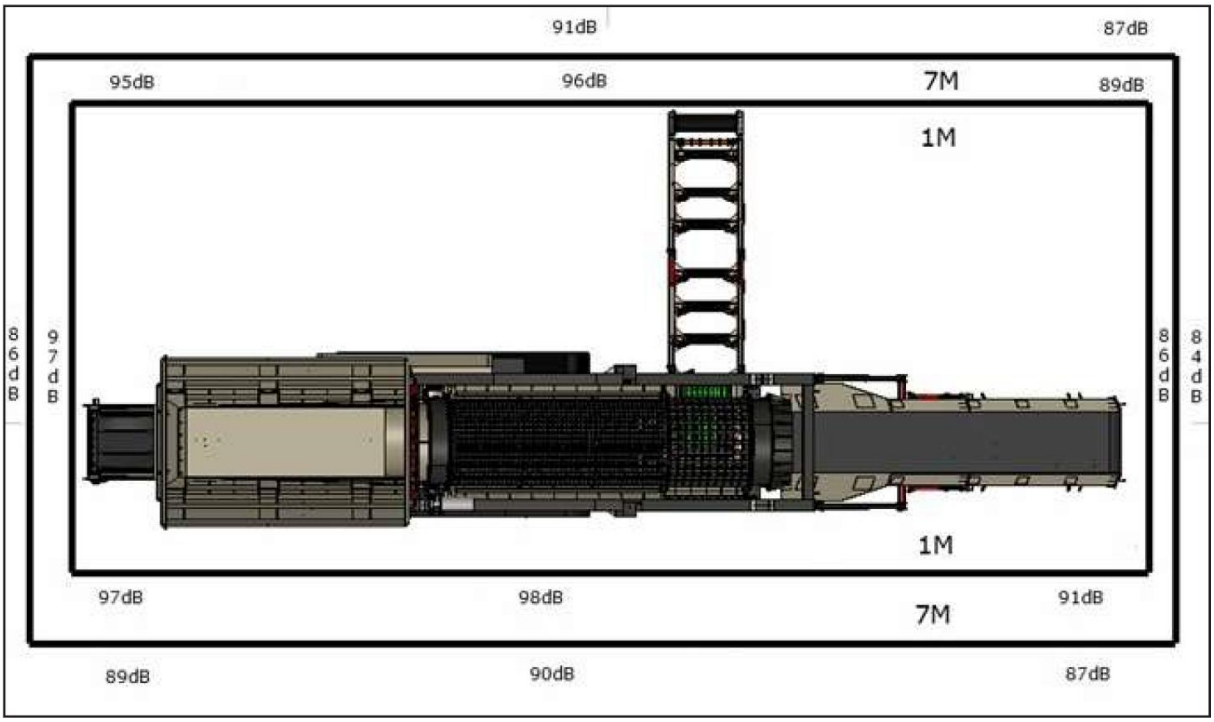


Diagram 9-1: M515 Track Trommel Noise Levels

The NIA therefore presents a reasonable worst-case scenario and any update based on the current design changes would not result in changes to the reported outcome of no adverse impacts at surrounding NSRs. Based on this, it was possible to discount the requirement for a revised NIA.

Terrestrial Noise impacts on Birds and Seals

As noted above, the Construction NIA therefore presents a reasonable worst-case scenario. In order to assess terrestrial noise impacts on birds and seals, noise contour maps have been prepared (see Appendix B) and it was identified noise creation levels were between 70 and 90dB at 10m from source, with noise levels decreasing over distance. With the creation of a 6m bund on the seaward side of the working area, the noise maps demonstrate that noise levels beyond the seaward bund would be between 40-50dB in the immediate vicinity of the bund and dissipate to <35dB at 250m. For reference, a study compiled by the Institute of Estuarine and Coastal Studies (IECS), University of Hull (2009) found that construction noise emissions below 50 dB had a low effect and no impact on waterbirds. Disturbance noise above 70 dB resulted in a moderate to high effect to birds resulting in movement within the feeding zone. The study concluded that construction noise levels should be restricted to below 70 dB.

Blasting

Terrestrial blasting will consist of approximately one blast per week over 35 weeks (no marine blasting is proposed). As noted in BS 6472-2:2008 (*Guide to evaluation of human exposure to vibration in buildings - Blast-induced vibration*) "Accurate prediction of air overpressure (from blasting) is almost

impossible due to the variable effects of the prevailing weather conditions and the large distances often involved."

As referenced by guidance, it is not possible to predict with accuracy the likely levels of air overpressure that will be generated at receptors by the proposed blasting due to high level of variables involved. The best way to control air overpressure is through good blast design and an appreciation of how local weather conditions can influence levels and impacts. Best practice measures will be recommended to minimise vibration and air overpressure generation due to blasting.

9.3.2 Mitigation Measures

The following mitigation will be employed to avoid and minimise any impacts occurring both during the construction and operational phases of the proposed development:

- Ornithological monitoring to be undertaken during the construction phase and during years 1, 2,3, 5 and 10 of operation to assess whether the populations of SPA species has been maintained. This will focus on the area around the proposed development (where the new/novel vessel route is situated and around Scapa Pier and surrounding areas where there will be a significant reduction in port services vessels). The monitoring methods and reporting outcomes will be discussed and agreed with NatureScot, along with any required mitigation measures depending on survey results;
- Production of a Vessel Management Plan, with input from NatureScot, for the Construction phase which will detail vessel routes etc to minimise, and where possible, avoid any disturbance impacts;
- Production of A Biosecurity Management Plan;
- Adherence to measures set out in the Construction Environmental Management Document (CEMD), Biodiversity Action Plan (BAP) and Biodiversity Net Gain (BNG) document.
- Deployment of an ECoW and marine mammal observer to monitor for the presence of qualifying species of the Scapa Flow SPA, and cetaceans and pinnipeds (in particular harbour seal) in the vicinity of the Proposed Development during terrestrial blasting and dredging works;
- Production and adherence to detailed Seal Protection Plan (SPP);
- Production and adherence to a detailed Pollution Prevention Plan;
- A silt boom to contain fine sediments will be used whilst reclamation work activities are undertaken.
- Controls and mitigation measures can and should be implemented when undertaking terrestrial blasting, including screens and bunding to dampen sound would also reduce the effects of noise on birds in the marine environment and seals on land.
- A blast strategy will be developed once a blasting contractor has been commissioned and attached the the CEMD.

9.3.3 Updated Residual Effects

There are no updates to the residual effects detailed in Chapter 9 of the EIAR (July 2023 and updated in August 2024).

9.3.4 Summary and Conclusions.

There are no updates to the likely effects of the development on noise. As noted in 9.2 above, the NIA presents a reasonable worst-case scenario and any update based on the current design changes would not result in changes to the reported outcome of no adverse impacts at surrounding NSRs. Based on this, we discount the requirement for a revised NIA.

10 SUPPORTING ASSESSMENTS

This section considers whether any updates are required to the conclusions of the assessment provided in Chapter 10.1 of the EIAR (July 2023 and updated in August 2024) as a result of the amendments to the Proposed Development.

10.1 Accidents and Natural Disasters

No consultee comments were received on this topic, therefore, this section is considering only design changes.

10.1.1 Updated Baseline Conditions

There are no updates to the baseline conditions detailed in Chapter 10.1 of the EIAR (July 2023 and updated in August 2024).

10.1.2 Future Baseline

There are no updates to the future baseline conditions detailed in Chapter 10.1 of the EIAR (July 2023 and updated in August 2024).

10.1.3 Updated Potential Effects

There are no updates to the potential effects detailed in Chapter 10.1 of the EIAR (July 2023 and updated in August 2024).

10.1.4 Mitigation Measures

There are no updates to the mitigation measures detailed in Chapter 10.1 and Chapter 11 of the EIAR (July 2023 and updated in August 2024).

10.1.5 Updated Residual Effects

There are no updates to the residual effects detailed in Chapter 10.1 of the EIAR (July 2023 and updated in August 2024).

10.1.6 Summary and Conclusions

There are no updates on the likely effects of the development on accidents and natural disasters.

10.2 Air Quality

No consultee comments were received on this topic, therefore, this section is considering only design changes.

10.2.1 Updated Baseline Conditions

There are no updates to the baseline conditions detailed in Chapter 10.2 of the EIAR (July 2023 and updated in August 2024).

10.2.2 Future Baseline

As noted within Section 10.2 Air Quality of the EIAR (July 2023 and updated in August 2024), there are no Air Quality Management Areas (AQMAs) within the surrounding area. The Department for Environment, Food and Rural Affairs (DEFRA) air quality monitoring archive confirms the air quality estimated background concentrations are well below relevant air quality objectives indicating good local air quality with no exceedances of the national air quality objectives.

Based on the amended project design i.e. installation of caissons as opposed to the exemplar design, the findings within Section 10.2 of the EIAR (July 2023 and updated in August 2024) remain valid and it is not anticipated to affect the future baseline.

10.2.3 Updated Potential Effects

There are no updates to the potential effects detailed in Chapter 10.2 of the EIAR (July 2023 and updated in August 2024).

10.2.4 Mitigation Measures

There are no updates to the mitigation measures detailed in Chapter 10.2 and Chapter 11 of the EIAR (July 2023 and updated in August 2024).

10.2.5 Updated Residual Effects

There are no updates to the residual effects detailed in Chapter 10.2 of the EIAR (July 2023 and updated in August 2024).

10.2.6 Summary and Conclusions

There are no updates on the likely effects of the development on air quality.

10.3 Carbon, Climate Change and Greenhouse Gas Emissions Assessment

No consultee comments were received for this topic, therefore, this section is considering only design changes.

10.3.1 Introduction

As the construction methodology for the proposed development is revised, the Greenhouse Gas (GHG) emissions calculation for the revised construction methodology was undertaken and the same is discussed here in this updated assessment. A comparison with the previous assessment indicates that the revised construction methodology results in a reduction of GHG emissions by approximately **37.85%**.

Apart from the changes in the proposed development and construction methods, the remaining details of this section remain unchanged from that set out in the EIA Report.

10.3.2 Updated Assessment Scope and Methodology

PAS 2080
The details related to the modular framework set out in PAS 2080 Carbon Management in Infrastructure remain unchanged from that set out in the EIA Report.

Carbon emission assessment for the original construction methodology was undertaken using Sweco's carbon estimating tool and the updated carbon emission assessment for the revised construction methodology is undertaken using COWI's internal carbon estimating tool. Both the carbon emission assessment tools are based on PAS 2080 and RICS (2017).

The assessment boundary considered within the assessment remains the same and includes the pre-construction and construction emissions (A1 – A5). Use stage (B2-B3) carbon is not calculated for the revised construction methodology as it is expected to be similar to the previous assessment. Additionally, it was just 0.70% compared to pre-construction and construction emissions (A1 – A5) in the original assessment, which is negligible.

The material quantities for the updated assessment were provided by Arch Henderson, similar to the original assessment. The carbon emission factors considered for the updated assessment as detailed in the table below.

Table 10-1: Capital Carbon Emissions Considered in the Assessment

Life Cycle Stage	Guidance	Industry Standard / Source of Carbon Factors
A1 – A3	Product	CESSM4
A4	Transport of materials to the project site	RICS 2017
A5	Construction and installation processes	CESSM4

Sources of carbon factors related to the original assessment can be referred to in the original EIAR submission.

Assumptions
The following assumptions have been made for the updated carbon assessment:

Equipment Type	Transportation Method	Distance	Emission Factor
Excavating, Crushing & Sieving	Road	600 km from north Wales to Aberdeen	1.28 kgCO2e/km
	Sea	200 km to Orkney	1.61E-05 kgCO2e/(kg·km)
Dredging	Dredging vessel	11 hours	5740 kgCO2e/ hour
Marine & Caisson Installation	Marine installation vessel	16 hours	14000 kgCO2e/ hour

Assumptions related to the original assessment can be referred to in the original EIAR submission.

Climate Change Projections
The details of this section remain unchanged from that set out in the EIAR dated August 2024.

10.3.3 Baseline Conditions

Updated Total Carbon

The total carbon emission for the project with updated construction methodology is **95,299** tCO_2e which is **37.85%** less compared to carbon emissions from the previous construction methodology, i.e.153, 341 tCO_2e. Considering 20% of risk allowance with the updated methodology, the total carbon emission will be **1,14,359** tCO_2e reduction would still be **25.42%** compared to the previous construction method.

Table 10-2: Total Emissions of Proposed Development (tCO2e)

Life Cycle Stage	Activity	Emissions (tCO_2e) Original method	Emissions (tCO_2e) Revised method
A	**Before use stage**	**1,52,277**	**94,235**
B	**Use stage**	**1,064**	**1,064**
Total Pre-Use Capital Carbon Emissions (tCO_2e)		**1,53,341**	**95,299**

Updated Capital Carbon
Emissions from the construction phase, which covers the capital carbon of the development, are summarised in the table below.

Table 10-3: Emissions arising from the construction phase (A1-5)

Life Cycle Stage	Activity	Emissions (tCO_2e) Original method	Emissions (tCO_2e) Revised method
A1 – A3	**Materials used in construction**	**77,889**	**46,086**
A4	**Transportation of materials to the site**	**21,438**	**4,048**
A5	**Construction site emissions**	**52,950**	**44,102**
Total Pre-Use Capital Carbon Emissions (tCO_2e)		**152,277**	**94,235**

Emissions associated with earthwork and caissons are the most carbon intensive elements of the proposed development, as the below figure shows.

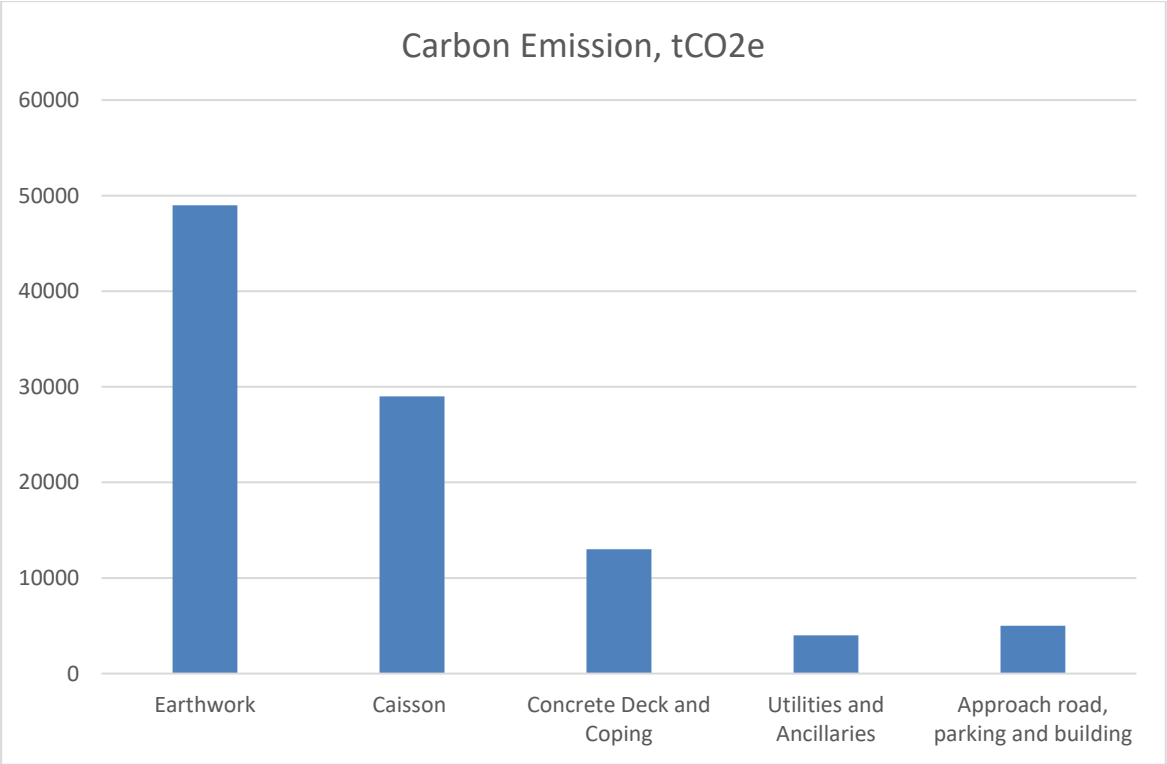


Figure 10-1: Emissions associated with lifecycle Stage A across all activities

Use Stage Carbon
The details of this section remain unchanged from that set out in the EIA Report.

Climate Change Projections
The details of this section remain unchanged from that set out in the EIA Report.

10.3.4 Mitigation Measures

The details of this section remain unchanged from that set out in the EIA Report.

10.3.5 Summary and Conclusions

There are significant carbon savings in comparison with the previous assessment (exemplar design) indicating that the revised caisson construction methodology results in a reduction of GHG emissions by approximately **37.85%**.

10.4 Transport – Aviation

No consultee comments were received for this topic, therefore, this section is considering only design changes

10.4.1 Updated Baseline Conditions

There are no updates to the baseline conditions detailed in Chapter 10.4 of the EIAR (July 2023 and updated in August 2024).

10.4.2 Future Baseline

There are no updates to the future baseline conditions detailed in Chapter 10.4 of the EIAR (July 2023 and updated in August 2024).

10.4.3 Updated Potential Effects

There are no updates to the potential effects detailed in Chapter 10.4 of the EIAR (July 2023 and updated in August 2024).

10.4.4 Mitigation Measures

There are no updates to the mitigation measures detailed in Chapter 10.4 and Chapter 11 of the EIAR (July 2023 and updated in August 2024).

10.4.5 Updated Residual Effects

There are no updates to the residual effects detailed in Chapter 10.4 of the EIAR (July 2023 and updated in August 2024).

10.4.6 Summary and Conclusions

There are no updates on the likely effects of the development on Transport - Aviation

10.5 Transport – Roads

No consultee comments were received for this topic, therefore, this section is considering only design changes

10.5.1 Updated Baseline Conditions

There are no updates to the baseline conditions detailed in Chapter 10.5 of the EIAR (July 2023 and updated in August 2024) as a result of the change from the exemplar design to the caisson design.

10.5.2 Future Baseline

It is unknown at present how many vehicle trips will be associated with SDWQ once operational.

10.5.3 Updated Potential Effects

It is anticipated that a supply of rock will be required from local quarries (supplementing the rock from the dredge pocket) for the caisson foundation. It should be noted that steel for the exemplar design was partly due to being transported by road, and this was accounted for in Section 10.5 of the August 2024 EIAR and Technical Appendix 10.1 (Transport Statement). As the caisson design does not now require steel to be transported by road, it is anticipated that this will be a like-for-like transfer to rock by road, requiring a similar number of HGV trips per day. This will be confirmed once the foundation design has been finalised.

10.5.4 Mitigation Measures

It is expected that the mitigation measures already identified within Section 10.4 and Chapter 11 (Schedule of Mitigation) of the EIAR (July 2023 and updated in August 2024) will remain appropriate. As a precautionary measure, a Construction Traffic Management Plan (CTMP) will be prepared for agreement with Orkney Islands Council prior to construction works commencing. This will be a "live" documents, and as such, the contractor will amend and improve the CTMP as required.

Design drawings will include details on how walking and cycling modes will access the proposed deep water quay site, and any onward pedestrian access to the coastline.

10.5.5 Updated Residual Effects

There are no updates to the residual effects detailed in Chapter 10.4 of the EIAR (July 2023 and updated in August 2024).

10.5.6 Summary and Conclusions

There are no updates to the likely effects of the development on Transport – Roads.

11 SCHEDULE OF MITIGATION

The change from the exemplar design is a construction method variation, with the use of caisson structures instead of a piled quay. The Schedule of Mitigation within the August 2024 EIA Report has been updated within Table 11-1 which also includes mitigation within the HRA and Seal Risk Assessment which support this SEI.

Table 11-1: Schedule of Mitigation
(Includes New Mitigation from SEI Report and Seal Risk Assessment)

Feature / Topic	Mitigation	Timing
General		
Construction Environmental Management Document (Refer to Appendix I to View the Outline CEMD)	A Detailed Construction Environmental Management Document (CEMD) containing individual specific Construction Environmental Management Plans (CEMP) will be developed to ensure that the mitigation measures outlined in the EIAR and project consents are followed during the proposed construction works. The CEMD will include surface water management and pollution prevention measures (e.g. Pollution Prevention Plan), and will be in place during construction and operation. The CEMD will remain a live document and will be continually updated as the work progresses. The CEMD will be developed as a practical tool to facilitate the management of environmental mitigation measures and to provide a clear roadmap of the key roles and responsibilities during construction. All mitigation measures will be incorporated into the CEMD, which will include detailed Construction Method Statements (CMS). An Ecological/Environmental Clerk of Works (EnvCoW) will monitor the construction works to ensure that the CEMD and associated mitigation measures are being implemented effectively.	Construction
Best Practice	Best practice will be adopted throughout all phases of development, following current guidance as listed in Chapter 5 of the EIAR. The programme of works, including timings and methods, will be planned, monitored and managed to minimise the potential negative environmental impacts.	Construction
Pollution Incident Response Plan	A Pollution Incident Response Plan will be set out in the CEMD relating to the construction of the proposed development, statutory requirements and identification of areas of highest sensitivity. This will provide site spill response procedures, emergency contact details and equipment inventories and their location. All staff will be made aware of this document and its content during site induction. A copy will be available in the site office at all times.	Construction
Vessel Movements and Navigational	All of the risks should be kept under review by OICHA as the development progresses	Construction
Chapter 4: Water Environment		
Construction Environmental Management Document	A CEMD will be developed to ensure that the mitigation measures outlined in the EIAR are followed during the proposed construction works. The CEMD includes surface water management and pollution prevention measures (e.g. Pollution Prevention Plan), and will be in place during construction and operation. The CEMD will remain a live document and will be continually updated as the work progresses. The CEMD is a practical tool to facilitate the management of environmental mitigation measures and to provide a clear roadmap of the key roles and responsibilities during construction.	Construction
	A suitably qualified Environmental Clerk of Works (EnvCoW) will monitor the construction works to ensure that the CEMD and associated mitigation measures are being implemented effectively.	Construction
	Best practice will be adopted throughout all phases of development, following current guidance. The programme of works, including timing, direction and method of capital dredge, will be planned, monitored and managed to minimise the potential negative environmental impacts.	Construction
	A Pollution Incident Response Plan will be developed relating to the construction of the proposed development, statutory requirements and identification of areas of highest sensitivity. This will provide site spill response procedures, emergency contact details and equipment inventories and their location. All staff will be made aware of this document and its content during site induction. A copy will be available in the site office at all times.	Construction
	All activities above Mean High Water Springs (MHWS) with potential to affect the water environment require to be authorised under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR). The level of authorisation required is dependent on the anticipated environmental risk posed by the activity to be carried out. These activities could include construction drainage. Construction activities below MHWS with potential to affect the water environment require to be authorised under a Marine Licence.	Construction
Dredged Material	Mitigation measures will be delivered by the principal contractor through detailed Construction Environment Management Plans (CEMPs) that will be produced following appointment. The contractor will be responsible for producing a site specific Pollution Prevention Plan (PPP) that will apply the principles of the agreed mitigation to show how the mitigation is implemented effectively down to the specific site.	Construction
Turbidity Monitoring	As a precautionary measure, OICHA proposes to undertake turbidity monitoring to protect water quality and ensure minimal environmental impact. OICHA propose to monitor sediment re-suspension levels to prevent damage to the local ecosystem and aquaculture as high sediment concentrations can contribute to suboptimal conditions and may harm aquaculture fish since it affects the overall ecological balance and the fish have restricted movement. By monitoring turbidity, OICHA can determine potential impacts on the environment and implement corrective actions.	Dredging and Construction

Feature / Topic	Mitigation	Timing
Surface Water Management	The surface water drainage will be designed to ensure that there are no untreated surface water discharges directly to surrounding coastal waters. It is proposed to replicate natural drainage around construction areas and to use source control to deal with rainwater in proximity to where it hits the ground in line with current Sustainable Drainage Systems (SuDS) guidance. Suitable prevention measures will be in place at all times to prevent the release of pollutants to the water environment, including adjacent coastal waters. These will be regularly inspected and maintained to ensure optimal performance.	Construction
Site Compounds	Run-off from compounds will be captured and passed through construction drainage features prior to discharge. Foul drainage will either be contained in a closed system and disposed of at a suitable off-site facility with private treatment and discharge or, where possible, directed via a connection to the local drainage network.	Construction
Concrete	In the case that concrete batching is to be undertaken on-site the following mitigation measures would be implemented to minimise the potential impact of concrete batching on the water environment in line with PPG6: • Concrete batching will take place on an impermeable designated area and at least 10m from any waterbody. • Equipment and vehicles will be washed out in a designated area that has been specifically designed to contain wet concrete/ wash water. • A closed loop system will be used for wash waters. Wash waters will be stored in a contained lined pond for settlement before being reused (e.g. for mixing and washing). • No discharge of wash waters will occur on-site. All excess wash water that cannot be reused will be disposed of off-site. The following mitigation is proposed for concrete handling and placement: - Pouring of concrete will take place within well shuttered pours to prevent egress of concrete from the pour area. - Pouring of concrete during adverse weather conditions (i.e. high rainfall etc) will be avoided. - The CEMP will include a Pollution Incident Response Plan, and drivers of vehicles carrying concrete will be informed so as to raise awareness of potential effects of concrete and of the procedures for clean-up of any accidental spills. Concrete acidity (pH) will be as close to neutral (or site-specific pH) as practicable as a further precaution against spills or leakage.	Construction
Oil, Fuel, Site Vehicle Use and Storage	The risk of oil contamination will be minimised by good site working practice (further described below) but should a higher risk of oil contamination be identified then installation of an oil separator will be considered. The storage of oil is considered a Controlled Activity which will be deemed to be authorised if it complies with the Regulations. The mitigation measures to minimise any risk of contaminant release are in line with SEPA GPP and PPG documents and include the following: • Storage: o Storage for oil and fuels on site will be designed to be compliant with GPP2 and GPP8. o The storage and use of loose drums of fuel on site will not be permitted. o Bunded tanks will provide storage of at least 110% of the tank's maximum capacity. • Refuelling and maintenance: o Fuelling and maintenance of vehicles and machinery, and cleaning of tools, will be carried out in a designated area where possible in line with PPG7. o Multiple spill kits will be kept on site. o Drip trays will be used while refuelling. o Regular inspection and maintenance of vehicles, tanks and bunds will be undertaken. Emergency procedure: The Pollution Incident Response Plan will include measures to deal with accidental spillages.	Construction
Monitoring and Enhancement	The Developer shall undertake a planned programme of compliance monitoring to verify the effectiveness of the project's environmental management. Monitoring plans will be established and implemented with the agreement of SEPA, NatureScot and Marine Directorate. Specific auditing and monitoring plans will be developed by the contractor and will cover the following: • The contractor's own Environmental Management System; • The CEMD, schedule of mitigation register, relevant legislation and industry good practice; • All project activity; • Roles and responsibilities for those undertaking audits and monitoring; • Frequency of inspection activities (i.e. daily, weekly, monthly); • Process to deal with corrective actions/non-compliance; and • Reporting procedures (including non-compliance).	Construction

Chapter 5: Biodiversity		
CEMD	Adherence to measures set out in the Construction Environmental Management Document (CEMD), Biodiversity Action Plan (BAP) and Biodiversity Net Gain (BNG) document.	Construction
Ornithological monitoring	Ornithological monitoring to be undertaken during the construction phase and during years 1, 2, 3, 5 and 10 of operation to assess whether the populations of SPA species has been maintained. This will focus on the area around the proposed development (where the new/novel vessel route is situated and around Scapa Pier and surrounding areas where there will be a significant reduction in port services vessels). The monitoring methods and reporting outcomes will be discussed and agreed with NatureScot, along with any required mitigation measures depending on survey results;	Construction and Operation
Vessel Management Plan	Production of a Vessel Management Plan for the Construction phases which will detail vessel routes, speeds etc to minimise, and where possible, avoid any disturbance impacts;	Construction
Vessel Management Plan	The vessel movement mitigation protocol has remained similar to that of the marine mammals, however, there has been an addition to include incorporation of the Scottish Marine Wildlife Watching Code into the vessel management plan.	Dredging and Construction
Ornithologist / marine mammal observer	Deployment of an Ornithologist and marine mammal observer to monitor for the presence of qualifying species of the Scapa Flow SPA, and cetaceans and pinnipeds (in particular harbour seal) in the vicinity of the Proposed Development during terrestrial blasting and dredging works;	Construction
Seal Protection Plan	Production and adherence to detailed Seal Protection Plan (SPP);	Construction
Pollution Prevention Plan	Production and adherence to a detailed Pollution Prevention Plan;	Construction
Silt boom	A silt boom to contain fine sediments will be used whilst reclamation work activities are undertaken.	Construction
Marine Mammal Observation Protocol (MMOP)	The seal mitigation will comprise a standard Marine Mammal Observation Protocol (MMOP) as per JNCC guidance will be implemented during dredging operations in sea states less than 4 and during times of optimal visibility.	Dredging
Marine Mitigation Zone	A mitigation zone (a pre-agreed radius) around dredging site prior to any works is implemented. The radius of the mitigation zone should be 500m for each activity to cover the PTS and TTS ranges of the activities.	Dredging
Seal Observation Protocol	The Seal Observation Protocol (SOP) will be implemented so that the construction and dredging works do not cause injury or unnecessary disturbance to seals.	Dredging and Construction
Blasting	Controls and mitigation measures will be implemented when undertaking terrestrial blasting, including screens and bunding to dampen sound, this will also reduce the effects of noise on seals from land based activities. The Construction Environmental Management Document (CEMD) will detail mitigation measures to avoid significant impacts on marine bird species, including Great Northern Diver. This includes the presence of an ornithologist to monitor for the presence of SPA qualifying species within 500m of the Proposed Development and record behavioural responses within this zone. If impacts are recorded, then the disturbance zone shall be increased.	Construction
Blasting	The MMO protocol implemented for dredging will also be undertaken for terrestrial blasting and (as stated above) a 6m high bund will be formed at the seaward boundary of the site by retaining the existing land and excavating behind, creating a natural noise screen from terrestrial blasting (and other works) and will only be removed once the site is excavated to the final profile. This would reduce the effects of noise on seals on land. Additional mitigation methods for terrestrial blasting that should also be considered to be implemented for terrestrial blasting include: ○ During terrestrial blasting, minimising air overpressure at the source, such that, even under unfavourable weather conditions, all such energy is within acceptable criteria at distance, remains the best practicable approach. It is an approach that all surface mineral sites are obliged to follow under the provisions of The Quarries Regulations 1999. ○ Detonating cord should be used as sparingly as possible, and any exposed lengths covered with as much material as possible. Just a few feet of exposed cord can lead to significant amounts of audible energy and, hence, high air overpressure levels. Stemming release can be controlled by detonation technique, together with an adequate amount of good stemming material. It should be noted however that detonation cord and stemming release have been virtually eliminated with the use of in hole initiation techniques. ○ If the use of exposed detonating cord is avoided the characteristic noise of a blast is no longer a sharp crack but rather a dull thump. This is partly due to the detonating sequence and partly due to natural energy dissipation and reduction. Whilst some of the noise perceived by a neighbouring resident would be directly from the blast itself, the lower frequency components of the air overpressure might well induce secondary rattling of windows and ornaments within a property which could augment the overall effect. ○ Thus, in terms of noise control or reduction in the care and attention to blast design and subsequent implementation, including initiation, necessary for the control of air overpressure is equally applicable to noise.	

	○ BS 6472-2:2008 states that “The highest [air overpressure] levels normally measured in the United Kingdom are generally less than 1% of the levels known to cause structural damage.” Therefore, by implementation of the best practice measures, effects due to air overpressure generation by the Proposed Development are anticipated to have a negligible effect on seals in terrestrial environments.	
GWDTE / Tufa	Re-establishing natural vegetation, including mosses and other aquatic plants, to help stabilise the tufa deposits and improve habitat quality;	Construction and post construction
GWDTE / Tufa	Reducing nutrient runoff from agriculture and other sources to help improve water quality and protect the sensitive ecosystems in tufa springs;	Construction
GWDTE / Tufa	Protecting areas around tufa springs from development and other destructive activities for long-term conservation;	Construction and post construction
Tufa monitoring	Regular monitoring of water flow, water quality, and the health of tufa structures is essential for evaluating the effectiveness of restoration efforts and making adjustments as needed.	Construction and post construction
Terrestrial Habitats	Terrestrial habitats outwith the footprint of the development should be retained and clearly delimited from the works area in order to reduce the risk of damage. Compensation for lost habitats should be provided through on and offsite habitat enhancement and creation. A detailed Biodiversity Net Gain Assessment and Biodiversity Action Plan containing a baseline survey of the proposed compensatory habitat area, clear management objectives and actions to meet those objectives, and a monitoring plan will be produced prior to construction commencing.	Construction
Sub-tidal habitats	A silt boom to contain fine sediments will be used whilst land reclamation activities are undertaken. Inert stone material free from fine clays or organic materials will be utilised to form the outer bunds for land reclamation. The principal contractor will produce and implement a biosecurity plan throughout the duration of works. This will include the cleaning of equipment and plant machinery prior to deployment and at regular intervals throughout to reduce risk of transmitting non-native and invasive species. The plan will be submitted to the planning authority and other relevant consultees for approval prior to works commencing and implementation would be audited by the EnvCoW. Implementation of Ballast Water Management Plan and industry standard ballast water management practices. Continuation of the Harbour Authorities biosecurity monitoring programme as detailed in the existing Ballast Water Management Policy.	Construction
Otter	All personal on the site should be made aware of the presence of protected species including otter via the site induction and additional task specific toolbox talks as required. A pre-works check for otter should be conducted prior to works commencing on the site and regularly throughout works. If otter are observed on site at any point during construction, works should be halted and advice sought from the EnvCOW. If a resting site is identified either during the pre-works check or during works, a species protection plan will be required and the need for a disturbance licence will be assessed. Where possible construction activities will be confined to daylight hours to reduce disturbance to commuting and foraging otter within the locale. Any artificial light required during construction will be fitted with shades and directed at the required work area only. A strict speed limit for both onshore and marine traffic will be implemented to reduce risk of collision with protected species (15mph on shore and 4 knots on the water within the harbour area, outwith the harbour area vessels shall be controlled by vessel speeds set out by the Statutory Harbour Authority and appropriate to the construction vessel type). Permanent lighting design will be kept to the minimum required for health and safety and security purposes. All lighting will be fitted with shades and directed at the required areas. The shoreline and surrounding waters will be avoided as far as possible to reduce disturbance to wildlife.	Prior to and during construction
Marine Mammals	All personnel on the site should be made aware of the presence of protected species including marine mammals via the site induction and additional task specific toolbox talks as required. A Marine Mammal Protection Plan will be implemented by the contractor to reduce the risk of underwater noise causing injury to marine mammals. This will involve the use of a trained Marine Mammal Observer (MMO). The MMPP also details protocols to be implemented to reduce collision risk. Implementation of a vessel management plan including agreed routes and speed limits. Safe vessel operation to minimise risk of collision with marine mammals and basking shark to be promoted to users. Training courses such as those provided by the WiSe scheme could be offered at regular intervals.	Construction

Fish	All personnel on the site should be made aware of the presence of protected species including fish via the site induction and additional task specific toolbox talks as required. Any artificial light required during construction will be fitted with shades and directed at the required work area only. A Basking Shark Protection Plan will be implemented to reduce the risk of underwater noise causing injury. This will involve the use of a trained Marine Mammal Observer (MMO), Passive Acoustic The ECoW, EnvCoW or MMO should monitor any fish deaths as a result of construction activities and report these to NatureScot and Marine Directorate (number of fish and species). Consideration should be given to mitigation strategies to reduce fish mortality if it becomes an issue. This can be difficult to do however with some strategies such as the use of netting or bubble curtains sometimes having the effect of preventing fish from moving away from noisy activities. Implementation of a vessel management plan including agreed routes and speed limits. Safe vessel operation to minimise risk of collision with marine mammals and basking shark to be promoted to users. Training courses such as those provided by the WiSe scheme could be offered at regular intervals. Permanent lighting design will be kept to the minimum required for health and safety and security purposes. All lighting will be fitted with shades and directed and the required areas. The shoreline and surrounding waters will be avoided as far as possible to reduce disturbance to wildlife.	Construction
Chapter 6: Archaeology and Cultural Heritage		
Archaeological Investigations	Further archaeological investigation in the vicinity of Site 2 , potentially comprising geophysical survey and/or archaeological trial trenching, will be agreed with OIC in advance of the construction phase of the project. This may lead to further requirements for mitigation, either before or during the construction.	Prior to Construction/Construction
WSI/PAD	A Written Scheme of Investigation (WSI) and Protocol for Archaeological Discoveries (PAD) to avoid or mitigate accidental impacts and manage any accidental discoveries of archaeological interest will be compiled and submitted for approval to OIC and fully implemented during the construction phase of the project	Construction
Chapter 7: Seascape, Landscape and Visual Impact		
Excess unsuitable material	Excess unsuitable material (including topsoil) that cannot be used to form the quayside extending out into the sea will be deposited on land immediately above and to the north east of the proposed cut slope. This material will be deposited to a relatively thin depth and graded out into/integrated with surrounding pastoral farmland. The material would not be deposited in the form of visually obtrusive bunds or mounds. It would visually assimilate with surrounding sloping grazed farmland.	Construction
Design Drawings	Design drawings will be developed at detailed design stage and will be submitted for approval. No works shall commence on site until details for the provision for onsite landscaped areas, including trees or other planting have been submitted and approved by OIC	Design
Chapter 8: Socio-Economics		
Employment opportunities	Requirements upon the contractor to provide local job creation and local training either directly or through supply chain for the construction and operational phases of the development to provide greater and longer lasting benefit to communities.	Construction
Local Businesses	Continue to consult with local businesses, including local tourist groups throughout the proposed development design and construction programme to manage significant inflow of workers during peak tourist season and large scale events on the island.	Construction
Local Businesses	Engage with local businesses, including marine users, to understand their access and operational requirements. Contractor and design team should ensure that current operations at the harbour can reasonably continue during construction of the proposed development and effectively communicate when there are any changes to access (including short term changes).	Construction
Local Community Capacity	Engage with local authority to ensure there is sufficient capacity in council services and infrastructure to accommodate influx in workers.	Construction
Community Benefits	Community benefits and social value should be maximised during the construction period, such as the provision of apprenticeships, training and work experience opportunities. The baseline indicates that the age group 18 – 24 has the highest proportion on the island of being unemployed; targeting this group would maximise benefits and this would represent a significant opportunity to provide long term employment and development of key green skills locally.	Construction
Chapter 9: Airborne Noise		
Construction General	Develop a construction noise management plan to ensure surrounding residents are not impacted by site development activities.	Construction
Blast Strategy	A blast strategy to be prepared once a blasting contractor is commissioned.	Construction
Chapter 10.1: Accidents and Natural Disasters		
Marine Safety	Orkney Islands Council Harbour Authority existing Safety Management System should be updated periodically as harbour operations change or new legislation arises.	Construction

Chapter 10.2: Air Quality		
Construction Dust Risk	<u>Communications</u> • Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. • Display the head or regional office contact information. • Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The DMP should include, as a minimum, the measures outlined in this section. <u>Site Management</u> • Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book. • Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. • Make the complaints log available to the local authority when asked. <u>Monitoring</u> • Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked. • Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. <u>Site Maintenance</u> • Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. • Avoid site runoff of water or mud. <u>Operations and Waste Management</u> • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. • Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. • Use enclosed chutes and conveyors and covered skips. • Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. <u>Vehicle and Plant Operation</u> • Ensure all vehicles switch off engines when stationary – no idling vehicles. • Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. These measures will be included within the CEMP or similar which will be produced by the contractor prior to construction and signed off by Orkney Islands Council.	Construction
Chapter 10.3: Carbon, Climate Change and Greenhouse Gas Emissions		
Construction	Opportunities of carbon reduction in the construction phase can be achieved through consideration of alternative/recycled materials, design optimisation, construction site management (e.g. sourcing energy efficient plant) and construction waste management.	Construction
Chapter 10.5: Transport Roads		
Access road	The creation of an access road which locals can use by car or active travel modes will provide added community benefit, making this section of the coastline accessible.	Construction
Travel Plan	A site Travel Plan (in accordance with NPF4 Policy 13 f) will be developed once details of the workforce are known. This will also include provision for low or zero emission vehicles and cycle charging points within safe locations.	Construction/Operation
Access Design	Design drawings will include details on how walking and cycling modes will access the proposed deep water quay site, and any onward pedestrian access to the coastline.	Design
Construction Traffic Management Plan	A Construction Traffic Management Plan (CTMP) will be prepared for agreement with Orkney Islands Council prior to construction commencing. This will be a “live” documents, and as such, the contractor will update and improve the CTMP as required	Construction

Seal Risk Assessment		
Dredging Protocol	Dredging will not commence during poor visibility (such as fog) or during periods when the sea state is not conducive to visual mitigation as there is a greater risk of failing to detect the presence of seals. An elevated platform for the MMO to monitor from would be beneficial when the during rougher periods, the dredging works could also be scheduled on a day where the sea is expected to be calmer.	Dredging
	The MMO(s) should be situated in a location that provides the best viewing platform and is likely to be closest to the dredging activities. For example, an elevated area of the coast or a vessels bridge that allows 360 degree cover (depending upon the size of the mitigation zone more than one MMO viewing platform (and therefore more than one vessel) may be required to ensure that the entire mitigation zone can be observed).	Dredging
	At least 30 minutes before any dredging, a visual watch, known as the 'pre-works search', should be carried out in the mitigation zone. The pre-works search should continue until the MMO advises that the mitigation zone is clear of seals, and the dredging works can start.	Dredging
	The MMO will scan the waters using binoculars or a spotting scope and by making visual observations. Sightings of seals will be appropriately recorded in terms of date, time, position, weather conditions, sea state, species, number, adult/juvenile, behaviour, range etc. on the JNCC standard forms. Communication between the MMO and the contractor and the start/end times of the activities will also be recorded on the forms.	Dredging
	Dredging should not be undertaken within 20 minutes of a seal being detected within the mitigation zone.	Dredging
	If a seal is observed, within the mitigation zone, it should be monitored and tracked until it moves out of range. The MMO should notify the relevant chain of command of the detection and advise that the operation should be delayed. If the seal is not detected again within 20 minutes, it can be assumed that it has left the area and the works may commence.	Dredging
	If an MMO is uncertain whether seals are present within the mitigation zone, they should advise that the activity should be delayed as a precaution until they are certain that no animals are present.	Dredging
Vessel Movement	The Harbour Authority implement speed restrictions on vessels within Orkney waters, additionally, leaflets can be created to provide additional advice to port users to avoid disturbance to and/or collision with seals during construction which should include, but is not limited to the following: • A strict speed limit for marine traffic will be implemented to reduce risk of collision with seals (4 knots within the water). • Implementation of a Vessel Management Plan including agreed routes, speed limits and incorporation of the Scottish Marine Wildlife Watching Code . • Safe vessel operation to minimise risk of collision with seals to be promoted to users. Training courses such as those provided by the WiSe scheme could be offered at regular intervals.	Construction
	Additionally (where possible) leaflets can be created to provide additional advice to quay users to avoid disturbance to and/or collision with seals which should include, but is not limited to the following: • Keep a safe distance from seals. Never get closer than 100m (200m if another boat is present), but if within 100m, switch the engine to neutral; • Never drive head on to, or move between, scatter or separate seals. If unsure of their movements, simply stop and put the engine into neutral; • Spend no longer than 15 minutes near the animals; • Special care must be taken with mothers and young; • Maintain a steady direction and a slow 'no wake' speed; and • Avoid sudden changes in speed.	Construction

12 SUMMARY OF RESIDUAL EFFECTS

The additional information provided in this SEI Report (May 2025) incorporates consideration of the recent change from the exemplar design to the use of caisson structures instead of a piled quay and addressing consultee comments. The caisson design will necessitate a larger capital dredge than previously assessed in order to enable caisson placement, as outlined in section 2.2.6. The finished development will have the same footprint as the exemplar design and the finished dredge pockets will remain the same as the exemplar design.

