

Orkney Logistics Base (Hatston) Environmental Impact Assessment Report: Non - Technical Summary



September 2025

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Introduction

Background

Orkney Islands Council Harbour Authority (OICHA) proposes to expand the existing Hatston Quay and adjacent land to create a Logistics Base to be rebranded as Orkney Logistics Base (Hatston). Hatston Quay includes a ferry terminal and is located on the Orkney Mainland coast to the immediate northwest of Kirkwall. This proposal will reduce the current seasonal constraints on the availability of berths due to cruise activities and will provide a facility to attract more users across a range of economic sectors such as offshore wind, oil and gas, freight and ferries, boat repair, aquaculture and logistics. With the additional space and quay length current operations can co-exist with such new activities. The proposed development forms part of the Orkney Harbours Masterplan.

Consenting Process

The Environmental Impact Assessment (EIA) was undertaken under both the Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 and the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the Marine EIA Regulations').

The purpose of this Non-Technical Summary (NTS) is to provide a summary of the findings of the EIA. The purpose of the EIA is to determine whether the Orkney Logistics Base (Hatston) development will have significant effects on the environment. Where significant effects are predicted, the EIA considers the scale and magnitude of these effects and measures to mitigate them. This NTS sets out the scope of the EIA, the methods used and the findings of the assessment.

Supplementary

Environmental Information

The Supplementary Environmental Information Report (SEIR) presents the likely significant environmental effects of updated environmental information.

The SEIR (September 2025) contains the following as appendices:

- A. Consultee Comments/Signpost Report
- B. Habitat Regulations Appraisal
- C. Ornithology Report
- D. Seal Risk Assessment
- E. Marine Mammal Risk Assessment
- F. Basking Shark Risk Assessment
- G. Underwater Noise Report
- H. Dredging Best Practicable Environmental Option Report
- I. Figures
- J. Outline Construction Environmental Management Document

The Site

The site of the proposed development is part of an existing ferry terminal, located approximately 2km northwest of the town of Kirkwall off the A965 Grainshore Road. The site is located on a section of coastline which has commercial / industrial uses located within adjacent grazing land.



Above: Site Location Plan

There are a number of isolated residential properties located to the south south-west of the site with the closest residence approx. 750m away.

Structure of this Non-Technical Summary

The NTS is set out in the same order as the EIA and SEIR Report, to facilitate cross-referencing and to offer a summary of the environmental findings that will be submitted.

The sections within this NTS are therefore as follows:

- 1 Introduction
- 2 Proposed Development
- 3 EIA Methodology and Scoping
- 4 Water Environment
- 5 Biodiversity
- 6 Archaeology and Cultural Heritage
- 7 Landscape, Seascape and Visual Impact Assessment
- 8 Socio-Economics
- 9 Supporting Assessments
- 10 Summary of Significance of Effects

The overall suite of documents associated with the applications comprises the following:

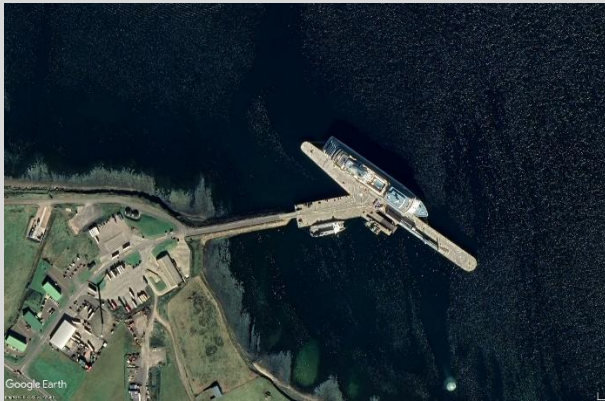
- The Environmental Impact Assessment Report (EIAR) – this reports the potentially significant environmental effects of the proposed development on the environment, and is made up of the following:
 - Volume 1: Written Statement – this includes the written assessment and contains discussion of potentially significant environmental effects and proposed mitigation measures
 - Volume 2: Figures – this volume includes figures, drawings and diagrams which support Volume 1
 - Volume 3: Technical Appendices – this volume contains the technical background reports written and used to derive the environmental assessment.
- Supplementary Environmental Information Report: has been produced to address consultee queries and supplemental information to the EIAR.
- Pre-Application Consultation (PAC) Report: this provides information on the community engagement which has been undertaken prior to this submission with regards to the proposed development and details public engagement initiatives and attitudes towards the proposed development.
- Non-Technical Summary (NTS) (this document provides a description of the EIA process and its findings in non-technical language).