The conclusions reached within this SEI Report (May 2025) are consistent with those identified within the EIA Report (August 2024).

The table below details the residual effects of the proposed development after the mitigation measures outlined in the Schedule of Mitigation have been applied.

Topics	**Construction Phase Impact**	**Operational Phase Impacts**
Water Environment	Not Significant	Not Significant
Biodiversity	Not Significant	Not Significant
Archaeology and Cultural Heritage	Not Significant	Not Significant
Seascape, Landscape and Visual	Significant	Significant
Socio-Economics	Not Significant	Not Significant
Airborne Noise	Not Significant	Not Significant
Topics Not Requiring Full EIA	Not Significant	Not Significant

APPENDICES

A CONSULTEE COMMENTS

Scapa Deep Water Quay
Environmental Impact Assessment Addendum Report (MD-LOT)

May 2025

EXECUTIVE SUMMARY

This document provides Supplemental Environmental Information (SEI) relevant to the Scapa Deep Water Quay (SDWQ) Environmental Impact Assessment (EIA) and Habitat Regulations Appraisal (HRA) in response to a formal request from the Marine Directorate Licensing Operation Team (MD-LOT) on behalf of Scottish Ministers.

The Applicant has provided additional new information to clarify specific points/areas of concern raised by stakeholders during consultation. This document is an addendum to the Environmental Impact Assessment Report (EIAR) prepared for the proposed Scapa Deep Water Quay to be located on the Orkney mainland coast and situated circa 4km south from Scapa Pier.

The EIAR was prepared under the Town & Country Planning (Environmental Impact Assessment) (Scotland) 2017 Regulations ("the EIA Regulations") and the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ("the marine EIA Regulations"). The EIAR was submitted to support an application for Planning Permission to Orkney Islands Council (OIC) as well as applications for a marine construction and dredging licence to MD-LOT.

Having received, and reviewed, all written representations received following the post submission consultation, MD-LOT on behalf of Scottish Minsters formally requested Orkney Islands Council Harbour Authority (OICHA) to provide SEI.

The requested SEI comprises new information directly relevant to reaching a reasoned conclusion on the likely significant effects of the works on the environment. MD-LOT also raised several points of clarification arising from the consultation responses received. The SEI request and additional clarification points are presented within this document.

As a further note, to address consultee concerns design mitigation has been implemented to amend the exemplar design to incorporate caissons which will reduce environmental impacts associated with piling and associated drilling.

Contents

1 INTRODUCTION

1.1 Terms of Reference

The following marine licence applications (MLAs) were submitted to Marine Directorate Licensing Operations Team (MD LOT) on 18 September 2023 for the proposed Scapa Deep Water Quay (the 'proposed development'):

- Marine Licence - Capital Dredge & Sea Deposits - Scapa Deep Water Quay - Orkney – 00010509
- Marine Licence - Harbour Construction - Scapa Harbour, Orkney – 00010511

The MLAs were supported by an Environmental Impact Assessment Report (EIAR), Technical Appendices and Non-Technical Summary.

Following MD LOT's review of the MLAs and supporting documents, the consultation responses received, and the advice provided by Consultees, especially regarding the requirements of National Planning Framework 4 (NPF4) and biodiversity enhancement, an EIA Addendum report was prepared and Submitted October 2024.

Following review of the October submission, further consultee responses were received and an EIA Addendum report and supporting documents was prepared and Submitted May 2025.

1.2 Scope of Report

This document forms an addendum to the EIAR issued in support of the MLAs. Following chapters set out the stakeholder comments and advice received on the EIAR and supporting documents, and the required response to each comment. This document should be read alongside the EIAR and supporting documents submitted in September 2023. The following documents have been updated/ added with this report.

Report title	**New/Updated**	**Report title**
Supplementary Environmental Inofrmation Report	New	New documents detailing the new Caisson design and proviion of supplementary environmental inofrmation
Signpost Document Appendix A of the SEI Report	New	This document. Consultee comments nad how they have been addressed
Habitats Regulations Appraisal Appendix B Of the SEI Report	Updated	Substantially updated to incorporate consultee comments, predominantly from NatureScot
Marine Mammal Protection Plan	Updated	Updated to incorporate consultee comments, predominantly from NatureScot
Basking Shark Risk Assessment	Updated	Updated to incorporate consultee comments, predominantly from NatureScot

Seal Risk Assessment	New	
Outline CEMD	Updated	

It should be noted that all the chapter and section numbers referred to in this report relate to the original EIA submission (2023) unless specified. The following chapters address the comments received by each consultee as submitted to MD-LOT.

1.3 Report Usage

The information and recommendations contained within this report have been prepared in the specific context stated above and should not be utilised in any other context without prior written permission from EnviroCentre Limited.

If this report is to be submitted for regulatory approval more than 12 months following the report date, it is recommended that it is referred to EnviroCentre Limited for review to ensure that any relevant changes in data, best practice, guidance or legislation in the intervening period are integrated into an updated version of the report.

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2 PROPOSED DEVELOPMENT DESCRIPTION

2.1 Proposed Development

As noted within the Environmental Impact Assessment Reports produced in July 2023 and updated in August 2024, the proposed development is to construct a deep water quay including 597 metre, 2.7 hectare quayside and quay extension, excavate landform and reclaim land to create an 18 hectare laydown including rock armour revetments, construction of an access road, vehicle parking, water tanks and associated infrastructure.

2.2 Alternatives - SDWQ Design Mitigation and Project Description

There have been various changes to the proposed development since the original Scapa Deep Water Quay (SDWQ) EIAR was produced in July 2023, and these are detailed below. It should be noted that these changes do not affect the assessments within the existing EIAR.

Based on consultee feedback the project team has taken proactive steps during the design and environmental assessment process to reduce the potential negative impacts of the project, a crucial part of responsible project management (mitigation by design), aiming to prevent or minimise environmental impacts before they arise. It must be noted that the overall development footprint and dredge area remains unchanged from the previous exemplar design.

2.2.1 Design

Environmental Impact Assessment (EIA) is generally considered an iterative process, meaning it is not a one-time only assessment undertaken after a project is designed. Rather, it's a continuous process where findings from the EIA inform and influence the design of the project throughout its development. In the case of SDWQ, EIA assessments identified potential impacts on certain habitats and wildlife. Based on these findings, the design has been modified.

Option 1: Original Exemplar Design The original exemplar design comprised a 597m long main quayside berth face constructed of steel tubular piles with interlocking sheet piles forming a combi wall solution with a further inner tied sheet pile anchor wall. The anticipated tubular steel piles (approx. 2.1m dia.) for the quay wall required drilled rock sockets to provide suitable pile toe below -15m Chart Datum (CD) dredge level. These works would incorporate Bauer BG41 Drill rigs or similar working over water from temporary piling platforms from the reclamation bund or a jack up barge with silt booms placed to the seaward side. This combi quay wall was to support a concrete cope and deck directly behind followed by general hardcore surfaced laydown reclamation area and drainage.

This design solution was initially assessed as appropriate at scheme design stage, however, as stated within Volume 3: Technical Appendix 2.1 of the EIAR, this design "…*may vary once final design and build tender procurement is progressed and contractors individual construction methods are known"*.

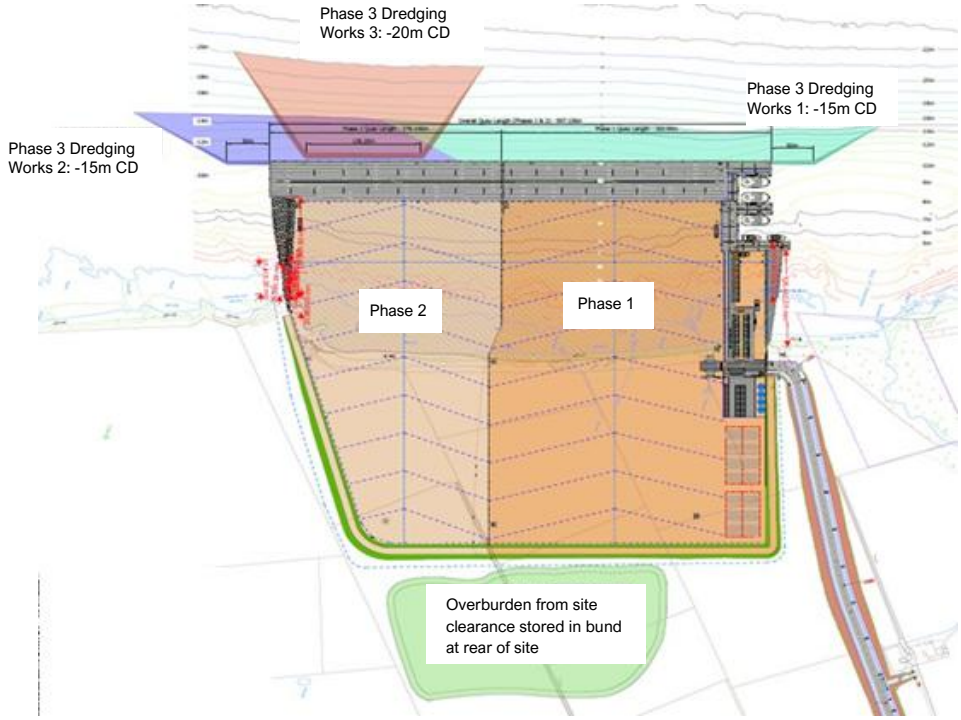
Option 2: Caisson Design Following further design work an alterative caisson design approach was identified which focuses on an alternative quay typology based on concrete caissons which is suitable given the existing ground conditions and the high operational loads.

A caisson is a large, hollow, precast concrete structure used in marine infrastructure. It is floated to position and then carefully sunk onto a prepared foundation, typically consisting of crushed rock or exposed bedrock. Once in place, it serves as a gravity-based retaining structure capable of withstanding

lateral earth and hydrostatic pressures, vessel impacts, and environmental forces. Caissons are particularly suitable for deep-water quays due to their robustness, modularity, and adaptability to various seabed conditions.

The prefabrication of caissons off site in Spain allows for a shortened programme and reduces environmental impacts from underwater and airborne noise and vibrations/impact as there is no requirement for marine piling or drilling for the caisson design solution.

The geotechnical assessment based on current ground investigations leads to a materials balance where reuse of component material either dredged or excavated is prioritised.



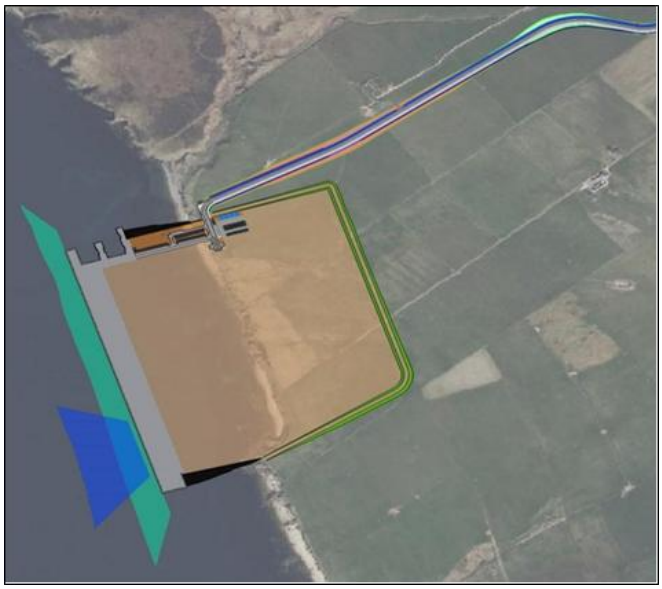


Diagram 2-1: Proposed SDWQ site

Preferred Option

The Caisson Design option has been selected as the preferred option for various reasons, including the mitigation of potential significant environmental effects. The prefabrication of caissons off site in Spain allows for a shortened programme and reduces environmental impacts from underwater and airborne noise and vibrations/impact as there is no requirement for marine piling or drilling for the caisson design solution.

2.2.2 Design Criteria

The design, manufacture, and construction of both temporary and permanent marine works shall adhere to current good practice and comply with all relevant and up-to-date Eurocodes, British Standards, Codes of Practice, and other applicable international standards and regulations. This includes structural, geotechnical, maritime, corrosion protection, drainage, and other discipline- specific codes necessary to ensure safety, durability, and regulatory compliance.

The design of the marine structures for the Scapa Flow Deep Water Quay Project is based on a minimum design life of 60 years, ensuring resilience in a highly aggressive marine environment, with salt spray, seawater immersion, and scour action. The quay structure must be designed for a return period of 570 years, while the revetment has a return period of 200 years, reflecting different failure probabilities for each element (10% for the quay and 20% for the revetment).

Key design parameters include:

- **Dredging Requirements:** The operational depths of -15.0m CD and -20.0m CD must be achieved.
- **Environmental Conditions:** Consideration of climate change and sea-level rise scenarios (A projected sea level rise of 0.9 m by 2100 is considered, based on national climate projections), with tidal lag and wave conditions (1/50-year,1/200-year,1/570-year return periods) integrated into the design.
- **Materials:** Concrete and reinforcement materials must comply with Eurocodes and British Standards, with specifications for exposure classes, cement types, and aggregate properties.
- **Caisson Design:** The caissons are designed with a focus on durability, using concrete that is resistant to corrosion in marine environments. Concrete properties, cement types, and aggregate characteristics have been carefully specified to ensure a long lifespan (Diagram 2-2).
- **Foundations and fill:** Crushed igneous rock is used as the foundation layer, with strict controls on durability and strength. Fill materials inside and behind caissons are selected for high density and internal friction to ensure stability.
- **Scour Protection:** Concrete scour protection mattresses and rock armour is installed to mitigate seabed erosion caused by vessel thrusters and propellers near the quay (Diagram 2-3)
- **Load types considered:** Includes structural dead loads, loads and imposed loads, wave loads, buoyancy effects, hydrostatic pressures, vessel impacts, and backfill pressures
- **Structural Stability**: The strength and stability of the marine works are evaluated for failure modes such as sliding, overturning, bearing capacity, and structural integrity following BS 6349, Eurocode, and PIANC guidelines. Additional considerations include buoyancy, hydrostatic pressure, and surcharge loads.

These criteria form the foundation for the design of a robust, long-lasting marine structure, ensuring safety, stability, and durability under challenging environmental conditions.

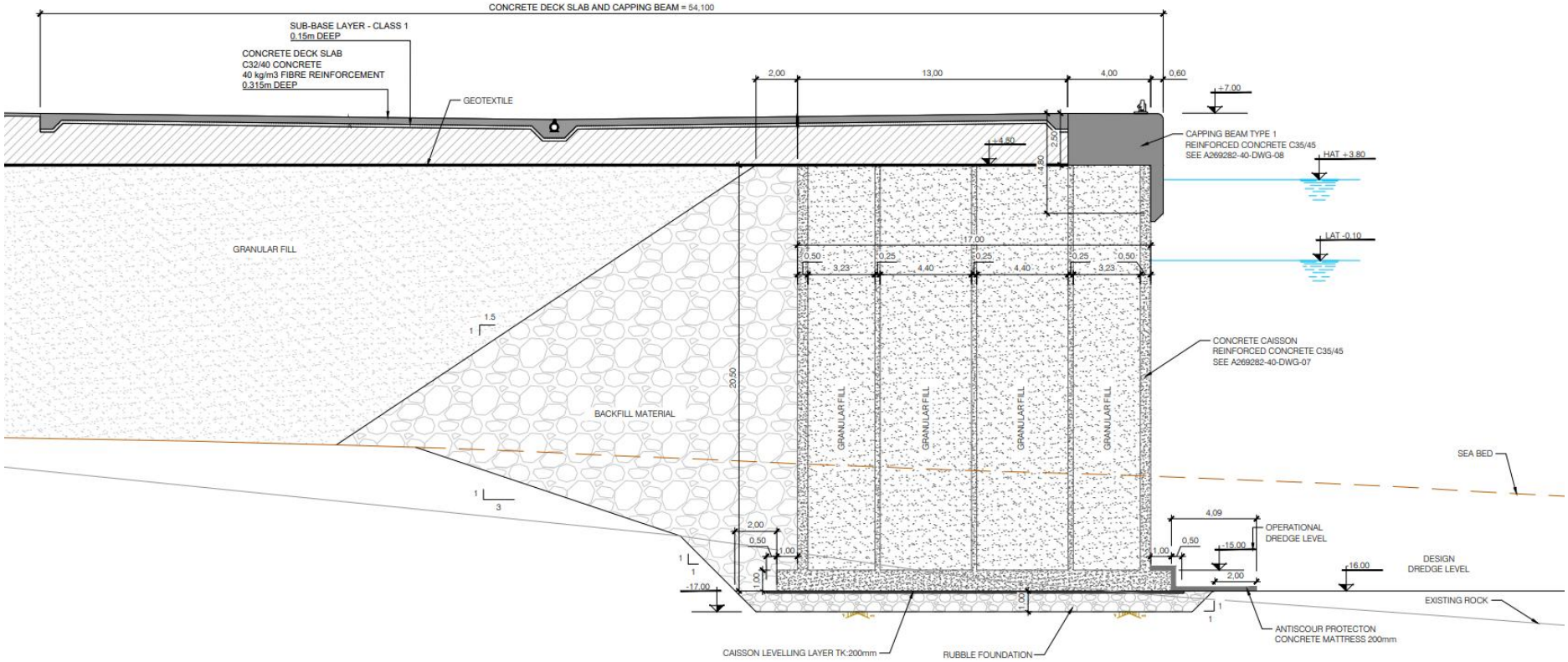


Diagram 2-2: Typical Cross Section

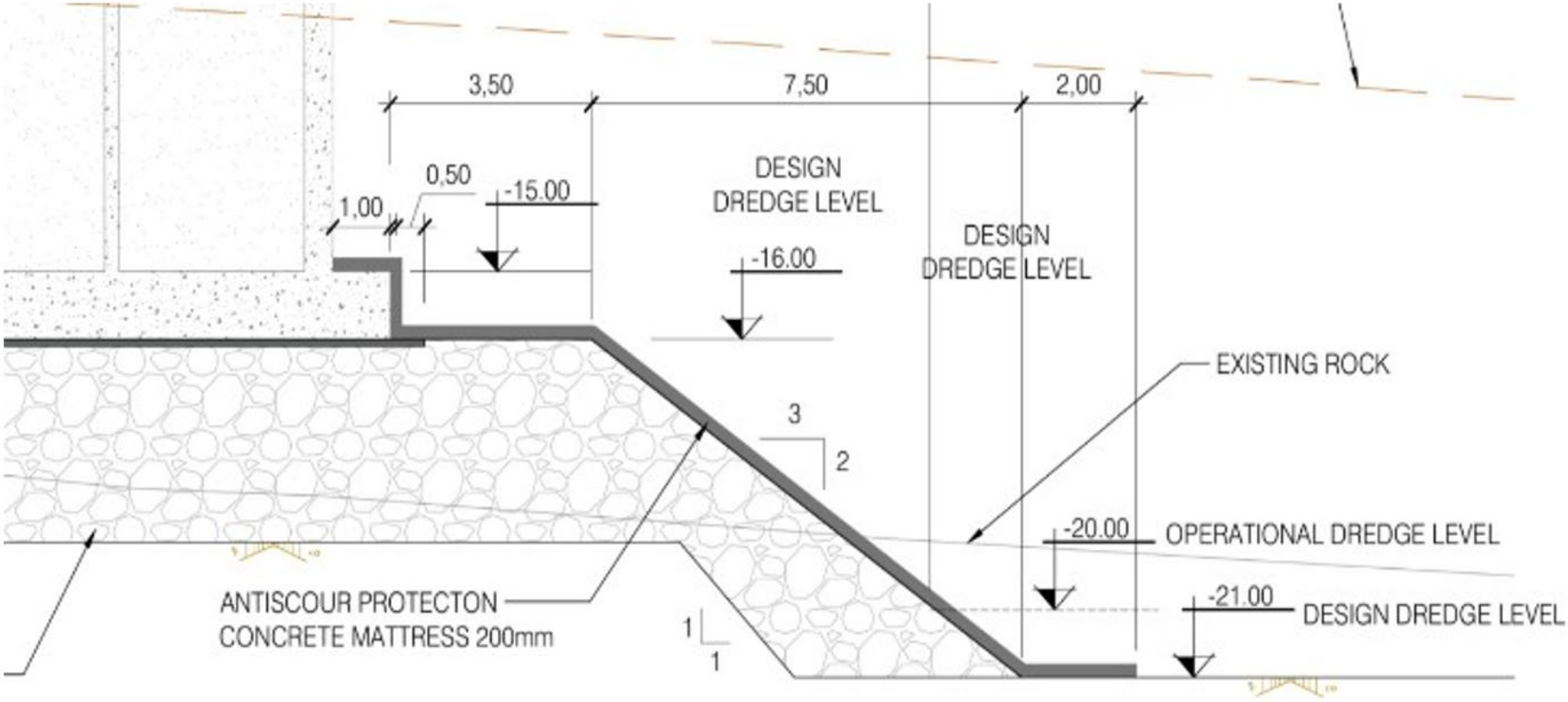


Diagram 2-3: Concrete mattress on rock

2.2.3 CAISSON DESIGN SUMMARY

- The main quay is composed of nine large reinforced concrete caissons, with a smaller caisson at the south end that ties into the south revetment.
- Different caisson cross-sections are used along the alignment to adapt to dredging depths and variable geotechnical conditions.
- The quay top level is at +7.00m CD and dredging in front of the quay reaches -15.00m CD, with a 1m over-dredge allowance for design purposes.
- A specific 140m section includes a deeper dredge pocket of -20.00m CD, offset 10m from the quay face. This will be confirmed with the developed design.
- At the north end, the OICHA tug and pilot boat berths are formed by four caissons, and one berth (62m long) uses a blockwork wall due to shallower seabed depth.
- Dredging design considers slopes based on soil type, ensuring foundation levels reach engineering rock.
- Geotechnical stability of caissons is checked against sliding, overturning, bearing capacity, and overall stability, using standard analytical methods and software tools such as SLOPE/W.

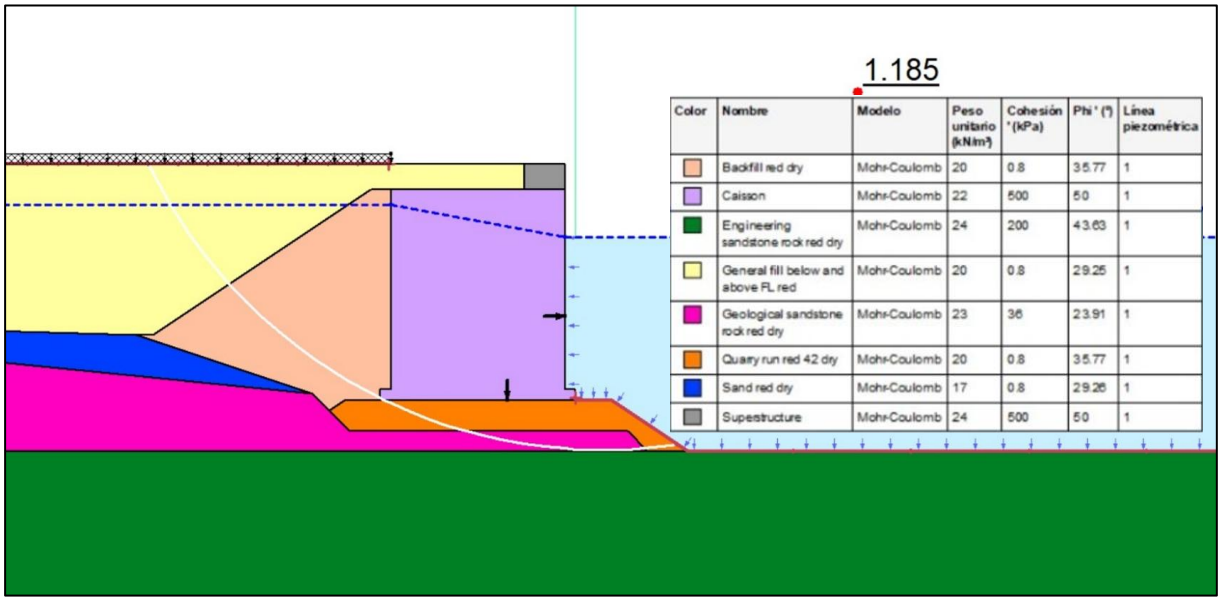


Diagram 2-4: Example of results of the geotechnical stability analysis for bearing capacity and overall stability using SLOPE/W and Plaxis software

- Structural analysis is based on a representative caisson (A1) using FEM. Reinforcement is currently unified across all caissons but may be optimised later
- In areas where the foundation is not directly on rock, scour protection is provided with a concrete mattress, adjusted based on the seabed material and vessel propeller forces.
- The geometry of the caissons has been standardized as much as possible, especially in the main quay (all 17 m wide and 20.5 m high for types A1–A3), to simplify construction and allow reuse of formwork. Caissons in the tug and pilot berth areas (types B1–B4) have lower heights, adapted to specific site and operational conditions. Some include multilevel steps for vessel access
- Buoyancy stability was analysed to ensure safe transport and installation, by adjusting internal ballast water to maintain appropriate draft and stability.
- A range of cross-sections have been developed to match site conditions, particularly for the tug and pilot berths, which include pre- and post-tender bulletin design options. Key design assumptions include:
    - 1m over-dredge applied throughout
    - Rock profiles interpolated from borehole data

- Slope angles based on material type (e.g. 3:1 for granular soils)
- Caisson foundations in the main quay resting on engineering rock where feasible

2.2.4 Wave Modelling Study

A detailed wave model (MIKE 21 SW) was used to predict wave behaviour over a 26-year period. The model confirms that local wind waves dominate, though some swell reaches the site.

Wave data from multiple return periods (up to 1:570 years) were generated to guide the design of the quay, revetments, and other structures.

Conditions during storm events were simulated to understand their effect on wave heights and construction planning.

2.2.5 Dredging works

In addition to the dredging required at the berth pockets the contractors design approach requires additional dredging for the caissons/block wall foundations. The design assumes that the structures will be founded on hard bearing strata, requiring the removal of superficial soils and hard strata from approx. -15m CD down to a maximum depth of -20.5m CD. The dredged area edge slopes depend on the material type ranging from 1:3 in superficial soils to 1:1 in engineering rock. Whilst the dredging berth pockets are required to be operative for elevations of -15m CD and -20m CD. The structures have been designed to accommodate an over dredge of 1m.

Refer to the dredging section below for dredge volumes, particularly disposal to sea. The Best Practicable Environmental Option (BPEO) report has been updated to take account of updated dredge volumes.[1]

2.2.6 Dredging

Dredging will be performed as one of the first construction activities in a single campaign. It is proposed to be executed by a combination of different methodologies that can tackle the scope while minimising impacts to the environment and coordinated with the critical path activities.

For reference, the dredge volumes associated with the **exemplar design** were as follows

Table 2-1: Dredging Area and Sediment Quantities (Exemplar Design)

Dredging Phases	Area (m^2)	Est. Quantities (m^3)
Phases 1 and 2 - Initial to -15m CD	39,000	86,000
Phase 3 -20m CD berthing pocket	26,000	90,000

Of the 176,000m^3 dredge material noted above, 25,000m^3 was intended to be disposed offshore. Sea disposal was originally calculated using a barge expected to carry material up to 1,000m^3 volume, therefore 50 return trips (100 vessel movements in total).

As a result of the modified **caisson design**, additional dredging volume is required compared to the exemplar design to provide the caisson foundations. The revised total dredge volume is detailed in Table 2-2.

Table 2-2: Dredge Material (Caisson Design)

[1] Rev 2 (May 2025)

Material type	Total volume dredged (m^3)	Volume reused on site (m^3)	Volume disposed offshore (m^3)
Sand	249,859	49,972	199,887
Clay	53,022	0	53,022
Rock	61,627	61,627	0
TOTAL	**364,508**	**111,599**	**252,909**

Note, it is assumed all clay and 80% of sand is disposed offshore, as agreed with OICHA.

Dredging methods: Sand and clay will be dredged either by hydraulic dredging using a trailer suction hopper dredger (TSHD) or mechanically by means of backhoe or grab dredgers. Rock will be dredged using a cutter suction dredger (CSD) or mechanical equipment such as backhoe dredgers equipped with rock rippers.

Dredging Caisson trench: Additional dredging is required to accommodate the caisson section (rock foundation, scour protection and caisson). Different levels have been considered following assumptions of founding the caisson on suitable hard bearing strata along the full length of the quay line. Width of this trench at the lowest level is 24 m from toe to toe.

Disposal at sea: As stated above, the volume of material (predominantly sand with some clay) to be disposed at sea has increased to a maximum of 252,909m^3 (this figure may reduce once additional geotechnical information is available). Further information about sea disposal is provided in the updated BPEO. It is assumed that 4,000m^3 capacity barge(s) will be used to transport material to the offshore disposal site. Therefore, the revised estimated dredge disposal vessel movements will increase from 50 round trips (100 vessel movements in total) (over a two-month period or almost 1 vessel movement each day) to approximately 63 rounds trips (126 vessel movements in total) over a 33-week period between end of October 2026 and end of May 2027. This equates to approximately 4 vessel movements each week. This increase from 100 to 126 is does not to materially affect the existing assessments.

2.2.7 Quay Wall

The quay wall will be formed from reinforced concrete caissons installed on a rock bed foundation, as shown on Diagram 2-5)

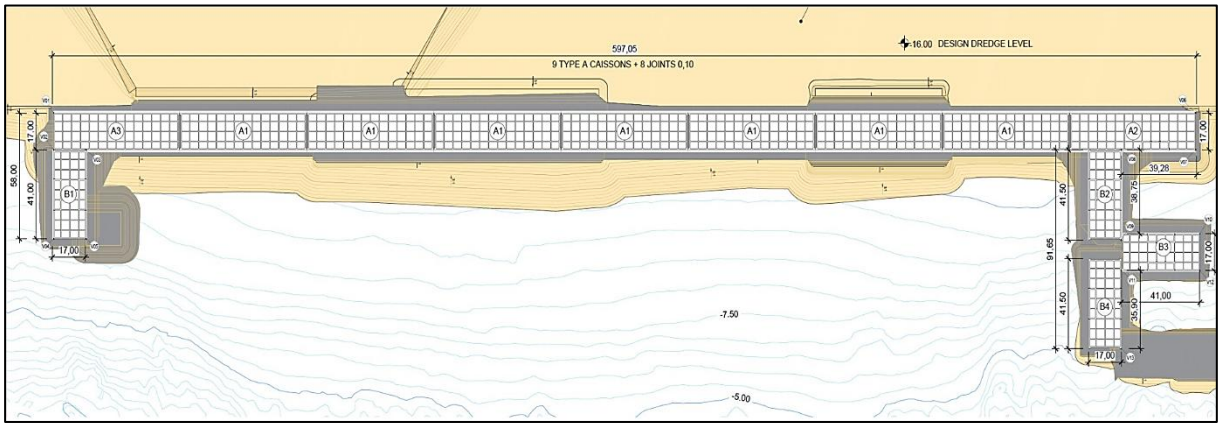


Diagram 2-5: General arrangement

The main quay is composed of nine large reinforced concrete caissons, with a smaller caisson at the south end that ties into the south revetment.

At the north end, the OICHA tug and pilot boat berths are formed by four caissons. At the innermost berths of the tug and pilot boat area, where seabed levels are shallow, concrete block walls are used

instead of caissons. Another block wall acts as a retaining structure behind the southern end of the main quay. The block walls are built using large interlocking concrete blocks reinforced with vertical steel bars for added stability.

2.2.8 Caisson Transport and Unloading

Following fabrication of the caissons in a floating dock in Spain, they will be towed to a sheltered area within the port basin. There, they will be stored in a floating condition until the arrival of the semisubmersible vessel, which will transport them to the SDWQ site. It is anticipated that 3 or 4 four trips using a semi-submersible vessel will be required to deliver all caissons to the SDWQ site. The estimated transit time for the transfer of the caissons to SDWQ is 8 days (round-trip). Consecutive trips will be undertaken to transport all caissons.

A Biosecurity Plan will be produced as part of the Detailed Construction Environmental Management Plan (CEMD) which will set out the measures to prevent introduction of invasive non-native species, in accordance with relevant legislation and best practice.

Diagram 2-6: Image of a previous caisson loading operation onto semisubmersible vessel at Langosteira Port.

2.2.9 Caisson Unloading

The unloading operation (Diagram 2-9) at Scapa Flow requires water depths over 27m due to the draft of the vessel and caissons, and favourable metocean conditions (Table 2-3)

Table 2-3: Required metocean conditions for vessel loading/unloading

Limiting weather criteria for loading/discharge operations		
Maximum 10-minute sustained wind speed	15	knots
Maximum significant wave height	0.5	m
Maximum swell	0.3	m
Maximum swell period	7	seconds
Maximum current	1	knots

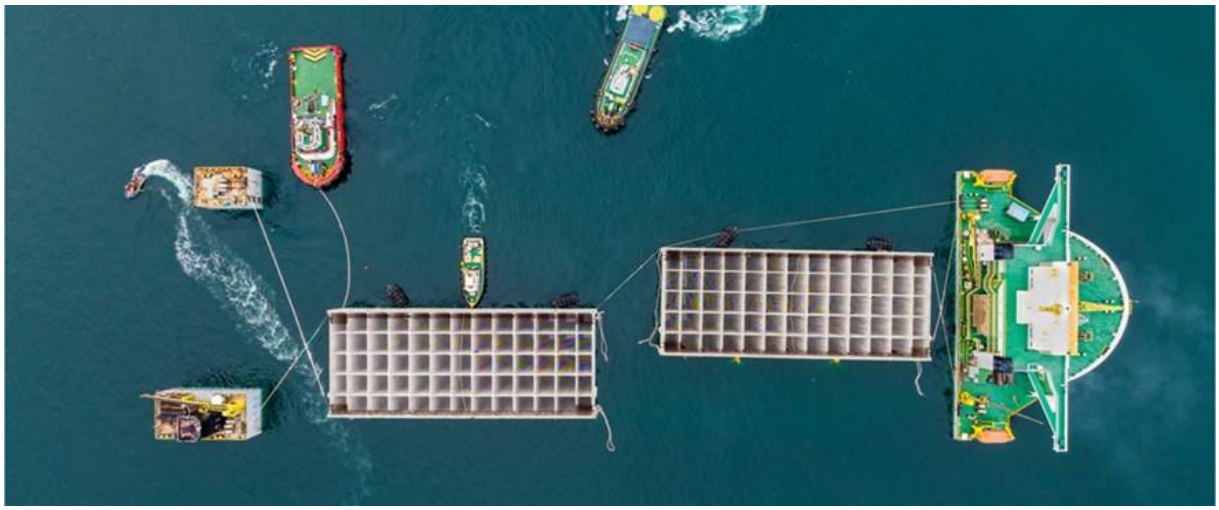


Diagram 2-7; Caisson loading into the semi submersible vessel

The three - four batches of caisson deliveries will be unloaded using 3 tugboats of at least 4000 Horsepower which will be hired locally, with the operation carried out in one to two good weather days per shipment.

Caissons will be unloaded from the semisubmersible vessel to quay location and stored within the project area, as shown in Diagram 2-8. They will be prepared with the installation of auxiliary equipment such as winches, mooring ropes and anchors, walking platforms, ballast system, topographic prisms and fenders. Once the weather conditions permit, they will be sunk into their final positions. Alternatively, caissons can be temporarily stored onto the foundation at the quay line and refloated to install within tolerance later. Any temporary storage will be within the project boundary.

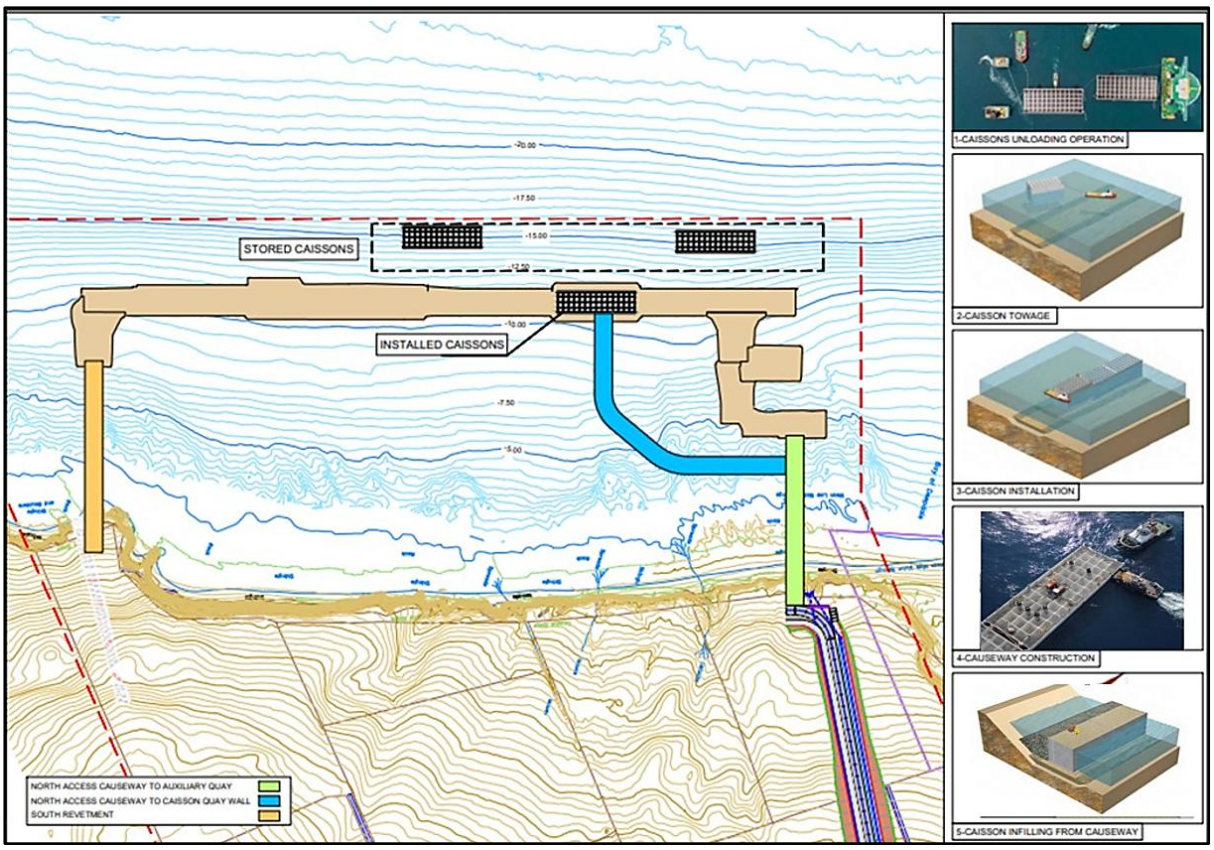


Diagram 2-8: Storage area for caisson within project boundaries.

2.2.10 Caisson Installation

The process to install a caisson is typically performed in around 6-8 hours given suitable metocean conditions. Caissons will be towed individually from their temporary storage location to the quay line. Typically, one tugboat will be sufficient, with the same tug used to assist the installation operation.

Diagram 2-9: Caisson control platform and equipment to position and sink them.

The caisson will be positioned while sinking, using tugs and winches until a final controlled touchdown on the rock foundation. Each caisson has independent and watertight groups of cells. During the operation, each group of cells is filled simultaneously with sea water either by means of a pump or a valve, with surveyors monitoring the level in each group to ensure that the installation process is performed in a controlled manner.

The caissons arrive dry and any ballasting uses water introduced locally and not imported. Each caisson is ballasted with seawater until touchdown on the gravel foundation. If the final positioning is within specified tolerances, ballasting continues until the caisson is filled with seawater. Where tolerances are not achieved, the caisson is re-floated by de-ballasting water and repeating the operation, until tolerances are met. It is typical for a single operation to achieve successful installation within toleranceThe installation process requires specific conditions to ensure the operation is safely and accurately completed as shown in Table 2-4.

Table 2-4: Required metocean conditions for vessel loading/unloading

Limiting weather criteria for caisson sinking operations		
Maximum 10-minute sustained wind speed	10	m/s
Maximum significant wave height	0.8	m
Maximum swell	0.3	m
Maximum swell period	8	seconds
Maximum current	0.5	m/s

2.2.11 Revetments

Rock-armoured revetments will be constructed to protect the north and south sides of the site from wave action, as shown on Diagram 2-8. Armour layers will consist of 2.5 tonne (north) and 4.5 tonne (south) imported rock with appropriately sized underlayers and geotextiles.

2.2.12 Sea Filling

Once caissons are installed, filled and backfilled, and the revetments are also in place closing the perimeter, general infilling will commence. Reclamation material is comprised of dredged material and land-based excavated material (which will be screened on site to remove fines before placement). Substantial marine area containment will be achieved before land reclamation fill is progressed, thus minimising sediment discharge outside the works. It should be noted that OICHA intend to install turbidity meters to measure any rouge emissions, which will be included within the supporting outline CEMD, and will be detailed in full within the final working version to be prepared by the contractor once commissioned i.e. post-consent.

2.2.13 Site Setup and Access Road Construction

The access road design utilises the exemplar design alignment retaining the swale on the northern side and footpath on the southern side. The road surface has been modified to a fully flexible solution to meet the requirements of the proposed design vehicle and loading. To ensure stability of the slope in the fill sections the swale has been designed to incorporate a HDPE liner.

A safety barrier assessment indicates that H1/W2 safety barrier are required at the bend to the compound entrance access road, signage, lighting utility connections and stock fencing have all been reviewed and the design updated as required

The access road is prioritised as a critical path activity as its completion triggers the commencement of the esplanades cut and fill operations. The contractor will require temporary service connections to the esplanades early in the programme to facilitate blasting, quarrying and earthworks operations.

Access will be formed from the realigned highway. Safe access and egress from the A961 will be achieved with reflective signage, 2-way lights as necessary, and the utilisation of banksmen.

The contractor will carry out the topsoil strip, overburden removal and elements of rock cut for the new access road. The contractor will place the subbase and surcharge it to act as a robust haul road during the construction programme.

The contractor will install the service trenching, drainage and ducting as the works progress to ensure water is managed effectively, services can be connected to the esplanade and a safe road is completed prior to temporary traffic using it. Upon completion of the project the contactor will trim the surcharge and carry out the final surfacing.

2.2.14 Excavation Platform

The excavation of soft soils on land will be excavated by mechanical means, and the rock will be excavated by drilling and terrestrial blasting (no marine blasting is proposed). Initially the contractor will install pre-earthworks drainage to control surface water run-off. After installing perimeter cut off V ditches and ahead of main land excavation and land blasting, a 6m high bund will be formed at the seaward boundary of the site by retaining the existing land and excavating behind. This will create a natural noise screen and sediment run off retention barrier. This natural bund will be removed once the remainder of the site is excavated to create the final profile.

2.2.15 Programme

The project contractor will deliver the Project ten months early, when compared with the exemplar design duration of 52 months. This will be achieved through an innovative and robust off-site caisson manufacturing methodology, which delivers a de-risked project solution and minimises disruption to the Orkney Islands residents and environment.

A summary of the main programme milestones is included below (Diagram 2-10)

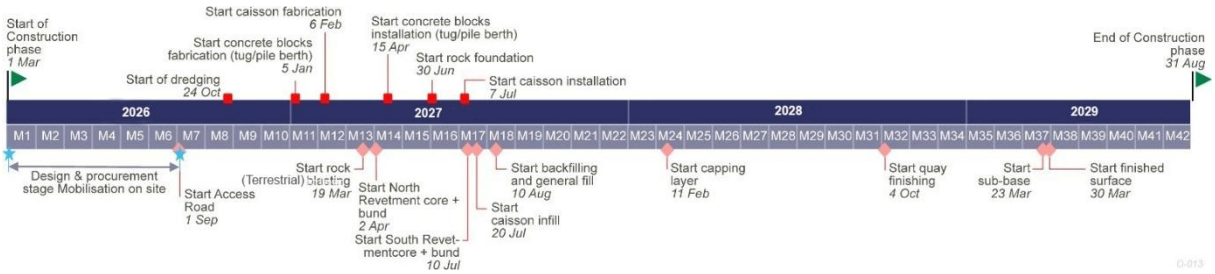


Diagram 2-10: Proposed Programme

The proposed programme is comprehensive, feasible and delivers a low risk and quicker approach to design and construction of the Project by:

- Progressing the construction of the quay wall using an offsite caisson fabrication solution while the dredging and earthworks progress concurrently on site
- Installing 13 caisson units instead of approximately 1800m of combi-wall/sheet pile wall, significantly reducing the volume of activities on site and the associated exposure to downtime risk from seasonal weather (especially wind and the effect on craneage operations)
- Using the time savings (Diagram 2-10) from the caisson solution and concurrent working approach to: – De-risk the critical path by creating programme float of ten months.
- Propose 1st of March 2026 as the Start Date to enable continuous works sequencing for summer transport and installation of caissons.

Diagram 2-11: Critical path through programme

3 MD-LOT EIA SUPPLEMENTARY INFORMATION REQUEST (RECEIVED15/04/2025)

S/N	Comments received on EIAR submission	May 2025 Response/comment
General		
1.	Scottish Ministers require that the inconsistencies within the documents submitted to reflect design scope are rectified and resubmitted.	**Noted**
2.	Clarity is required (in line with comments made by Orkney Islands Council Marine Planning) regarding any temporary associated activities, including but not limited to the partial assembly or storage of wind turbines at the proposed harbour facility. If the proposed assembly hub will include the construction/assembly of turbines that will be up to 300m in height, this must be reflected in the ZTV, visualisations and associated impact assessment, albeit as temporary structures.	With reference to offshore wind turbine components there is no information currently available for this activity, however, these activities (if they are to be undertaken at SDWQ) will be subject to permissions outwith this application. This has been consulted on and agreed with project team members within MD-LOT.
3.	Further information is required (in line with comments made by NatureScot) regarding the vessel movements during the construction including confirmation on all deliveries (except steel piles which are being delivered on the existing commercial Northlink vessel), to include route and timings and confirmation that deliveries will be made into and from Lyness. The information is lacking enough detail to assess any impacts on marine species, including birds and mammals.	Updated vessel movements during construction are provided in HRA Chapter 4 and Section 5.5.2 of the SEI Report. Note: Chapter 2 of the Supplementary Environmental Information Report (SEIR) provides an overview of the main change from the exemplar design is a construction method variation, to the use of caisson structures instead of a piled quay.
4.	Further information is required (in line with comments made by NatureScot) regarding vessel movements during the operational stage including clarification on existing vessel movements detailed independently, and information on vessels transferring from Scapa Pier to SDWQ along seasonal timings and routes.	Vessel movements during the operational phase are not yet available at this early stage of the project. However, they have been estimated as best as possible within Chapter 4 of the HRA.

5.	More information is required on the potential impacts on the relevant environmental receptors due to the construction methods and scheduling.	Refer to HRA Chapter 4 and Technical Appendices which include Noise Contour maps. Chapter 2 of the Supplementary Environmental Information Report (SEIR) provides an overview of the main change from the exemplar design is a construction method variation, to the use of caisson structures which removes piling and drilling associated with the piled quay option. Discussions with the project contractor confirmed that the assumptions in the modelled plant tables within the Noise Impact Assessment (NIA) are reasonable and present a conservative approach, with the exception of the suggested inclusion of two trommels. The trommels were added into the model based on the MDS M515 Track Trommel data sheet. The addition of the two trommels noise levels at the surrounding NSRs are within 1dB of those reported in the Technical Appendix 9.1. This change is not significant, and the levels at all receptors remain well below the threshold for impact (Refer to Chapter 9 of the SEIR (May 2025).
6.	The potential impacts of noise impacts from construction should be fully assessed for impacts on displacement and injury to SPA birds, and must include details of the impact ranges, displacement area and potential risk of injury amongst SPA birds from vibro-piling along with evidence to support the 250m buffer distance in the HRA	Chapter 2 of the Supplementary Environmental Information Report (SEIR) and Chapter 3 of the HRA provides an overview of the main change from the exemplar design to the use of caisson structures instead of a piled quay. The caisson structures remove the requirement for piling and drilling associated with the piled quay option.
7.	The spatial extent of disturbance assessments is extended beyond 1-2km for novel proposed vessel routes	This is addressed throughout HRA and in the maps within the Appendices

8.	Further information on location and timings of proposed terrestrial blasting and, if blasting is to be undertaken, a full assessment considering the disturbance impact zone must be included for the relevant qualifying features.	BS 6472-2:2008 (Guide to evaluation of human exposure to vibration in buildings - Blast-induced vibration) states that "Accurate prediction of air overpressure (from blasting) is almost impossible due to the variable effects of the prevailing weather conditions and the large distances often involved." As referenced by guidance, it is not possible to predict with accuracy the likely levels of air overpressure that will be generated at receptors by the proposed blasting due to high level of variables involved. The best way to control air overpressure is through good blast design and an appreciation of how local weather conditions can influence levels and impacts. Best practice measures will be recommended to minimise vibration and air overpressure generation due to blasting. Once a blasting contractor has been appointed a terrestrial blast strategy will be prepared and issued to the Regulators. Refer to • sections 2.2.14, 5.5.6, 5.6, 9.3.1 and Chapter 11 of the SEI, • Sections 3.2.13, 6.3.2.2, 6.4.2.2, 6.5.2.2, 6.6.2.2, 67.2.2 6.8.2.2, 6.9.1.2, 6.10.2.2, 9.1.1 10a, and Chapter 13 of the HRA, • Sections 1.2, 4.4 and 5.1.7 of the Seal Risk Assessment
9.	Further information is required on the impact of drilling and effects of noise assessed for SPA birds and SAC seals.	As noted above the change from the exemplar design, to the use of caisson structures instead of a piled quay remove the requirement for piling and drilling associated with the piled quay option.
10.	Confirmation on the duration including days/months and timings of dredge activity to further assess disturbance levels for SPA birds and SAC seals.	The duration of proposed dredge campaign has increased from 102 days to ~234 days. However, the duration of the construction phases would be reduced significantly as the proposed caisson development will be completed approximately ten months early, when compared with the exemplar design duration of 52 months (refer to Section 2.2.14 of the SEIR)
11.	The Marine Mammal and Fish Baseline still shows confusion between aquaculture sites and commercial fisheries and this must therefore be updated.	This has been updated in the MM and fish baseline

Cumulative Assessment		
12.	Scottish Ministers request a more robust and detailed cumulative impact assessment for this proposal. It must take into account relevant developments which are likely to have a significant effect on the same qualifying features and populations of protected SPA and SAC species. As a minimum, the proposed development with Flotta Deep Water and nearby aquaculture sites should be included in the in-combination/cumulative assessment along with the cumulative impact of vessel movements, including but not limited to aquaculture sites in the eastern side of the Scapa Flow SPA.	Refer to the HRA. Flotta is unlikely to proceed. Aquaculture sites added to HRA – refer to Chapter 12 In Combination Effects.
13.	Furthermore, Scottish Ministers require the following information to be provided, in line with the views of NatureScot: • The "wider occurrence in Scapa Flow" aspects of the HRA sections for each SPA feature must be re-written in line with all of NatureScot's comments. In short these include but are not limited to new maps to make the data clearer, updated cumulative assessment within the North Orkney SPA, highlighting of how flightless moult periods overlap with the project and impacts on all SPA features from noise related activities and vessel movements. The full requirements can be found in the NatureScot response attached.	Maps have been produced (Appendix A of the HRA) that combine project survey data and HiDef survey data.
Scapa Flow SPA		
14.	Review and amend the HRA in relation to the declining numbers of Red Throated Divers recording its now unfavourable status.	HRA Sections 6.10 and 8.1
15.	Further assessment of the black-throated Diver, non-breeding feature of the Scapa Flow -SPA, in relation to a reduced habitat, must be undertaken to determine the potential for adverse effects on site integrity in relation to conservation objective 2a.	Section 6.4 of the HRA details assessment on Black-throated Diver, including mortality matrix as requested by NatureScot (table found in Appendix D of HRA).
16	A detailed quantitative assessment on the black-throated Diver, non-breeding, in relation to disturbance impacts, must be undertaken to determine the potential for adverse effects on site integrity in relation to conservation objective 2b.	As above
17.	Great Northern Diver- non-breeding, a further assessment is required incorporating increased vessel movements, in relation to disturbance impacts, must be undertaken to determine the potential for adverse effects on site integrity in relation to conservation objective 2b.	Section 6.3 of the HRA Appendix C of the HRA shows construction vessel routes and Great Northern Diver locations.

18	Slavonian Grebe non-breeding - a further assessment is required, in relation to disturbance impacts, including increased vessel movements, to determine the potential for adverse effects on site integrity in relation to conservation objective 2b.	Section 6.5 of the HRA Appendix C of the HRA shows construction vessel routes and Slavonian Grebe locations.
19	Red-throated diver, breeding – impact associated with increased vessel movements must be assessed within the HRA as a likely significant effect on this feature.	Refer to HRA Section 6.10, 8.1 and section 9
Impact Assessment		

20.	A revised assessment on disturbance impacts is required for associated vessel movements along with consideration of permanent displacement. Additionally, the impact pathways of individual species need to be considered to support conclusions for both construction and operations.	• Hi Def survey maps have been prepared for the following:
		  ○ black-throated Diver
		  ○ Great Northern
		  ○ Slavonian Grebe
		  ○ Long tailed duck
		  ○ Eider
		• Section 6 of the HRA

North Orkney SPA		
21.	Further assessment on the SPA is required in relation to connectivity with Scapa Deep Water Quay for the Great northern diver, Slavonian grebe and Red-throated diver of both Orkney SPA and Scapa Flow SPA for disturbance and displacement.	Section 7 of the HRA
22.	A further cumulative/ in-combination assessment is required considering any cumulative impacts of the proposed Hatston development occurring concurrently with the SDWQ development.	Chapter 12 In Combination Effects within the HRA
23	A revised assessment on the effects of the development on the qualifying features of this SPA on their population size, status and sensitivities must be undertaken as part of the HRA using the correct baseline figures for each qualifying feature.	Section 7 of the HRA
Hoy SPA		
24.	Breeding Red-throated diver- Further assessment must be undertaken to determine the impacts of the development on mortality and breeding that may undermine the conservation objective to maintain the population of the species as a viable component of the site,.	Section 9 of the HRA
.25.	The use of Lyness pier as the main port for construction vessels (as well as movements between SDWQ and the dredge deposit site) must be assessed for the red throated diver feature including timings routes and number of vessels.	No longer required. Assessment now includes route via Stromness
In combination impacts		
26.	A revised assessment is required using quantative or evidence-based assessment to determine in combination effects with the Hatston and Lyness wind turbines to support the assessment and conclusions.	Section 12 of the HRA

27.	Flotta Deep Water Quay should be included in a revised cumulative assessment.	Unlikely to be proceeding
28.	The revised assessment should also include the impacts of vessel movements associated with aquaculture sites of the eastern side of Scapa Flow.	Section 12 of the HRA
Mitigation		
29.	Further detail in regard to assessments and mitigation is required in order to assess efficacy.	Mitigation has been reviewed and amended as required
Sanday SAC – Harbour Seal		
30.	A quantitative assessment is required on the disturbance impacts from vessel movements, piling and dredge activity, detailing the size and status of the SAC condition, feature, and any sensitivities, indicating resources used in the compilation	Seal Risk Assessment and Section 10 of the HRA. Piling and associated drilling no longer required
31.	Further information is required on the drilling and terrestrial blasting including assessment of associated impact on harbour seals.	Seal Risk Assessment and Section 10 of the HRA. Drilling is no longer part of the design.
32.	Detailed information is required on the length of the dredging campaign to inform disturbance levels.	Section 3.2 of the HRA
33.	The selection of projects considered in the in combination assessment needs to reflect a wider range of developments such as other harbour developments, aquaculture, renewable energy developments and cable installations and the impact these have in combination with the assessment making specific reference to the SAC population, status and size.	Section 12 of the HRA
34.	Impacts associated with vessel movements must be based on more realistic estimates of the vessel movements associated with both the construction and operational phases. Sufficient detail should be provided to enable a full assessment of the likely impacts, which should include information of the likely types of vessels and on the volumes, timings, frequencies and routes of likely vessel movements.	Section 10 of the HRA
Mitigation		
35.	Mitigation must be tailored to the predicted impacts associated with the proposed activities..	Chapter 5 Seal Risk Assessment and Chapter 13 of the HRA
Underwater Noise Impacts Further information is required on all activities likely to generate novel/prolonged levels of noise including drilling and terrestrial blasting. Specifics on numbers of holes drilled, timing and duration as well as the proposed timings of terrestrial blasting. More information on the length of the dredging campaign is also required. Impacts from all construction activities likely to generate an increased, novel or prolonged level of noise must be assessed for the Harbour seal feature of Sanday SAC.		
36.	Should an alternative method other than vibratory pilling be considered, NatureScot should be consulted via MD LOT.	The change from the exemplar design to the use of caisson structures instead of a piled quay remove the requirement for piling and drilling associated with the piled quay option thus reducing underwater noise.

37.	To support the conclusion of no adverse effect on site integrity a quantative assessment will be required as per the NatureScot advice giving attention to the unfavourable declining status of the SAC and current population numbers, distribution, vulnerabilities, and sensitive timings.	Seal Risk Assessment/ Section 10 of the HRA
38.	Underwater noise modelling must be revised and reassessed for the dredging requirements of Phase three.	Seal Risk Assessment/ Section 10 of the HRA. Revised underwater noise modeling was not undertaken as pilng and associated drilling are no longer being undertaken as a result of the change from the exemplar design to the caisson design. In addition, there is reduced construction noise and emissions, as the caissons are manufactured off-site (in Spain) under controlled conditions.
Vessel Movement Impacts		
39.	Further assessment is required on vessel movements for both construction and operation to support conclusion and any mitigation required. Increased vessel movements associated with the development must be realistic to inform the assessment.	HRA/ supporting species maps (Appendices A, B and C)
In Combination Impacts		
40.	Clarity is required with regard to justification for scoping plans and projects in or out of the in combination assessment. The in combination assessment must be quantitative and refer to the population size and status of the SAC.	Refer to HRA Chapter 12 "For the Proposed Development at SDWQ, the following developments have been recommended by Orkney Islands Council to be considered for in-combination effects: • Hatston Logistics Base; • Lyness onshore wind farm" Various others (such as aquaculture) were also considered.
41.	Clarity is required for the in-combination assessment specifically if Hatston and SDWQ are to be developed concurrent or sequentially along with further detailed realistic timings and scheduling individualised for each site to inform cumulative impacts.	noted Refer to Chapter 12 of the HRA.
Advice in Relation to Appendix 3 NatureScot Response		
Marine Mammals		

42.	Revision of submissions are required to ensure the design scope is accurate and all references to marine blasting removed as well as inclusion of the humpback whale (included in TA 5.2), fin whale (included in TA 5.2) and common dolphin (included in TA 5.2) consistently throughout documents. Data gaps and inaccuracies in the marine mammal baseline must be addressed.	**noted** MM and fish baseline is TA 5.2, so has been updated with new design works. But no mention of blasting in there. Unless the MMRA was what was being referred to here? If so, no marine blasting is referred to. Uncertain on comments about humpback whale and common dolphin as they are referred to in both MMRA and MM and fish baseline document throughout. Fin whale wasn't in TTS/PTS section, so have added in, but is scoped to be impacted. In relation to: *Data gaps and inaccuracies in the marine mammal baseline must be addressed.* NS also states: *However, we can accept the baseline report if all mitigation measures are implemented for all marine mammal species, irrespective of the frequency in which they are sighted in the area.* It is assumed thay this means no updates to MM and fish baseline required
	The Marine Mammal Risk Assessment should include seals.	
43.	More robust cumulative assessments are required, which should consider the range of relevant plans and projects which could have a significant effect on the same populations of marine mammals likely to be impacted by this proposed development.	Refer to Section 4.2 of Seal Risk Assessment and Chpter 12 of the HRA
Underwater noise modelling		
44.	Underwater noise modelling must be updated to be based on the most accurate and realistic description of the development.	The change from the exemplar design to the use of caisson structures instead of a piled quay this removes the requirement for piling and drilling associated with the piled quay option thus reducing underwater noise. In addition, there is reduced construction noise and emissions, as the caissons are manufactured off-site (in Spain) under controlled conditions.
	Inconsistencies between the documents must be addressed.	Inconsistencies have been addressed. It should also be noted that he change from the exemplar design to the use of caisson structures instead of a piled quay this removes the requirement for piling and associated drilling associated with the piled quay option thus reducing underwater noise. In addition, there is reduced construction noise and emissions, as the caissons are manufactured off-site (in Spain) under controlled conditions.

	Noise maps are required for modelling undertaken in the report.	Noise maps are attached to the underwater noise report. It should be noted that he change from the exemplar design to the use of caisson structures instead of a piled quay this removes the requirement for piling and associated drilling associated with the piled quay option thus reducing underwater noise. In addition, there is reduced construction noise and emissions, as the caissons are manufactured off-site (in Spain) under controlled conditions.
45.	Further information is required on the methodology for modelling impacts, to include detail on hearing groups and swim speed	The change from the exemplar design to the use of caisson structures instead of a piled quay this removes the requirement for piling and drilling associated with the piled quay option thus reducing underwater noise. In addition, there is reduced construction noise and emissions, as the caissons are manufactured off-site (in Spain) under controlled conditions.
Marine Mammal Risk Assessment and Basking Shark Risk Assessments		
46.	A revised risk assessment is required detailing species numbers likely to be disturbed by the development by a threshold shift or by behavioural change. The revision should use SCANS IV data and the current version of noise modelling.	**noted** Data used in the Seal RA was agreed with NatureScot and this was assumend acceptable for the MMRA and BSRA.
47.	Further information is also required on the type, scheduling and duration of construction to fully assess levels of disturbance, including potential, a revised Cumulative Impact is also required.	Updated info on construction added to MMRA and BSRA
Ornithology		
48.	A revised ornithology report is required detailing zone of influence for species disturbed, notably the black-throated and red-throated divers. The revised report should consider relevant sources, including those specified in the NatureScot response, and evidence how the zone of influence has been adopted.	Refer to Ornithology: Technical Report/ HRA
49.	European shag should be included in the list of SPA species to be scoped in.	Refer to Section 6.6 of the HRA
50.	Further, wider consideration is required of the potential disturbance impacts including novel vessel routes resulting from the location of the proposed development in a previously undeveloped section of coastline.	HRA/ Appendix A and C (supporting species maps) of the HRA
51.	Clearly define true seabirds nesting in colonies, breeding red-throated divers and migratory inshore wintering species.	HRA
52.	Further evaluation is required in respect of the Arctic and Common tern.	Refer to Ornithology: Technical Report.
53.	Further information is required on the evidence for the statement on significance	Noted Refer to Chapter 12 Summary of Effects within the SEI
Impact Assessment		
54.	Further information is required on the loss of habitat, vessel movements, inshore activity and potential pollution incidents impacting on the Tern species to validate conclusions.	HRA
In Combination Impacts		
55.	Aquaculture sites should be included and assessed along with other developments including Hatson and Lyness onshore windfarm.	HRA Chapter 12

Commercial Aquaculture		
56.	In line with comments made by Orkney Islands Council further information is required on the outcome of the consultation with the Orkney Fisheries Association through the consultation events.	As noted within the EIAR Section 8.2 dated August 2024 The Orkney Fisheries Association have been consulted during the consultation events undertaken as part of the proposal. This consultation was to explain what the proposed development entailed and to get their thoughts on the proposals. They were not in-depth discussions but were used to feed into the findings of Chapter 8 of the EIAR. An additional meeting via MSTeams was held with Scottish Sea Farms (SSF) on 30/05/2025 to discuss the changes to the design (i.e. the caisson). Understandably they had some concerns over the increased dredging, however, as per previous discussions they were helpful and appeared supportive with the new proposals providing the environmental measures that are in place can demonstrate protection of their operations.
Archaeology		
57.	Further information is required in line with Orkney Islands Council comments to mitigate the impact of propeller wash and scour on historic assets.	In line with Orkney Islands Council comments to mitigate the impact of propeller wash and scour on historic assets, rock armour will be installed at SDWQ to mitigate seabed erosion caused by vessel thrusters and propellers near the quay. Due to natural waves and the movement created by the props and thrusters of ships coming into the facility, the embankment or subgrade material will scour and potentially compromise existing infrastructure. In areas where the foundation is not directly on rock, scour protection will be provided with a 200mm antiscour protection concrete mattress as shown in the Diagram within Section 6.4 of the SEIR) As noted in the previous EIARs and supprting information further investigation of “Site 2” will be carried out prior to construction commencing.

4 SDWQ DEVELOPMENT & MARINE PLANNING (ORKNEY ISLAND COUNCIL) COMMENTS – OIC

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
1.	**Sites of Special Scientific Interest (SSSIs)** The Keelylang Hill and Swartaback Burn SSSI is important for breeding hen harrier, breeding bird assemblage (which includes red throated diver, short eared owl and hen harrier – the same interests as the Orkney Mainland Moors SPA) and upland (habitat) assemblage. The SSSI lies within the Orkney Mainland Moors SPA, approximately 6km to the south west. The SSSI habitat will not be affected by the proposed development. **As the SSSI avian features are the same as for the SPA, addressing likely significant effects on the SPA interests via the HRA will ensure that adverse effects on the SSSI avian features are also minimised.**	**Sites of Special Scientific Interest (SSSIs)** The previous advice remains valid: The advice of NatureScot in relation to the SPA and HRA must be followed.	Orkney Mainland Moors SPA and Hen Harrier included in the HRA (Table 5-1 and Scoped Out). Hen Harrier Management Plan will be in the CEMD. (Refer to Outline CEMD Appendix I of the SEI Report)
2.	**Local Nature Conservation Site (LNCS)** Gaitnip Hill LNCS is located within approximately 35 metres of the closest part of the proposed development. It is important for a range of upland, freshwater, maritime, fen and bog habitats, moss carder bee and a range of birds including hen harrier, short eared owl, merlin, curlew, lapwing, snipe, skylark, twite, reed bunting. Provided all works take place within the red line planning application boundary, there should not be any adverse effects on the habitats of the LNCS or the insects that rely on them. However, due to proximity, there could be adverse effects through disturbance on the breeding birds that are part of the LNCS, in particular hen harrier. Hen harrier have a heightened level of legal protection as they are listed in Schedule 1 and 1A of the Wildlife and Countryside Act 1981 (as amended in Scotland), which means that it is an offence to disturb hen harrier while building a nest or is in, on or near a nest containing eggs or young, to disturb the dependent young of hen harrier, or to harass hen harrier at any time. (see https://www.nature.scot/doc/implications-additional-protection-hen-harrier-red-kite-and-golden-eagle-under-schedules-a1-1a) Information in NatureScot commissioned research report 1283 (available via https://www.nature.scot/doc/naturescot-research-report-1283-disturbance-	**Local Nature Conservation Site (LNCS)** The previous advice remains valid: **Further consideration and identification of suitable mitigation measures to minimise the risk of disturbance to breeding hen harrier and committing an offense is required. This should be incorporated into a breeding bird species protection plan in an outline CEMP.**	Hen Harrier Management Plan will be in the CEMD. (Refer to Outline CEMD Appendix I of the SEI Report)

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
	distances-review-updated-literature-review-disturbance) indicates that hen harrier are susceptible to disturbance from visual and noise related disturbance out to 1000m, which would include the majority of the LNCS. Based on the information provided in Technical Appendix 5.3 (Ornithology), the breeding bird walk over survey effective area covered extends to approximately 250m from the proposed development and access route. While hen harrier were not recorded breeding within the walkover survey area, they were recorded flying over the site during vantage point surveys. This indicates that they could be breeding within the LNCS. **Further consideration and identification of suitable mitigation measures to minimise the risk of disturbance to breeding hen harrier and committing an offense is therefore required. This should be incorporated into an outline CEMP - see advice on Protected species – breeding birds and Wider biodiversity – CEMP below.**		
3.	**European Protected Species – otter** Information about effects on otter from construction and operation has been provided in Technical Appendix 5.8 (Otter Survey) and Environmental Report section 5. Otter are European Protected Species with a high level of legal protection. As probable otter resting sites would be destroyed by the proposed development, a license from NatureScot would be required to allow the development to go ahead without breaching the law. **The applicant should supply evidence of the advice they have received from NatureScot that a license could be granted (based on the available information presented in the EIA and any follow up survey work that has been undertaken) that would allow the development to proceed without breaching the law. Until this evidence has been provided, the Council will be unable to determine the application.**	**European Protected Species – otter** The previous advice remains valid: **The applicant should supply evidence of the advice they have received from NatureScot that a license could be granted** (based on the available information presented in the EIA and any follow up survey work that has been undertaken) that would allow the development to proceed without breaching the law. Until this evidence has been provided, the Council will be unable to determine the application.	An application for an European protected species (EPS) licence will be submitted to the Regulator if the presence of otter is identified on site prior to works commencing. NatureScot are not expected to confirm that an EPS licence could be granted, until such a time that they have assessed an EPS application to disturb otter (should one be required). However, the development will not be able to proceed without an EPS licence, if one is required; we trust that this provides the necessary comfort that the project would only be allowed to proceed in compliance with the law.
4.	**European Protected Species – cetaceans** Information about effects on cetaceans from construction and operation has been provided in Technical Appendix 5.2 (Marine Mammal and Fish Baseline	**European Protected Species – cetaceans** The previous advice remains valid: **The applicant should supply evidence of the**	An application for a marine mammal European protected species (EPS) licence will be

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
	report) and Environmental Report section 5. Cetaceans are European Protected Species with a high level of legal protection. The Environmental Report section 5.8.2 (page 57) considers that a licence would be required from NatureScot as adverse effects on cetaceans are unavoidable for a development of this nature, location and scale. **The applicant should supply evidence of the advice they have received from NatureScot that a license could be granted (based on the available information presented in the EIA) that would allow the development to proceed without breaching the law. Until this evidence has been provided, the Council will be unable to determine the application.**	**advice they have received from NatureScot that a license could be granted** (based on the available information presented in the EIA and any follow up survey work that has been undertaken) that would allow the development to proceed without breaching the law. Until this evidence has been provided, the Council will be unable to determine the application.	submitted to the Regulator prior to works commencing. NatureScot are not expected to confirm that a EPS licence could be granted, until such a time that they have assessed an EPS application to disturb otter (should one be required). However, the development will not be able to proceed without an EPS licence, if one is required; we trust that this provides the necessary comfort that the project would only be allowed to proceed in compliance with the law.
5.	**Protected Species – basking shark** Information about effects on basking shark from construction and operation has been provided in Technical Appendix 5.2 (Marine Mammal and Fish Baseline report) and Environmental Report section 5. Basking shark are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and have a high level of legal protection. The Environmental Report section 5.8.2 (page 57) considers that a licence would be required from NatureScot as adverse effects on basking shark are unavoidable for a development of this nature, location and scale. **The applicant should supply evidence of the advice they have received from NatureScot that a license could be granted (based on the available information presented in the EIA) that would allow the development to proceed without breaching the law. Until this evidence has been provided, the Council will be unable to determine the application.**	**Protected Species – basking shark** The previous advice remains valid: **The applicant should supply evidence of the advice they have received from NatureScot that a license could be granted** (based on the available information presented in the EIA and any follow up survey work that has been undertaken) that would allow the development to proceed without breaching the law. Until this evidence has been provided, the Council will be unable to determine the application.	An application for a basking shark disturbance licence will be submitted to the Regulator prior to works commencing. NatureScot are not expected to confirm that a EPS licence could be granted, until such a time that they have assessed an EPS application to disturb otter (should one be required). However, the development will not be able to proceed without an EPS licence, if one is required; we trust that this provides the necessary comfort that the project would only be allowed to proceed in compliance with the law.

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
6.	**Protected species – breeding birds** All wild birds are legally protected, making it an offense to damage or destroy nests while being used or built. Hen harrier have a heightened level of legal protection as they are listed in Schedule 1 and 1A of the Wildlife and Countryside Act 1981 (as amended in Scotland), making it an offense to disturb hen harrier while building a nest or is in, on or near a nest containing eggs or young, to disturb the dependent young of hen harrier, or to harass hen harrier at any time. Technical Appendix 5.3 (Ornithology) includes information on 14 bird species that were found to breed within the proposed development site and immediate surrounding area. As outlined under the advice for **Local Nature Conservation Site (LNCS)** above, hen harrier breeding in the neighbouring LNCS would be affected by disturbance caused by the proposed development. Ten of the 15 affected breeding species are red or amber listed Birds of conservation concern (red listed: hen harrier, ringed plover, lapwing, curlew, skylark, starling, twite; amber listed: oystercatcher, redshank, wren) Six (hen harrier, curlew, skylark, twite, starling and lapwing) are also listed on the Scottish Biodiversity List as requiring conservation action and/or avoidance of negative impacts. However, no mitigation measures for breeding birds are proposed in the Schedule of mitigation (section 11 of the Environmental Report, pages 131 to 136) and no compensation is proposed to offset the loss of breeding habitat. **In relation to addressing the loss of breeding habitat, this should be included as part of demonstrating how the proposed development will conserve, restore or enhance biodiversity, as required under the advice provided below for Wider biodiversity – NPF4 policy 3.b.** **In relation to mitigation measures during construction, for this site, range of habitats present and the existing uses of the proposed development site and surrounding area, the inclusion of mitigation measures in an outline CEMP would minimise the risk of adverse effects, committing an offense in relation to hen harrier, and/or unexpected discovery of breeding birds halting works.** **A breeding bird protection plan must be incorporated into an outline CEMP, setting out measures to minimise adverse effects on breeding birds including, but not limited to:**	**Protected species – breeding birds** While the biodiversity feasibility report and management plan (Technical Appendices 5.9 and 5.10) refer to enhanced habitat providing a place for breeding birds, **the comparatively small size of the enhanced areas and location next to what would be busy working areas are insufficient to compensate for the breeding habitat that would be lost as a result of the proposed development. This issue requires reconsideration and to be addressed in a meaningful way that responds to the loss of breeding habitat and the nature and scale of the proposed development.** **The previous advice remains valid in relation to the CEMD and need for a breeding bird species protection plan.**	Regarding BNG, the Feasibility Assessment undertaken in June 2024 identified that to achieve a 10% gain, both onsite and offsite habitat enhancement and creation would be required. At the time of writing the BNG Feasibility Assessment and this SEI, land within the control of the OICHA and suitable for the application of enhancement and creation measures, has been identified at Hatston Pier, Orkney (Grid Reference: HY 43095 12969). Additionally, habitat restoration at the community led, Quarterness Windfarm is being considered as an opportunity to achieve BNG. Quarterness is near Hatston Pier (approximately 2.4km west). Further opportunities for habitat enhancement and creation have also been identified by the Environmental Planner for Orkney Islands Council at Papdale East Park (Grid Reference: HY 45863 10498) and Balfour Hospital, Kirkwall (HY 44458 10109). Additional sites identified by OICHA (as the responsible legal entity, have a firm commitment to identifying biodiversity enhancement) which include redundant quarries which are in need of restoration, and several

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
	– ground preparation (including vegetation stripping) works to start between October to February (inclusive) with continuous working thereafter – or where this is not possible, a pre-start walk over of the site by a suitably experienced (and licensed) ecologist must be carried out to identify signs of breeding birds, plus a specific survey for breeding hen harrier within the site and out to 1km from the development boundary, with a breeding bird protection plan submitted for approval in writing by OIC before any ground preparation or construction works commence or re-start; – demarcation of working corridors to prevent vehicle movements and/or storage of materials within areas that should otherwise be outwith the area of works; – daily walkovers of the proposed development site by a suitably experienced and licensed Ecological Clerk of Works (ECoW) to identify nest sites and nesting behaviour; – marking of nest locations within the proposed development site by the ECoW, who should also ensure that all personnel on site know to avoid working in the vicinity of nest sites until such time as the ECoW advises that the young birds have fledged or the nest failed; **Without the inclusion of the appropriate mitigation measures to avoid adverse effects on breeding birds in an outline CEMP, the development would be unacceptable in relation to breeding birds, particularly hen harrier, a Schedule 1 species with heightened levels of legal protection from disturbance.**		potential sites associated with proposals such as those to enhance biodiversity and reduce maintenance within the Grainebank SuDS areas (subject to consultation and permission). It's been agreed in principle with OIC Planning that BNG commitments will be agreed post-consent, enforced by condition, should planning permission be granted. The CEMD will include management measures including nesting bird protection plan, hen harrier plan etc..
7.	**Terrestrial wider biodiversity – NPF4 policy 3.b** **Unfortunately the information submitted with the application does not demonstrate how the proposed development will conserve, restore or enhance biodiversity (including nature networks) so that it is in a demonstrably better state than without intervention, and therefore does not meet the requirements of points iv and v of NPF4 policy 3.b.** While there is a stated intention to provide a Biodiversity Action Plan (Environmental Report, section 5.8.3, page 57), very limited information is provided on what this might contain, where and how measures would be delivered and who would be responsible for delivering them. The enhancement measures mentioned in section 5.8.3 do not appear to relate to the nature and scale of the proposed development or its effects, particularly loss of a range of habitats and loss of habitat for breeding birds, in a comparatively undeveloped	**Terrestrial wider biodiversity – NPF4 policy 3.b** Much of the previous advice remains valid due to a **lack of commitment and/or insufficient detail, as well as unclear off-site enhancement proposals** - see also comments in relation to advice provided in February and June 2024 further below. **In addition, nature networks have not been directly addressed.** In relation to the biodiversity feasibility report and management plan (Technical Appendices 5.9 and 5.10), **it is confusing having two documents largely repeating the same information. They would benefit from being combined to provide**	Regarding BNG, the Feasibility Assessment undertaken in June 2024 identified that to achieve a 10% gain, both onsite and offsite habitat enhancement and creation would be required. At the time of writing the BNG Feasibility Assessment and this SEI, land within the control of the OICHA and suitable for the application of enhancement and creation measures, has been identified at Hatston Pier, Orkney (Grid Reference: HY 43095

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
	location with low levels of existing human activity. Some of the measures are also unlikely to be effective in Orkney (eg building mounted bird boxes, deadwood piles, rock piles), mainly due to climatic conditions. Reconsideration and justification of the proposed measures is therefore required. The section 5.8.1.1 (page 56) of the Environmental Report and the Schedule of mitigation (section 11, page 133) includes an intention to produce a Habitat Management Plan for the creation of an offsite compensatory habitat area. However this is not identified in section 5.8.3 of the Environmental Report and no information is provided on where, what, how or when such habitat creation might occur. Without information on where, when, what and how compensatory habitat creation or enhancement would occur, it is not possible to have confidence that appropriate compensation would be delivered. Further information is therefore required. Compensation for loss of otter resting sites in the form of scrub planting is identified in Technical Appendix 5.8 (Otter survey, page i). However this is not identified in section 5.8.3 of the Environmental Report and no other information is provided. If it is a proposed mitigation measure, further information is required. It is appreciated that NPF4 policy 3.b is a relatively new national planning policy requirement and that OIC work on nature networks is in the formative stages. Therefore, it may be useful for the applicant to contact the Environmental Planner to discuss ideas the applicant may have about how to meet the policy requirements. The applicant should refer to the policy and submit information detailing how they propose to conserve, restore and enhance biodiversity, with particular reference to nature networks. The information should clearly set out what, how, when and where measures to conserve, restore and enhance biodiversity would be implemented, as well as how measures would integrate with or otherwise support nature networks. Details of future management to ensure the intended biodiversity results are achieved should also be included. Maps/plans should be provided showing the location of proposed measures. The rationale behind the selection of the proposed compensation and enhancement measures, where they would be delivered (on or off-site) and how they relate to the location, nature and scale of the proposed development and its effects also needs to be included. Details of the species proposed to be used should also	**one Biodiversity Management Plan, with supporting information such as the metric workings provided as appendices.**	12969). Additionally, habitat restoration at the community led, Quarterness Windfarm is being considered as an opportunity to achieve BNG. Quarterness is near Hatston Pier (approximately 2.4km west). Further opportunities for habitat enhancement and creation have also been identified by the Environmental Planner for Orkney Islands Council at Papdale East Park (Grid Reference: HY 45863 10498) and Balfour Hospital, Kirkwall (HY 44458 10109). Additional sites identified by OICHA (as the responsible legal entity, have a firm commitment to identifying biodiversity enhancement) which include redundant quarries which are in need of restoration, and several potential sites associated with proposals such as those to enhance biodiversity and reduce maintenance within the Grainebank SuDS areas (subject to consultation and permission). It has been agreed in principle with OIC Planning that BNG commitments will be agreed post-consent, enforced by condition, should planning permission be granted.