The Proposed Development

Need for Development

The proposed development at Hatston is required to reduce conflicts between users and operational activity as well as enabling growth across a range of economic sectors. Currently the seasonal lack of availability of berths due to cruise activities results in a year-round constraint on other vessel use. In addition, the shore-side infrastructure and storage areas are located a significant distance

from the quay across a narrow causeway access route.



Above Satellite image of existing Hatston Pier Structure

To alleviate this pressure on site operations, core proposals comprise a significant extension to the existing pier and expansion of the landside area through phased reclamation. This will allow freight and traffic to be handled more efficiently and effectively while accommodating expansion and economic growth.

With the additional space and quay length current operations can co-exist with such new activities. The current thought on the types of activity or features that will or could be introduced to the site or surrounds as a result of the proposed development are:

- Areas for car and freight marshalling will be reconfigured with better defined pedestrian routes to and from the quayside: for example, to the long stay car park and the main road;
- Reconfigured pedestrian access within the harbour area to connect to proposed active travel connection improvements to Kirkwall;
- Upgraded/extended ferry passenger reception facility;
- Establishment of an offshore wind Operations & Maintenance (O&M) base;
- Boat repair including a boat lift facility;
- Oil and gas supply operations;

- Handling renewable energy devices (requiring sufficient laydown area);
- Storage of alternative fuels; and
- Aquaculture development and storage.

Options to promote sustainable transport have also been considered, such as the provision of electric vehicle charging points, electric bicycles, electric vehicles as part of car-pooling schemes and linkages with existing and future walking and cycling networks.

The Proposed Development

It is proposed to extend the existing outer quay by 300m (with minimum water depth of -10m Chart Datum) which would also form a 125m inner berth. This would create substantially more quayside which would be available for both current and future commercial operations.

In addition to the above, circa 7.5 hectares of additional land extending from the current shoreline outwards would be made available for harbour-related operations through reclamation. The design may include an additional linkspan, and will include base engineering for a fuel facility and space provision to later accommodate a ship lift.



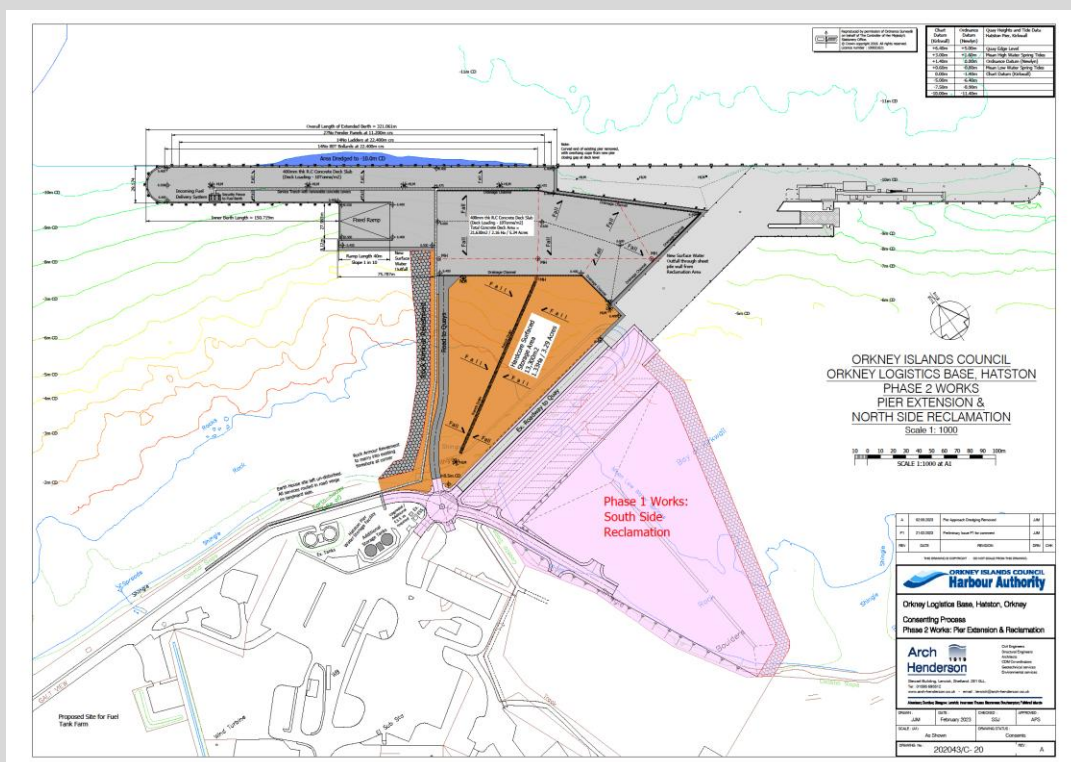
Above Schematic of the Proposed Development