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
	be provided (latin and common names). **As off-site compensation for habitat loss is proposed, an outline HMP should be provided. Where relevant, measures identified to conserve, restore and/or enhance biodiversity should also be incorporated into the outline CEMP (see advice below).** **Once the required information has been submitted then it should be possible to provide further advice on the appropriateness of proposed biodiversity measures.**		
8.	**Wider biodiversity – CEMP** While there is a stated intention within the Environmental Report to agree a CEMP with the planning authority prior to works commencing on site, this post-permission approach does not allow for full assessment of the potential effects on the environment, particularly from the construction phase of the proposed development. **Further information is therefore required in the form of an outline CEMP, which should set out the principles that principal contractor responsible for writing the detailed CEMP post-permission (should permission be granted) will be expected to adhere to.** For example, the measures set out in Technical Appendix 2.1 (SDWQ - Project Description and Potential Methods report) and sections 5.8.1.1 (pages 56 and 57) and 11 (Schedule of mitigation, pages 131 to 136) of the Environmental Report, as well as measures to avoid adverse effects on breeding birds identified in the advice on **Protected species – breeding birds** above. **Information should be included on how and where materials (including excavated and removed material) would be stored to minimise soil compaction, whether temporary surfaces would be used within working corridors to minimise soil compaction, and how/if working corridors would be restored once construction activity ends.** **Information on the proposed bunds and overburden storage area should be included.** Section 2.6 of the Environmental Report (page 5) identifies that non-inert material arising from site stripping and excavation works will be used for form perimeter bunds. However, while Technical Appendix 2.1 (SDWQ - Project Description and Potential Methods report) page 7 identifies estimated volumes of excavated material, no detail is provided within the submitted	**Wider biodiversity – CEMP** **The previous advice remains valid as there is insufficient detail and not all of the requested information has been included.** The submitted documents would also benefit from a clear setting out of roles and responsibilities for the different personnel who would interact with environmental matters on site. For example, there is reference to Ecological Clerk of Works, Environmental Clerk of Works, Environmental Manager, Environmental Advisor, etc, but no consistency between documents or clarity over the different roles, which is confusing as it appears at times that the same role has been given different titles. **The CEMD should include a table clearly setting out the different roles, their responsibilities, how often they would be on site and in what capacity.**	The submitted outline CEMD will be updated by the contractor once detailed working methods have been finalised and will include wider biodiversity management measures along with roles/responsibilities and other supporting Environmental Management Plans. However, some of the information requested in this comment, e.g. locations of working corridors, welfare facilities, wheel washing points etc will not be known until a contractor has been appointed and so cannot be addressed in the Outline CEMD. As the CEMD, as submitted, is only an outline, it required detailed input from the contractor once commissioned. Nevertheless, an indicative soil management plan has been included as an appendix to the CEMD. Other indicative appendices include:

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
	information about the proposed footprint or dimensions, how the bunds relate to the surrounding landform and habitats, whether they would be seeded/planted, what pollution prevention and control measures would be implemented to prevent sediment run off during wet weather and dust during dry conditions, etc. As well as the perimeter bunds, there is a large area shown outwith the bunded area as being for "overburden" on some figures (such as the Overall site layout – all proposed phases drawing, reference 202042/EIA-110, dated May 2023). There is no other information on this area or proposed land use or how it relates to the surrounding landform or habitats, so it is not clear at what stage in the proposed development the overburden area would be used, what type of material it would contain, what the dimensions would be, how it would be contained within that location, what pollution prevention and control measures would be used, or how it would be monitored and maintained (particularly to prevent it becoming an uncontrolled disposal area post-construction). **The outline CEMP should also provide spatial information on the areas of search for construction activities such as (but not limited to) working corridor(s), laydown/storage area(s), concrete batching, welfare facilities, parking, refuelling and vehicle cleaning/wheel washing points.** The mitigation hierarchy should be used to identify the most appropriate areas of search for construction activities that minimise adverse effects on biodiversity (including breeding birds and soils – see also advice for **Protected species – breeding birds and Soils)**. Setting the principles and identifying appropriate areas of search for construction activities at this stage in the planning process would help demonstrate that construction activities can be accommodated within the proposed development site without causing unexpected adverse environmental effects that have not been considered in the Environmental Report. It would also provide clarity and a framework for the principal contractor to expand upon. **Once the required information has been submitted then it should be possible to provide further advice on the effects of construction activities on biodiversity (and soils).**		**B** Pollution Prevention Equipment Inventory (on and off Site Resources) **C** Chemical, Product and Waste Inventory **D** Marine Mammal Protection Plan **E** Seal Mitigation Plan **F** Indicative Water Quality Management **G** Indicative Site Clearance Works **H** Indicative Nesting Birds **I** Indicative Hen Harrier Management Plan **J** Indicative Protected Species **K** Indicative Archaeology and Cultural Heritage **L** Indicative Soil management **M** Indicative Site Waste Management **N** Indicative Biosecurity Measures **O** Indicative Construction Traffic Management **P** Indicative Construction Noise Management **Q** Indicative Dust and Air Emissions It should be nothed that the above is not exhaustive.
9.	**Water environment - GWDTE** Section 4.7.2.2 of the Environmental Report identifies that tufa forming spring communities, a ground water dependent terrestrial ecosystem (GWDTE), will be lost as it is not possible to avoid this habitat or mitigate against adverse effects. It goes on to identify that the loss would be offset by compensatory	**Water environment - GWDTE** The advice of SEPA must be followed in relation to GWDTE (it is noted that they raised significant concerns and requested further information in their response of 20 November 2023).	Refer to 5.5.8 in the SEIR

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
	habitat creation offsite. Section 5.8.1 (page 56) also states that "compensation for lost habitats should be provided off site". However, although the Schedule of mitigation (section 11, page 133 of the Environmental Report) proposes a Habitat Management Plan, no information is provided on where, how or when such habitat creation would occur. As a result, it is not possible to be confident that it would be achievable or successful in compensating for the loss of GWDTE. **Further information is therefore required and should be included in the information required under the advice provided for Wider biodiversity – NPF4 policy 3.b above.**		
10.	**Soils** Technical Appendix 2.1 (SDWQ - Project Description and Potential Methods report) provides some information on how the works would proceed, which is useful. However it does not consider vehicle movements or storage of materials and the effects of this on soils. It is not clear from the information within the rest of the Environmental Report and appendices whether or how the mitigation hierarchy has been applied to minimise disturbance to soils, or how works will be conducted in a manner that protects soil from compaction, erosion and soil sealing to meet the requirements of NPF4 policy 5.a. It is important that this is considered prior to determination to ensure that adverse effects are minimised. It would not be appropriate to rely on incorporating mitigation into a post-permission CEMP. This is because design or layout changes may be required to achieve optimum working methods that minimise effects, which would require to be identified now, included in the proposed site layout and detailed in the mitigation schedule and an outline CEMP. **Further information on how soil compaction, erosion and sealing will be minimised is required to demonstrate how the proposed development meets the requirements of NPF4 policy 5.a. This could be provided in an outline CEMP requested under Wider biodiversity - CEMP above.**	**Soils** The previous advice remains valid as insufficient detail has been provided: **Further information on how soil compaction, erosion and sealing will be minimised including spatial information is required to demonstrate how the proposed development meets the requirements of NPF4 policy 5.a.**	Refer to outline CEMD. This will be updated once the working methods have been finalised by the contractor.
11.	It will be important to distinguish between measures required to compensate for effects in the marine/intertidal environment, and separately those that are required to compensate for the effects on terrestrial habitats and species. This is to help us understand what measure(s) are compensating for what effect(s) when making our assessments.	This has been done, which is welcome.	The comment has been satisfactorily addressed.
12.	It will be important to distinguish between measures required to compensate for effects in the marine/intertidal environment, and separately those that are required to compensate for the effects on terrestrial habitats and species. This	This has been done in the Biodiversity Management Plan, which is welcome.	The comment has been satisfactorily addressed.

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	is to help us understand what measure(s) are compensating for what effect(s) when making our assessments.		
13.	Applying same principle of Metric 4, which you said you would be using a tweaked version of to inform your assessment of what level of biodiversity measures may be required, bear in mind that the further away from the development site then the amount of measures required to compensate increases with distance.	This advice remains valid, as off-site enhancement is proposed (albeit with no detail on the specific location* (there are two LNCS with Wideford in the name), intended enhancement aim or methods). * there are two LNCS with 'Wideford' in the name, which was highlighted and clarification requested by email on 12 August 2024	Regarding BNG, the Feasibility Assessment undertaken in June 2024 identified that to achieve a 10% gain, both onsite and offsite habitat enhancement and creation would be required. At the time of writing the BNG Feasibility Assessment and this SEI, land within the control of the OICHA and suitable for the application of enhancement and creation measures, has been identified at Hatston Pier, Orkney (Grid Reference: HY 43095 12969). Additionally, habitat restoration at the community led, Quarterness Windfarm is being considered as an opportunity to achieve BNG. Quarterness is near Hatston Pier (approximately 2.4km west). Further opportunities for habitat enhancement and creation have also been identified by the Environmental Planner for Orkney Islands Council at Papdale East Park (Grid Reference: HY 45863 10498) and Balfour Hospital, Kirkwall (HY 44458 10109). Additional sites identified by OICHA (as the responsible legal entity, have a firm commitment to identifying biodiversity enhancement) which include

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			redundant quarries which are in need of restoration, and several potential sites associated with proposals such as those to enhance biodiversity and reduce maintenance within the Grainebank SuDS areas (subject to consultation and permission). It has been agreed in principle with OIC Planning that BNG commitments will be agreed post-consent, enforced by condition, should planning permission be granted.
14.	We reiterate that submissions must **demonstrate how the proposed measures relate to the nature and scale of the proposed development and its effects, particularly loss of a range of habitats and loss of habitat for breeding birds.**	This has not been satisfactorily addressed.	Refer to HRA
15.	**We need to have confidence that measures can be delivered. So as well as detail on what the proposed measures would achieve (eg wetland restoration) and how this would be achieved at the potential location (eg drain blocking in locations A and B, reprofiling to remove ditches, planting with XYZ species, etc) , demonstration of in-principle agreement with landowner(s) will be required prior to determination of the planning application.** This is because otherwise biodiversity measures could be agreed and conditioned as part of planning permission (should permission be granted) that it may turn out are not possible to deliver. It would not be acceptable or appropriate to suggest a suite of measures but not have identified where they could be delivered. However it might be possible to identify a wider suite of measures and where they could be delivered, and condition that it would be agreed post-permission (should permission be granted) which of those measures or combination of measures would go ahead.	This advice remains valid, as off-site enhancement is proposed (albeit with no detail on the specific location* (there are two LNCS with Wideford in the name), intended enhancement aim or methods).	Refer to 13 above
16.	We also reiterate that submissions must **demonstrate how biodiversity measures would contribute to nature networks**. As discussed our work on identification of nature networks is underway but not well developed yet. I would be happy to provide further informal advice on draft options and how	This has not been satisfactorily addressed.	Refer to 13 above Unfortunately nature networks do not currently exist on Orkney. There is a good chance that any

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	they might contribute to nature networks, once potential sites for delivery of biodiversity measures have been identified along with what measures might be feasible at particular location(s).		potential NNs now, may be altered as that process progresses. Time may be wasted trying to guess what and where to align too. Therefore, offsite enhancement locations as noted in 13 above provide realistic enhancement opportunities.
17.	**We also reiterate that the proposed drainage, transport, access, active travel and biodiversity enhancement provisions/designs should be planned/designed in a holistic and integrated way to maximise positive outcomes/multiple benefits.**	This advice remains valid.	Biodiversity enhancement – refer to 13 above and 5.5.8 of the SEIR. As noted within the Transport Statement (Technical Appendix 10.4 dated August 2024) a site Travel Plan (in accordance with NPF4 Policy 13 f) will be developed once details of the workforce are known. This will also include provision for low or zero emission vehicles and cycle charging points within safe locations. Design drawings will be developed at detailed design stage and will be submitted for approval. No works shall commence on site until details for the provision for onsite landscaped areas, including trees or other planting have been submitted and approved by OIC.

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18.	In general, the basis of the approach taken appears to be appropriate and heading in the right direction. **However the enhancement measures will require strict, well controlled land management to achieve the habitat objectives, and unfortunately at present there is a lack of commitment and clarity around this.** There are also some other points of clarity and further detail required: [see below]	This advice remains valid and still requires to be addressed.	Refer to 13 above
19.	**A copy of the metric used should be provided with the report, to enable cross referencing and checking of workings.**	This has not been provided.	Refer to Table 4-2 within the Biodiversity Net Gain Feasibility Report dated August 2024 (Volume 3: Technical Appendix 5.9)
20.	Page i. While the recommendation for a permeable surface are welcome in relation to surface water management, they would not significantly contribute to biodiversity or create SUDS features. Reference to them should therefore be removed from the document.	This has been removed, which is welcome.	The comment has been satisfactorily addressed.
21.	Page i and page 11 section 4.11. The two figures for the total habitat gain are different. Clarification is required as to why or whether this is an error/which is correct.	This has been addressed, which is welcome.	The comment has been satisfactorily addressed.
22.	Page i. Clarification is needed as to what the final paragraph means. This is important as there needs to be confidence that the proposed biodiversity measures can be delivered alongside the proposed development. It may be necessary to have alternative options for different scenarios, for example if the overburden is not suitable for the proposed habitat creation, how would sufficient enhancement be delivered?	This is no longer included, so clarification is no longer required.	The comment has been satisfactorily addressed.
23.	Page 1, section 1.1. For clarity, measures to compensate for the loss of intertidal and marine habitats will be required, albeit we understand that these will be addressed separately. As such reference to intertidal habitat should be removed from the report to avoid confusion (eg section 1.3).	Separate information has been submitted.	The comment has been satisfactorily addressed.
24.	Page 2, section 1.4. **Information is required on the phasing of habitat creation and restoration, and how it fits with ground preparation and construction phasing. Any seasonal requirements need to be highlighted and addressed (eg timing of turf removal, breeding bird restrictions, etc).**	This has not been included and remains to be addressed.	Regarding BNG, the Feasibility Assessment undertaken in June 2024 identified that to achieve a 10% gain, both onsite and offsite habitat enhancement and creation would be required. At the time of writing the BNG Feasibility Assessment and this

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			SEI, land within the control of the OICHA and suitable for the application of enhancement and creation measures, has been identified at Hatston Pier, Orkney (Grid Reference: HY 43095 12969). Additionally, habitat restoration at the community led, Quarterness Windfarm is being considered as an opportunity to achieve BNG. Quarterness is near Hatston Pier (approximately 2.4km west). Further opportunities for habitat enhancement and creation have also been identified by the Environmental Planner for Orkney Islands Council at Papdale East Park (Grid Reference: HY 45863 10498) and Balfour Hospital, Kirkwall (HY 44458 10109). Additional sites identified by OICHA (as the responsible legal entity, have a firm commitment to identifying biodiversity enhancement) which include redundant quarries which are in need of restoration, and several potential sites associated with proposals such as those to enhance biodiversity and reduce maintenance within the Grainebank SuDS areas (subject to consultation and permission). It has been agreed in principle with OIC Planning that BNG

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			commitments will be agreed post-consent, enforced by condition, should planning permission be granted.
25.	Page 3 section 1.5 and page 6 section 2.6. Refers to the Orkney Local Biodiversity Action Plan. As the LBAP partnership ceased to operate in March 2024, there is no Orkney LBAP. Reference should instead be made to the Scottish Biodiversity List of species and habitats of most importance for biodiversity conservation, available via https://www.nature.scot/scotlands-biodiversity/scottish-biodiversity-strategy-and-cop15/scottish-biodiversity-list.	Page 6 section 2.6 still refers to the Orkney LBAP.	Reference to Local Biodiversity Action Plan removed from May 2025 SEI Report and supporting documents
26.	Section 4.2. More detail is required on: a. **What the different habitat areas will be used for post-creation, eg open to grazing under control of the farmer, grazed under agreement with farmer that restricts grazing to meet biodiversity objectives, fenced to prevent access by livestock at sensitive times of year etc?** b. It is not clear whether the land within the red line boundary will be separated from the surrounding farmland, eg will fencing be installed to keep livestock and people out? This has implications for how the ground can be managed over time. Retained and proposed fencing should be described in the report (eg size and type) and shown on the figures. c. Information about weed control is required. Eg which species, when, how, etc. d. Sections 4.2.2 and 4.2.3. Collection and spreading of green hay increases uncertainty that the proposed habitat objectives will be met due to unknown seed quantity, viability, collection and spreading. Appropriate ground preparation and use of a suitable seed mix is preferable. **However until information on points a and b above is provided (along with the proportions of each species within the mixes), it is not possible to comment on the proposed seed mixes, particularly in relation to their suitability for contributing to B lines.** **e. Section 4.2.4. Likewise, it is not possible to comment on the suitability of the seed mix for the lowland acid grassland area.**	This remains to be addressed in sufficient detail. Fencing is now proposed and shown on plans. Information has been provided, **albeit it is not clear who would be responsible for undertaking weed control, so further information is required.** This advice remains valid. This advice remains valid.	Refer to 13 above. OICHA are currently working to identify sites for enhancement, and as the responsible legal entity, have a firm commitment to ensuring identified land is managed sustainably. V3 of the BNG plan, shows stock fencing around the farmland. (Technical Appendix 5.9 Biodiversity Net Gain)

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27.	Section 4.2.4 refers to preventing encroachment of scrub habitat. As Orkney has little scrub or woodland habitat, it has a higher biodiversity value than elsewhere in Scotland. It would be helpful to explain whether this habitat option was explored but ruled out, and why (particularly as it would provide stepping stone connectivity with the scrub along the adjoining burn).	This advice remains valid: While the proposed onsite biodiversity measures should technically result in enhancement of the existing habitat, **the proposed habitat changes are unambitious, do not deliver sufficient to compensate for the habitat lost, and would require ongoing management with no long-term commitment or responsibility assigned to this, which significantly reduces confidence in delivery. Alternative habitat of higher value with significantly less long-term management requirements should be considered, such as scrub woodland.**	Refer to 13 above
28.	Section 4.2.7. While green roof habitat would be beneficial to biodiversity, it would typically need to be incorporated into a flat roof design of buildings, which may not be feasible or desirable for the intended uses. Due to climatic conditions, green roofs can be problematic to manage and maintain in Orkney, which is likely to make them unattractive to the applicant. As these measures are not committed to and should not be included in the metric calculations, they should not be included in the report.	This is no longer included.	The comment has been satisfactorily addressed.
29.	Section 4.2.8. Several of the proposed measures are unlikely to be effective in Orkney due to climatic conditions and are unlikely to be compatible with the industrial use of the site. Swifts are also not recorded in Orkney. **As these measures are not committed to and should not be included in the metric calculations, they should not be included in the report.**	This advice remains valid and requires addressing.	Measures have been updated in the SEI Report and HRA (which were also added to the CEMD).
30.	Section 4.2.9. More detail is required on the **proposed ongoing monitoring and management (including what and when, responsibilities, etc) of each zone/area** to ensure that the proposed habitat objectives are achieved throughout the lifetime of the proposed development. **Information is also required on what would happen with monitoring results – for example, who would the results be reported to, what would happen if monitoring showed that the intended outcomes were not being achieved or unexpected results were encountered, who would decide whether interventions, alternative methods or habitats were required, who would approve such interventions, etc.**	This advice remains valid due to the lack of sufficient detail and/or commitment.	There is a monitoring section in the BNG (Section 4.2.8 Volume 3: Technical Appendix 5.9). It should be noted that the client is actively looking for suitable off site enhancement opportunities (refer to 13 above), Monitoring results would be fed back to the council and adapted as required to achieve BNG.

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31.	The Methodology is mostly satisfactory, except for the lack of definition of a study area for the assessment of impacts on setting (section 6.5.1.1), which does not follow advice in Historic Environment Scotland and NatureScot's Environmental Impact Assessment Handbook: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland, 2018 v5 that is referred to in section 6.3.3 of the EIAR.	The developer response tracker states that this is addressed in Section 6.5.1.1 of the EIA Report. 6.5.1.1 states that the "Study Area… is **1km** radius from proposed centre of development (see Figure 6.1)", yet neither the centre nor the 1km radius are depicted on the figure to allow this to be reviewed. 6.5.1.1 states that the "Setting Study Area… comprises an area of **5km** from the site (see Figure 6-2, Appendix 2 of this EIAR)", yet **Figure 6-2 does not show the boundary of this Study Area. There is no Appendix 2 in the EIAR and Technical Appendix 2 has nothing to do with Archaeology and Cultural Heritage.** **Therefore, the November comments have not been satisfactorily addressed, and further information is required to address these outstanding issues.**	Refer to the SEIR (May 2025) where an updated Figure 6.2 has been placed.
32.	The potential effect of the construction vessels such as jack-up barges, transits to and from Scapa Pier (see section 2.6.3) has not been addressed. This can be done so simply by committing to avoidance of the locations of known historic assets in the Navigation Management Plan.	The developer response tracker states that this is addressed in Section 6.6.2, 6.6.3 and 6.7 of the EIA Report. This has not been addressed in Sections 6.6.2 or 6.6.3 but has been satisfactorily addressed in Sections 6.6.1.3 and 6.7. **However, it has not been entered into the Schedule of Mitigation (Table 11-1) nor the Summary of Effects section 12.4.** **This must be done for the revision to be fully satisfactory.**	The Schedule of Mitigation has been updated within the SEI Report (May 2025) to take account of the new caisson option.
33.	Operational impacts and management/mitigation: 1. The assessment of propeller wash and the potential for scour on the seabed (EIAR section 6.6.2.2) is not adequate as it stands. The statement that it 'is not expected to have a large impact' is not sufficient. The maximum likely draught of vessels using the quay is not defined, nor is evidence provided for what the	The developer response tracker states that this is addressed in Section 6.6.2.2 of the EIA Report and Technical Appendix 2.3 (Navigational Risk Assessment) **The issue has not been fully answered – it is**	Scour- Refer to Chapter 2 of the SEIR: The design of the marine structures for the SDWQ Project

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	water/seabed disturbance is when moving slowly, and what constitutes significant wash is not defined. None of this is compared to the known depth of historic assets (e.g. 18m water depth for MBES contact 1; 26m water depth for the Royal Oak). Similarly, no evidence is provided to support the statement that thrusters should not cause significant vertical turbulence; 'should not' is not the same as 'will not'. 2. The avoidance of any prop wash and turbulence (significant or not) on identified seabed assets near or on approach (within 2km) to the quay can be done simply by committing to avoidance of the locations of known historic assets in the Navigation Management Plan, including the identification of specific approach and departure route corridors.	**not stated whether the 3 m clearance between thrusters and bed level on a low tide is enough to not cause seabed disturbance. There still appears to be an element of doubt with the use of 'should not cause significant vertical turbulence', rather 'than will not cause'. Therefore, further information and evidence is required to remove this doubt.** The issue is not mentioned in Technical Appendix 2.3 (Navigational Risk Assessment) However, the mitigation that locations of known heritage assets in the vicinity of the site will be recorded in the Navigational Management Plan/Construction Environmental Management Document, to ensure their avoidance, and prevent any scouring, is welcomed and supported. **This mitigation must be entered into the Schedule of Mitigation (Table 11-1) and the Summary of Effects section 12.4 for the mitigation to be fully satisfactory.**	is based on a minimum design life of 60 years, ensuring resilience in a highly aggressive marine environment, with salt spray, seawater immersion, and scour action. Scour protection is also provided with a concrete mattress, adjusted based on the seabed material and vessel propeller forces. Refer to '*Diagram 2 3: Concrete mattress*' on rock in the SEIR. The Schedule of Mitigation has been updated within the SEI Report (May 2025) to take account of the new caisson option.
34.	When assessing potential onshore effects during operation in EIAR section 6.6.2, it is not clear whether construction or operation effects are being assessed. It is stated that the effects considered are 'by the construction of the proposed development' not by the presence and operation of the proposed development. This requires clarification before an informed response can be made.	The developer response tracker states that this is addressed in Section 6.6.1 and 6.6.2 of the EIA Report. This clarification has been made. No further comment.	The comment has been satisfactorily addressed.
35.	There is no identification of what aspects of the development (e.g. lighting columns; the quay; size and frequency of vessels using the quay) could affect the setting of the historic environment assets identified as receptors in order to support the conclusions of the impact assessment. This is despite the fact that such aspects of the development were mentioned in scoping responses (see Technical Appendix 3.2) and were specified in the SLVIA Chapter 7 (see sections 7.4.3 and 7.4.4). Therefore, more information is required so that an informed decision about the assessment can be made.	The developer response tracker states that this is addressed in Section no.6.5.1.1, 6.5.2, 6.6, 6.7 and 6.8 of the EIA Report. **The identification of what aspects of the development could affect the setting of identified historic environment receptors is not addressed in 6.5.1.1, 6.5.2, 6.7 or 6.8; The identification of these aspects is partly but not fully addressed in 6.6.2.1. Further detail is required.**	**7.6.2 The potential visual effects of the proposed development discusses lighting columns** "*7.4.4 Zones of theoretical visibility (ZTVs)* *The adoption of a 15km radius general study area was informed*

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			by the production at the early stages of the assessment of preliminary ZTVs to a 20km radius. This demonstrated that the principal areas of potential visibility lay within 15km and that any occasional longer distance visibility and resulting effects would unlikely be significant (see also section below on NSA)…."
36.	EIAR Figure 6-2 ZTV is a crude image that lacks detail and does not appear to correlate with SLVIA ZTV Figures 7-5 and Figure 7-7 in Volume 2 of the EIAR. No study area has been shown on the figure.	**Figure 6-2 of the EIA Report has not been revised and still does not show the study area with receptors identified in Sections 6.5.2.11 and 6.6.2.** This means that there is insufficient data with which to assess these parts of the EIAR.	Figure 6.2 added to the SEIR
37.	While specific assets were identified for inclusion in the scoping report and scoping opinions (see Technical Appendices 3.1 and 3.2), **this was not to the exclusion of any other assets that there may be, and no justification for this exclusion has been provided, or if the assets chosen are representative of the effect on any other sites. The standard practise of defining a study area based on a ZTV extending to a certain radius from the development has not been followed**, in contrast to the standard presentation of Chapter 7. Therefore, more information is required so that an informed decision about the assessment can be made	The developer response tracker states that this is addressed in Section no.6.5.1.1, 6.5.2, 6.6, 6.7 and 6.8 of the EIA Report. Section 6.5.1.1 identifies a 5km radius study area but refers to Figure 6-2, which is completely inadequate for the purpose. **Until this is rectified, the potential impacts identified in Section 6.6 cannot be reviewed.**	Figure 6.2 added
38.	A Biodiversity Action Plan for enhancements has yet to be developed for the onshore and intertidal habitats within the site and adjacent Orkney Islands Council Harbour Authority (OICHA) land holdings (Section 5.8.3). It should be ensured that no planting occurs on identified historic environment assets, designated or undesignated.	The developer response is that "No historic environment assets are within the area identified for biodiversity enhancement." However, Site 2, a low sub-oval mound with a central depression, which is identified as a possible prehistoric site in Section 6.5.2.4, appears to be within an area proposed for habitat creation and enhancement (Technical Appendix 5.10, Figure 2-1). **This site should be marked off by an exclusion zone. This mitigation should be entered into Table 10-1.**	As noted in the previous EIARs and supprting information further investigation of "Site 2" will be carried out prior to construction commencing.

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39.	All of the above comments also apply to Chapter 12 Summary of Significance of Effects, section 12.4 Archaeology and Cultural heritage, and may require revisions and additions to the Schedule of Mitigations (Chapter 11).	Revisions to the Schedule of Mitigations are still required, e.g. that locations of known heritage assets in the vicinity of the site will be recorded in the Navigational Management Plan/Construction Environmental Management Document, to ensure avoidance of impact; and avoidance of Site 2 during biodiversity enhancement activities. These revisions should be incorporated into the Schedule of Mitigation (Table 10-1) as a requirement.	Updated Schedule of Mitigation within the SEIR (and CEMD)
40.	It is noted that Maerl fragments were also recorded, but as coverage was <2%, it is agreed that they would not qualify as a maerl bed PMF. However, without viewing the images from the survey we are unable to verify this (images not provided in the EIA information).	Comment now addressed; Jenni E Kakkonen PhD, OIC's Marine Environmental Scientist has reviewed the still images and video and have concluded that No maerl Lithothamnion glaciale or Phymatolithon calcareum beds were present.	The comment has been satisfactorily addressed.
41.	Section 5.8.3, Biodiversity Enhancement, explains that two measures for marine biodiversity enhancement will be delivered: • The creation of features within the rock armour to maximise ecological niches to support a wide range of species; and • Off-site biodiversity enhancement in the form of native oyster (Ostrea edulis) restoration project within the Orkney Islands. These marine biodiversity enhancement proposals are very much welcomed to support the implementation of NPF4 Policy 3 b), National Marine Plan Gen Policy 9 and PFOWMSP General Policy 1A. However, further information is required to detail the proposals to create features within the rock armour to maximise ecological niches. It is recommended that planning authority/MD-LOT give due consideration to how these provisions will be implemented and secured through any consent.	Technical Appendix 5.10, Scapa Deep Water Quay Biodiversity Enhancement Management Plan, para. 2.2.2 states the following objectives: 1. Create habitat features within the rock armour to maximise ecological niches. 2. Create habitat features on the quay wall to maximise ecological niches. 3. Install 10 Guillemot next boxes. Para 2.2.3 states that 'the exact prescriptions required to achieve these objectives depends somewhat on the finalised design and engineering requirements for the structures and so will need to be developed with the chosen contractor'. **It is recommended that a commitment to provide further detail on the delivery objectives 1, 2 and 3 above be included within the Biodiversity Enhancement Management Plan.** The significant additional information provided in the Biodiversity Enhancement Management Plan on the proposed oyster restoration activities is	Refer to 13 above

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		welcomed including Appendix A Orkney Native Oyster Restoration Strategy and Appendix B Native Oyster PHD Proposal.	
42.	Further detail is also required to outline how the proposed native oyster restoration project will be developed, implemented and monitored to secure long term ecological and climate benefits. The applicant should provide details on the key stages of the process and expected timelines, which should include (but not limited to): 1.Setting clear restoration goals and objectives from the outset. 2. Identifying relevant stakeholders including NatureScot, Orkney Islands Council Marine Planning, Crown Estate Scotland, Orkney Marine Asset Management Pilot Scheme, The Marine Directorate, and any other organisations or NGOs with relevant experience to ensure local ecological knowledge is incorporated into the project design and to ensure greater stakeholder engagement and support. 3.The location of potential sites around Orkney with known feasibility, for example those that have previously been identified as having been historic locations for native oyster beds and/or having potential for native oyster beds. See SNH Commissioned Report 251: Conservation of the Native Oyster Ostrea edulis in Scotland (paragraph 2.2.4) for further information. 4.A commitment to carry out a site selection and feasibility study, followed by baseline surveys where appropriate. 5.The development of a long-term restoration plan and monitoring protocols (bearing in mind that successfully re-establishing viable self-sustaining oyster beds can take many decades). 6.Details on biosecurity protocols 7.An outline of engagement and communication plans	The significant additional information provided in the Biodiversity Enhancement Management Plan (Technical Appendix 5.10 on the proposed oyster restoration activities is welcomed including Appendix A Orkney Native Oyster Restoration Strategy and Appendix B Native Oyster PHD Proposal. Appendix A of Technical Appendix 5.10 addresses the previous points raised (1-7) as follows: 1. Identified in Appendix 5.10 of technical appendix 5.10. 2. Included (Page 11, Appendix A) 3. Historic sites included – PhD proposal for site selection through modelling. 4. PhD proposal for site selection through modelling. 5. Included info in Appendix A of technical appendix 5.10. 6. Commitment to prepare a detailed biosecurity plan has been included Appendix A of technical appendix 5.10. 7. Commitment to prepare communication plan in Appendix A of technical appendix 5.10.	The comment has been satisfactorily addressed.
43.	An assessment should be undertaken to ensure that the proposed development and existing fish farm at Quanterness can co-exist under the provisions of NMP Gen 4 Co- existence, with due consideration to appropriate mitigation.	Apologies, Quanterness was referred to in error. Comment was supposed to refer to Westerbister. It is welcomed that further discussions have taken place with Scottish Sea Farms (SSF), who operate the Westerbister fish farm, regarding the SDWQ development proposals. Chapter 4 Water Environment (refer to Table 4-9: Residual Effects) states: It was agreed that consultation would remain ongoing and Scottish Sea Farms would remain involved in the process	The comment has been satisfactorily addressed.

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		by having access to CEMD Documents and advising what would constitute appropriate mitigation mainly during construction.	
44.	Section 5.5.7.3 of the EIAR introduces confusion between commercial fisheries and aquaculture (fish farming). This error is also reflected in Appendix 5.2 Marine Mammal and Fish Baseline. Further to this, the identified impacts on farmed salmon at Westerbister are not a biodiversity issue, they are both animal welfare and socio-economic issues and should be assessed in this context.	It's welcome that the EIAR main document has been updated to reflect this.	The comment has been satisfactorily addressed.
45.	Section 5.6.14.1 of the EIAR, identifies fish farming as 'commercial fisheries' which should be corrected to fish farming. 5.5.7.3 states the Westerbister fish farm is 'c.500m' south of the proposed development and 5.6.14.1 states it is 'approx. 835m any from works'. The distance from the proposed quay and dredge area needs to be accurately identified to ensure that an accurate impact assessment has been carried out on farmed fish in terms of noise, vibration and water quality	It's welcome that the EIAR main document has been updated to reflect this.	The comment has been satisfactorily addressed.
46.	Section 7.1.3, 7.6.1 and 7.6.2 of the EIAR does not include wind turbine assembly in the description of the proposed development, source of potential landscape/coastal character effects or potential visual effects of the proposed development. Para. 10.4.3, in the Transport- Aviation assessment, states that the elevation of the constructed turbines (including the addition of the blades) is taken to be 300m. The socio-economic impact assessment in EIAR outlines the operational phase of the proposed development including an offshore wind assembly hub, maintenance of offshore structures and platforms. It is reasonably foreseeable that floating offshore wind turbines would be assembled adjacent to the quay and requiring wet stored in Scapa Flow before deployment. These structures should therefore be assessed within the SLVIA, albeit as temporary structures with associated impacts.	Section 7.1.3, 7.4.4, 7.6.1 and 7.6.2 of the EIA Report mentions 'assembly hub' related to wind farm. **If the proposed assembly hub will include the construction of turbines that will be up to 300m in height, this should be reflected in the ZTV, visualisations and associated impact assessment, albeit as temporary structures.**	With reference to consultee comments relating to wet storage of offshore wind turbine components, there is no information currently available for this activity, however, these activities (if they are to be undertaken at SDWQ) will be subject to permissions outwith this application. This has been consulted on and agreed with project team members within MD-LOT.
47.	The viewpoints presented at 7.8.4 in the EIAR are not clear enough to visualize the effects of the proposed development and are not compliant with the Guidelines for Landscape and Visual Impact Assessment. High resolution visualisations, wirelines etc could not be found in the Technical Appendices supporting the planning application, Scapa Deep Water Quay Environmental Impact Assessment Report: Volume 2: Figures.	Visualisations in Design and Access Statement – Appendix A adequately address this comment regarding the quality of the visualisations.	The comment has been satisfactorily addressed.
48.	Section 7.7.2 of the EIAR sets out the principles of providing tree and shrubby planting to help integrate the permanent site footprint with its landscape setting. These landscape design principles are very much supported, though they have	The previous advice remains valid. **The design drawings (Volume 2: Contents Figures) make no provision for onsite landscaped areas,**	Design drawings will be developed at detailed design stage and will be submitted for

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	not been incorporated into the proposed layout plans submitted with the planning application. These principles will need to be address in the detailed design drawings submitted with this application. It is important that the proposed drainage, transport, access, active travel and biodiversity enhancement provisions/designs are considered in a holistic and integrated way to maximise positive outcomes.	**including trees or other planting. These drawings should detail where landscaped areas will be established, and how these landscaped areas will be integrated with the proposed drainage, transport, access, active travel and biodiversity enhancement provisions. Further discussion with the planning authority is recommended.**	approval. No works shall commence on site until details for the provision for onsite landscaped areas, including trees or other planting have been submitted and approved by OIC Planning. Refer to Section 7.5 of the SEI Report and Schedule of Mitigation.
49.	The Transport -Aviation assessment in the EIA, section 10.5.3, estimates that 80% of commuters to the site will drive using private vehicles. **The proposed development does not include adequate measures to facilitate modal shift to more sustainable transport modes/choices.**	The previous advice remains valid. **The proposed development design drawings should include adequate measures to facilitate modal shift to more sustainable transport modes/choices e.g. walking, cycling and bus stop infrastructure.**	As noted within the Transport Statement (Technical Appendix 10.4 dated August 2024) a site Travel Plan (in accordance with NPF4 Policy 13 f) will be developed once details of the workforce are known. This will also include provision for low or zero emission vehicles and cycle charging points within safe locations.
50.	Section 10.5.4, Mitigation Measures, states that the creation of an access road which locals can use by car or active travel modes will provide added community benefit, making this section of the coastline accessible. **The proposals do not include adequate detail on the how safe access by active travel modes will be accommodated through infrastructure design and facilities.**	The previous advice remains valid. **The proposed development design drawings should include details on how walking and cycling modes will access the proposed deep water quay site, and any onward pedestrian access to the coastline.**	These drawings will be developed at detailed design stage and will be submitted for approval. No works shall commence on site until details on how walking and cycling modes will access the proposed deep water quay site, and any onward pedestrian access to the coastline. Refer to Section 10.5.4 of the SEI Report and Schedule of Mitigation.

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51.	The transport assessment and development proposals do not demonstrate that the transport requirements generated have been considered in line with the sustainable travel and investment hierarchies in accordance with NPF4 Policy 13 b). Further detailed information is required to demonstrate compliance with this policy in terms facilitating active travel modes, safe accessibility by public transport, walking and cycling. Provisions need to be made for low or zero emission vehicle and cycle charging points in safe locations, in alignment with building standards.	The previous advice remains valid. **The proposed development design drawings should include detailed provisions for active travel modes, safe accessibility by public transport, walking and cycling. Provisions need to be made for low or zero emission vehicle and cycle charging points in safe locations.**	As noted within the Transport Statement (Technical Appendix 10.4 dated August 2024) a site Travel Plan (in accordance with NPF4) will be developed once details of the workforce are known. This will also include provision for low or zero emission vehicles and cycle charging points within safe locations. Refer to Section 10.5.4 of the SEI Report and Schedule of Mitigation.
52.	**The proposed footpath access from the A961 does not detail provisions for cycling and does not detail how the path will safely and efficiently access the site car cark and entrances. The potential for recreational footpath to access the coast and/or wider areas of natural habitat should be detailed. This could also include interpretation of the local natural and historic environment interest. It is recommended that a Travel Plan be prepared for this proposed development in accordance with NPF4 Policy 13 f).**	The previous advice remains valid. The proposed development design drawings should include detailed provisions to address these comments.	As noted within the Transport Statement (Technical Appendix 10.4 dated August 2024) a site Travel Plan (in accordance with NPF4 Policy 13 f) will be developed once details of the workforce are known. This will also include provision for low or zero emission vehicles and cycle charging points within safe locations.
53.	The Design and Access Statement Scapa Deep Water Quay, pp 18, sets out the principle of providing walking and cycling routes and access to Deepdale as part of the development. It outlines the consideration of rest stops and whether local art can be incorporated into places of interest. **It is recommended that these principles be addressed within the detailed design proposals/drawings for the proposed development, in consultation with the planning authority and the OIC Transport team.** As detailed above, the proposed drainage, transport, access, active travel and biodiversity enhancement provisions/designs should be considered in a holistic and integrated way to maximise positive outcomes. Consideration should be given to both onsite and off-site active travel provision and enhancement.	The previous advice remains valid.	As above

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
54.	Section 8.3 of the EIAR does not acknowledge the requirement to comply with NPF4 Policy 25: Community Wealth Building including improving community resilience, increasing spending within communities, ensuring the use of local supply chains and local job creation. These should be important factor in the determination of the consent applications for the proposed development. Furthermore, the PFOWMSP General Policy 1B outlines the need to maximise opportunities to support local supply chains and create skilled employment in local communities.	Section 8.3 and 8.7 of EIA report has been updated to state compliance with NPF4 Policy 25. The planning application should be assessed to determine compliance.	The comment has been satisfactorily addressed.
55.	Table 8-16 in the EIAR provides a summary of potential construction impacts including a slight beneficial temporary increase in employment/jobs for local workers. Following the application of the proposed mitigation at 8.7, pp111, in the EIAR, Table 8-16 identifies a moderate beneficial increase in employment/jobs for local workers (residual effects). **It is recommended that consenting authorities adequately secure the relevant mitigation and enhancement detailed at 8.7, pp111, in the EIAR, to comply with the requirements of NPF4 Policy 25.**	The applicant has noted this comment. The previous advice remains valid.	The comment has been addressed.
56.	Table 8-16 identifies moderate adverse potential impacts on the capacity of local accommodation to accommodate workers. Following the application of the proposed mitigation at 8.7, pp 111, in the EIAR, slight adverse potential impacts on the capacity of local accommodation has been identified. The proposed mitigation is to engage with the local authority and other agencies to ensure there is sufficient capacity in local services and infrastructure to accommodate additional workers. Further to this, 8.8 states that the contractor should aim to avoid a significant inflow of workers during the peak tourist season and large-scale events, and if this is achieved, the effect is likely to be limited to a slight adverse residual effect and has therefore not been assessed as significant. These mitigation provisions are not considered adequate nor is it realistic to avoid construction during the peak season. Local accommodation is already at capacity during the peak season and cannot realistically accommodate the proposed volume of construction workers. There are also likely to be displacement impacts on the provision of accommodation for other sectors e.g. tourism, events. It is recommended that the applicant should provide an adequate proposal to accommodate construction workers, in consultation with OIC Housing and with regard to the Housing Needs and Demand Assessment, and that necessary mitigation measures should be secured through the appropriate statutory consent.	The mitigation detailed at 8.7 of EIA report has been updated to state: Engage with local authority and other agencies to ensure there is sufficient capacity in local services and infrastructure to accommodate additional workers. There are a number of solutions for housing construction workers where temporary accommodation is provided either at site or in a close vicinity to the construction area. It is expected that any consent would include a condition that contractors would be expected to set out their detailed proposals prior to construction commencing'. A condition is considered a reasonable approach to address this issue. **That said, further information should be provided by the applicant to demonstrate that they have control of adequate land on site to accommodate construction workers and identify an appropriate location.**	The caisson design has reduced the construction period by 10 months. In addition, the caissons will be manufactured in Spain and shipped to SDWQ via three or four vessels. This reduces the duration and volume of on-site equipment, resources and potential accommodation requirements. Once construction methods have been finalised and the number of staff required on site, consultation will be undertaken with OIC Planning to discuss accommodation requirements.

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
57.	Table 8-17 identifies the operational phase effects on new/permanent local jobs, the predicted increase in GVA for the Orkney economy, the continued access and operations of local businesses and effects on local community capacity and Council services. Following the application of the proposed mitigation at 8.7, pp111, in the EIAR, Table 8-17 identifies a moderate beneficial increase in local job creation and increase in GVA (residual effects). **It is recommended that consenting authorities adequately secure the relevant mitigation and enhancement detailed at 8.7, pp111, in the EIAR, to comply with the requirements of NPF4 Policy 25.**	The applicant has noted this comment. The previous advice remains valid.	The comment has been satisfactorily addressed.
58.	Table 8-16 (construction effects) and Table 8-17 (operation effects) identify the potential impact on existing marine users/businesses as slight adverse. It is not clear in the EIAR how these potential impacts have been assessed on commercial fisheries. It is recommended that the Orkney Fisheries Association be consulted to consider any potential impacts on inshore fisheries. Also note comments above regarding the adequacy of the assessment of impacts on fish farming to complete this assessment.	Section 8.2 states the Orkney Fisheries Association have been consulted during the consultation events undertaken as part of the proposal. **No information is provided on the outcome of this consultation and any subsequent assessment of impacts on commercial fishing activities within the vicinity of the proposed development. This information should be included in the EIAR.**	As noted within the EIAR Section 8.2 dated August 2024 The Orkney Fisheries Association have been consulted during the consultation events undertaken as part of the proposal. This consultation was to explain what the proposed development entailed and to get their thoughts on the proposals. They were not in-depth discussions but were used to feed into the findings of Chapter 8 of the EIAR. An additional meeting via MSTeams was held with Scottish Sea Farms (SSF) was held on 30/05/2025 to discuss the changes to the design (i.e. the caisson). Understandably they had some concerns over the increased dredging, however, as per previous discussions they were helpful and appeared supportive with the new proposals providing the environmental measures that are

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
			in place can demonstrate protection of their operations.
59.	2.7.1 of Volume 1 Environmental Impact Assessment Report (EIAR) states development includes the partial assembly of offshore wind turbines during the operational phase. The scale of partially assembled turbines should be defined upfront in the EIAR, working on the basis of a worst-case scenario. It is not clear in EIAR whether offshore wind turbine components will be transported to the offshore wind farm sites and assembled there and/or whether floating wind turbines will be fully assembled at the proposed harbour facility and stored in Scapa Flow before being towed to the site. These temporary associated activities should be identified in the description of the development as appropriate	Section 2.7 of the EIAR does not provide sufficient information on whether offshore wind turbine components will be transported to the offshore wind farm sites and assembled there and/or whether floating wind turbines will be fully assembled at the proposed harbour facility and stored in Scapa Flow before being towed to the site. **These temporary associated activities should be identified in the description of the development, as appropriate.**	With reference to offshore wind turbine components there is no information currently available for this activity, however, these activities (if they are to be undertaken at SDWQ) will be subject to permissions outwith this application. This has been consulted on and agreed with project team members within MD-LOT.
60.	Section 4.7.2.3 of the EIAR assesses the disposal of dredge material sediment and impacts on water quality, supported by the Dredging Best Practicable Environmental Option Report (BPEO). The BPEO identifies that the unsuitable material for engineering purposes may be disposed of at sea. This remaining portion of the silt/clay sized particle dredge is 23% or 19,090m3 of dredge material. BPEO identifies Stromness B as the most appropriate disposal option. Scapa Flow Deep Water Quay Coastal Hydrodynamic Modelling Study does not model the dispersion of deposed clay and silt at the proposed disposal site (Stromness B). It is therefore difficult to assess potential impacts on PMFs in this location. There are some concerns about disposal of dredge at the Stromness Bin Bring Deeps due to PMFs in the area. It doesn't look like any assessment have been undertaken of these potential impacts. PMFs nearby to Stromness B include Horse Mussel Beds 300m from deposit site (medium-high sensitivity, FeAST), Burrowing Sea Cucumbers 700m away (low medium sensitivity, FeAST), Fan mussels 770m away (medium-low sensitivity, FeAST) and Ocean Quahogs 1km away (potentially high sensitivity, FeAST). It is recommended that further assessment of potential impacts on these PMFs be undertaken, and if environmentally beneficial, consideration be given to the use of a less sensitive disposal sites. Section 4.7.2.3 of the EIAR, Reclamation, states that the proposed reclamation fill (imported quarry material and dredge material) could potentially result in plumes of suspended solids and a reduction in water quality with a resultant impact on aquatic life.	These comments were made in response to the marine licence consultation from MD-LOT to OIC. The disposal of dredge material is licensed by MD-LOT not as part of the planning application.	No further comments

S/N	Comments received on EIAR submission	New comments received	May 2025 Response/comment
	The receiving coastal environment is highly sensitive to such sediment discharge. 4.8.1.2 states that mitigation measures relating to dredge material will be delivered by the principal contractor through a detailed Construction Environment Management Plan (CEMP). It is recommended that an outline CEMP be prepared to outline how the imported quarry material and dredge material will be managed on site to avoid, minimise and mitigate potential adverse effects on the water environment and biodiversity.		
61.	Unfortunately, the information submitted with the marine licence application does not demonstrate how the proposed development will conserve, restore or enhance biodiversity (including nature networks) so that it is in a demonstrably better state than without intervention, and therefore does not meet the requirements of points iv and v of NPF4 policy 3.b. It is recommended that further detail be provided on the marine biodiversity enhancement proposals within the EIAR. OIC Development and Marine Planning has responded to the planning application for this development proposal seeking further information on the terrestrial biodiversity enhancement proposals. Section 5.8.1.1 of the EIAR states that compensation for lost habitat should be provided through off site habitat enhancement and creation. It is further identified that a Habitat Management Plan will be prepared to implement these provisions. It should be clarified whether this Habitat Management Plan will include the proposed marine habitat enhancement proposals. No information is provided on how or when such habitat creation might occur. Without this information it is not possible to have confidence that appropriate compensation would be delivered. Further information is therefore required.	These comments were made in response to the marine licence consultation to OIC from MD-LOT. That said, Technical Appendix 5.10, Scapa Deep Water Quay Biodiversity Enhancement Management Plan, now includes more detail on the oyster restoration enhancement proposals, which have address related previous comments. Technical Appendix 5.10 para. 2.2.2 states the following objectives: 1. Create habitat features within the rock armour to maximise ecological niches. 2. Create habitat features on the quay wall to maximise ecological niches. 3. Install 10 Guillemot next boxes. Para 2.2.3 states that 'the exact prescriptions required to achieve these objectives depends somewhat on the finalised design and engineering requirements for the structures and so will need to be developed with the chosen contractor'. **It is recommended that a commitment to provide further detail on the delivery objectives 1, 2 and 3 above be included within the Biodiversity Enhancement Management Plan.**	OICHA as the responsible legal entity, have a firm commitment to biodiversity enhancement and are investigating additional enhancement measures. For example, the installation of the caissons themselves can provide niche habitats i.e. the presence of algae that develop on the walls of the infrastructure. It has been agreed in principle with OIC Planning that BNG commitments will be agreed post-consent, enforced by condition, should planning permission be granted. Refer to 5.5.9 of the SEI Report.
62.	Section 7.5.8 of EIAR states that the ZTV can be found in Figure 5, EIAR Volume 2. Figure 2-7 are not included in the 'Volume 2 Figures' document on the MD-LOT website. The viewpoints presented at 7.8.4 are no clear enough to visualize the effects of the proposed development and are not compliant with the Guidelines for Landscape and Visual Impact Assessment.	Visualisations in Design and Access Statement – Appendix A adequately address this comment regarding the quality of the visualisations.	The comment has been satisfactorily addressed.

5 SDWQ NATURESCOT COMMENTS

S/N	New comments received	May 2025 Response/comment
Quality of the EIA and lack of adherence to scoping		
1.	• We consider the quality of the information and assessments in both the EIA and HRA to be insufficient to be able to conclude that there would be no adverse effect on site integrity for most of the qualifying features of Scapa Flow SPA, North Orkney SPA, Hoy SPA, the Harbour seal of Sanday SAC and coastal lagoons of Loch of Stenness SAC. • There has been a general lack of adherence to our advice provided to the Applicant and consultants at the application stage, pre-application stage, including our response to the Scoping Opinion request[2], and to comments made on the Strategic Environment Assessment (SEA) and Habitats Regulations Appraisal (HRA) of the Orkney Harbour Masterplan. • **There are inconsistencies between and within the documents submitted.** The application documents should be checked to ensure that all information is the same throughout and accurately reflects the design scope.	General comments noted, and have been incorporated through the specific comments below.
Vessel Movements		
2.	• We acknowledge that additional information has been provided. • **Confirmation is required that all deliveries (except for the steel piles imported on the existing commercial Northlink boat) will be made into and from Lyness. A vessel route and timing for all deliveries should be confirmed**. • Given the majority of the vessel movements associated with construction will be from the Lyness port, **cumulative impact with Flotta Deep Water Quay should be assessed**. • This lack of information prohibits a robust assessment of potential disturbance and/or displacement impacts on marine species, including birds and mammals, arising from vessel movements in the construction phase.	With the new design, no materials, other than via road transport, will be required. Therefore, there will no longer be vessel movements into and from Lyness. Flotta will not be assessed in cumulative assessment as it is unlikely to proceed.This has been agreed with NatureScot.
3.	• Existing vessel movements have now been provided to help establish assessment baselines. The table 4.2 in the HRA summarises type of vessel and movements for a two week period in winter 2023 and summer 2024 for the entire of Scapa Flow. **However, the spatial extent and routes of these vessel movements, including the OICHA vessels, relative to the SDWQ site is unclear, and this should be clarified. Existing vessel movements in the vicinity of the proposal should be presented separately in the table.** • **The table of existing vessel movements should also highlight which vessels are to transfer from using the Scapa Pier to the SDWQ**. It is proposed that Scapa Pier will only be utilised by recreational vessels and one tanker per week	Maps have been produced as an Appendix to the HRA (Appendix B of the SEIR) to show the predicted vessel movement routes. Spatial extent of novel routes has been presented.

2 Scoping Opinion, including NatureScot's response – Scapa Deep Water Quay, May 2021: https://planningandwarrant.orkney.gov.uk/online-applications/applicationDetails.do?keyVal=QRNT1OMD02E00&activeTab=summary

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	once SDWQ is complete. However, HRA Table 4.4 suggests that vessels relocating to SDWQ from Scapa Pier would be limited to Tugs and pilot boats totalling 1162 movements. The NRA 2.2.3 states that it is only anticipated that some existing vessel traffic (notably OIC tugs and Pilot vessels) may relocate their bases from Scapa Pier to the new quay. **These inconsistencies between EIA documents should be updated.** • The analyses in the NRA leads to the conclusion that "Overall traffic density in the project area is at the lowest level for any part of Scapa Flow". Therefore, any change in vessel traffic that would arise from the operation of the new facility at this location would be significant and pronounced with respect to the baseline conditions. • All assessments should be based on more realistic estimates of potential increases in vessel traffic in the vicinity of the proposed development. We note that operational vessel movements now include West of Orkney OWF, **but no further information on potential users or seasonal timings or routes has been provided. Figures for the operational vessel movements have not been provided beyond 2031 and it is unclear how these will be assessed.** • **The spatial extent of disturbance assessments should also be extended to include any novel proposed vessel routes associated with use of the quay beyond the immediate development footprint and beyond 1-2km radius considered within the HRA for the SPAs.** We welcome the inclusion in the HRA that a Vessel Management Plan will be produced, with input from NatureScot.	Operational figures are realistic.
Construction Methods		
4.	• Due to the design and build approach the details on construction methods and scheduling are limited, and the associated potential noise levels and impacts on the relevant environmental receptors are unclear with inconsistencies within the main EIA report and Technical Appendixes. • Confirmation has been made that there will be no underwater blasting. • **Given the need for drilling, piling and terrestrial blasting there is potential for displacement of SPA birds in the vicinity arising from both underwater and airborne noise. This should have been fully assessed.** The HRA assessment of disturbance from vibro-piling is still limited with **no detail on impact ranges, displacement area and potential risk of injury amongst SPA birds. There are no references or evidence to justify the 250m buffer distance proposed to minimise disturbance to SPA birds.** • We assume that there is no requirement or potential for marine blasting or impact piling under any circumstances as this has not been assessed within the submitted documentation. We ask that the construction requirements/site characteristics are carefully considered to ensure that vibro-piling is the appropriate method required. Should circumstances change we would advise that NatureScot is contacted immediately, and a further assessment would be required. • **We require further detail on the location and timings of proposed terrestrial blasting. The impact from terrestrial blasting and above-water noise on birds and marine mammals has not been fully addressed in the Appropriate Assessment nor in the proposed mitigation outlined in the HRA/EIA documents. Terrestrial**	As noted within the SEIR (Chapter 2), the excavation of soft soils on land will be by mechanical means, and the rock will be excavated by drilling and terrestrial blasting consisting of approximately one blast per week over 35 weeks beginning ~March 2027 (no marine blasting is proposed). Initially, the contractor will install pre-earthworks drainage to control surface water run-off. A 6m high bund will be formed at the seaward boundary of the site by retaining the existing land and excavating behind. This will create a natural noise screen and sediment runoff retention barrier. This natural bund will

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	blasting requires full assessment and should include the disturbance impact zone to fully assess potential displacement area for the relevant qualifying features. • **Further information is required on the drilling activities and the impact of noise from drilling on requires assessment for SPA birds and SAC seals.** • **Clarification is required on the dredging activities to assess levels of disturbance for SPA birds and SAC seals. There are some inconsistencies on dredge methodologies between EIA documents (Technical Appendix 2.1 and Technical Appendix 5.6), and further information is required on the duration (days/months) and timings of dredging.** • **A Blasting and Piling Strategy** could be produced to provide a detailed description of the installation procedures, scheduling of works and associated parameters.	be removed once the remainder of the site is excavated to create the final profile. A blast plan will be prepared once a blasting contractor has been commissioned. The prefabrication of caissons off site in Spain allows for a shortened programme while reducing construction works on site thus reduces environmental impacts from underwater and airborne noise and vibrations/impact as there is no requirement for marine piling or drilling for the caisson design solution, and reduces construction works on site Refer to the Chapter 3 of the HRA for a description of the proposed development and construction methods
Predicted use of the proposed development		
5.	• Wet storage is no longer proposed. If the SDWQ is required to store turbines or tall objects at any point in its lifetime, further assessment will be required • **Clarification should be provided on the requirement of the helipad which is included in Technical Appendix 2.3 NRA – 1.2 Figure 4, including if this is permanent or temporary. The potential use of this should have been assessed in the HRA due to the potential impacts on SPA birds.**	There will be no use of a helipad for this project.
Cumulative Assessment		

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6.	• More robust cumulative assessments are **required. We consider the range and detail of developments scoped in to the in-combination/cumulative assessment for all receptors to be lacking**, given the scale of the proposal and the known connections to other development proposals which are likely to have a significant effect on the same qualifying features and populations of protected species. Cumulative assessment is limited to Hatson and Lyness wind turbines. • **Cumulative assessments should consider the existing impacts of vessel movements within Scapa Flow on the SPA and SAC species. There are a number of aquaculture sites developed in the eastern side of Scapa Flow, and vessel operations associated with these sites should be included and assessed given the potential increase in disturbance**.	Refer to HRA Chapter 12 "For the Proposed Development at SDWQ, the following developments have been recommended by Orkney Islands Council to be considered for in-combination effects: • Hatston Logistics Base; • Lyness onshore wind farm" Various others (such as aquaculture) were also considered.
European Designated Sites - SPAs		
7.	*Key issues to be addressed:* • The Ornithology Technical Report submitted has remained largely unchanged since May 2023, with only with the addition of the 2023/24 heat maps in the appendixes. **This version does not incorporate the 2023/24 survey results within the body of the report and the monthly average bar charts in Appendix B have not been updated.** We have provided considerable advice on this report to the applicant, however no subsequent changes have been made to address our questions and concerns[3]. Without the requested updates to the Ornithology Technical Report and the inclusion of the 2023/24 survey results, we are unable to conclude that there would be no adverse effect on site integrity for most qualifying features of Scapa Flow SPA and North Orkney SPA. • **In addition to the missing information in the Ornithology Technical Report, there remains key issues with the HRA for all SPAs which are summarised below and then detailed for each SPA:** o There is no evidence to support the theory that the redeployment of port service vessels from Scapa Pier will "equate to 4.5x increase in optimal habitat compared to the loss of suboptimal habitat". Potential reduction of vessels at Scapa Pier cannot be used as justification for the adverse impacts at the proposal site. There is no substantial evidence to support this proposal, or to be confident that birds will relocate to the existing Scapa Pier area. Scapa Pier will still be in operation, and the number of vessels which will continue to use this facility has not been confirmed or guaranteed at this stage. On this basis, the HRA sections for each SPA feature under 'Wider occurrence in Scapa Flow' should be revised. o Further clarification, evidence and assessment is required to support this proposal, including a clear comparison of usage by SPA features between areas of Scapa Flow. In the HRA sections 'Wider occurrence across the SPA' the different survey data should be illustrated together on a map/maps to enable a	Ornithology Technical Report has been updated with 2023/24 survey results, both within the body of the report and monthly bar charts. Maps have been produced showing spatial extent of SPA birds from all known survey data (2017/18 data, HiDef data, our data). (Appendix A of HRA) Technical report includes flightless moult periods. HRA has been updated to provide more info re Hoy SPA and North Orkney SPA. Fragmentation as a result of branching off along novel vessel route is not anticipated. Evidence that Black Throated Diver move freely around the

3 Pre-application advice submitted by NatureScot via email to Envirocentre on 31 May 2023 (Our reference: CPA170816) with further advice provided on 17 July 2024 (Our reference: CLC175480). Advice also provided during meeting held on 30 April 2024 between NatureScot and Scapa Deep Water Quay Project Team (representatives from OICHA, Arch Henderson and Envirocentre) on 19 April 2024.

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	combined overview of distribution of each qualifying feature across Scapa Flow SPA. This should include the Scapa Flow inshore 2017/2018 data, Hi Def 2021/22 and 2022/23 data, and the SPA citation data. Area of potential displacement should also be mapped, which should take into account noise disturbance distances and vessel disturbance distances from both the SDWQ site and new vessel routes or routes where there will potentially be significant increases in traffic. These maps should be used to determine the location and quantify the size of the area within the SPA where each species is likely to be disturbed/displaced from. This information should also be used to determine the level of importance that the displacement area holds to each species relative to the areas of usage across the wider SPA. o This information will also be used to feed into the cumulative assessment for proposals within North Orkney SPA. For qualifying features where there may be a cumulative impact, maps should also be produced for North Orkney SPA, and a combined assessment of the displacement area and relative importance to each species should also be made. o Flightless moult periods should be highlighted for all relevant species, and potential overlap with operations identified. o The HRA states that it is clear existing habitat around Scapa Flow is of more value and has greater habitat enhancement potential than the proposal area. This statement has not been evidenced. Furthermore, it is possible that the branching of traffic to the east along the new route to SDWQ may cause further fragmentation of habitat particularly to birds when in flightless moult. o Further information is required for the Appropriate Assessments for all SPA features, particularly on the impact from noise related activities and vessel movements. o Scapa Flow SPA - black throated diver: There is potential for conservation objective 2a and b to be undermined and more detailed assessment is required. As previously advised, we require a quantitative assessment to be carried out. o Appropriate Assessments for Hoy SPA and North Orkney SPA are insufficient and require amendment. o Operational vessel movements remain unchanged, with the exception of predicted vessel movements from the West of Orkney Offshore Windfarm. No figures have been provided beyond 2031. o Mitigation of a soft start and 250m monitoring zone is unlikely to limit potential disturbance impact but may prevent potential injury. Vibro piling daily for 30 months is still described as a temporary impact and this should be amended. This is prolonged disturbance over several seasons. o The impacts of vessel movements, in both construction and operational phases, on other species including Eider and Long-tailed duck, could be mitigated through adoption of appropriate measures to reduce disturbance, particularly during sensitive periods such as flightless moult and pre-migration aggregations. Flightless moult periods should be highlighted for all relevant species, and potential overlap with operations identified. We would wish to comment on details of associated Vessel Management Plans (VMPs) for each phase.	voe despite current level of vessel movements in and out of Scapa Pier.

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Scapa Flow SPA		
8.	**We note that in the HRA, Table 5.1 black throated diver are not listed as a feature of Scapa Flow SPA, and great northern diver are listed twice.** The HRA appropriate assessment for Scapa Flow SPA 6.1 states that "All designated site features are assessed as favourable." Feature condition refers to the condition of the protected feature at a site level. The protected features of Scapa Flow SPA have not been assessed since designation, however for most features corroborative evidence suggest there is no reason to suspect deterioration in condition since site selection (SNH, 2019). Hence, the feature condition for Scapa Flow SPA is provided as condition at site selection. However, recent surveys have indicated a decline in black-throated diver from 57 at citation to 39 in 2017/2018. **It is likely that this feature would now be assessed as unfavourable and this should be noted in the assessments.**	Black-throated Diver included in Table 5.1 Citation levels for Black-throated Diver used in HRA (Section 6)
Black-throated Diver, non-breeding		
9.	• Black-throated divers were present on over 50% of watches, indicating that the waters in the vicinity of the proposed development are regularly used by this species. • In the HRA Section 6.4.1 – **Peak and average counts should be compared against the citation population and not the 2017/2018 survey results.** • Conservation Objective 2a: The regular usage of this general area by a notable proportion of the SPA population accords with the distributions recorded in the surveys underpinning SPA selection[4]. Unlike Great northern divers, Black-throated divers are confined to shallower inshore waters of the Flow, such that the development footprint represents a substantially greater, albeit not quantifiable, proportion of available habitat than the 0.1% suggested. **There is potential for this conservation objective to be undermined and more detailed assessment is required.** • Any risk of collisions with vessels can be reduced through implementation of appropriate vessel management plans • Conservation Objective 2b: Significant proportions of the SPA population regularly occur in the vicinity of the development site. This species is also highly sensitive to vessel disturbance. They are likely to be particularly sensitive and vulnerable to disturbance from vessels during their flightless moult period which occurs sometime between mid-September and end of December. **There is therefore potential for the proposed development to undermine this CO and a detailed quantitative assessment of potential disturbance impacts is required. This**	See Section 6.4 of HRA. Mortality matrix model has been produced (Appendix D of HRA). This was developed in consultation with NatureScot technical specialists and findings have been agreed.

4 SNH (2016). Site selection document – Scapa Flow pSPA

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	could use a matrix approach to estimate levels of loss to the population associated with a range of values for both percentage permanent displacement within specified radii of both the development site and associated vessel routes and for percentage additional mortality that might arise. Such an approach is described in Guidance Note 8: Guidance to support Offshore Wind applications: Marine Ornithology Advice for assessing the distributional responses, displacement and barrier effects of Marine birds We maintain this advice, and request that a quantitative assessment is still required. • Conservation Objective 2c: There is very little available information on Black-throated diver diets and foraging behaviour such that supporting habitats are poorly understood. However, it has been assessed in the hydrodynamic, including plume dispersal, modelling for the proposed dredging area that that habitat loss or modification will be confined to the immediate construction and dredge footprint. Therefore, the conclusion that loss of habitat is unlikely to undermine this CO can be supported. This reflects the nature of the benthic deposits and habitats described in Technical Annex 5.4 to the EIA Report and wider observed overall Black-throated diver distribution within the SPA. • Dredging will be carried out at the proposed development site, with a dredge disposal site at FI040 Stromness A, where up to 25,000 tonnes of high silt content dredge could be disposed. With alternative dredge disposal site chosen outside of Scapa Flow at Stromness A (FI040), we agree that there is limited connectivity between dredge disposal and the SPA features.	
Great Northern Diver, non-breeding		
10.	• Great northern divers were recorded on all winter watches with around 50% of observations of birds foraging. • Conservation Objective 2a: We agree that with the conclusion that loss of the development footprint of 32Ha would not undermine this CO since Great northern divers are numerous (citation population 510 birds) and widely distributed across Scapa Flow[2,5] . Any risk of collisions with vessels can be reduced through implementation of appropriate vessel management plans • Conservation Objective 2b: Great northern diver show high levels of sensitivity to disturbance from vessels[6] and studies in Orkney[7] found that birds are quite likely to swim or dive in the 200-300m distance band from a passing ferry, and this species was also recorded swimming out of the path of ferries up to 4km. They may be particularly sensitive to disturbance from vessels during their flightless moult period from February until mid-April. **Therefore, the Applicant's conclusion that "this level of increased vessel movements is not likely to result in significant**	See Section 6.3 of HRA

5 Jackson (2018) Scapa Flow proposed Special Protection Area (pSPA) – inshore wintering waterfowl survey 2017/2018. NatureScot Report No. 1075 https://www.nature.scot/doc/naturescot-research-report-1075-scapa-flow-proposed-special-protection-area-pspa-inshore-wintering

6 Goodship, N. & Furness, R.W. 2019. Seaweed hand-harvesting: literature review of disturbance distances and vulnerabilities of marine and coastal birds. Scottish Natural Heritage Research Report No. 1096

7 Jarrett, D. et al (2018) Short-Term Behavioural Responses of Wintering Waterbirds to Marine Activity: Quantifying the Sensitivity of Waterbird Species during the Non-Breeding Season to Marine Activities in Orkney and the Western Isles. Scottish Marine and Freshwater Science Vol 7 No 9, 88pp

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	effects on Great Northern Diver" and the overall conclusion is that "distribution of Great Northern Diver will be maintained throughout the site" cannot be supported. A more robust assessment is required to determine the potential for adverse effect on site integrity, noting in particular our comments in Appendix 1 that the increase in vessel movements is potentially much greater than the levels assumed for these species assessments. • Conservation Objective 2c: In terms of the development footprint, it has been assessed in the hydrodynamic, including plume dispersal, modelling that that habitat loss or modification will be confined to the immediate construction and dredge footprint, as is indicated in Appendix 4. Therefore, the conclusion that loss of habitat in the development footprint and dredge plume is unlikely to undermine this CO can be supported for the capital dredge requirements. • Dredging will be carried out at the proposed development site, with a dredge disposal site at FI040 Stromness A, where up to 25,000 tonnes of high silt content dredge could be disposed. With alternative dredge disposal site chosen outside of Scapa Flow at Stromness A (FI040), we agree that there is limited connectivity between dredge disposal and the SPA features.	
Slavonian Grebe, non-breeding		
11.	Slavonian grebes were recorded in 77.5% of watches with a concentrated distribution within the Bay of Deepdale with up to 80% of observations being of birds foraging • *Conservation Objective 2a:* Slavonian grebes are confined to shallow and sheltered inshore waters of the Flow and so the development footprint represents a substantially greater proportion of available habitat than suggested. However, permanent displacement of up to 5 birds from the footprint itself is unlikely to undermine site integrity given overall distribution across the SPA5 6. Any risk of collisions with vessels can be reduced through implementation of appropriate vessel management plans. • *Conservation Objective 2b:* Within Orkney, Slavonian grebe has been assessed as having a very high sensitivity to boat disturbance; and was found very likely to respond to a passing ferry at a distance of 200-300m (third highest response after Black-throated and Red-throated divers) by flying away (Jarrett *et al*., 2018). The same source also concluded that Slavonian grebe rarely appears to be present in areas of sea around Orkney where regular marine activity takes place; and noted that in response to marine activity, the evasive flights of Slavonian grebe are longer/further than for other species. However, some other sources suggest greater tolerance and somewhat lower sensitivity. **There is a lack of robust assessment to support the conclusion of no adverse effect with respect to this Conservation Objective, noting in particular that the potential increase in vessel movements is potentially much greater than the levels assumed for these species assessments.**	See Section 6.5 of HRA

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	• *Conservation Objective 2c:* There is very little available information on Slavonian grebe diets in their marine non-breeding season but they are known to take small fish and typically forage in depths of 10m or less[8]. There is therefore underlying uncertainty around potential impacts. However, it has been assessed in the hydrodynamic, including plume dispersal, modelling that that habitat loss or modification will be confined to the immediate construction and dredge footprint, as is indicated in Appendix 4. Therefore, the conclusion that loss of habitat in the development footprint and dredge plume is unlikely to undermine this CO can be supported for the capital dredge requirements. • Dredging will be carried out at the proposed development site, with a dredge disposal site at FI040 Stromness A, where up to 25,000 tonnes of high silt content dredge could be disposed. With alternative dredge disposal site chosen outside of Scapa Flow at Stromness A (FI040), we agree that there is limited connectivity between dredge disposal and the SPA features.	
Red-throated diver, breeding		
16.	• Breeding red-throated divers at the Scapa Flow SPA commute between freshwater breeding sites, typically at remote lochans or pools, to foraging grounds in adjacent coastal waters within 10km of their nest site[9]. The models for Scapa Flow SPA predicted that relatively few red-throated divers are likely to forage in the waters adjacent to the proposed development site, or along the adjacent coastline • This prediction is supported by the Applicant's survey data. In the breeding season (April to September) Red-throated divers were recorded in 16 of 47 watches with average of less than 1 bird and peak of 4 birds seen (May 2021 and July 2022), almost exclusively within 1km of the main vantage point. This reflects their preference for shallow waters where they feed on fish such as Sand Eels, although fewer than half of behavioural observations (37% and 26% in 2021 and 2022 respectively, Table 6 in Ornithology Technical Report) were of foraging birds. The surveyor suggests that the inshore survey area is utilised as a staging and loafing site as well as for foraging noting that flight path observations in 2022 suggested that at least one pair breeding inland to the east often alighted within the survey area as their first destination when flying to sea from their breeding site. • The survey evidence presented is in line with previous modelling. It indicates that the waters in the vicinity of the proposed development site are of relatively low importance to foraging Red-throated divers. A conclusion of no adverse effect on site integrity can therefore be supported with respect to potential for displacement, disturbance or loss of habitat within the footprint of the development site. • It is proposed that the main vessel movements required during the construction period will be to and from Lyness, with 72 (2 each month) deliveries over a 30 month period. There will also be 50 vessel movements between SDWQ and the dredge disposal site over a two month period proposed to take place in the spring/summer. Given that the Lyness port and the north side of Hoy are preferred areas for foraging red-throated diver, there is potential for these	See Sections 6.10, 8.1 and Section 9 of HRA. Vessel movements from Lyness no longer considered as not required with new design. Vessels associated with dredging disposal pass via Stromness where Red throated Diver from Hoy SPA forage. Dredging vessel movements will occur outwith important foraging period for this species (June – August) – see section 9 of HRA.

8 Robbins, A. 2017. Seabird Ecology in High-Energy Environments: Approaches to Assessing Impacts of Marine Renewables. PhD Dissertation, University of Glasgow.

9 Black, J., Dean B.J., Webb A., Lewis, M., Okill D. and Reid J.B., (2015), Identification of important marine areas in the UK for red-throated divers (Gavia stellata) during the breeding season. JNCC Report No 541. JNCC, Peterborough

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	operations to overlap with the breeding period. **We advise that the impact associated with these increased vessel movements should be considered and assessed in the HRA as a likely significant effect on the red-throated diver of Scapa Flow SPA.** • It is noted that wet storage is no longer proposed which removes the previous concerns raised regarding collision risk. If the SDWQ is required to store turbines or tall objects at any point in its lifetime, further assessment will be required.	
North Orkney SPA		
17.	The proposal could affect North Orkney Special Protection Area (SPA) protected for its non-breeding and breeding marine birds. **Our advice is that there is insufficient information to determine whether the proposal is likely to have a significant effect on the Great northern diver, Slavonian grebe and Red-throated diver of North Orkney SPA. For this to be determined, we recommend that the following additional information is obtained**: • There remains uncertainty over the potential connectivity between North Orkney SPA and the proposed Scapa Deep Water Quay development with regards to the respective populations of Great northern diver, Slavonian grebe and Red-throated diver associated with each SPA and the proposed development. • Non-breeding Great-northern diver, Slavonian grebe and breeding Red-throated diver are features of both North Orkney SPA and Scapa Flow SPA. These species could use the marine waters in both SPAs. All species are highly sensitive to disturbance and displacement. • Given that the proposed Hatston development, which is within North Orkney SPA, could occur concurrently with the Scapa Deep Water Quay development, the cumulative and in-combination assessment needs to be reassessed to consider the potential impacts on the qualifying features. • We acknowledge that the Hatston development has been included in the in-combination assessment. However, a sufficient Appropriate Assessment for North Orkney SPA has not been carried out. The revised HRA currently uses the same assessment and conclusions as for Scapa Flow SPA, which is incorrect given that North Orkney SPA has different baseline figures for each qualifying feature. No attempt has been made to assess the impacts relative to the population size, status and sensitivities of North Orkney SPA features. This is not acceptable and a full assessment for this SPA is required, which also takes account of any possible in combination effects with other plans or projects.	Refer to Section 9 of the HRA
Hoy SPA		
19.	The proposal could affect Hoy Special Protection Area (SPA) protected for its populations of seabirds. Our advice is that this proposal is likely to have a significant effect on Red-throated diver, Arctic skua, Fulmar, Great black-backed gull, Great skua, Guillemot, Kittiwake, Puffin and seabird assemblage of Hoy SPA. Consequently, Orkney Islands	See Section 7 of HRA

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	Council, as competent authority, is required to carry out an appropriate assessment in view of the site's conservation objectives for its qualifying interests. Arctic skua, Fulmar, Great black-backed gull, Great skua, Guillemot, Kittiwake, Puffin and seabird assemblage: For these features, we advise that based on the information provided, our conclusion is that the proposal will not adversely affect the integrity of the site. **Breeding Red-throated diver: For this feature, we advise that based on the information provided, we are unable to conclude no adverse effect on site integrity and further information is required.** The appraisal we carried out considered the impact of the proposals on the following factors: • **The correct Conservation Objectives have been identified, but the focus of assessment should be as to whether activities in the marine environment could cause excess mortality and/or reduce breeding success to extent that could undermine the objective to maintain the population of the species as a viable component of the site, rather than no significant disturbance to the species as assessed.** • **The Appropriate Assessment is insufficient and makes no reference to the SPA citation population for each species, which could be used to assess the survey numbers against.** • **For several species it is stated that the birds recorded in the survey were likely from another breeding colony or elsewhere, but no reasoning is provided for this or where the other colony is located**. • However, given the findings of the site surveys, as summarised in the assessment text, there is no evidence to indicate that the waters in the vicinity of the site are of importance to the breeding seabird features of the Hoy SPA for foraging or other essential activities. The numbers of birds seen are also low relative to site populations. We therefore agree with the conclusion of no adverse effect on site integrity for the Arctic skua, Fulmar, Great black-backed gull, Great skua, Guillemot, Kittiwake, Puffin and seabird assemblage. • If Lyness is to be used as the main port for construction vessels, given the proximity to Hoy SPA, this should be included and assessed accordingly in the HRA. The main vessel movements associated with construction are 72 (2 each month) deliveries to and from Lyness over a 30 month period. There will also be 50 vessel movements between SDWQ and the dredge disposal site over a two month period proposed to take place in the spring/summer. **Given that the Lyness port and the north side of Hoy are preferred areas for foraging Red-throated diver and there is potential for these operations to overlap with the breeding period, there is a likely significant effect on this feature and an assessment in the HRA is required. An appropriate assessment for the Red-throated diver of Hoy SPA which takes into account the construction vessel movements from both Lyness and the**	

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	dredge disposal site to the development site at SDWQ has not been carried out. Details of these vessel movements should be clarified (timings, routes and number of vessels) and an assessment carried out.	
RIn-combination Effects		
20.	Cumulative assessment is limited to Hatson ferry terminal extension and Lyness wind turbines and the **in-combination assessment for both is inadequate. There is no quantitative assessment or substantial evidence to support** the in-combination/ cumulative impacts assessments and conclusions associated with the Hatston and Lyness wind turbine developments. Given that the majority of the vessel construction deliveries will be made to and from Lyness**, Flotta Deep Water Quay should be included in the cumulative assessment.** Robust cumulative assessments are also required which consider the **existing impacts of vessel movements associated with the numerous aquaculture sites developed in the eastern side of the Scapa Flow SPA**.	Refer to HRA Chapter 12 "For the Proposed Development at SDWQ, the following developments have been recommended by Orkney Islands Council to be considered for in-combination effects: • Hatston Logistics Base; • Lyness onshore wind farm" Various others (such as aquaculture) were also considered.
Mitigation		
21.	Proposed mitigation measures around vessel speeds and use of ornithology observer during construction works could reduce impacts, **but efficacy in reducing potential impacts will depend on specific details. Given current lack of detail in both the assessments and proposed mitigation measures it is not possible to assess this at present.**	It should be noted that vessel routes serving the SDWQ site are within existing shipping lanes. Much of the movements shall be within harbour limits and therefore speeds shall require to be adhered based on the Ports requirements. Refer to Chapter 4 (Vessel movement) and Chapter 12 (Mitigation) within the HRA
APPENDIX 5.5 – HABITATS REGULATIONS APPRAISAL - Appropriate Assessment		
22.	**We are unable to accept the conclusion of no adverse effect on site integrity based on the current HRA**. The quality of the information, evidence and assessments in both the EIA and HRA are insufficient to be able to confidently conclude that there would be no adverse effect on site integrity for the Harbour seal of Sanday SAC. Some of our previous advice has	The HRA has been subject to substantial amendments in consultation with NatureScot.

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	been addressed, however there are still key aspects of information and assessments missing which are required and could support the conclusion of no adverse effect on site integrity. **We advise that the following points are still outstanding. We provide further detail on these points below.** • A quantitative assessment is required to determine the level of disturbance arising from vessel movements, and from piling and dredging activities. The appropriate assessment should make reference to the site-specific population size and status of the SAC feature, the feature condition and any sensitivities, as well as other relevant references/resources. • Clarity is required on aspects of the drilling and terrestrial blasting, both of which have the potential to generate increased, novel and/or prolonged levels of noise. The associated impacts on harbour seals should be fully assessed. • Information on the length of the dredging campaigns is required to adequately assess disturbance levels. • Our previous advice on in-combination assessment has not been addressed and still applies. The in-combination assessment still requires further consideration and should include a wider range of more relevant developments. As advised above, in-combination assessments should also be quantitative and refer to the SAC population size and status. • Once the assessment on harbour seal has been revised based on our advice above, the mitigation needs to be tailored to the predicted impacts associated with the proposed activities. Since the assessment fails to fully address the likely impacts on harbour seal, it is unknown if the standard mitigation measures being proposed are appropriate and sufficient to confidently conclude no AESI	Maps have been attached as appendices showing vessel movments and qualifyinf features of the SPA. The prefabrication of caissons off site in Spain allows for a shortened programme while reducing construction works on site thus reduces environmental impacts from underwater and airborne noise and vibrations/impact as there is no requirement for marine piling or drilling for the caisson design solution, and reduces construction works on site Refer to Sections 3 and 10 of HRA
Underwater noise impacts		
23.	• The updated HRA confirms that there will be no marine blasting required for this development, although some terrestrial blasting will take place. The Applicant's Appropriate Assessment considers the risk of temporary disturbance and long-term injury from underwater noise associated with vibro-piling and dredging and concludes that given the temporary nature of the proposed blasting works, and by adhering to the proposed mitigation, the impacts associated with underwater noise on the SAC Harbour seals are considered to be not significant. While the relevant impact pathways have been mentioned in the HRA, **the assessments for each impact are still lacking and fail to make reference to the population size and status of the SAC.** • Increased, novel and/or prolonged underwater noise has the potential to displace seals from the affected area, as well as cause temporary or permanent injury. **Therefore, the impact from all construction activities proposed which are likely to generate an increased, novel and/or prolonged level of noise (i.e. drilling, piling, dredging and blasting) should be assessed for the Harbour Seal of Sanday SAC**. As advised in our scoping advice, all effects on the site feature should be assessed for all phases of the development in the HRA. We acknowledge that vibro-piling and dredging have now been included in the HRA, **however the impacts of drilling and terrestrial**	Refer to Section 10 of HRA. The design has changed from the original exemplar design (Option 1) to the prefered option (caisson design) which provides many environmental benefits. The caissons, for example, are being manufactured in Spain and shipped to the site by 3 or 4 vessels which remove the requirement for piling and drilling which is no longer required and will improve underwater noise significantly.

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	blasting have still not been considered or assessed in the appropriate assessment. Information should be provided on the number of holes to be drilled, and on the duration and timings of drilling. We also advise further detail is provided on the location and timings of proposed terrestrial blasting. To adequately assess disturbance levels associated with dredging, more information on length (days/months) of the dredging campaigns is required. The appropriate assessment should be revised accordingly. • Our previous advice on the underwater noise modelling assessments in Technical Appendix 5.6 – Underwater Noise Modelling has not been fully addressed. However, we can accept this based on the understanding that no marine blasting will occur, and that the proposed mitigation for vibro-piling and dredging is implemented. As we previously advised, given that these are mobile species, animals are likely to move around or away from noise, the realised emission rate would be lower than what has been assumed by the current model. We therefore agree that the model outputs are likely to be over-precautionary. • We assume that there is no requirement or potential for marine blasting or impact piling in all phases of the proposal. The construction requirements and site characteristics should be carefully considered to ensure that vibro-piling is the appropriate method required. Should circumstances change we would advise that NatureScot is consulted, and a further assessment would be required. • Auditory injury (PTS and TTS) levels have now been provided in the HRA, however there is no attempt to quantify the level of disturbance arising from activities which will emit noise. We can agree with the statement that there is unlikely to be any disturbance to harbour seals within the boundary of Sanday SAC. We can also agree that with mitigation measures implemented for vibro-piling, there is unlikely to be auditory injury to seal species in the area. **However, no attempt has been made to quantify the level of disturbance from any of the underwater noise activities alone or in combination with other projects. Therefore, we cannot support the conclusion of no adverse effect on site integrity. Current HRA assessments are qualitative, and we advise that a quantitative assessment should be carried out.** In some circumstances we would expect more substantial, detailed modelling (e.g. iPCoD[10]), to determine the levels of disturbance to marine mammals, **however given the distance between Sanday SAC and that no blasting is being proposed, we can accept updated quantitative assessments based on the range of information from Carter et al., 2022[11], SCOS population data[12], Technical Appendix 5.6 – Underwater Noise Modelling, as well as the Conservation and Management Advice document for the SAC[13].** Given the status of Sanday SAC (unfavourable declining) and the wider management unit for harbour seals (also unfavourable declining), it is important that this HRA assessment is robust and takes account of all available evidence. This should include site-specific reference to population numbers and distributions, vulnerabilities and the inclusion of sensitive times of year for the species.	The caisson also benefits by being constructed approximately 10 months quicker than the previous exemplar. Refer to HRA Chapter 12 "For the Proposed Development at SDWQ, the following developments have been recommended by Orkney Islands Council to be considered for in-combination effects: • Hatston Logistics Base; • Lyness onshore wind farm" Various others (such as aquaculture) were also considered. Revised underwater noise modeling was not undertaken as pilng and associated drilling are no longer being undertaken as a result of the change from the exemplar design to the caisson design. In addition, there is reduced construction noise and emissions on site, as the caissons are manufactured off-site (in Spain) under controlled conditions.