The development is designed to be built in three phases. These phases should not be considered consecutively but allow for a degree of flexibility which can be adapted to suit the requirements, budget and programme of OICHA. The drawings below give an

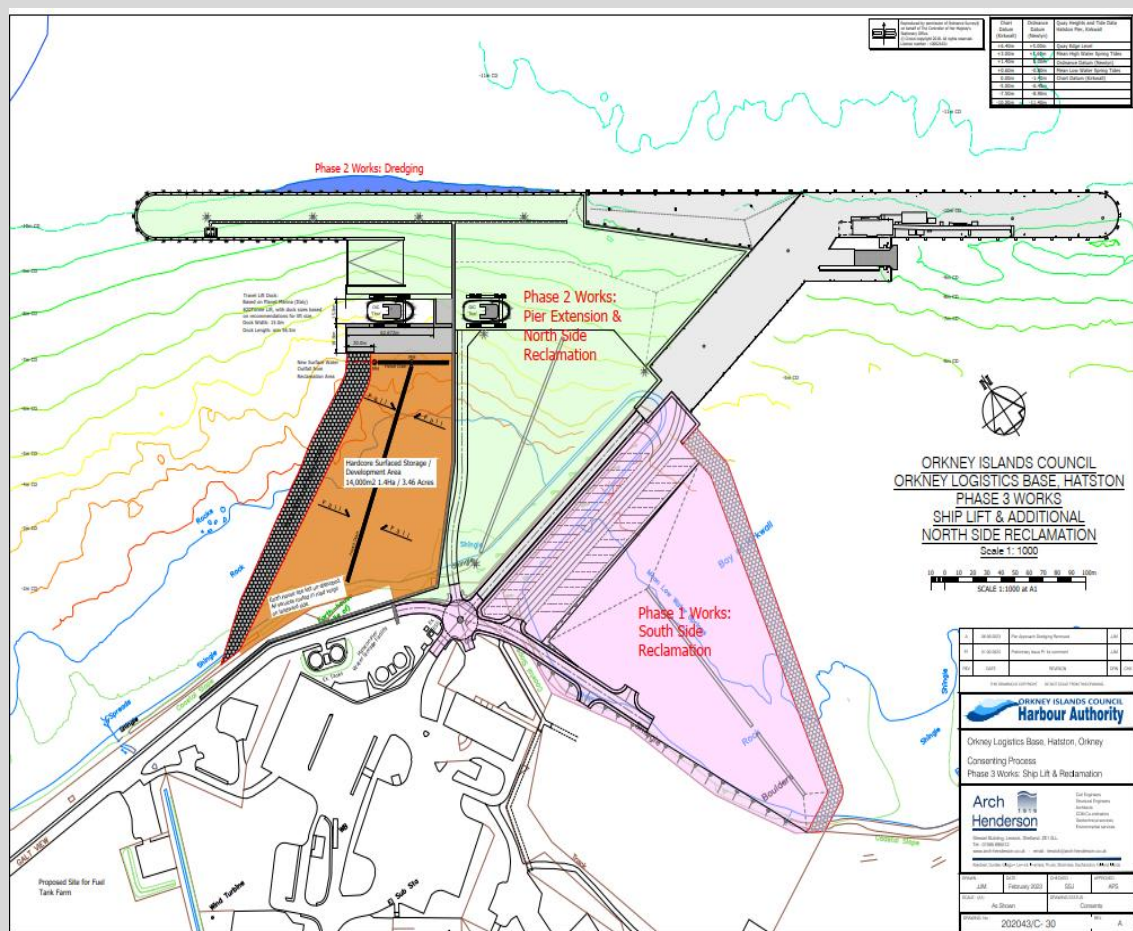
- Formation of bunds within which to infill and create laydown areas;
- Import of stone for infilling;

- Placement of rock armour;
- Installation of piles to create the new quay, which includes underwater blasting to pre-treat the rock, and
- A small area of dredging.