10 https://marine.gov.scot/information/interim-population-consequences-disturbance-model-ipcod

11 https://www.frontiersin.org/journals/marine-science/articles/10.3389/fmars.2022.875869/full

12 https://www.smru.st-andrews.ac.uk/research-overview/research-policy/scos/index.html

13 https://sitelink.nature.scot/site/8372

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	• **We advise that underwater noise modelling will need to be revised and reassessed for the dredging requirements for Phase 3** • It should be noted that soft-start procedures are only relevant for equipment which have this capability, and which have the potential to cause instantaneous PTS, otherwise this procedure extends the time of unnecessary emitted noise into the environment.	
Vessel movement impacts		
24.	• The HRA now considers the relevant impact pathways associated with the predicted increase in vessel movements associated with the construction and operational phase of this proposal. However, as advised for the impacts associated with underwater noise, the assessment for disturbance from vessel movements is still qualitative. **Based on these current assessments, we cannot confirm if the conclusions and proposed mitigation can be supported. There has been no attempt to quantity the level of disturbance from vessel activities on the SAC population and there is no substantial evidence or reference to support the conclusion that seals would habituate to increased vessel activity. The vessel movement assessment relies on the Technical Appendix – 2.3 Navigational Risk Assessment, which only includes predicted vessel movements until 2031.** • Given that the baseline vessel movements in this part of Scapa Flow have been assessed as being relatively low, as stated in the Technical Appendix - 2.3 Navigational Risk Assessment: "Overall traffic density in the project area is at the lowest level for any part of Scapa Flow", the predicted changes to vessel movements and the associated impacts on harbour seals in this part of Scapa Flow are likely to be pronounced. As previously advised, **all impacts associated with vessel presence should be assessed based on realistic estimates of potential increases in vessel movements for all construction and operation phases.** • It is generally accepted that smaller and more mobile species are less at risk of vessel strike than from larger vessels. **However, small fast-moving vessels still present a risk and mitigation is expected.** • The proposed mitigation to adopt speed limits of 4 knots could help to minimise disturbance and/or risk of injury and death by collision. The implementation of a vessel management plan including agreed routes and speed limits and providing WiSe training courses could also help to mitigate the impacts on harbour seals associated with vessel movements. **However, since the Technical Appendix 5.5 – Habitats Regulations Appraisal assessment fails to fully address and quantify the impact of vessel movements on harbour seal, it is uncertain if this standard mitigation being proposed would be adequate to mitigate the potential impacts associated with the likely vessel movements.**	Refer to Section 10 of the HRA
In-combination impacts		
26.	• Our previous advice has not been fully addressed in the revised HRA: **The selection of projects considered in the in-combination effects does not appear to be comprehensive nor includes the most relevant and up-to-date developments** which may also impact on the Sanday SAC Harbour seal population. There is no consideration of the wider range of developments and sectors as we advised in the Scoping Opinion Section 6.13.33, **which should**	Refer to Section 12 of the HRA

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	have included other harbour developments, aquaculture, renewable energy developments, cable installations. • There **is no justification why certain plans and projects have been scoped in or out**, despite our previous advice above on the key types of projects which should be considered. There is **no substantial assessment to support the conclusion that there will be no in-combination impacts.** As previously advised, **in-combination assessments should also be quantitative and refer to the population size and status of the SAC.** • We acknowledge that Hatston has now been included in the in-combination assessment, however **it has not been confirmed if Hatston construction works and SDWQ are likely to be undertaken concurrently or sequentially. A clear worst-case scenario, or several scenarios based on realistic options and timings/scheduling of construction work at each development site, should be assessed and presented where final details are unknown.** The in-combination assessment should consider the wider range of activities which could cumulatively impact the designated features, such as vessel movements and activities which emit noise.	Refer to HRA Chapter 12 "For the Proposed Development at SDWQ, the following developments have been recommended by Orkney Islands Council to be considered for in-combination effects: • Hatston Logistics Base; • Lyness onshore wind farm" Various others (such as aquaculture) were also considered.
Marine Mammals		
30.	Marine mammals are considered in section 5 of the main EIA report and Technical Appendix 5.2. Both the Underwater Noise Modelling Report (Technical Appendix 5.6), the Marine Mammal Mitigation Plan (Technical Appendix 5.7), the Marine Mammal Risk Assessment (Technical Appendix 5.11) and the Basking Shark Risk Assessment (Technical Appendix 5.12) have also been considered in our advice below. The proposal has the potential to affect a number of marine protected species. This includes all cetacean species (whales, dolphins and porpoise), seals and basking shark, all of which are classed as European Protected Species (EPS). In addition to the potential connectivity to the Harbour seal populations of Sanday SAC, the proposal is could affect a number of designated seal haul-outs within range of the proposed site. We note that an EPS licence will be applied for. The key points of our advice is summarised below, with further comments provided on specific Technical Appendixes: • **There are inconsistencies between and within the documents submitted. The application documents should be checked to ensure that all information is the same throughout and accurately reflects the design scope.** All documents need to be updated to remove text relating to marine blasting activities. • We welcome the changes to scope in humpback whale, fin whale and common dolphin, **however, these changes haven't been updated throughout and within the documents. We note that there are still some data gaps and inaccuracies in the marine mammal baseline report and the most up-to-date data has not been used (i.e.**	NatureScot state they can accept the MM and fish baseline data so long as mitigation covers all marine mammals. Killer whale is included all year round in baseline/MMRA. A Seal RA produced (in consultation with NatureSCot) and is attached to the SEI Report as Appendix D. The HRA has been updated with seal information to better assess Sanday SAC. Pilng and associated drilling are no longer being undertaken as a result of the change from the exemplar design to

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	SCANS IV, Carter et al., 2022). It should be noted that killer whales are seen year-round in the Orkney waters. However, we can accept the baseline report if all mitigation measures are implemented for all marine mammal species, irrespective of the frequency in which they are sighted in the area. • **Seals have not been included in the Marine Mammal Risk Assessment.** We are also still concerned that minimal attention has been given to the serious decline in harbour seal in Orkney waters and the importance of not subjecting them to additional pressures. • **The conclusions in the HRA for Sanday SAC are not based on sufficient evidence nor robust or complete assessments**. This has been addressed separately in Appendix 2. • **The underwater noise assessment does not appear to follow the standard assessment approach.** Our previous advice on the underwater noise modelling assessments has not been fully addressed. However, as advised for Sanday SAC, we can accept this based on the understanding that no marine blasting or impact piling will occur, and that mitigation will be implemented for all marine mammal species. • **More robust cumulative assessments are required,** which should consider the range of relevant plans and projects which could have a significant effect on the same populations of marine mammals likely to be impacted by this proposed development.	the caisson design. In addition, there is reduced construction noise and emissions on site, as the caissons are manufactured off-site (in Spain) under controlled conditions.. Only dredging occurring now. Refer to HRA Chapter 12 "For the Proposed Development at SDWQ, the following developments have been recommended by Orkney Islands Council to be considered for in-combination effects: • Hatston Logistics Base; • Lyness onshore wind farm" Various others (such as aquaculture) were also considered.
The Technical Appendix 5.6- Underwater Noise Modelling		
33.	**It is noted that the following points from our previous advice on the underwater noise modelling have not been addressed:** • Underwater noise modelling parameters should be based on the most accurate and realistic description of the proposed development. We note the following discrepancies: o Vibration piling levels are expected to be 196dB, although the model is based on piles with a diameter 2.1m whereas the main EIA report states piles could be up to 2.2m. o Dredging levels are expected to be 192dB which is based on dredging to 15m. The EIA report states that Phase 3 dredging will be required to 20m and submitted under a separate application. Further underwater noise modelling may be required to support this application.	The design has changed from the original exemplar design (Option 1) to the prefered option (caisson design) which provides many environmental benefits. The caissons, for example, are being manufactured in Spain and shipped to the site by 3 or 4 vessels which remove the requirement for piling and drilling which is no longer required

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	○ Despite 24 hours of dredging proposed, only 8 hours of dredging has been modelled in the underwater noise modelling. However, since dredging is a continuous, broadband, low frequency noise it can be concluded that there is no potential for instantaneous PTS/TTS. • It would appear that the impact zones presented for marine mammals are still based on a stationary animal. As we previously advised, animals are likely to move around or move away from the noise source and so the realised emission will likely be lower. **There has been an attempt to model a fleeing animal for dredging, however the method for this is unclear and the noise maps in Appendix E are missing. Clarity is required on the methodology for modelling impacts on a fleeing animal, and should state which hearing groups and associated swim speeds have been used.** Despite this uncertainty, given that the modelling has been carried out on a static animal, it is accepted that the results present a worst-case scenario.	and will improve underwater noise significantly. The caisson also benefits by being constructed approximately 10 months quicker than the exemplar. The Marine Mammal Risk Assessment contains a Marine Mammal Mitigation Plan which comprises to minimise potential impacts on Marine Mammals: • Marine Mammal Observation Protocol • Dredging Protocol • Reporting • Vessel Movement Mitigation Protocol These will be agreed with NatureScot prior to works commencing. CEDA Position Paper - 7 November 2011[14] states "*Dredging involves a variety of activities that produce underwater sounds. Most of these are relatively low in intensity and frequency, although recent investigations indicated that occasionally higher frequencies are emitted. Compared to other activities that generate underwater sound, dredging is within the lower range of emitted sound pressure levels. While it is clear that*

[14] https://dredging.org/media/ceda/org/documents/resources/cedaonline/2011-11_ceda_positionpaper_underwatersound_v2.pdf

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		dredging sound has the potential to affect the behaviour of aquatic life in some cases, injury in most scenarios should not be a concern, or should be preventable. It is very unlikely that dredging-induced sounds will lead to any population level consequences, although harm to individuals should not be overlooked.It should be noted that the CEDA Position Paper states noise associated with shipping (large vessels) is in the region of 180dB-190dB.
Mitigation: EIA Section 5.8 and Technical Appendix 5.7 Marine Mammal Mitigation Plan		
34.	In our original response submitted on the 8 December 2023, we provided some initial comments on the potential suitability of the mitigation proposals. **In addition to these comments, we offer the following further points to consider:** • The elements contained within the Marine Mammal Protection Plan are all considered to be standard (e.g. MMO, PAM, soft start approach to piling etc). It should be noted that soft-start procedures are only relevant for equipment which have this capability, and which have the potential to cause instantaneous PTS, otherwise this procedure extends the time of unnecessary emitted noise into the environment. • The implementation of vessel management plans, including details such as agreed routes and speed limits of 4 knots, as well as providing WiSe training and / or adhere to the Scottish Marine Wildlife Watching Code, could help to minimise disturbance and injury associated with vessel movements. We advise that the following measures should be included in the vessel management plan: o Inform vessel skippers and staff of marine mammal collision risk, conduct regular watches and ensure slow speeds if marine mammals are detected; and o All vessels, including vessels under 10m in length, will adhere to the general principles in the Scottish Marine Wildlife Watching Code when undertaking their activities. • The Basking shark code of conduct should be included within any mitigation measures	These points are all updated in relevant docs; i.e.Seal Risk Assessment, Basking Shark Risk Assessment, Marine Mammal Risk Assessment, etc
Marine Mammal Risk Assessment and Basking Shark Risk Assessments Technical Appendix 5.10 and 5.11		

S/N	New comments received	May 2025 Response/comment
35.	Any future application for an EPS licence will require an EPS Risk Assessment[15], which should include a modelled or estimated number of animals likely to be disturbed by the proposal from either threshold shift or behavioural change. We advise that the baseline for the EPS Risk Assessment should use the new SCANS IV data for cetaceans and an updated version of the underwater noise modelling provided, taking into account our advice provided above on the Technical Appendix 5.6 Underwater noise modelling. Any species that have the potential to be disturbed should be assessed within the EPS Risk Assessment. We have previously provided advice on which species could be impacted by this proposal and should be scoped in. As advised for the EIA and HRA, adequate information should also be provided on the type, scheduling and duration of construction activities which are likely to cause disturbance. This level of detail has not been provided and would be required as part of any future EPS licence to be able to fully assess the potential level of disturbance. Cumulative impacts associated should also be fully assessed.	An application for a European protected species (EPS) licence will be submitted to the Regulator prior to works commencing.
40.	**Biodiversity Enhancement** Since the original submission of this proposal, **the Scottish Government Draft Planning Guidance on Biodiversity (November 2023)** has been published and provides further advice on delivering biodiversity enhancement. Although labelled as "Draft Guidance" it is intended that **it should be used now to assist in implementation and delivery of Policy 3.** Given that the biodiversity enhancement plans are still to be finalised, **we advise the following should be considered as plans develop:** • Information on predicted losses, and the proposed mitigation, compensation and enhancement should be clearly set out, and also concisely summarised, in the application, so that this can be easily understood by decision makers. • The proposal should clearly set out the type and scale of enhancement it will deliver, ensuring that the application clearly distinguishes between those elements mitigating or compensating for adverse effects and those delivering enhancement. • On-site enhancement should be prioritised before off-site delivery. Where purely on-site enhancement is not possible, the Scottish Government draft guidance sets out further considerations for off-site delivery.	Biodiversity Net Gain Feasibility Assessment (Technical Appendix 5.9) was undertaken using DEFRA Statutory Biodiversity Metric in line with the user guide[16] and technical supplements[17]. With reporting outlining losses, proposed mitigation, enhancement and

15 Marine Scotland: The protection of Marine European Protected Species from injury and disturbance. Guidance for Scottish Inshore Waters (July 2020) https://www.gov.scot/publications/marine-european-protected-species-protection-from-injury-and-disturbance/

16 Natural England (2024). Biodiversity Metric : User Guide. Natural England Joint Publication JP039. Available at: https://assets.publishing.service.gov.uk/media/65c60e0514b83c000ca715f3/The_Statutory_Biodiversity_Metric_-_User_Guide_.pdf (Accessed July 2024)

17 Natural England (2024). Biodiversity Net Gain – Guidance documents: Available at: https://www.gov.uk/government/collections/biodiversity-net-gain (Accessed July 2024)

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	• It is also important that the application demonstrates that the enhancement is to be secured within a reasonable timescale and with reasonable certainty, including appropriate management and monitoring arrangements, and sustained for the future (preferably in perpetuity) to deliver a lasting legacy. • Enhancement requires consideration of all biodiversity, not just the significant effects that are the focus of EIA. • Enhancement delivered should be additional to any measures which would have been likely to happen in the absence of the development. Our Developing with Nature guidance has been prepared, in discussion with Scottish Government, to support local development applications. It sets out a number of common measures to enhance biodiversity that are widely applicable. For national, major and EIA developments, more detailed assessment and more ambitious measures are likely to be required, but elements of our ***Developing with Nature*** **guidance** may still be helpful. For information and updates, please see our **enhancing biodiversity webpage.** **Biodiversity Net Gain Feasibility Assessment (Technical Appendix 5.9) and Biodiversity Enhancement Management Plan (Technical Appendix 5.10)** As part of this submission of further information to support the EIA of this proposal, a Biodiversity Net Gain Feasibility Assessment and Biodiversity Enhancement Management Plan has been submitted as part of the requirements set out by NPF4 biodiversity policy 3b. As part of our previous response, we provided initial comments on the requirements for biodiversity enhancement and we maintain this advice. However, we acknowledge the additional information which has been provided, including the clarification that separate enhancement measures will be carried out to address the losses in the terrestrial, intertidal and marine environment, and offer some additional advice under each theme. **Terrestrial habitat** We acknowledge that some on-site biodiversity enhancement measures have been proposed for the terrestrial habitats lost to the development, but given the scale of proposal and the significant impact on biodiversity, additional offsite enhancement measures will be required. **Wideford Hill LNCS has been identified as a potential site, but no further detail has been provided on the exact location, type and scale of any enhancement measures. The general advice and guidance on NPF4 Policy 3b linked above should be followed and referenced to help in the design of the final measures and plans.**	compensation. Aligned with the user guide and technical supplements, on-site enhancement is prioritised over off-site delivery. OICHA, as the responsible legal entity, are in the process of identifying offsite locations suitable. All locations identified as opportunities for offsite enhancement measures, inclusive of Wideford Hill LNCS are being carefully considered. Further survey, to determine baseline habitat and condition assessment will be undertaken at all sites taken further in the process, in order for

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	It is stated in the Biodiversity Net Gain Feasibility Assessment (Technical Appendix 5.9) that the measures included in this plan for the terrestrial habitats does not cover requirements arising from potential impacts on protected species and off-site designated sites. **However, we advise that existing Protected Areas need to be considered when selecting and planning enhancement measures to ensure there could be no damaging impacts on qualifying features.** Impacts could occur if the proposed work is both within and in connection to protected areas. Depending on the final site selected at Wideford Hill, there could potentially be some connectivity to foraging ground of the qualifying bird features of Orkney Mainland Moors SPA and Keelylang Hill and Swartaback Burn SSSI . **Where European sites (e.g. SPA/SAC) are affected, an HRA may be required before measures can be implemented. There is also the requirement to understand and conform to the standard legal requirements if the works could interact with Protected Species, whether already present on site or likely to be attracted by the biodiversity measures.** The species and habitats which could be enhanced through any off-site measures should be considered at an early stage. Enhancement measures should focus on locally and ecologically relevant measures that complement, substitute or restore lost, degraded or disturbed habitats and species, particularly those considered a priority for action (e.g. locally important habitats and species, or nationally identified priority species as identified in the Scottish Biodiversity List**). We encourage the applicant also seeks guidance and consults with various local conservation groups to seek opportunities to build on existing work and avoid duplication. Environmental Planning at Orkney Islands Council are best placed to advise on opportunities to build and strengthen nature networks.** The proposed provision of nest boxes for black guillemots is welcome and has been successful at other locations in Orkney (Lyness) and elsewhere. **Intertidal habitat** **We note that the loss of intertidal habitats has not been quantified and considered within the Biodiversity Net Gain Feasibility Assessment (Technical Appendix 5.8)** but proposals for enhancement of the intertidal and marine habitats are outlined within the Biodiversity Enhancement Management Plan (Technical Appendix 5.9). The Biodiversity Net Gain Feasibility Assessment uses the Defra Statutory Metric to quantify the terrestrial habitat requirements, which can be accepted along with other appropriate information on enhancement measures. **No metric has been used to quantify the predicted losses of intertidal habitats, so it is unclear if the surface area of rock armour to be included in the biodiversity enhancement plans will be sufficient to account for the loss of intertidal habitats.** Intertidal boulder rocks are a habitat considered of priority for conservation in the UK Biodiversity Action Plan (“BAP habitat”) and this habitat is directly lost as a result of the development so creation of this habitat by way of ecologically engineered rock armour would be appropriate in this case. However, as previously advised, given that a substantial area of this habitat could be lost to the	a bespoke enhancement plans to be developed. Offsite enhancement locations will be considered against several factors, inclusive of appropriateness in the wider context, such as potential impact on designated sites and protected species. Discussions with Environmental Planning at Orkney Islands Council are underway on opportunities to build and strengthen nature networks. Ongoing Scapa Deep Water Quay intertidal/Rocky Shore surveys have been undertaken on 22/23 May 2025 by a team led by Dr Jenni Kakkonen, Orkney Independent Marine Advisory Group (OIMAG). The results of these surveys will feed into future iterations of the Biodiversity Net

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	development, **the area of intertidal habitat needs to be considered and quantified as part of the requirements for biodiversity enhancement.** We welcome the inclusion of the PhD proposal "*Rocky shore biodiversity: Separating the effects of anthropogenic impacts from natural variation and climate change impacts*", **however it is unclear how this proposal integrates with the commitment to carry out biodiversity enhancement measures and associated monitoring for the intertidal habitats lost to the development.** The proposed intertidal biodiversity enhancement measures are still under development and may be subject to change depending on the final design. **We advise that the final measures for the intertidal habitat should meet the requirements set out in the Scottish Government's Draft Planning Guidance on Biodiversity, and that any plans for biodiversity enhancement should be discussed and approved by the Regulators (Orkney Islands Council and MD LOT) in consultation with NatureScot prior to consent being granted.** **Marine habitat** The Native Oyster Restoration Strategy for Orkney sets out clear high-level objectives and demonstrates understanding of the policy and regulatory considerations necessary for native oyster restoration. **However, we noticed that our latest guidance, *NatureScot Research Report 1316 - Guidance and Recommendations for Native Oyster Enhancement Projects in Scotland*, has not been referenced. We recommend that the developer reviews this to ensure alignment with NatureScot guidance.** We are pleased to see the PhD collaboration with Heriot-Watt University, which will support broader research on site suitability for native oyster restoration**. However, we would appreciate further clarification on whether all aspects of baseline monitoring will be conducted as part of the PhD research, or if these will be completed by the developer.** On page 11 of the document, you outline the baseline survey requirements. **We recommend that these surveys include a biodiversity baseline focused on benthic habitats and species, with reporting on the presence of Priority Marine Features (PMF) and Invasive Non-Native Species (INNS) in the selected sites. We note that all proposed sites are within SPAs and an HRA will be required.** Additionally, once all necessary licenses and permissions are in place and the site(s) have been deemed suitable for native oyster restoration, **monitoring should include the six universal metrics (Project footprint, Oyster habitat area, Oyster density, Oyster size and frequency, Temperature, and Salinity) highlighted but we also expect monitoring of survival and benthic biodiversity (at a minimum).**	Gain Feasibility Assessment and consequently the requirement for mitigation, enhancement and habitat creation. Noted. OICHA as the responsible legal entity, have a firm commitment to biodiversity enhancement and are investigating additional enhancement measures. Installation of the caisson itself can provide niche habitats i.e. the presence of algae that develop on the walls of the infrastructure etc. By providing surfaces for colonisation and offering shelter, caissons can contribute to the growth of diverse marine ecosystems. Noted

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	If the substrate at the selected site(s) is deemed insufficient for appropriate settlement, and the addition of cultch is necessary to create suitable conditions for restoration, biosecurity protocols will need to be followed. Specifically, any cultch used should be weathered on land to ensure it is biologically inert. **If the project includes plans for weathering or storing cultch on land, please consult SEPA regarding relevant advice and licensing requirements.** **The PhD proposal mentions growth and survival trials in small baskets. We recommend contacting the Local Authority to determine if Planning Permission is required for these activities. Additionally, a non-native species licence may be required** for the baskets if reproductively active oysters are held. If a licence is not required, the biosecurity plan should still address mitigation measures for accidental release. Any release of native oysters onto the seabed, where they are not contained, would require a non-native species licence and should follow the Scottish Code for Conservation Translocations as best practice. As previously advised, any changes or further plans for biodiversity enhancement should be discussed with the Regulators (Orkney Islands Council and MD LOT) in consultation with NatureScot prior to consent being granted. We acknowledge initial contact has been made with NatureScot's marine enhancement team, and we would be happy to advise further.	Noted. Plans for how the PhD, notably baseline monitoring will progress are ongoing. Noted.
Comments on the EIA Report, Section 5 Biodiversity – Ornithology		
43.	Table 5.1 presents a scoping summary. With respect to marine bird features a Zone of Influence is defined as being "*Within the development and up to 750m from the boundary (considered to be the furthest disturbance distance of bird species)*". Goodship and Furness (2022) are cited as source for this, but information within that report indicates that some species, black-throated and red-throated divers in particular can be disturbed over distances of 1000m or more. Additional relevant data sources are Goodship and Furness (2019) and Jarrett et al (2018). The studies reported in Jarrett et al (2018) were undertaken in Orkney waters and are therefore of particular relevance. In addition, the proposed development site is in a previously undeveloped section of coastline away from shipping lanes/routes already used by commercial vessels in Scapa Flow. **Consequently, consideration should also be given to wider potential disturbance impacts associated with vessels moving to and from the facility along novel vessel routes away from the immediate vicinity of the development itself.** **European shag should be included in the list of SPA species to be scoped in.**	Maps have been produced (Appendix A of the HRA) that combines project survey data and HiDef survey data. European Shag - Refer to Section 6.6 of the HRA
5.5.4 Baseline Ornithology		

S/N	New comments received	May 2025 Response/comment
44.	This simply refers readers to EIA Technical Appendix 5.3 for results of the various surveys undertaken by Firth Ecology with **no attempt made to summarise the findings. This is at odds with approach taken for other receptors (e.g. marine mammals in section 5.5.6). We have also advised that the Technical Appendix 5.3 does not take into account our previous advice nor the most up-to-date survey information.**	SPA qualifying species are summarised in the HRA. From Vantage Point watches, 23 non Scapa Flow SPA species were recorded. The highest number of birds were Greylag Goose (peak of 820), Common Gull (peak of 439) and Herring Gull (peak of 111). Small numbers of all other species were recorded. For auk species, Black Guillemots showed a stable pattern, as it is a locally resident breeding species. The clear peak in August of each year may be due to the presence of all of the year's fledged young out on the water along with their parents. 18 birds were concentrated within 500 m of the shore, but they became more frequent further out during the summer. Razorbills and Guillemots were somewhat irregularly present in the survey area in most months, with small numbers (less than five birds on average) within 1 km. They were more consistently present and in higher numbers in the breeding seasons. In Year 2, the extension of the counts out to 2 km showed the occasional much large numbers that could be more distant, with peak counts for both species on the first (early morning) count on 3rd June 2022. Guillemots did not appear to

S/N	New comments received	May 2025 Response/comment
		breed nearby and their numbers within 1 km were similar between 2021 and 2022. However, tens of pairs of Razorbills appeared to be breeding on the cliffs to the north of the site in 2022, when the May and June counts within 1 km were clearly higher than in 2021. Flight logging surveys recorded the feeding rate of both Arctic and Common Terns off Deepdale. For Arctic Terns, the feeding rate was 3.7 birds/hr in 2021 and 3.2 birds/hr in 2022. For Common Tern, the feeding rate was 0.9 birds/hr and 0.7 birds/he respectively. During wintering bird surveys (terrestrial), 18 species were recorded. Of significance were large flocks of Golden Plover and Curlew with peaks of 175 and 260 respectively. During breeding bird surveys, 12 species were recorded within the Proposed Development site boundary; Mallard, Oystercatcher, Lapwing, Ringed Plover, Redshank, Curlew, Rock Dove, Skylark, Wren, Pied Wagtail, Rock Pipit and Twite. Peregrine, Hen Harrier and Short-eared Owl were all recorded flying over or adjacent to the site. There was no evidence of breeding for all three species

S/N	New comments received	May 2025 Response/comment
		within 1km of the Proposed Development.
45.	This is very high level with only reference to marine birds being "*Deterioration of seabird populations*". **There is lack of any distinction here between true seabird species nesting in colonies, breeding red-throated divers and migratory inshore wintering species.**	Colony Nesting Seabirds – Guillemot, Razorbill, Black Guillemot, Puffin, Shag, Cormorant, Fulmar, Kittiwake Breeding Red-throated Diver Migratory inshore wintering species – Great Northern Diver, Black-throated Diver, Eider, Long-tailed Duck, Red-breasted Merganser
46.	In Table 5.7, the Scapa Flow and Orkney Mainland Moors SPAs are listed as being included for evaluation given their international importance. **No other ornithological interests are listed, despite inclusion in Table 5.1 of Arctic and common tern, both of which are Birds Directive Annex 1 species. However, terns are included in the ornithology impact assessment at section 5.6.6.**	Arctic and Common Tern are assessed of being of International Importance through their inclusion on Annex 1 of the Birds Directive.
47.	Please also refer to comments on the Scapa Flow SPA HRA in Appendix 2. The potential impact pathways identified for the construction phases can be summarised as: • Injury or death through collision or underwater shock waves arising from piling. • Injury or death through chemical pollution. • Temporary displacement from feeding or loafing habitat associated with disturbance as a result of increased noise, vibrations and human presence Note there is no specific reference to associated vessel movements and also that permanent displacement from the marine footprint is not considered (this is however recognised as a potential pathway for foraging terns at section 5.6.6 and also more widely within the HRA). • Indirect effects if prey species killed or displaced. The assessment in this section of the EIA report has been improved with some further information included. **However, there remains no reference to the findings of the ornithology surveys (e.g., to characterise numbers and distributions of birds in vicinity of the site and how these relate to the wider SPA populations and distributions, noting in particular**	SPA qualifying species are assessed in the HRA and conclude that with mitigation, there would be no adverse effect on site integrity for any of the qualifying species.

S/N	New comments received	May 2025 Response/comment
	that no species utilise the entire site and some, such as black-throated diver, Slavonian grebe and red-breasted merganser, have restricted distributions and are confined to near shore waters). The sensitivities of individual species to the various impact pathways have still not been considered. As advised previously, there is no actual assessment of potential impacts to support the conclusions drawn for the construction and operational phases.	
49.	5.6.2 Orkney Mainland Moors SPA/ West Mainland Moors SSSI impact assessment As above, there is **no reference made no baseline bird surveys and no detail around basis for the conclusions drawn.**	Orkney Moors SPA is assessed within the HRA and concludes no adverse effect on site integrity. Other non-SPA qualifying species designated in the West Mainland Moors SSSI, have been scoped out of further assessment due to a lack of connectivity.
5.6.6 Ornithology Impact Assessment		
50.	**There is a lack of detail with regards to the assessment of habitat loss on tern species** (e.g., considering numbers of terns seen using the area in relation to overall populations) to enable judgement as to validity of the conclusions. For operational phase the same conclusion is reached with respect to vessel movements, inshore activity and potential pollution incidents, but again with **no reference to relevant material on either populations or sensitivities.**	The Proposed Development will see the loss of 19Ha of inshore habitat that is utilised by both Arctic and Common Terns. With a mean foraging range of 4.4km, the potential foraging area is 774Ha. Therefore, the loss equates to 2.4% of foraging habitat which is considered not significant and demonstrates that there is plenty of suitable feeding habitat within their foraging area. There is no research on sensitivity of these birds to vessel movements, however these species do regularly nest within harbours which suggests that they are not adversely impacted by vessels.

S/N	New comments received	May 2025 Response/comment
5.7 Cumulative Impact Assessment		
51.	The only other development or activity considered is the proposed Hatston Pier extension and the Lyness onshore windfarm. **There is no mention of aquaculture and the potential for any significant cumulative impacts is dismissed.**	Cumulative (In-combination) effects has been assessed within the HRA (Section 12), taking into account aquaculture sites within Scapa Flow SPA. No cumulative impacts are predicted.
5.10 Statement of Significance including Table 5-9: Residual effects summary		
55.	With respect to birds, this concludes "*There is a possibility of a small number of individual birds …. experiencing disturbance or being displaced from a small area of their habitat but this is not considered likely to affect the favourable conservation status of populations in a local, national or international context*". **As above, the level of analyses presented to support this is inadequate.**	SPA qualifying species are assessed in HRA and concludes that with mitigation, there will be no adverse effect on site integrity. Given the small densities of other species recorded during the surveys (see Technical Report 5.3: Ornithology Technical Report), or in the case of Greylag Goose, their large local population, it is concluded that *"There is a possibility of a small number of individual birds …. experiencing disturbance or being displaced from a small area of their habitat but this is not considered likely to affect the favourable conservation status of populations in a local, national or international context"*
Comments on the EIA Report, Section 5 Biodiversity Protected species		

S/N	New comments received	May 2025 Response/comment
56.	Our advice on impacts on otter remains unchanged: We acknowledge that an otter survey has been carried out in accordance to our scoping advice, and that evidence of otter activity was identified within the site. **It has been proposed in the EIA and Technical Appendix 5.8 that further survey work is required to determine the use of the site for breeding, including the use of camera traps (section 5.5.3.1) and pre-construction surveys (section 5.8.1). It is therefore not possible to confirm that the impacts to otter are of low magnitude, as concluded in the EIA, section 5.6.5, until this further survey work and subsequent assessment is complete.** We also note that a disturbance licence may be required for otter, depending on the outcome of the proposed survey work and pre-construction monitoring. We fulfil our advisory role on protected species through the provision of standing advice and do not expect to be consulted except in exceptional circumstances not covered by our standing advice.[18] If it is considered that a species licence is required as part of this development, the Applicant should contact our licencing colleagues to deal with any licence application. In considering whether a licence is likely to be granted you should familiarise yourself with the licencing information in the advice and consider the tests. There is information in our species advice notes on the circumstances in which a licence is likely to be granted. <u>Invasive Non-Native Species (INNS)</u> We note that a non-native Invasive Species Plan has been proposed in Technical Appendix 10.3, Section 2.4. As previously advised, we recommend that any site-based biosecurity plan considers the risk of introducing or spreading other forms of INNS, including stoats and other land-based predators which pose a threat to Orkney's biodiversity. Suitable protocols and general good practices should be incorporated to prevent and stop the spread of INNS, in accordance with local and established guidance[19].	Noted. Pre-construction surveys will be planned and undertaken in consultation with NatureScot.

18 Planning and development advice: protected species: https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/planning-and-development-protected-species

19 For example: Orkney Native Wildlife Project: https://www.orkneynativewildlife.org.uk/ and Biosecurity for Life: https://biosecurityforlife.org.uk

6 SDWQ SEPA COMMENTS

S/N	Comments received on EIAR submission	Response provided in Revised EIAR (August 2024)/ Addendum report (October 2024)	New comments received	Final Response
1.	We note the potential loss of rare, tufa forming spring communities (section 4.7.2.2) due to their location on the cliff face. This constitutes a loss of biodiversity as well as a loss of GWDTE. Whilst mitigation is proposed the applicant is required to provide evidence that the proposal is feasible, given the specific conditions at the site, and to demonstrate that a similar approach has been successful elsewhere. Although the area indicated for compensatory habitat is the same bedrock unit, the fissures/ porous areas which are allowing the spring may not be consistent across the whole unit. The mitigation area may not have the same spring forming capability. This is an issue that must be resolved before habitat is lost. It is unclear whether the bedrock face referred to in Section 4.7.2.2 is to be cleared as an integral part of the works or purely to provide the opportunity to create compensatory habitat. The impact of exposing the bedrock on existing habitat or rock conditions must be considered. The compensatory habitat creation would be acceptable if it is restoring something previously damaged or enhancing a habitat so it has more ecological value, but the applicant would need to prove that this is the case and that it is feasible.	A Biodiversity Net Gain Feasibility Assessment (Technical Appendix 5.9) and Biodiversity Environmental Management Plan (Appendix 5.10) has been developed to demonstrate how the proposed development will conserve, restore or enhance biodiversity including tufa forming spring communities and bedrock face.	We requested that the applicant provide evidence that the mitigation proposal is feasible, given the specific conditions at the site, and to demonstrate that a similar approach has been successful elsewhere. The information provided does not answer any of our concerns regarding the proposed mitigation for the Tufa forming springs. The engineering options suggested do not provide a considered solution and also have not been shown to be successful elsewhere. It remains unclear whether the bedrock face is to be cleared as an integral part of the works or purely to provide the opportunity to create compensatory habitat. The impact of exposing the bedrock on existing habitat or rock conditions must be considered.	Refer to Section 5.5.8 of the SEIR (May 2025)

S/N	Comments received on EIAR submission	Response provided in Revised EIAR (August 2024)/ Addendum report (October 2024)	New comments received	Final Response
			The compensatory habitat creation would be acceptable if it is restoring something previously damaged or enhancing a habitat so it has more ecological value but the applicant would need to prove that this is the case and that it is feasible	
2.	The site is shown to be at risk of flooding based on the SEPA Future Flood Maps. This indicates that there is a risk of flooding from the sea. You can view the SEPA Flood Maps and find out more about them at Flood Maps I SEPA- Flood Maps I SEPA. The proposals are for the construction of a deep water quay which is considered a water compatible use and potentially also essential infrastructure. These uses are included within NPF4 as uses which are permitted within the flood risk area under Policy 22a provided there is no increase in flood risk elsewhere as a result of the development. A hydrodynamic study has been provided in support of this application. This has not been reviewed as we are satisfied that the proposals are unlikely to lead to an increase in flood risk elsewhere given the land raising and reclamation is within the sea where loss of floodplain won't impact flood levels. The deepening of channels may cause erosion of the nearby shore over time although erosion risk is not a matter within SEPA's remit.	No comments for applicant.	No Comment	

7 ORKNEY ISLAND COUNCIL CONSULTEE RESPONSES MARCH 2025

Each requirement of the Regulations is considered separately, and commentary is provided if this requirement has been met. The colour system included in is as follows:

Requirements have been met in full and no further action is required;

Requirements have been addressed in part and additional action or clarification is required; or

Requirements have not been fulfilled in action is required, and further information requested.

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
Regulation 5					
Reg 5 (1) *An application for planning permission for EIA development must be accompanied by an environmental impact assessment report ("EIA report").*	An EIA Report has been prepared and submitted with the planning application. **Action to meet requirements of regulation 5 (1)** **Requirements met and no further action is required.**	An EIA Report has been prepared and submitted with the planning application.	Requirements met.	**No further action is required.**	
Reg 5 (2) An EIA report is a report prepared in accordance with this regulation by the developer which includes (at least):					
a) a description of the development comprising information on the site, design, size and other relevant features of the development;	The EIA Report sets out a summary description of the proposed development at Section 2.5 - 2.7 with a fuller description set out within the reporting 'SDWQ – Project Description & Potential Methods' contained in Technical Appendix 2.1 This is	Section 2.5 to 2.7 of the EIAR and Technical Appendix 2.1 has been updated in response consultee comments. Clarity is provided in that explosives will not be used in the marine environment but will be used onshore.	The updated EIAR provides some further detail to the description of development, however a number of areas of description remain to be provided. **Statutory Consultee Response**	**Provide confirmation that all deliveries will be made into and from Lyness.** **A vessel route and timing for all deliveries should be confirmed.** **Further information on potential users and seasonal**	With reference to vessel movements, refer to the HRA. As a result of the change from the exemplar design to caisson, steel associated with piling etc. is no longer required. In addition, is anticipated that 3 or 4 four trips using a semi-submersible vessel will be required to deliver all caissons to the SDWQ site. The estimated transit time for the transfer of the caissons to SDWQ is 8 days (round-trip from/to Spain). Consecutive trips will be undertaken to transport all caissons.

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
	supported by plans and sections which detail the site entrance layout, site sections and overall site and site sections with information on the site, design, size and relevant features of the development. The EIAR describes the construction of the development, phasing for Stage 2 with laydown areas. Construction Phases 1 and 2 dredge spoil disposals will take place at the proposed site. There is description also of operational aspects of the development which are relevant to assessment including site activities, vehicle movements and propeller wash, vessel movements and temporary placement of wind turbine component for carriage. The description provides that during the operational phase, maintenance dredging is not expected to be required. **Technical Consultee Response** NatureScot in its response highlights the need for additional detail relating to vessel movements associated with the development, including vessel routings, frequency and timings and duration of activities during the construction phase. This will allow for a robust assessment of potential disturbance or displacement impacts on marine species arising from vessel movements. Further information/ clarity is required with respect to construction methodology including the potential use of explosives. Clarity is required on the proposed use of the new harbour facility for wet storage in order to fully assess the potential significance of any impacts. OIC Development and Marine Planning highlight the need for additional information with respect to vehicle movements and storage of materials. Further information is therefore required in the form of an outline CEMP, which should set out the principles that principal contractor responsible for writing the detailed CEMP post-permission (should permission be granted) will be expected to adhere to	With respect to vessel routes and timing, this is summarised at 2.6.3 and cross referenced with the Navigational Risk Assessment provided in Technical Appendix 2.3. A construction and environmental management document is included within the EIAR (section 2.4 of Technical Appendix 10.3.	**NatureScot** in its response acknowledges that additional information which describes the development has been provided. However, confirmation is required '*that all deliveries will be made into and from Lyness. A vessel route and timing for all deliveries should be confirmed'*. Nature Scot advises that further details have to be provided with respect to terrestrial blasting. Further information is required with respect to drilling activities. Further, Nature Scot advises: '*A Blasting and Piling Strategy could be produced to provide a detailed description of the installation procedures, scheduling of works and associated parameters*. A Construction Environmental Management Document has been provided at Technical Appendix 10.3. With respect to soils**, Development and Marine Planning** in its updated response highlights the need for additional information with respect to vehicle movements and storage of materials. It is however noted that all cut and fill operations are intended to take place on site without the need for material to be exported.	**timings and routes of Operational vessel movements including West of Orkney OWF, to be provided.** **A Blasting and Piling Strategy should be produced to provide a detailed description of the installation procedures, scheduling of works and associated parameters. The strategy would inform ecological and vibration assessments requested by consultees.** **Clarification is required on the dredging activities.** **Clarification should be provided on the requirement of the helipad.** **With respect to soils, provide clarification with respect to the need for additional information which may be required with respect to vehicle movements and storage of materials.** **The CEMD should include a table clearly setting out the different roles, their responsibilities, how often they would be on site and in what capacity.** **The CEMD should provide spatial information on the areas of search for construction activities such as (but not limited to) working corridor(s), laydown/storage area(s), concrete batching, welfare facilities, parking, refuelling and vehicle cleaning/wheel washing points.** **Information should be included on how and where materials (including excavated and removed material) would be stored to minimise soil compaction, whether temporary surfaces would be used within working corridors to minimise soil compaction, and how/if working corridors would be restored once construction activity ends.** **Information on the proposed bunds and overburden storage area should be included.** **Provisions need to be made for low or zero emission vehicle and cycle charging points in safe locations.** **The proposed development design drawings should include adequate**	As noted within the SEIR, caisson delivery is anticipated to be month 16 to month 18 2027, with caisson installation commencing early July 2027 for 7.3 weeks. As there is no blasting contractor at present, the Blasting Plan (terrestrial only) will be prepared and submitted to the Regulator prior to blasting works. The is no longer any need for a piling strategy. Refer to 2.2.5 and 2.2.6 of the SEIR (May 2025). Soil management will form part of the Detailed CEMD which will be developed once the contractor carrying out the topsoil strip, overburden removal etc has developed their method statement. The CEMD will be issued for agreement prior to works commencing. The CEMD will include roles, their responsibilities, construction activities, laydown, material storage areas, proposed bunds and overburden storage area should be included etc. and pollution prevention plan (note this is not a complete list). An outline CEMD has been submitted with the application and the contractor will develop the document into a full working CEMD. It should be noted that some of the information requested in this comment, e.g. locations of working corridors, welfare facilities, wheel washing points etc will not be known until a contractor has been appointed and so cannot be addressed in the Outline CEMD.

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
	Action to meet requirement of regulation 5 (2) - **Review all statutory consultee comments and provide additional description of development where required.** - **Provide details of construction methodology and blasting.** - **Provide details of projected vessel movements.** - **Provide an outline Construction and Environmental Management Plan (CEMP) which will be embedded within the proposed development.**			**measures to facilitate modal shift to more sustainable transport modes/ choices e.g. walking, cycling and bus stop infrastructure.** **The potential for recreational footpath to access the coast and/or wider areas of natural habitat should be detailed.** **The design drawings (Volume 2: Contents Figures) make no provision for onsite landscaped areas, including trees or other planting. These drawings should detail where landscaped areas will be established, and how these landscaped areas will be integrated with the proposed drainage, transport, access, active travel and biodiversity enhancement provisions.** **Sufficient information should be provided on whether offshore wind turbine components will be transported to the offshore wind farm sites and assembled there and/or whether floating wind turbines will be fully assembled at the proposed harbour facility and stored in Scapa Flow before being towed to the site.**	As noted within the Transport Statement (Technical Appendix 10.4 dated August 2024) a site Travel Plan (in accordance with NPF4 Policy 13 f) will be developed once details of the workforce are known. This will also include provision for low or zero emission vehicles and cycle charging points within safe locations. These drawings will be developed at detailed design stage and will be submitted for approval. No works shall commence on site until details for the provision for onsite landscaped areas, including trees or other planting have been submitted and approved by OIC. With reference to consultee comments relating to offshore wind turbine components, there is no information currently available for this activity, however, these activities (if they are to be undertaken at SDWQ) will be subject to permissions outwith this application. This has been consulted on and agreed with project team members within MD-LOT.