Phase 2 Pier Extension and North Side Reclamation



Phase 3 Linkspan and Reclamation Layout

Construction Timescales and Working Hours

It is important to note that the contract for construction of the facility may be awarded on a design and build basis. Therefore, while exemplar tender designs have been completed by Arch Henderson (Project Technical Advisors), until the preferred contractor is identified and procurement complete the exact detail of the construction methodologies cannot be confirmed at this stage in the development process.

The normal working hours for construction are anticipated to be Monday – Saturday 7am to 7pm and Sunday 7am until 2pm.

EIA

Methodology & Scoping

General EIA Methodology

The purpose of an EIA is to identify and evaluate the likely significant effects of a proposed development on the environment, both direct and indirect, and then identify measures to mitigate or manage any significant adverse effects before a planning application is determined.

The EIA process provides an opportunity to ‘design out’ adverse effects wherever possible by making alterations to the design of the proposed development before the application is submitted and based upon feed-back from consultees.

Where adverse effects cannot be designed out, mitigation measures can be proposed to avoid, compensate, or reduce significant environmental effects to an acceptable level.

The environmental information gathered during the EIA is derived through a methodical process of identification, prediction, and evaluation of the likely significant environmental effects of the proposed development. This process includes: -

- identifying the sensitivity of the baseline conditions / receptors;
- predicted the magnitude of potential impacts;
- predict the significant effect of the impacts;
- detailing mitigation measures to limit impacts;
- predicting the potential residual effects as well as the potential cumulative impacts.

The results and findings are presented in full within the EIAR and summarised in this document.

Scoping as part of the EIA Process

Scoping is defined as ‘the way in which key issues are identified from a broad range of potential concerns for inclusion in EIA studies, the areas affected, and the level to which they should be studied’. The scoping process enables the topics to be covered in the EIAR to be agreed and for those topics not considered pertinent to be scoped out of the study or reduced in scope (i.e. topics where it is unlikely that significant environmental effects will occur).

Scoping Requests were submitted to OIC and Marine Scotland – Licensing Operations Team (MS - LOT) on 31st March 2021. A Scoping Opinion was received from OIC on 13th

October 2021, and from MS-LOT on 22nd October 2021.

Consultation

Consultation responses were obtained from the following organisations in respect of the Scoping Reports issued to OIC and MS-LOT:

- OIC departments
- Historic Environment Scotland (HES)
- Marine Scotland
- Marine Services
- Northern Lighthouse Board
- Orkney Fisheries Association
- Orkney Trout Fishing Association
- Royal Society for the Protection of Birds (RSPB)
- Royal Yachting Association Scotland (RYA Scotland)
- Scottish Environment Protection Agency (SEPA)
- NatureScot
- Scottish Water
- Defence Infrastructure Organisation (Ministry of Defence)
- Maritime and Coastguard Agency
- Marine Scotland Science (MSS)
- Marine Scotland – Marine Analytical Unit (MAU)
- Marine Scotland Planning and Policy
- Transport Scotland

Supplemental Environmental Information

Following review of the EIAR statutory consultees requested additional information for ornithology, seals, underwater noise, vessel movements and the interaction with birds and seals i.e. disturbance, displacement and potential fatalities and potential terrestrial noise disturbance.

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 21st January 5th March and 27th March 2025)

Scope of the Environmental Impact Assessment (EIA)

Based on the consultation undertaken and responses received, a view was reached on the key topics to be assessed as part of the EIA. These were:

- Water Environment
- Biodiversity
- Archaeology and Cultural Heritage
- Seascape, Landscape and Visual Impacts
- Socio-Economics
- Other Supporting Assessments including Airborne Noise, Air Quality; Accidents and Natural Disasters; Carbon, Climate Change and Greenhouse Gas; and Transport.