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
(b) a description of the likely significant effects of the development on the environment;	On the basis of assessment undertaken the technical chapters provide description of the likely significant effects of the development on the environment during construction and operation. A Summary of effect table is included within each technical chapter. Chapter 12 provides an overarching table setting out a summary of significant effects identified within all chapters of the EIAR. It is not clear within all chapters as to what level of significance comprises a significant effect. A consistent approach between chapters to highlight the thresholds for likely significant effect would be beneficial to the EIAR. The assessment adopts the approach that initial assessment is undertaken without mitigation and then (embedded and additional) mitigation with enhancement is applied to establish residual effects. This approach doesn't provide visibility of the assessment of potential effects with embedded mitigation in place, and then where likely significant effects are identified, the need for and effect of secondary mitigation in arriving at residual effects. **Technical Consultee Response** A number of areas of concern have been raised by statutory consultees with respect to the assessments undertaken in arriving at the description of likely significant effect. These relate to biodiversity, noise, air quality and socio economics. Whilst scoped out from EIA, further assessment relating to road transport is requested. <u>NatureScot</u> In summary, Nature Scot advises 'insufficient *information has been provided on what is being proposed. We also advise that the quality of the assessments carried out in the EIA are not adequate for a development of this scale and potential magnitude of impact*.' *'We have considered the impact of the proposal on a number of internationally and* *nationally protected sites and*	The updated EIAR responds to comments made by statutory consultees and where the update required, provides a description of the likely significant effects of the development on the environment.	The updated EIAR is accompanied by a Response Tracker which highlights comments made and signposts where the matters raised are addressed. The response tracker document submitted to accompany the submission could usefully have been included within the updated EIAR, to demonstrate how matters raised through consultation had been addressed by the updated EIAR The updated EIAR is largely unchanged with respect to comments made through the EIAR peer review concerning consistency of approach between chapters with reference to the thresholds for likely significant effect and provision of standalone chapters for the supporting assessment sections set out in Chapter 10. No explanation is provided as to why this approach is adopted. **Technical Consultee Response** With respect to Technical Consultee responses, **NatureScot**, is not satisfied by the finding of the updated EIAR. It states: *'Based on the additional information submitted on 3 September 2024, some of our advice has been addressed. However, there are outstanding issues which have implications on our ability to assess the information presented*.' *'Scapa Flow Special Protection Area (SPA), North Orkney SPA, Hoy SPA, Sanday Special Area of Conservation (SAC), Loch of Stenness SAC: The proposal could affect internationally important natural heritage interests and we therefore object to this proposal until further information is provided. We will be able to give further consideration to this proposal once you have carried out your appraisal of these effects*.' **Development and Marine Planning** (Environment, Islands Archaeologist, and Marine Planning) has provided an extensive consultation response which it summarises as:	**In the light of Statutory consultee response, this review concludes that further assessment is required with reference to matters raised by NatureScot, SEPA, Development and Marine Planning.** **A robust assessment of potential disturbance and/or displacement impacts on marine species, including birds and mammals, arising from vessel movements in the construction phase should be undertaken which accounts for vessel movements associated with construction from the Lyness port, cumulative impact with Flotta Deep Water Quay.** **For the operational phase, the spatial extent and routes of vessel movements, including the OICHA vessels, relative to the SDWQ site should be clarified.** **All assessments should be based on more realistic estimates of potential increases in vessel traffic in the vicinity of the proposed development.** **Terrestrial blasting requires full assessment and should include the disturbance impact zone to fully assess potential displacement area for the relevant qualifying features.** **Cumulative assessments should consider the existing impacts of vessel movements within Scapa Flow on the SPA and SAC species. There are a number of aquaculture sites developed in the eastern side of Scapa Flow, and vessel operations associated with these sites should be included and assessed given the potential increase in disturbance.** **Updates to the Ornithology Technical Report and the inclusion of the 2023/24 survey results, are required to conclude that there would be no adverse effect on site integrity for most qualifying features of Scapa Flow SPA and North Orkney SPA.** **Evidence to support the theory that the redeployment of port service vessels from Scapa Pier will "equate to 4.5x increase in optimal habitat compared to the loss of suboptimal habitat" is required.**	Refer to the HRA and appendices (Heat Maps and Hidef data, construction vessel routes and birds and noise maps), Seal Risk Assessment). These have been developed as a result of Consultation Workshops ○ 21 January 2025: Technical meeting Scapa Deep Water Quay / Hatston (Client Team, OICHA, OIC Planning, NatureScot, OIMAG) ○ 05 March 2025: Marine Mammals Workshop (Client Team, NatureScot, OIMAG) ○ 27 March 2025: Ornithology Technical Workshop (Client Team, NatureScot, Stantec (on behalf of the contractor)) There has also been regular consultation meetings with NatureScot to discuss ornithology and seal risk. The above information is provided in Section 5.1 of the SEIR (May 2025). BS 6472-2:2008 (Guide to evaluation of human exposure to vibration in buildings - Blast-induced vibration) states that "Accurate prediction of air overpressure (from blasting) is almost impossible due to the variable effects of the prevailing weather conditions and the large distances often involved." As referenced by guidance, it is not possible to predict with accuracy the likely levels of air overpressure that will be generated at receptors by the proposed blasting due to high level of variables involved. The best way to control air overpressure is through good blast design and an appreciation of how local weather conditions can influence levels and impacts. Best practice measures will be recommended to minimise vibration and air overpressure generation due to blasting. A blasting strategy to be prepared once a contractor is appointed.

					The above information is provided in Section 5.5.6 of the SEIR (May 2025).
	species and we conclude that the proposal could raise natural heritage issues of international and national importance. However due to the reasons outlined above, we have been unable to carry out a full and detailed assessment on the likely significant effects this proposal will have on these natural heritage interests.'		*It is disappointing that many of the issues have not been satisfactorily addressed, with a continued lack of detail and/or lack of commitment to implementing specific measures. Key examples of this are the Construction Environment Management Document (CEMD) and*	**Further clarification, evidence and assessment is required to support this proposal, including a clear comparison of usage by SPA features between areas of Scapa Flow.** **There is potential for the proposed development to undermine Conservation**	The prefabrication of caissons off site in Spain allows for a shortened programme and reduces environmental impacts from underwater and airborne noise and vibrations/impact as there is no requirement for marine piling or drilling for the caisson design

	NatureScot considers '*the quality of the information and assessments in both the EIA and HRA to be insufficient and inadequate to be able to conclude that there would be no adverse effect on site integrity for the qualifying features of North Orkney SPA, Red-throated diver of Orkney Mainland Moors SPA, Harbour seal of Sanday SAC, grey seal of Faray and Holm of Faray SAC and Red-throated diver, Slavonian grebe, Great-northern diver of Scapa Flow SPA*.' With respect to the Waulkmill SSSI '*There are natural heritage interests of national importance on the site, which could be affected by the proposal. Further information is requested to determine if the proposal will affect the integrity of the SSSI'.* With respect to Protected natural heritage features ' *The proposal has the potential to affect a number of other protected natural heritage features, including European Protected Species (EPS) and Priority Marine Features (PMFs). We have concerns with the approach which has been used to assess the impacts on these features, as well as on the information itself used to inform these assessments'.* NatureScot highlights '*The analyses in the Navigational Risk Assessment leads to the conclusion that "Overall traffic density in the project area is at the lowest level for any part of Scapa Flow". Therefore, any change in vessel traffic that would arise from the operation of the new facility at this location would be significant and pronounced with respect to the baseline conditions.* *Assessment should be undertaken with reference to vessel traffic and its potential impact upon environmental receptors. All assessments*		*Biodiversity Management Plan, which contain limited and basic information despite requests for specific information and detail to be included. As a result, further information is required to address the outstanding issues highlighted in the February and June advice, as well as the updated advice provided below*. **SEPA** in its consultation response states: *In our response dated 20 November 2023 we noted that SEPA had significant concerns regarding habitat creation and biodiversity loss due to the development. The information we requested has not been provided for our assessment.* *We requested that the applicant provide evidence that the mitigation proposal is feasible, given the specific conditions at the site, and to demonstrate that a similar approach has been successful elsewhere. The information provided does not answer any of our concerns regarding the proposed mitigation for the Tufa forming springs.* *1.2 The engineering options suggested do not provide a considered solution and also have not been shown to be successful elsewhere.* *1.3 It remains unclear whether the bedrock face is to be cleared as an integral part of the works or purely to provide the opportunity to create compensatory habitat. The impact of exposing the bedrock on existing habitat or rock conditions must be considered.* *1.4 The compensatory habitat creation would be acceptable if it is restoring something previously damaged or enhancing a habitat so it has more ecological value but the applicant would need to prove that this is the case and that it is feasible.* The EIAR has been updated to include a Transport Statement at Technical Appendix 10.4.	**Objective 2b and 2c and a detailed quantitative assessment of potential disturbance impacts is required.** **A more robust assessment is required to determine the potential for adverse effect on site integrity that the increase in vessel movements is potentially much greater than the levels assumed for these species assessments.** **The application documents should be checked to ensure that all information is the same throughout and accurately reflects the design scope. All documents need to be updated to remove text relating to marine blasting activities.** **Underwater noise modelling parameters should be based on the most accurate and realistic description of the proposed development.** **With respect to Ornithology, Technical Appendix 5.3 should be updated to take into account of NatureScot's advice and include the most up-to-date survey information.** **The assessments undertaken must demonstrate how the proposed biodiversity enhancement measures relate to the nature and scale of the proposed development and its effects, particularly loss of a range of habitats and loss of habitat for breeding birds.** **Respond to all the points raised by NatureScot in Appendices 1 to 4 of its technical response.** **For the purposes of heritage assessment, the Study Area should be clearly defined in line with Historic Environment Scotland and NatureScot's Environmental Impact Assessment Handbook: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland.**	solution. As noted previously, the outline CEMD is the starting point and will be developed fully by the contractor once working methods are developed. With reference to the heritage assessment Study Area an updated Figure 6.2 has been included within the SEIR.

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
	should be based on more realistic estimates of potential increases in vessel traffic in the vicinity of the proposed development.' NatureScot further highlights '*Given the need for drilling and piling, as well as potentially blasting, there is potential for displacement of SPA birds in the vicinity arising from both underwater and airborne noise. This needs to be fully assessed*.' *'The assessments of impacts on the SPA and SAC features and for the benthic habitats, including PMFs, do not consider construction Phases 1 and 2 dredge spoil disposals at the proposed site. The potential impacts of at-sea dredge spoil disposal be assessed for the relevant species and habitats as advised in the Scoping Opinion, Section 6.2.1 and 6.3.72*.' <u>OIC Environmental Health</u> The OIC Environmental Health Officer makes a number of observations which point towards the need for additional assessment with respect to airborne noise. Assessment needs to address dredging and vibration. Additional clarification is required with respect to the dust risk assessment and assessment of lighting arrangements. The EIA scoping opinion presented by OIC states' "*Further work needs to be undertaken to better understand likely operational traffic movements and until this works is undertaken air quality impacts from the operational road traffic should be scoped into the EIA*." Transport has not been addressed as a standalone technical chapter of the EIAR supported by a Transport Impact Assessment. A summary Transport assessment is set out in Chapter 10 – Supporting Assessments which lacks baseline detail and assessment in line with environmental impact assessment methodology. The outcomes of the Transport Impact Assessment may raise implications for Air Quality and its assessment of potential likely significant effects.		**Roads Services** in its updated response is satisfied that Road transport matters have satisfactorily addressed. '*Roads have no adverse comments given proposals to widen road in separate application 22/423/PP*.' It should be noted however that Marien Planning do raise further matters to be addressed through EIAR. **Environmental Health** accept the updated assessment and reporting submitted within the EIAR. The EIAR Socio Economic Chapter 8 has addressed the matter of potential impact upon nearby sea farm and is accepted by OIC Development and Marine planning. **Engineering Services** states: 'The modelling results provided by the applicant indicate a maximum wave height for the 1 in 50 year wind condition of 2.60m and since the adoption of NPF4 in February 2023, 0.93m sea level rise to the year 2100 must be accounted for in assessment of coastal flood risk. As per NPF4Policy 22a, it should be demonstrated by the developers that the risk of coastal flooding including wave action is understood for this site to ensure that it remains safe and operational during floods.	**The identification of what aspects of the development (e.g. lighting columns; the quay; size and frequency of vessels using the quay) could affect the setting of identified historic environment receptors need to be addressed.** **Provide assessment which demonstrates the risk of coastal flooding including wave action is understood for this site to ensure that it remains safe and operational during floods.**	Refer to Chapter 6 and 7 of the EIAR (August 2024) which addresses lighting columns etc. With reference to consultee comments relating to offshore wind turbine components, there is no information currently available for this activity, however, these activities (if they are to be undertaken at SDWQ) will be subject to permissions outwith this application. This has been consulted on and agreed with project team members within MD-LOT. Frequency of vessels is discussed within the HRA and appendices. **<u>As SEPA noted in their consultation response,</u>** *"the proposals are for the construction of a deep water quay which is considered a water compatible use and potentially also essential infrastructure. These uses are included within NPF4 as uses which are permitted within the flood risk area under Policy 22a provided there is no increase in flood risk elsewhere as a result of the development.* *A hydrodynamic study has been provided in support of this application. This has not been reviewed as we are satisfied that the proposals are unlikely to lead to an increase in flood risk elsewhere given the land raising and reclamation is within the sea where loss of floodplain won't impact flood levels. The deepening of channels may cause erosion of the nearby shore over time although erosion risk is not a matter within SEPA's remit*."

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
	In consideration of the feedback from the OIC Environmental Health Officer, the noise chapter should provide for an assessment of vibration with respect to potential blasting, vibration and dredging during the constructional and operational phases. There should therefore also be cross reference to other technical aspects including biodiversity. In the light of Statutory consultee response, this review concludes that further baseline data collection and assessment is required with reference to biodiversity, noise, and transport. The applicant should further consult with the OIC EHO with respect to Air Quality having regard to the outcome of the Traffic Impact Assessment to be undertaken. <u>Marine Policy</u> The Marine Policy team highlights significant range of matters which the EIAR should address, some of which are raised also by the OIC Development and Marine planning Environment Planning officer and NatureScot. With respect to Fish Farming, OIC				

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
	Marine Policy notes: '*An assessment should be undertaken to ensure that the proposed development and existing fish farm at Quanterness can co-exist under the provisions of NMP Gen 4 Co- existence, with due consideration to appropriate mitigation*. **Action to meet requirement of regulation 5 (2)(b)** - **The assessments undertaken for Biodiversity, Air Quality, Noise should be undertaken in line with the detailed feedback provided by the Statutory Consultees** - **A Traffic Impact Assessment to an agreed scope should be prepared with an accompanying stand- alone chapter to the EIAR.** - **A standalone Air Quality chapter may be required if the Transport Impact Assessment outcomes necessitate**				

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
	this. The socio economic EIAR chapter should assess the potential economic effects of the development of the proposal site upon neighbouring fish farm enterprises.				
(c) a description of the features of the development and any measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;	Within each technical chapter there is provided a detailed description of mitigation measures to address harm arising from the development. These are differentiated as mitigation and enhancement measures implemented through one or more of three broad phases of the proposed development. Chapter 11 includes Table 11.1 which summarises these. The EIAR generally doesn't clearly differentiate between mitigation measures which are embedded (i.e. part of the proposed development in any event, such as good working practice or the employment of a CEMP)) within the proposed development and secondary (additional) mitigation measures which following assessment may be required to overcome an identified likely	The updated EIAR responds to comments made by statutory consultees and where the update required, provides further / updated description of mitigation measures to address harm arising.	The response tracker document submitted to accompany the submission is helpful though this could usefully have been included within the updated EIAR, to signpost where mitigation had been incorporated into chapters and the overarching summary table in Chapter 11. **Technical Consultee Response** From a NatureScot, and Marine policy perspective, the adequacy of mitigation measures remains to be confirmed in the light of further assessment which will need to be undertaken as highlighted by comments set out under Regulation 5(2)b. **NatureScot** advises '*Based on the additional information submitted on 3 September 2024, some of our advice has*	**Identify additional mitigation measures as necessary to overcome harm arising from the development which arises from the additional assessment required by statutory consultees as follows:** **Once the assessment on harbour seal has been revised based NatureScot advice, the mitigation needs to be tailored to the predicted impacts associated with the proposed activities.** **Revisit the proposed mitigation relating to harbour seals once assessment are undertaken to include reference to the population size and status of the Harbour seal of Sanday SAC.** **Mitigation associated with vessel movements to be reevaluated following update of assessment in line with NatureScot's comments.**	**Refer to Seal Risk Assessment and HRA** (These have been developed as a result of Consultation Workshops ○ 21 January 2025: Technical meeting Scapa Deep Water Quay / Hatston (Client Team, OICHA, OIC Planning, NatureScot, OIMAG) ○ 05 March 2025: Marine Mammals Workshop (Client Team, NatureScot, OIMAG) There have also been regular consultation meetings with NatureScot to discuss ornithology and seal risk.
	significant effect upon the environment, so it is not possible to easily compare impacts before and after the employment of secondary mitigation measures which may be required. In the light of consultee feedback and the need for additional assessment, there may be need for additional mitigation to be identified within a further iteration of the EIA reporting. **Technical Consultee Response** From a NatureScot, OIC Environmental Health, Road Services and Marine policy perspective, the adequacy of mitigation measures remains to be		*been addressed. However, there are outstanding issues which have implications on our ability to assess the information presented'*. '*Although some of our previous advice has been addressed, there remains a number of overarching, fundamental issues with what has been proposed in the application and with the information provided in the EIA which have consequences for all assessments.* **SEPA** With respect to GWDTE SEPA advises, **'***We requested that the applicant provide evidence that the mitigation proposal is feasible, given the specific conditions at the site, and to demonstrate that a similar approach has been successful*	**The Basking shark code of conduct should be included within any mitigation measures proposed.** **With respect to biodiversity enhancement, information on predicted losses, and the proposed mitigation, compensation and enhancement should be clearly set out, and also concisely summarised, in the application, so that this can be easily understood by decision makers.** **Further consideration and identification of suitable mitigation measures to minimise the risk of disturbance to breeding hen harrier and committing an offense is required. This should be incorporated into a breeding bird species protection plan in an outline CEMD.** **The information submitted with the application does not demonstrate**	Basking shark code of conduct is included within the updated Basking Shark Risk Assessment (Appendix F of the SEIR (May 2025)). Regarding BNG, the Feasibility Assessment undertaken in June 2024 identified that to achieve a 10% gain, both onsite and offsite habitat enhancement and creation would be required. At the time of writing the BNG Feasibility Assessment and this SEI, land within the control of the OICHA and suitable for the application of enhancement and creation measures, has been identified at Hatston Pier, Orkney (Grid Reference: HY 43095 12969). Additionally, habitat restoration at the community led, Quarterness Windfarm[20] is being considered as an opportunity to

[20] Quarterness Windfarm. Available at: https://orkneywindfarms.co.uk/quanterness (Accessed May 2025)

	confirmed in the light of further assessment which will need to be undertaken as highlighted by comments set out under Regulation 5(2)b above. <u>SEPA</u> In its consultation response, SEPA has significant concerns relating to habitat creation and biodiversity loss, with the Groundwater Dependent Terrestrial Ecosystem mitigation may not have the same spring forming capability. This aspect will need to be further addressed by the EIAR		*elsewhere. The information provided does not answer any of our concerns regarding the proposed mitigation for the Tufa forming springs. The engineering options suggested do not provide a considered solution and also have not been shown to be successful elsewhere. It remains unclear whether the bedrock face is to be cleared as an integral part of the works or purely to provide the opportunity to create compensatory habitat. The impact of exposing the bedrock on existing habitat or rock conditions must be considered.*	**how the proposed development will conserve, restore or enhance biodiversity (including nature networks) so that it is in a demonstrably better state than without intervention. This should be provided.**	achieve BNG. Quarterness is near Hatston Pier (approximately 2.4km west). Further opportunities for habitat enhancement and creation have also been identified by the Environmental Planner for Orkney Islands Council at Papdale East Park (Grid Reference: HY 45863 10498) and Balfour Hospital, Kirkwall (HY 44458 10109). Additional sites identified by OICHA (as the responsible legal entity, have a firm commitment to biodiversity enhancement) which include redundant quarries which are in need of restoration, and several potential sites associated with proposals such as those to enhance biodiversity and reduce maintenance within the Grainebank SuDS areas (subject to consultation and permission). The CEMD will contain a hen harrier management plan.
	. <u>Marine Scotland</u> Marine Scotland identifies that no mitigation measures for breeding birds have been proposed and that further consideration and identification of suitable mitigation measures to minimise the risk of disturbance to breeding hen harrier is required. <u>Marine Policy</u> Marine Policy in their response state. '*The applicant should refer to the policy and submit information detailing how they propose to conserve, restore and enhance biodiversity, with particular reference to nature networks. – mitigation measure. Details of future management to ensure the intended biodiversity results are achieved should also be include. Once the required information has been submitted then it should be possible to provide further advice on the appropriateness of any proposed biodiversity measures'.*		**Development and Marine Planning (Policy)** *Many of the issues have not been satisfactorily addressed, with a continued lack of detail and/or lack of commitment to implementing specific measures. Key examples of this are the Construction Environment Management Document (CEMD) and Biodiversity Management Plan, which contain limited and basic information despite requests for specific information and detail to be included*. Amongst these, it is noted: *With respect to Local Nature Conservation Sites, further consideration and identification of suitable mitigation measures to minimise the risk of disturbance to breeding hen harrier and committing an offense is required. This should be incorporated into a breeding bird species*	**Further information is required within the outline CEMD, which should set out the principles that principal contractor responsible for writing the detailed CEMD post-permission (should permission be granted) will be expected to adhere to.** **Information to be provided on where, how or when GWDTE habitat creation would occur.** **Detailed information is required with respect to how the mitigation hierarchy has been applied to minimise disturbance to soils, or how works will be conducted in a manner that protects soil from compaction.**	Roles and Responsibilities are included within the CEMD, as will an outline soil management plan which the contractor will complete once working methods have been finalised. The CEMD will be agreed with OIC.

	<u>OIC Environmental planner</u> The OIC Environmental planner highlights: '*While there is a stated intention to provide a Biodiversity Action Plan (Volume 1 Environmental Impact Assessment Report, section 5.8.3), very limited information is provided on what this might contain. The enhancement measures mentioned in section 5.8.3 do not appear to relate to the nature and scale of the proposed development or its effects, particularly habitat loss. Some of the measures are also unlikely to be effective in Orkney. Reconsideration of the proposed mitigation measures is therefore required. There is also a need to integrate proposed measures with nature networks*.' <u>Road Services</u> Road Services highlight that in addition to the need for Transport Impact Assessment set out within the EIAR, a monitoring scheme of the public road network is required with funding for the cost of any repairs that may be required to the public road because of the proposed harbour		*protection plan in an outline CEMP.* *With resect to Terrestrial Wider Biodiversity, much of the previous advice remains valid due to a lack of commitment and/or insufficient detail, as well as unclear off-site enhancement proposals*. With respect to soils, further information on how soil compaction, erosion and sealing will be minimised including spatial information is required to demonstrate how the proposed development meets the requirements of NPF4 policy 5.a. With respect to heritage mitigation, the Schedule of Mitigation (Table 11.1) needs it be updated on a number of matters highlighted.		

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
	development. Therefore, full details of a maintenance a monitoring scheme for all routes that will be used for the transportation of materials to the development site must be supplied for consideration as an embedded mitigation measure. (verbal feedback to OIC 31.1.24) The applicant is reminded that the application of planning conditions to address mitigation which has not been assessed through EIA is not an acceptable route to follow. Such information should be produced and robustly assessed in advance of a planning determination. **Action required to meet Regulation 5(2)(c):** - **Identify additional mitigation measures as necessary to overcome harm arising from the development which arises from the additional assessment required.**				

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
(d) a description of the reasonable alternatives studied by the developer, which are relevant to the development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;	Section 2.4 of the EIAR (Volume 1) describes the Alternatives considered. The process of choice of location has been facilitated through the emerging Orkney Harbour Masterplan now adopted in 2020. The EIAR explains that as required by the Environmental Assessment (Scotland) Act 2005 the development of the Masterplan was undertaken in parallel with a Strategic Environmental Assessment (SEA). A Habitats Regulations Assessment (HRA) was also undertaken as part of the SEA process. The Masterplan objectives were then used to identify viable options for taking forward into the Masterplan which were subsequently assessed against the SEA Objectives. The SEA also considered the likely changes to the environment as a result of not implementing the Masterplan. Following initial site investigations and preliminary ecological surveys it was concluded to situate the development to its current location would be preferable.	No specific reference in the updated submission to alternative design	No reference appears to have been made to the review comment in Section 2.4 or associated Technical Appendices	**Present alternative layouts of the proposed development considered. If none were, then provide an explanation why this is the case.**	There have been various changes to the proposed development since the original Scapa Deep Water Quay (SDWQ) EIAR was produced in July 2023, and these are detailed below. It should be noted that these changes do not affect the assessments within the existing EIAR. Environmental Impact Assessment (EIA) is generally considered an iterative process, meaning it is not a one-time only assessment undertaken after a project is designed. Rather, it's a continuous process where findings from the EIA inform and influence the design of the project throughout its development. In the case of SDWQ, EIA assessments identified potential impacts on certain habitats and wildlife. Based on these findings, the design has been changed from the Exemplar Design assessed within the 2023 and 2024 EIARs, to a caisson design. Refer to Chapter 2 of the Supplementary Environmental Information Report (May 2025) Based on consultee feedback the project team has taken proactive steps during the design and environmental assessment process to reduce the potential negative impacts of the project, a crucial part of responsible project management (mitigation by design), aiming to prevent or minimise environmental impacts before they arise i.e. there is no longer a requirement for piling or associated drilling, It must be noted that the overall development footprint and dredge area remains unchanged from the previous exemplar design.

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
	The move was a result of the engineering and environmental considerations: The quantity of overburden and unsuitable material (for development purposes) was determined to be greatly reduced by re-positioning the development on the land to the south of the burn; The current site selected avoided crossing the Burn of Deepdale; and Moving the development footprint to the south would avoided encroachment into the Gaitnip Hill LNCS which would have been the case if it was situated to the north of the Burn of Deepdale. Choice of location is the only matter identified with respect to Alternatives (within the context of the masterplanning referenced). NatureScot comment that in the Scoping Opinion the EIAR should include an assessment of alternative locations or layouts to the proposed development. **Action required to meet Regulation 5(2)(d):** - **Present alternative layouts of the proposed development considered. If none were then provide an explanation of this.**				***Option 1: Original Exemplar Design*** ***Option 2: Caisson Design*** ***Preferred Option: Caisson Design***

(e) a non-technical summary of the information referred to in sub- paragraphs (a) to (d); and	The Non-Technical Summary is presented in an easy to read format which suitably cross refers to the main EIAR document where required. The main EIA reporting will however need to be revisited in the light of statutory consultee responses and comment set out in this review. Updated reporting will need to be reflected by an updated standalone Non Technical Summary. Action required to meet Regulation 5(2)(e): - The Non Technical Summary will need to be updated as a standalone document to reflect any changes which are necessary to the main EIAR reflecting the comments of statutory consultees and this review.	An updated Non Technical Summary has been provided in an easy to read format which suitably cross refers to the updated main EIAR document where required.	In the light of comments from statutory consultees, the main EIAR document and therefore the Non Technical Summary will need to be updated.	The Non-Technical Summary will need to be updated as a standalone document to reflect any changes which are necessary to the main EIAR reflecting the comments of statutory consultees and this review.	A Non Technical Summary was provided as part of the submission of the EIAR (August 2024). The SEI Report being submitted highlights the changes to the project I'e. the development of the caisson design as the preferred option which removes the requirement for piling and associated noise. Chapter 2 of the SEI Report provides a description of the caisson option using non-technical terminology..

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
(f) any other information specified in schedule 4 relevant to the specific characteristics of the development and to the environmental features likely to be affected.	With the exception of matters raised through consultation and /or highlighted in this review, the EIAR identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the proposed development on population and human health; biodiversity, (c)land, soil, water, air and climate; and (d)material assets, cultural heritage and the landscape and the interaction between those factors. **Action required to meet Regulation 5(2)(f):** - **No action in addition to the matters raised in this review or by Technical consultees.**	No comment	No additional matters arise	**No action in addition to the matters raised in this review or by statutory consultees.**	
Reg 5(3) *Where a scoping opinion (or scoping direction) is issued, the EIA report must be based on that scoping opinion (or scoping direction, as the case may be), and include the information that may reasonably be required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment*	An EIA scoping opinion has been issued by OIC reference 21/160/SCO. For reference Technical Appendix 3 of the EIAR sets out the EIA scoping request; the OIC scoping opinion; and, Marine Scotland – Licensing Operations Team scoping opinion. Section 3.7 of the EIAR: 'Scoping as Part of the EIA Process' summarises the opinion in Table 3.1 which signposts matters for inclusion to EIAR chapters. The OIC scoping opinion requires the EIAR to include assessment with respect to Natural Disaster and Risk of Accidents, Air Quality, Climate Change, Socio Economics, Aviation and Transport. These aspects have been included in the EIAR as stand-alone chapters or within a 'Supporting Assessments' chapter 10. Individual technical assessment chapters also make reference to matters to be assessed with reference to the scoping opinions. In its consultation response,	An updated EIAR has been produced in response to statutory consultee feedback which in parts made reference to the EIAR scoping opinion. A transport statement has been produced which is included at Technical Appendix 10.4.	**NatureScot** in its consultation response confirms that with respect to Quality of the EIA and lack of adherence to scoping: 'There has been a general lack of adherence to our advice provided to the Applicant and consultants at the application stage, pre- application stage, including our response to the Scoping Opinion request, and to comments made on the Strategic Environment Assessment (SEA) and Habitats Regulations Appraisal (HRA) of the Orkney Harbour Masterplan. With reference to Archaeology and Cultural Heritage, the **Islands Archaeologist** notes '*There is no identification of what aspects of the development (e.g. lighting columns; the quay; size and frequency of vessels using the quay) could affect the setting of the historic environment assets identified as receptors* in order to support the conclusions of the impact assessment. This is despite the fact that such aspects of the development were mentioned in scoping responses (see Technical Appendix 3.2) and were specified in the SLVIA Chapter 7 (see sections 7.4.3 and 7.4.4). Therefore, more	**Further assessment should be undertaken in line with the comments made by NatureScot and the Islands Archaeologist where reference is made to the EIA scoping opinion.** **With respect to in combination impact referenced in the scoping opinion, undertake assessment which includes other harbour development.** **In line with the EIA scoping opinion, further information is required on aspects of the development (e.g. lighting columns; the quay; size and frequency of vessels using the quay) could affect the setting of the historic environment assets identified as receptors in order to support the conclusions of the impact assessment.** **Revisit the extent of the Study area for the purposes of landscape assessment as set out within the scoping opinion.**	Refer to Section7.6.2 The potential visual effects of the proposed development which discusses lighting columns "*7.4.4 Zones of theoretical visibility (ZTVs)* *The adoption of a 15km radius general study area was informed by the production at the early stages of the assessment of preliminary ZTVs to a 20km radius. This demonstrated that the principal areas of potential visibility lay within 15km and that any occasional longer distance visibility and resulting effects would unlikely be significant (see also section below on NSA"* In order to adequately assess in-combination effects, a thorough search of both the MD-Lot planning portal and the Orkney Islands Council planning applications portal. By default, all aquaculture sites within Scapa Flow SPA are included, regardless of time since the application was decided. In addition, aquaculture sites elsewhere in Orkney that could cause impacts to the qualifying features of Sanday SAC are also included. Given that harbour seals can travel up to 50km from haul out and pupping sites, a 50km radius was used for determining projects to screen for in-

	NatureScot highlights a lack of adherence to advice provided to the Applicant and consultants and that within the Scoping Opinion itself. In particular, NatureScot considers '*the quality of the information and assessments in both the EIA and HRA to be insufficient and inadequate to be able to conclude that there would be no adverse effect on site integrity for most of the qualifying features of Scapa Flow SPA, of the Harbour seal of Sanday SAC, coastal lagoons of Loch of Stenness SAC and North Orkney SPA*.' More generally, '*There has been a general lack of adherence to our advice provided to the Applicant and consultants in both the pre- application stage, including our response to the Scoping Opinion request, and to comments made on the Strategic Environment Assessment (SEA) and Habitats Regulations Appraisal (HRA) of the Orkney Harbour Masterplan*.' With respect to construction methods, NatureScot advises that as per its scoping opinion response, '*clarity is still required on the construction methodology, including the potential use of explosives'*. The EIA scoping opinion presented by OIC states' "*Further work needs to be undertaken to better understand likely operational traffic movements and until this works is undertaken air quality impacts from the operational road traffic should be scoped into the EIA*." *Given that the proposals involves construction of a new access road and the realignment of the A961 this indicated that the development is highly likely to have significant impacts on the existing public road infrastructure. The consultee therefore requires that the effects of both construction and operational traffic on the public road network must be*		information is required so that an informed decision about the assessment can be made. While specific assets were identified for inclusion in the scoping report and scoping opinions (see Technical Appendices 3.1 and 3.2), this was not to the exclusion of any otherassets that there may be, and no justification for this exclusion has been provided, or if the assets chosen are representative of the effect on any other sites. Nature Scot advises 'There is no consideration of the wider range of developments and sectors as we advised in the Scoping Opinion Section 6.13.33, which should have included other harbour developments, aquaculture, renewable energy developments, cable installations.'		combination assessment. The MD-Lot planning portal does not have a map search feature to enable a quick search for planning applications within this distance, so best judgement based on site names and project descriptions was made. For other development sites, a search of both planning portals for developments since 2022 was undertaken and a determination made whether to screen them in or out for assessment. Projects were screened out if there was no information on project specifics such as impacts or adverse effects on SPA/SAC qualifying features or if projects were deemed to have been completed (ie marine licence expiry). Refer to HRA Chapter 12 (dated May 2025)

	identified in the EIA." The EIAR scopes out Transport as a standalone topic. OIC Road Services has confirmed that scoping out has been undertaken without consultation and that a Transport Impact Assessment should be prepared to an agreed scope. **Action required to meet Regulation 5(3);** - **Provide information and assessment in line with Scoping Opinion. In particular refer to the comments of NatureScot, OIC Development and Marine Planning to ensure a robust baseline and assessment methodology are applied.** - **Provide a standalone Trasport Chapter informed by a Transport Impact Assessment to an agreed scope.**				

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
Reg 5(4) *) With a view to avoiding duplication of assessments, account is to be taken of the available results of other relevant assessments in preparing the EIA report.*	Reference is made in Section 12 to the Assessment undertaken for the proposed Hatston Pier. **Action required to meet Regulation 5(4)** - **No further action is required**	No Comment	No further action is required	**No further action is required**	
Reg 5(5) *In order to ensure the completeness and quality of the EIA report—*					
a) The developer must ensure that the EIA report is prepared by competent experts; and	The EIAR (Volume 1) at 1.4 Table 1 sets out details of the project team and its technical competence and project role. **Action required to meet Regulation 5(5)(a)** - **Requirements met and no further action is required.**	No Comment	No further action is required	**No further action is required**	
b) The EIA report must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.	The EIAR (Volume 1) at 1.4 Table 1 sets out details of the project team and its technical competence and project role. **Action required to meet Regulation 5(5)(b)** - **Requirements met and no further action is required.**	No Comment	No further action is required	**No further action is required**	
Schedule 4					
Para 1 (a) *a description of the location of the development;*	A description of the location of the development is set out at 2.2 of the EIAR Volume 1 **Action required to meet Schedule 4 Para 1(a).** - **Requirements met and no further action is required.**	No comment.	No further action is required	**No further action is required.**	
Para 1 (b) *a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;*	A description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases are set out at 2.5 of the EIAR (Volume 1) and Appendix 2.1 (Volume 3). With respect to construction methods, NatureScot advises that as per its scoping opinion response, '*clarity is still required on the construction methodology, including the potential use of explosives*'. *'As this is a design and build contract, there are key elements and specific details of the*	The response tracker which accompanies the updated submission (S/N 99) directs the reader to Section 2.6 of EIA Report. Section 2.4 of Technical Appendix 10.3 and Technical Appendix 5.5	**Technical Consultee Response** With respect to construction methodology, **NatureScot** in its response still requires: *'further detail on the location and timings of proposed terrestrial blasting. The impact from terrestrial blasting and above- water noise on birds and marine mammals has not been fully addressed in the Appropriate Assessment nor in the proposed mitigation outlined in the HRA/EIA documents. Terrestrial blasting requires full assessment and should include the*	**Further information is required with respect to location and timings of proposed terrestrial, blasting, with impact upon above water noise on birds and marine mammals assessed with mitigation in the EIAR.** **Provide confirmation that all deliveries will be made into and from Lyness. A vessel route and timing for all deliveries should be confirmed.** **Further information on potential users and seasonal timings and routes of Operational vessel movements including West of Orkney**	BS 6472-2:2008 (Guide to evaluation of human exposure to vibration in buildings - Blast-induced vibration) states that "Accurate prediction of air overpressure (from blasting) is almost impossible due to the variable effects of the prevailing weather conditions and the large distances often involved." As referenced by guidance, it is not possible to predict with accuracy the likely levels of air overpressure that will be generated at receptors by the proposed blasting due to high level of variables involved. The best way to control air overpressure is through good

	development and its construction which are currently unavailable. We advised in our Scoping Opinion response that a clear and realistic worst-case scenario should be defined in order to judge the likely impacts with respect to relevant aspects of the proposal and its construction which are unclear or not yet determined. In our view this approach has not been followed. Consequently, insufficient and unrealistic information has been provided on what is being proposed'. **Action required to meet Schedule 4 Para 1(b)** **The description of the physical characteristics of the development should be sufficient and realistic. The description of development should be updated to address the concerns highlighted.**		*disturbance impact zone to fully assess potential displacement area for the relevant qualifying features.'*	**OWF, to be provided.** **A Blasting and Piling Strategy should be produced to provide a detailed description of the installation procedures, scheduling of works and associated parameters. The strategy would inform ecological and vibration assessments requested by consultees.** **Clarification is required on the dredging activities.** **Clarification should be provided on the requirement of the helipad.** **With respect to soils, provide clarification with respect to the need for additional information which may be required with respect to vehicle movements and storage of materials.**	blast design and an appreciation of how local weather conditions can influence levels and impacts. Best practice measures will be recommended to minimise vibration and air overpressure generation due to blasting. A blasting strategy to be prepared once a (blasting) contractor is appointed. As a result of the change from the exemplar design to caisson, steel associated with piling etc. is no longer required. It is anticipated that 3 or 4 four trips using a semi-submersible vessel will be required to deliver all caissons to the SDWQ site. The estimated transit time for the transfer of the caissons to SDWQ is 8 days (round-trip from/to Spain). Consecutive trips will be undertaken to transport all caisson. For dredging information refer to 2.2.5 and 2.2.6 of the SEIR (May 2025). There will be no use of a helipad for this project. Soils – refer to the CEMD
Requirements (1)	**Review (2)**	**August 2024 Response (3)**	**January 2025 Comment (4)**	**Further Information or Update Request (5)**	**May 2025 Response**
				The CEMD should include a table clearly setting out the different roles, their responsibilities, how often they would be on site and in what capacity. The CEMD should provide spatial information on the areas of search for construction activities such as (but not limited to) working corridor(s), laydown/storage area(s), concrete batching, welfare facilities, parking, refuelling and vehicle cleaning/wheel washing points. **Information should be included on how and where materials (including excavated and removed material) would be stored to minimise soil compaction, whether temporary surfaces would be used within working corridors to minimise soil compaction, and how/if working corridors would be restored once construction activity ends. Information on the proposed bunds and overburden storage area should be included.**	Soil management will form part of the CEMD which will be developed once the contractor carrying out the topsoil strip, overburden removal etc has developed their method statement. The CEMD will be issued for agreement prior to works commencing. The CEMD will include roles, responsibilities, construction activities, laydown, material storage areas, proposed bunds and overburden storage area etc. and pollution prevention plan (note this is not a complete list). An outline CEMD will be submitted with the application and the contractor will develop the document into a full working CEMD. Some of the information requested in this comment, e.g. locations of working corridors, welfare facilities, wheel washing points etc will not be known until a contractor has been appointed and so cannot be addressed in the Outline CEMD.

				Provisions need to be made for low or zero emission vehicle and cycle charging points in safe locations.	
				The proposed development design drawings should include adequate measures to facilitate modal shift to more sustainable transport modes/choices e.g. walking, cycling and bus stop infrastructure.	As noted within the Transport Statement (Technical Appendix 10.4 dated August 2024) a site Travel Plan (in accordance with NPF4 Policy 13 f) will be developed once details of the workforce are known. This will also include provision for low or zero emission vehicles and cycle charging points within safe locations.
				The potential for recreational footpath to access the coast and/or wider areas of natural habitat should be detailed.	
				The design drawings (Volume 2: Contents Figures) make no provision for onsite landscaped areas, including trees or other planting. These drawings should detail where landscaped areas will be established, and how these landscaped areas will be integrated with the proposed drainage, transport, access, active travel and biodiversity enhancement provisions.	These drawings will be developed at detailed design stage and will be submitted for approval. No works shall commence on site until details for the provision for onsite landscaped areas, including trees or other planting have been submitted and approved by OIC Planning.
				Sufficient information should be provided on whether offshore wind turbine components will be transported to the offshore wind farm sites and assembled there and/or whether floating wind turbines will be fully assembled at the proposed harbour facility and stored in Scapa Flow before being towed to the site.	With reference to offshore wind turbine components there is no information available for this activity, however, it will be subject to permissions outwith this application.

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
Para 1 (c) *a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;*	Section 2 describes the proposed development, with subsection 2.7 addressing the Operational Phase. Here, the expected site activities are the delivery and partial assembly of offshore windfarm turbines. It is also envisaged that the pilot and tugboats that currently operate out from Scapa Pier would be relocated to the proposed development site. This section additionally describes staff numbers; dredging (not expected); vessel movements and navigation and propeller wash. Additionally, Appendix 2.1 describes the main purpose of this facility would be to undertake any/multiple industry activity that requires both deep- water berthing and large laydown area, with reference to specific market opportunities in the offshore wind and oil and gas sectors. In this regard, the placement at the quay of tall structures associated with these sectors is identified. **Action required to meet Schedule 4 Para 1(c)** - **Provide greater clarity with respect to projected vessel movements.**	The updated EIAR provides further clarification with respect to vessel movements.	Whilst further vessel movement information has been provided, NatureScot in particular seeks clarification on movements and additional assessment is required for the purposes of both the construction and operational phases of development. **Technical Consultee Response** **Development and Marine Planning** in its response state: *The developer response tracker states that this is addressed in Section no.6.5.1.1, 6.5.2, 6.6, 6.7 and 6.8 of the EIA Report.* *The identification of what aspects of the development could affect the setting of identified historic environment receptors is not addressed in 6.5.1.1, 6.5.2, 6.7 or 6.8; The identification of these aspects is partly but not fully addressed in 6.6.2.1. Further detail is required. The assessment of propeller wash and the potential for scour on the seabed (EIAR section 6.6.2.2) is not adequate as it stands*	**All assessments should be based on more realistic estimates of potential increases in vessel traffic in the vicinity of the proposed development.** **Quantity the level of disturbance from vessel activities on the SAC population providing substantial evidence or reference to support the conclusion that seals would habituate to increased vessel activity.** **Further information and assessment is required with respect to propeller wash and the potential for scour on the seabed (EIAR section 6.6.2.2).**	Refer to HRA and Seal Risk Assessment which has been prepared in consultation with NatureScot. Scour- Refer to Chapter 2 of the SEIR: The design of the marine structures for the SDWQ Project is based on a minimum design life of 60 years, ensuring resilience in a highly aggressive marine environment, with salt spray, seawater immersion, and scour action. Scour protection is also provided with a concrete mattress, adjusted based on the seabed material and vessel propeller forces. Refer to '*Diagram 7-1: Concrete mattress'* on rock in the SEIR-

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
Para 1 (d) *an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases)*	The EIAR provides assessment of noise (Chapter 9) in line with the OIC scoping opinion. Air quality was scoped out, but within Chapter 10 (Supporting Assessments) the topic is set out as an air quality appraisal. Given the need for drilling and piling, as well as potentially blasting, there is potential for displacement of SPA birds in the vicinity arising from both underwater and airborne noise. In the light of feedback from statutory consultees, this has not been fully assessed. Phase 3, dredging, should be included in the assessment, especially given it may be carried out over a 24-hour period. As part of the construction	The response tracker which accompanies the updated submission (S/N 99) directs the reader to Chapter 10 of Technical Appendix 5.5. Technical Appendix 5.6 and Technical Appendix 5.7.	**Technical Consultee Response** **NatureScot** identifies that '*no attempt has been made to quantify the level of disturbance from any of the underwater noise activities alone or in combination with other projects. Therefore, we cannot support the conclusion of no adverse effect on site integrity'.* Further ' *We advise that underwater noise modelling will need to be revised and reassessed for the dredging requirements for Phase 3'.* With respect to airborne noise, NatureScot advises '*Given the need for drilling, piling and terrestrial blasting there is potential for displacement of SPA birds in the*	**Further quantification and assessment with respect underwater and airborne noise is required in line with NatureScot's comments.** **An underwater and airborne noise assessment should be provided which reflects the comments of statutory consultees.** **A vibration component should be provided to the noise impact assessment.** **The potential impacts of at sea spoil disposal should be assessed for relevant species and habitats.** **Should the proposed assembly hub include the construction of turbines that will be up to 300m in height, this should**	Refer to HRA and Seal Risk Assessment which has been prepared in consultation with NatureScot. The design has changed from the original exemplar design (Option 1) to the preferred option (caisson design) which provides many environmental benefits. The caissons, for example, are being manufactured in Spain and shipped to the site by 3 or 4 vessels which remove the requirement for piling and drilling which is no longer required and will improve underwater noise significantly. The caisson design is within the same footprint as the exemplar design but also benefits by being constructed approximately 10 months quicker than

	impact assessment a vibration assessment should be provided, especially with the use of piling and vibro- hammering. The assessments of impacts on the SPA and SAC features and for the benthic habitats, including PMFs, do not consider construction Phases 1 and 2 dredge spoil disposals at the proposed site. The potential impacts of at-sea dredge spoil disposal should be assessed for the relevant species and habitats (as advised in the Scoping Opinion, Section 6.2.1 and 6.3.72) **Action required to meet Schedule 4 Para 1(d)** - **An underwater and airborne noise assessment should be provided which reflects the comments of statutory consultees.** - **A vibration component should be provided to the noise impact assessment.** **The potential impacts of at sea spoil disposal should be assessed for relevant species and habitats.**		*vicinity arising from both underwater and airborne noise. This should have been fully assessed. The HRA assessment of disturbance from vibro-piling is still limited with no detail on impact ranges, displacement area and potential risk of injury amongst SPA birds. There are no references or evidence to justify the 250m buffer distance proposed to minimise disturbance to SPA birds*. **Development and Marine Planning** states: '*The socio-economic impact assessment in EIAR outlines the operational phase of the proposed development including an offshore wind assembly hub, maintenance of offshore structures and platforms. It is reasonably foreseeable that floating offshore wind turbines would be assembled adjacent to the quay and requiring wet stored in Scapa Flow before deployment. These structures should therefore be assessed within the SLVIA, albeit as temporary structures with associated impacts'.*	**be reflected in the ZTV, visualisations and associated impact assessment, albeit as temporary structures**	the exemplar. With reference to consultee comments relating to offshore wind turbine components, there is no information currently available for this activity, however, these activities (if they are to be undertaken at SDWQ) will be subject to permissions outwith this application. This has been consulted on and agreed with project team members within MD-LOT.

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
Para 2 *A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.*	Section 2.4 of the EIAR (Volume 1) describes the Alternatives considered. The process of choice of location has been facilitated through the emerging Orkney Harbour Masterplan now adopted in 2020. The EIAR explains that as required by the Environmental Assessment (Scotland) Act 2005 the development of the Masterplan was undertaken in parallel with a Strategic Environmental Assessment (SEA). A Habitats Regulations Assessment (HRA) was also undertaken as part of the SEA process. The Masterplan objectives were then used to identify viable options for taking forward into the Masterplan which were subsequently assessed against the SEA Objectives. The SEA also considered the likely	No specific reference in the updated submission to alternative design	No reference appears to have been made to the review comment in Section 2.4 or associated Technical Appendices	**Present alternative layouts of the proposed development considered. If none were, then provide an explanation why this is the case.**	There have been various changes to the proposed development since the original Scapa Deep Water Quay (SDWQ) EIAR was produced in July 2023, and these are detailed below. It should be noted that these changes do not affect the assessments within the existing EIAR. Environmental Impact Assessment (EIA) is generally considered an iterative process, meaning it is not a one-time only assessment undertaken after a project is designed. Rather, it's a continuous process where findings from the EIA inform and influence the design of the project throughout its development. In the case of SDWQ, EIA assessments identified potential impacts on certain habitats and wildlife. Based on these findings, the design has been changed from the Exemplar Design assessed

	changes to the environment as a result of not implementing the Masterplan. - Following initial site investigations and preliminaryecological surveys it was concluded to situate the development to its current location would be preferable. The move was a result of the engineering and environmental considerations: The quantity of overburden and unsuitable material (for development purposes) was determined to be greatly reduced by re- positioning the development on the land to the south of the burn; The current site selected avoided crossing the Burn of Deepdale; and Moving the development footprint to the south would avoided encroachment into the Gaitnip Hill LNCS which would have been the case if it was situated to the north of the Burn of Deepdale. Choice of location is the only matter identified with respect to Alternatives (within the context of the masterplanning referenced). NatureScot comment that in the Scoping report the EIAR should include an assessment of alternative locations **or** layouts to the proposed development. **Action required to meet Schedule 4 Paragraph 2** - **Present alternative layouts of the proposed development considered. If none were considered, then provide an explanation of this.**				within the 2023 and 2024 EIARs, to a caisson design. Refer to Chapter 2 of the Supplementary Environmental Information Report (May 2025) Based on consultee feedback the project team has taken proactive steps during the design and environmental assessment process to reduce the potential negative impacts of the project, a crucial part of responsible project management (mitigation by design), aiming to prevent or minimise environmental impacts before they arise i.e. there is no longer a requirement for piling or associated drilling, It must be noted that the overall development footprint and dredge area remains unchanged from the previous exemplar design. ***Option 1: Original Exemplar Design*** ***Option 2: Caisson Design*** ***Preferred Option: Caisson Design***

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	May 2025 Response
Para 3 *A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.*	Each technical chapter of the EIAR sets out the baseline scenario. The aspects addressed being water, biodiversity, landscape and visual, noise in separate chapters. Chapter 10: Support Assessments comprises five other topics in a single chapter: Accident and Natural Disaster; Air Quality, Climate Change, Transport (Aviation) and Transport (Roads). These topics have been scoped out of EIA by the applicant who considers these aspects not to result in significant impacts. Aspects of reporting with respect to Biodiversity been found to be not sufficiently provided to enable a reliable assessment of the proposed development to be undertaken. In particular, Technical Appendix 5.3: Scapa Deep Water Quay Ornithology Technical Report is highlighted by a statutory consultees as not being adequate. In particular, NatureScot in its consultation response highlights *'we have engaged extensively with the Applicant and consultants with respect to details of marine bird surveys required for robust impact assessments. Much of our advice has either not been acted upon or not been addressed fully from the outset of the survey programme, resulting in an inconsistent approach with variable and incomplete spatial and temporal coverage*.' With reference to underwater noise environment, assessment is required. The baseline environment for such assessment needs to be therefore established. The baseline reporting relating to road transport is not supported by technical baseline data set out within the technical appendices, but is summarised briefly in paragraph 10.5.2 of the EIAR. No detailed Transport Impact Assessment is provided on the assumption the proposed development will not result in significant impacts. OIC Road Services considers the level of baseline data provided to be insufficient. A Traffic Impact Assessment to an agreed scope is required which is to inform a standalone Traffic chapter of the EIAR. The EIAR should also provide an outline of the '*likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge'*. This outline is provided with	The Updated EIAR seeks to address the comments raised by Statutory Consultees with respect to the baseline environment. The response tracker which accompanies the updated submission (S/N 1) confirms: *In the absence of any development in a 'do nothing' scenario, it is expected that the landscape would remain unchanged, except for potential alterations due to climate change and weather patterns. There are no significant proposals for development in this location other than the proposed development.* *Regarding the socio-economic aspect, without any development in a 'do nothing' scenario, it is projected that the socio-economic status of the Island would progress in accordance with local and national economic policies, and possibly through community benefit payments from offshore wind operators. However, given the ongoing preparation of the Climate Change Plan and the Energy Just Transition Plan, the specific policies and their economic impacts are currently unknown.*	**Technical Consultee Response** **NatureScot** in its response states: '*We note that there are still some data gaps and inaccuracies in the marine mammal baseline report and the most up-to-date data has not been used.'* *'The baseline for the EPS Risk Assessment should use the new SCANS IV data for cetaceans and an updated version of the underwater noise modelling provided, taking into account our advice provided above on the Technical Appendix 5.6 Underwater noise modelling'* With respect to Ornithology Nature Scot states: '*Given issues around design of the baseline surveys, we should seek engagement on design of these surveys to ensure that they are fit for purpose and that the results could inform both understanding of actual impacts and any adaptive management measures.'* *The EIAR should for each technical aspect include a section concerning the Future Baseline. An explanation in the response tracker which sits outside the EIAR is not considered to meet the requirements of Paragraph 3.* *A review of the updated EIAR shows that no reference to the Future Baseline is made within the following sections. Chapter 6 _Archaeology and Heritage; Chapter 7 Seascape Landscape and Visual, Chapter 9 Airborne Noise; Chapter 10 Accidents and Disasters; Air Quality; Carbon Climate Change and Greenhouse Assessment (although future projections are made for the purposes of assessment of the scheme) and Transport. No reference is made to the future baseline in the Transport Assessment produced at Technical Appendix 10.4.*	**Provide an acceptable baseline with respect to marine ornithology revised Biodiversity assessment to address the feedback of both NatureScot, the Environmental Planner and Environmental Health regarding noise and air quality.** **Within the technical chapters highlighted below, provide an outline of the likely evolution without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge within the Archaeology; Seascape, Landscape and Visual impact; Socio Economics, Airborne noise; or outline within the EIAR itself why in the light of Paragraph 3 of the Regulations this is not undertaken.** **To provide an acceptable noise baseline for underwater noise environment to inform an underwater noise and vibration noise assessment.**	Refer to HRA and Seal Risk Assessment which has been prepared in consultation with NatureScot. The design has changed from the original exemplar design (Option 1) to the preferred option (caisson design) which provides many environmental benefits. The caissons, for example, are being manufactured in Spain and shipped to the site by 3 or 4 vessels which remove the requirement for piling and drilling which is no longer required and will improve underwater noise significantly. The caisson design is within the same footprint as the exemplar design but also benefits by being constructed approximately 10 months quicker than the exemplar.

	respect to Chapter 4 Water (paragraph 4.5.8), Chapter 5 Biodiversity (paragraph 5.5.8) and Chapter 10 Carbon and climate change. No such outline is provided with respect to Archaeology; Seascape, Landscape and Visual Impact; Socio economics and Airborne noise. The appraisals set out in Chapter 10 do not relate to impact assessment and therefore such a future baseline is not provided. **Action required to meet Schedule 4 Para 3** - **To Provide an acceptable baseline with respect to marine ornithology revised Biodiversity assessment to address the feedback of both Nature Scot, the OIC Environmental Planner and OIC EHO re noise and air quality.** - **To provide an acceptable noise baseline for underwater noise environment to inform an underwater noise and vibration noise assessment.** - **Provide an outline of the likely evolution without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge within the Archaeology; Seascape, Landscape and Visual impact; Socio Economics, Airborne noise; or outline why in the light of Paragraph 3 of the Regulations this is not undertaken.**				

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	
Para 4 *A description of the factors specified in regulation 4(3) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydro morphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape*	With the exception of matters raised through consultation and/or highlighted in this review, the EIAR identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the proposed development on population and human health; biodiversity, (c)land, soil, water, air and climate; and (d)material assets, cultural heritage and the landscape and the interaction between those factors. **Action required to meet Schedule 4 Para 4** - **No action except in respect of the matters raised in this review.**	The applicant has provided an updated EIAR which seeks to address the initial round of comments provided by consultees to the application.	NatureScot, SEPA, OIC Development and Marine Planning in their consultation responses have raised many areas of concern which the updated EIAR has failed to address to their satisfaction	**With the exception of matters raised through consultation and /or highlighted in this review, the EIAR identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the proposed development on population and human health; biodiversity, (c)land, soil, water, air and climate; and (d)material assets, cultural heritage and the landscape and the interaction between those factors.**	Noted

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	
Para 5 *A description of the likely significant effects of the development on the environment resulting from, inter alia:* *(a) the construction and existence of the development, including, where relevant, demolition works;* *(b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;* *(c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;* *(d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);* *(e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;* *(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;* *(g)the technologies and the substances used.* *The description of the likely significant effects on the factors specified in regulation 4(3) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short- term, medium-term and long- term, permanent and temporary, positive and negative effects of the development*	On the basis of assessment undertaken the technical chapters provide description of the likely significant effects of the development on the environment during construction and operation. A Summary of effect table are included within each technical chapter. Chapter 12 provides an overarching table setting out a summary of significant effects. It is not clear with all chapters as to what level of significance comprises a significant effect. A consistent approach to approach between chapters to highlight the thresholds for likely significant effect would be beneficial to the EIAR. The assessment adopts the approach that initial assessment is undertaken without mitigation and then (embedded and additional) mitigation with enhancement is applied to establish residual effects. **Technical Consultee Response** A number of areas of concern have been raised by statutory consultees with respect to the assessments undertaken in arriving at the description of likely significant effect. These relate to biodiversity, noise, air quality and socio economics. Whilst scoped out from EIA, further assessment relating to road transport is requested. In summary, Nature Scot advises '*insufficient information has been provided on what is being proposed. We also advise that the quality of the assessments carried out in the EIA are not adequate for a development of this scale and potential magnitude of impact.*' '*We have considered the impact of the proposal on a number of internationally and nationally protected sites and species and we conclude that the proposal could raise natural heritage issues of international and national importance.* *However due to the reasons outlined above, we have been unable to carry out a full and detailed assessment on the likely significant effects this proposal will have on these natural heritage interests*.' Nature Scot considers the quality of the information and assessments in both the EIA and HRA to be insufficient and inadequate to be able to conclude that there would be no adverse effect on site integrity for the qualifying features of North Orkney SPA, Red-throated diver of Orkney Mainland Moors SPA, Harbour seal of Sanday SAC, grey seal of Faray and	The updated EIAR responds to comments made by statutory consultees and where the update required, provides a description of the likely significant effects of the development on the environment.	The updated EIAR is accompanied by a Response Tracker which highlights comments made and signposts where the matters raised are addressed. The response tracker document submitted to accompany the submission could usefully have been included within the updated EIAR, to demonstrate how matters raised through consultation had been addressed by the updated EIAR The updated EIAR is largely unchanged with respect to comments made through the EIAR peer review concerning consistency of approach between chapters with reference to the thresholds for likely significant effect and provision of standalone chapters for the supporting assessment sections set out in Chapter 10. No explanation is provided as to why this approach is adopted. **Technical Consultee Response** With respect to Technical Consultee responses, **NatureScot**, is not satisfied by the finding of the updated EIAR. It states: *'Based on the additional information submitted on 3 September 2024, some of our advice has been addressed. However, there are outstanding issues which have implications on our ability to assess the information presented*.' *'Scapa Flow Special Protection Area (SPA), North Orkney SPA, Hoy SPA, Sanday Special Area of Conservation (SAC), Loch of Stenness SAC: The proposal could affect internationally important natural heritage interests and we therefore object to this proposal until further information is provided. We will be able to give further consideration to this proposal once you have carried out your appraisal of these effects*.' The **OIC Development and Marine Planning Service** (Environment, Islands Archaeologist, and Marine	**In the light of Statutory consultee response, this review concludes that further assessment is required with reference to matters raised by NatureScot, SEPA, Development and Marine Planning.** **In the light of Statutory consultee response, this review concludes that further assessment is required with reference to matters raised by NatureScot, SEPA, Development and Marine Planning.** **A robust assessment of potential disturbance and/or displacement impacts on marine species, including birds and mammals, arising from vessel movements in the construction phase should be undertaken which accounts for vessel movements associated with construction from the Lyness port, cumulative impact with Flotta Deep Water Quay.** **For the operational phase, the spatial extent and routes of vessel movements, including the OICHA vessels, relative to the SDWQ site should be clarified.** **All assessments should be based on more realistic estimates of potential increases in vessel traffic in the vicinity of the proposed development.** **Terrestrial blasting requires full assessment and should include the disturbance impact zone to fully assess potential displacement area for the relevant qualifying features.** **Cumulative assessments should consider the existing impacts of vessel movements within Scapa Flow on the SPA and SAC species. There are a number of aquaculture sites developed in the eastern side of Scapa Flow, and vessel operations associated with these sites should be included and assessed given the potential increase in disturbance.** **Updates to the Ornithology Technical Report and the inclusion of the 2023/24 survey results, are**	**Refer to HRA and Seal Risk Assessment which has been prepared in consultation with NatureScot.** **Blasting:** BS 6472-2:2008 (Guide to evaluation of human exposure to vibration in buildings - Blast-induced vibration) states that "Accurate prediction of air overpressure (from blasting) is almost impossible due to the variable effects of the prevailing weather conditions and the large distances often involved." As referenced by guidance, it is not possible to predict with accuracy the likely levels of air overpressure that will be generated at receptors by the proposed blasting due to high level of variables involved. The best way to control air overpressure is through good blast design and an appreciation of how local weather conditions can influence levels and impacts. Best practice measures will be recommended to minimise vibration and air overpressure generation due to blasting. Once a blasting contractor has been appointed a terrestrial blast strategy will be prepared and issued to the Regulators. **Underwater Noise:** Piling and blasting is no longer required due to the change to the caisson design. **Ornithology Technical Report:** The Ornithology Technical Report has been amended (Appendix C of the SEIR (May 2025)). **BNG** Regarding BNG, the Feasibility Assessment undertaken in June 2024 identified that to achieve a 10% gain, both onsite and offsite habitat enhancement and creation would be required. At the time of writing the BNG Feasibility Assessment and this SEI, land within the control of the OICHA and suitable for the application

	Holm of Faray SAC and Red-throated diver, Slavonian grebe, Great- northern diver of Scapa Flow SPA. With respect to the Waulkmill SSSI '*There are natural heritage interests of national importance on the site, which could be affected by the proposal. Further information is requested to determine if the proposal will affect the integrity of the SSSI*'. With respect to Protected natural heritage features ' *The proposal has the potential to affect a number of other protected natural heritage features, including European Protected Species (EPS) and Priority Marine Features (PMFs). We have concerns with the approach which has been used to assess the impacts on these features, as well as on the information itself used to inform these assessments'.* *NatureScot highlights 'The analyses in the Navigational Risk Assessment leads to the conclusion that "Overall traffic density in the project area is at the lowest level for any part of Scapa Flow". Therefore, any change in vessel traffic that would arise from the operation of the new facility at this location would be significant and pronounced with respect to the baseline conditions.* *Assessment should be undertaken with reference to vessel traffic and its potential impact upon environmental receptors. All assessments should be based on more realistic estimates of potential increases in vessel traffic in the vicinity of the proposed development.' NatureScot further highlights 'Given the need for drilling and piling, as well as potentially blasting, there is potential for displacement of SPA birds in the vicinity arising from both underwater and airborne noise. This needs to be fully assessed*.' '*The assessments of impacts on the SPA and SAC features and for the benthic habitats, including PMFs, do not consider construction Phases 1 and 2 dredge spoil disposals at the proposed site. The potential impacts of at-sea dredge spoil disposal be assessed for the relevant species and habitats as advised in the Scoping Opinion, Section 6.2.1 and 6.3.72.*' The OIC Environmental Health Officer makes a number of observations which point towards the need for additional assessment with respect to airborne noise. Assessment needs to address dredging and vibration. Additional clarification is required with respect to the dust risk assessment and assessment of lighting arrangements.		Planning) has provided an extensive consultation response which it summarises as: *It is disappointing that many of the issues have not been satisfactorily addressed, with a continued lack of detail and/or lack of commitment to implementing specific measures. Key examples of this are the Construction Environment Management Document (CEMD) and Biodiversity Management Plan, which contain limited and basic information despite requests for specific information and detail to be included. As a result, further information is required to address the outstanding issues highlighted in the February and June advice, as well as the updated advice provided below*. **SEPA** in its consultation response states: *In our response dated 20 November 2023 we noted that SEPA had significant concerns regarding habitat creation and biodiversity loss due to the development. The information we requested has not been provided for our assessment.* *We requested that the applicant provide evidence that the* *mitigation proposal is feasible, given the specific conditions at the site, and to demonstrate that a similar approach has been successful elsewhere. The information provided does not answer any of our concerns regarding the proposed mitigation for the Tufa forming springs.* *1.2 The engineering options suggested do not provide a considered solution and also have not been shown to be successful elsewhere.* *1.3 It remains unclear whether the bedrock face is to be cleared as an integral part of the works or purely to provide the opportunity to create compensatory habitat. The impact of exposing the bedrock on existing habitat or rock conditions must be considered.* *1.4 The compensatory habitat creation would be acceptable if it is restoring something previously*	**required to conclude that there would be no adverse effect on site integrity for most qualifying features of Scapa Flow SPA and North Orkney SPA.** **Evidence to support the theory that the redeployment of port service vessels from Scapa Pier will "equate to 4.5x increase in optimal habitat compared to the loss of suboptimal habitat" is required.** **Further clarification, evidence and assessment is required to support this proposal, including a clear comparison of usage by SPA features between areas of Scapa Flow.** **There is potential for the proposed development to undermine Conservation Objective 2b and 2c and a detailed quantitative assessment of potential disturbance impacts is required.** **A more robust assessment is required to determine the potential for adverse effect on site integrity that the increase in vessel movements is potentially much greater than the levels assumed for these species assessments.** **The application documents should be checked to ensure that all information is the same throughout and accurately reflects the design scope. All documents need to be updated to remove text relating to marine blasting activities.** **Underwater noise modelling parameters should be based on the most accurate and realistic description of the proposed development.** **With respect to Ornithology, Technical Appendix 5.3 should be updated to take into account of NatureScot's advice and include the most up-to-date survey information.** **The assessments undertaken must demonstrate how the proposed biodiversity enhancement measures relate to the nature and scale of the proposed development and its effects, particularly loss of a range of habitats and loss of habitat for**	of enhancement and creation measures, has been identified at Hatston Pier, Orkney (Grid Reference: HY 43095 12969). Additionally, habitat restoration at the community led, Quarterness Windfarm[21] is being considered as an opportunity to achieve BNG. Quarterness is near Hatston Pier (approximately 2.4km west). Further opportunities for habitat enhancement and creation have also been identified by the Environmental Planner for Orkney Islands Council at Papdale East Park (Grid Reference: HY 45863 10498) and Balfour Hospital, Kirkwall (HY 44458 10109). Additional sites identified by OICHA (as the responsible legal entity, have a firm commitment to biodiversity enhacement) which include redundant quarries which are in need of restoration, and several potential sites associated with proposals such as those to enhance biodiversity and reduce maintenance within the Grainebank SuDS areas (subject to consultation and permission). Operational Vessel Movements – refer to Section 4.3 of the HRA dated May 2025 (Appendix B of the SEI Report). Refer to Ornithology Report (Appendix C of the SEI Report and HRA (Appendix B of the SEI Report (Including Appendix D Black-throated Diver Mortality Matrix Model.

[21] Quarterness Windfarm. Available at: https://orkneywindfarms.co.uk/quanterness (Accessed May 2025)

	The EIA scoping opinion presented by OIC states' "*Further work needs to be undertaken to better understand likely operational*		*damaged or enhancing a habitat so it has more ecological value but the applicant would need to prove that this is the case and that it is feasible.* *The EIAR has been updated to include a Transport Statement at Technical Appendix 10.4.*	**breeding birds.**	

Requirements (1)	**Review (2)**	**August 2024 Response (3)**	**January 2025 Comment (4)**	**Further Information or Update Request (5)**	
	traffic movements and until this works is undertaken air quality impacts from the operational road traffic should be scoped into the EIA." *The OIC Scoping Opinion scopes in Transport as an EIAR topic. This has not been addressed as a standalone technical chapter supported by a Transport Impact Assessment. A summary Transport assessment is set out in Chapter 10 which lacks baseline detail and assessment in line with environmental impact assessment methodology. The outcomes of the Transport Impact Assessment may raise implications for Air Quality and its assessment of potential likely significant effects.* *In consideration of the feedback from the OIC Environmental Health Officer, the noise chapter should provide for an assessment of vibration with respect to potential blasting, vibration and dredging during the constructional and operational phases. There should therefore also be cross reference to other technical aspects including biodiversity.* In the light of Statutory consultee response, this review concludes that further baseline data collection and assessment is required with reference to biodiversity, noise, and transport. The applicant should further consult with the OIC EHO with respect to Air Quality having regard to the outcome of the Traffic Impact Assessment to be undertaken. The Marine Policy team highlights significant range of matters which the EIAR should address, some of which are raised also by the OIC Development and Marine planning Environment Planning officer and NatureScot. With respect to Fish Farming, OIC Marine Policy notes: '*An assessment should be undertake to ensure that the proposed development and existing fish farm at Quanterness can co-exist under the provisions of NMP Gen 4 Co- existence, with due consideration to appropriate mitigation*. **Action to meet requirement of Schedule 4 para 5**		The EIAR Socio Economic Chapter 8 has addressed the matter of potential impact upon nearby sea farm and is accepted by OIC Development and Marine planning **Roads Services** in its updated response is satisfied that Road transport matters have satisfactorily addressed. '*Roads have no adverse comments given proposals to widen road in separate application 22/423/PP*.' **Environmental Health** accept the updated assessment and reporting submitted within the EIAR.	**Respond to all the points raised by NatureScot in Appendices 1 to 4 of its technical response.** **For the purposes of heritage assessment, the Study Area should be clearly defined in line with Historic Environment Scotland and NatureScot's Environmental Impact Assessment Handbook: Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland.** **The identification of what aspects of the development (e.g. lighting columns; the quay; size and frequency of vessels using the quay) could affect the setting of identified historic environment receptors need to be addressed.**	**Refer to Chapter 6 and 7 of the EIAR (August 2024) which addresses lighting columns etc.**

	- The assessments undertaken for Biodiversity, Air Quality, Noise should be undertaken in line with the detailed feedback provided by the Statutory Consultees. **- A Traffic Impact Assessment to an agreed scope should be prepared with an accompanying stand- alone chapter to the EIAR.** **- A standalone Air Quality chapter may be required if the Transport impact Assessment outcomes necessitate this.** **The socio economic EIAR chapter should assess the potential economic effects of the development of the proposal site upon neighbouring fish farm enterprises.**				

Requirements (1)	Review (2)	August 2024 Response (3)	January 2025 Comment (4)	Further Information or Update Request (5)	
Para 6 *A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved*	Chapter 3 of the EIAR includes sets out the broad environmental impact assessment methodology. Each technical chapter sets out methodology applied, with reference to a relevant professional body. Details of limitations or difficulties are generally not referenced (with the exception of Water Environment, though Chapter 6 Seascape, Landscape, Visual Impact Assessment notes that there had been no feedback to agree approach generally). **Action required to meet Schedule 4 Para 6:** - **No action required.**	No Comment	No further action is required	**No Action Required**	
Para 7 *A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.*	A detailed description of the features of the development with each technical chapter sets out mitigation measures to address harm arising from the development. These are differentiated as mitigation and enhancement measures implemented through one or more of three broad phases of the proposed development. Chapter 11 includes Table 11.1 which summarises these. The EIAR generally doesn't clearly differentiate between mitigation measures which are embedded (i.e. part of the proposed development in any event, such as good working practice or the employment of a CEMP)) within the proposed development and secondary (additional) mitigation measures which following assessment may be required to overcome an identified likely significant effect upon the environment, so it is not possible to easily compare impacts before and after the employment of secondary mitigation measures which may be required. In the light of consultee feedback and the need for additional assessment, there may be need for additional mitigation to be identified within a further iteration of the EIA reporting. **Technical Consultee Response** From a NatureScot, OIC Environmental Health, Road Services and Marine policy perspective, the adequacy of mitigation measures remains to be confirmed in the light of further assessment which will need to be undertaken as highlighted by comments set out under Regulation 5(2)b above. In its consultation response, SEPA has significant concerns relating to habitat creation and biodiversity loss, with the	The updated EIAR responds to comments made by statutory consultees and where the update required, provides further / updated description of mitigation measures to address harm arising.	The response tracker document submitted to accompany the submission is helpful though this could usefully have been included within the updated EIAR, to signpost where mitigation had been incorporated into chapters and the overarching summary table in Chapter 11. **Technical Consultee Response** From a NatureScot, and Marine policy perspective, the adequacy of mitigation measures remains to be confirmed in the light of further assessment which will need to be undertaken as highlighted by comments set out under Regulation 5(2)b. NatureScot advises 'Based on the additional information submitted on 3 September 2024, some of our advice has been addressed. However, there are outstanding issues which have implications on our ability to assess the information presented'. 'Although some of our previous advice has been addressed, there remains a number of overarching, fundamental issues with what has been proposed in the application and with the information provided in the EIA which have consequences for all assessments. **SEPA** With respect to GWDTE SEPA advises, 'We requested that the applicant provide evidence that the	**Identify additional mitigation measures as necessary to overcome harm arising from the development which arises from the additional assessment required by statutory consultees.** **Identify additional mitigation measures as necessary to overcome harm arising from the development which arises from the additional assessment required by statutory consultees as follows:** **Once the assessment on harbour seal has been revised based NatureScot advice, the mitigation needs to be tailored to the predicted impacts associated with the proposed activities.** **Revisit the proposed mitigation relating to harbour seals once assessment are undertaken to include reference to the population size and status of the Harbour seal of Sanday SAC.** **Mitigation associated with vessel movements to be reevaluated following update of assessment in line with NatureScot's comments.** **The Basking shark code of conduct should be included within any mitigation measures proposed.** **With respect to biodiversity enhancement, information on predicted losses, and the proposed mitigation, compensation and enhancement should be clearly set out, and also concisely summarised,**	**Refer to the Schedule of Mitigation within the SEIR and CEMD** **Refer to Seal Risk Assessment and HRA** **BNG and GWDTE – refer to 5.5.8 of the SEIR**

	Groundwater Dependent Terrestrial Ecosystem mitigation may not have the same spring forming capability. This aspect will need to be further addressed by the EIAR. Marine Scotland identifies that no mitigation measures for breeding birds have been proposed and that further consideration and identification of suitable mitigation measures to minimise the risk of disturbance to breeding hen harrier is required. Marine Policy in their response state. '*The applicant should refer to the policy and submit information detailing how they propose to conserve, restore and enhance biodiversity, with particular reference to nature networks. – mitigation measure. Details of future management to ensure the intended biodiversity results are achieved should also be include. Once the required information has been submitted then it should be possible to provide further advice on the appropriateness of any proposed biodiversity measures'.* The OIC Environmental planner highlights: '*While there is a stated intention to provide a Biodiversity Action Plan (Volume 1 Environmental Impact Assessment Report, section 5.8.3), very limited information is provided on what this might contain. The enhancement measures mentioned in section 5.8.3 do not appear to relate to the nature and scale of the proposed development or its effects, particularly habitat loss. Some of the measures are also unlikely to be effective in Orkney. Reconsideration of the proposed mitigation measures is therefore required. There is also a need to integrate proposed measures with nature networks*.' Road services highlight that in addition to impact assessment set out within the EIAR, a monitoring scheme of the public road network is required with funding for the cost of any repairs that may be required to the public road because of the proposed harbour development. Therefore, full details of a maintenance a monitoring scheme for all routes that will be used for the transportation of materials to the development site must be supplied for consideration. (verbal feedback to OIC 31.1.24) The applicant is reminded that the application of planning conditions to address mitigation which has not been assessed through EIA is not an acceptable route to follow. Such information should be produced and robustly assessed in advance of a planning determination.		mitigation proposal is feasible, given the specific conditions at the site, and to demonstrate that a similar approach has been successful elsewhere. The information provided does not answer any of our concerns regarding the proposed mitigation for the Tufa *forming springs. The engineering options suggested do not provide a considered solution and also have not been shown to be successful elsewhere. It remains unclear whether the bedrock face is to be cleared as an integral part of the works or purely to provide the opportunity to create compensatory habitat. The impact of exposing the bedrock on existing habitat or rock conditions must be considered.* **Development and Marine Planning (Policy)** *Many of the issues have not been satisfactorily addressed, with a continued lack of detail and/or lack of commitment to implementing specific measures. Key examples of this are the Construction Environment Management Document (CEMD) and Biodiversity Management Plan, which contain limited and basic information despite requests for specific information and detail to be included*. Amongst these, it is noted: *With respect to Local Nature Conservation Sites, further consideration and identificationof suitable mitigation measures to minimise the risk of disturbance to breeding hen harrier and committing an offense is required. This should be incorporated into a breeding bird species protection plan in an outline CEMP.* *With resect to Terrestrial Wider Biodiversity, much of the previous advice remains valid due to a lack of commitment and/or insufficient detail, as well as unclear off-site enhancement proposals*. With respect to soils, further information on how soil compaction, erosion and sealing will be minimised including spatial information is required to demonstrate how the proposed development meets the	**in the application, so that this can be easily understood by decision makers.** **Further consideration and identification of suitable mitigation measures to minimise the risk of disturbance to breeding hen harrier and committing an offense is required. This should be incorporated into a breeding bird species protection plan in an outline CEMD.** **The information submitted with the application does not demonstrate how the proposed development will conserve, restore or enhance biodiversity (including nature networks) so that it is in a demonstrably better state than without intervention.** **This should be provided.** **Further information is required within the outline CEMD, which should set out the principles that principal contractor responsible for writing the detailed CEMD post-permission (should permission be granted) will be expected to adhere to.** **Information to be provided on where, how or when GWDTE habitat creation would occur.** **Detailed information is required with respect to how the mitigation hierarchy has been applied to minimise disturbance to soils, or how works will be conducted in a manner that protects soil from compaction.**	

	Action required to meet Schedule 4 Para 7 - **Identify additional mitigation measures as necessary to overcome harm arising from the development which arises from the additional assessment required.**		requirements of NPF4 policy 5.a. With respect to heritage mitigation, the Schedule of Mitigation (Table 11.1) needs it be updated on a number of matters highlighted		

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Para 8 *A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned.*	Chapter 10 of the EIAR included a section on the Vulnerability of the development to risks of major accidents and/ or disasters. **Action required to meet Schedule 4 Para 8:** - **No action required**	No Comment	No Comment	**No Action Required**	
Para 9 A non-technical summary of the information provided under paragraphs 1 to 8.	The Non-Technical Summary is presented in an easy to read format which suitably cross refers to the main EIAR document where required. The main EIA reporting will however need to be revisited in the light of statutory consultee responses and comment set out in this review. Updated reporting will need to be reflected by an updated standalone Non Technical Summary. Action required to meet Schedule 4 Para 9 - The Non Technical Summary will need to be updated as a standalone document to reflect any changes which are necessary to the main EIAR reflecting the comments of statutory consultees and this review.	An updated Non Technical Summary has been provided in an easy to read format which suitably cross refers to the updated main EIAR document where required.	In the light of comments from statutory consultees, the main EIAR document and therefore the Non-Technical Summary will need to be updated	**The Non-Technical Summary will need to be updated as a standalone document to reflect any changes which are necessary to the main EIAR reflecting the comments of statutory consultees and this review.**	A Non Technical Summary was provided as part of the submission of the EIAR (August 2024). The SEI Report being submitted highlights the changes to the project I'e. the development of the caisson design as the preferred option which removes the requirement for piling and associated noise. Chapter 2 of the SEI Report provides a description of the caisson option using non-technical terminology

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Para 10 *A reference list detailing the sources used for the descriptions and assessments included in the EIAR.*	The EIAR provides a glossary of terms and details of sources used throughout, though these appear as footnotes or in the body of the EIAR text itself. **Action Required to meet Regulation Para 10:** - **No action required.**	No Comment	No Comment	**No Action Required**	

8 ROYAL SOCIETY FOR THE PROTECTION OF BIRDS (RSPB) COMMENTS

S/N	New comments received	May 2025 Response/comment
1.	At this stage we consider the quality of the information and assessments in both the EIA and HRA to be insufficient to be able to conclude that there would be no adverse effect on site integrity for the qualifying features of Scapa Flow SPA and North Orkney SPA (used by the same species), namely Red-throated diver, Slavonian grebe, Great-northern diver of Scapa Flow SPA. From the information available, the proposed scheme would result in effects on SPA species as result of direct habitat loss and from construction disturbance. The report to inform the HRA states that the re-deployment of vessel routes will result in a 785 ha area where there will be a disturbance reduction for SPA associated species resulting in an increase in useable habitat. The report concludes that with the mitigation outlined in relation to each feature there would be no significant disturbance to qualifying bird species of the SPAs and consequently, with this mitigation in place, that the supporting habitats and processes of those SPAs will be maintained. However, we question whether this mitigation is sufficient and appropriate to allow the conclusion of no adverse effect on the SPA to be reached.	The HRA has been subject to substantial amendment in consultation with NatureScot. Maps have been attached as appendices showing vessel movments and the qualifying features of the SPA. Refer also to Section 6.4.2 Assessment of Potential Impacts on Conservation Objectives
2.	In describing the proposed mitigation, a schedule of vessel movements is provided but there is little information on how these routes will be monitored, controlled and maintained in the future and how an increase in activity, or new routes from the harbour would be assessed for their impacts upon the SPA. To function effectively and with a high degree of certainty as mitigation for the impacts of the development, these measures would need to be secured prior to determination, and function for the full period of the impacts. No information is provided on how this would be achieved.	Refer to Section 4 Vessel Movements
3.	We note that Biodiversity Enhancement is proposed as part of the development. The proposals include elements for terrestrial, inter-tidal and marine habitats and are welcomed in principle. However, we do not believe existing metrics (including DEFRA's BNG metric for England), are the best approach for determining the most appropriate focus and location of enhancement. They are not designed to protect and invest in Scotland's nature restoration priorities, producing an overly reductive and simplified view of the wider ecological context, which is often not a sound proxy for the actual impact on nature. The best method to ascertain the most appropriate type and location of enhancement is to use a qualitative approach, administered by ecological experts with an understanding of the ecology of the site. Using an EIA-like or ecological assessment process to assess the scale and value of biodiversity lost, the ecological context and the relevant opportunities for enhancement, means enhancement measures can be designed to maximise ecological value. RSPB Scotland believes that there should be a reassessment of the potential Biodiversity Enhancement for this project using a qualitative approach – including looking at onsite and offsite habitat enhancement. We would be keen to work with Orkney Island Council Harbour Authority on this updated assessment and to help identify suitable sites for any offside enhancement. We would also be happy to meet with the developer and their representatives to discuss this if this would be helpful.	Regarding BNG, the Feasibility Assessment undertaken in June 2024 identified that to achieve a 10% gain, both onsite and offsite habitat enhancement and creation would be required. At the time of writing the BNG Feasibility Assessment and this SEI, land within the control of the OICHA and suitable for the application of enhancement and creation measures, has been identified at Hatston Pier, Orkney (Grid Reference: HY 43095 12969). Additionally, habitat restoration at the community led, Quarterness Windfarm is being considered as an opportunity to achieve BNG. Quarterness is near Hatston Pier (approximately 2.4km west). Further opportunities for habitat enhancement and creation have also been identified by the Environmental Planner for Orkney Islands Council at Papdale East Park (Grid Reference: HY 45863 10498) and Balfour Hospital, Kirkwall (HY 44458 10109). Additional sites identified by OICHA (as the responsible legal entity, have a firm commitment to identifying biodiversity enhancement) which include redundant quarries which are in need of restoration, and several potential sites associated with proposals such as those to enhance biodiversity and reduce maintenance within the Grainebank SuDS areas (subject to consultation and permission). It's been agreed in principle with OIC Planning that BNG commitments will be agreed post-consent, enforced by condition, should planning permission be granted.
4.	We also note the recommendation from the Orkney Island Council that the biodiversity measures should contribute to nature networks, and we support this goal and believe that any biodiversity compensation or enhancement should be reviewed in terms of wider nature networks.	Unfortunately nature networks do not currently exist on Orkney. There is a good chance that any potential NNs now, may be altered as that process progresses. Therefore, offsite enhancement locations as noted above provide realistic enhancement opportunities.

B HABITAT REGULATIONS APPRAISAL

C ORNITHOLOGY REPORT

D SEAL RISK ASSESSMENT

E BASKING SHARK RISK ASSESSMENT

F MARINE MAMMAL RISK ASSESSMENT

G DREDGING BEST PRACTICABLE ENVIRONMENTAL OPTION REPORT

H DRAWINGS

I OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT DOCUMENT