Water Environment

Introduction

This section of the EIA Report and SEIR considered potential impacts of the proposed development upon water quality, tides, waves and sediment transport. The assessment was undertaken in accordance with relevant best practice guidance, by experienced hydrologists and coastal modellers.

The assessment process involved an initial desk-based review of level surveys of the land and seabed, review of literature, ordnance survey, geological mapping, nautical charts, ground investigation and sediment sampling results. Consultation was undertaken with key

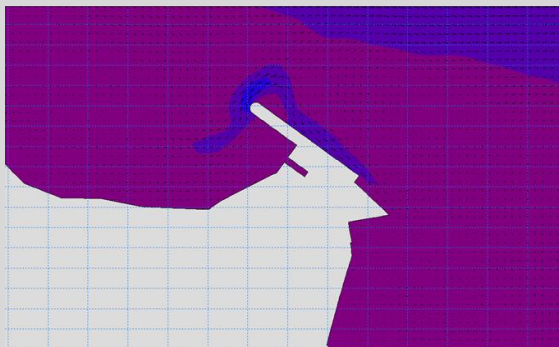
stakeholders to obtain relevant information and to ensure their concerns were addressed within the study.

Computer modelling of tides and waves was undertaken for both existing conditions and conditions following construction of the proposed development.

Impact Assessment and Significance of Effects

During the construction phase, due to the small dredge volume, coarse nature of the sediment, and weak tidal currents, the impact of proposed dredging and land reclamation activities was found to be low within the immediate vicinity of the works, and negligible out with this area. With implementation of surface water management and pollution prevention measures, no construction activities were found to have a significant effect upon the water environment.

The results of computer modelling of tides and waves indicate that the impact of the proposed development on coastal processes and existing outfalls will be negligible.



Above: Current Speed at Hatston Post Development during mid-ebb spring tide

During the operation of the proposed development the assessment found that potential impacts were the same as during the construction phase for all receptors, and the impact of the operational development on the water environment and coastal processes,

with appropriate mitigation in place, would therefore be negligible.

Overall, the assessment concluded that the residual effects of the proposed development are considered to be negligible, and accordingly no significant effects on the water environment or coastal processes have been identified.

Proposed Mitigation Measures

During the construction phase a Construction Environmental Management Document (CEMD) will be developed to ensure that the mitigation measures outlined in the EIAR and SEIR are followed during the proposed construction work. The CEMD will include surface water management and pollution prevention measures which follow best practice and comply with SEPA guidance.

A suitably qualified Environmental Clerk of Works (EnvCoW) will monitor the construction works to ensure that the CEMP and associated mitigation measures are being implemented effectively.

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 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.

During the operational phase an Operational Environmental Management Document (OEMD) will be in place, this will include surface water management and pollution prevention measures which follow best practice and comply with SEPA guidance.

The Applicant 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.

Biodiversity

Introduction

The biodiversity assessment considered the impact of the proposed extension of the Hatston Pier on designated sites, marine and terrestrial habitats, and protected wildlife, including birds, marine mammals, otters and fish. The assessment was carried out according to the latest guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) by experienced and competent ecologists who are all Members of CIEEM and follow its Code of Professional Conduct.

A number of studies were conducted to gather baseline information regarding sensitive features within the site and wider area. This included a review of desk-based information available from biological records and bodies such as and Marine Directorate. Field surveys were also conducted to identify marine and terrestrial habitats, determine how birds use the site and if there were protected species such as otter present. Computer modelling

was used to determine how noise generated through construction activities would travel underwater.



Above overview of assumed piling/blasting locations and approximate areas to be dredged

Designated sites in proximity to the development and scoped into the shadow Habitats Regulations Appraisal for assessment include:

- North Orkney Special Protection Area (SPA)
- Orkney Mainland Moors SPA
- Scapa Flow SPA
- Loch of Stenness SAC
- Faray and Holm of Faray Special Area of Conservation (SAC)
- Sanday SAC

Habitats in close proximity to the development include:

- Burns and canalised burns
- Kelp and Seaweed communities on sublittoral sediment
- Seapens and burrowing megafauna in ciralittoral fine mud
- Species/species groups including Otter, Gray & harbour seal, harbour porpoises, Minke whale, Dolphinids (Risso's dolphin, long-finned pilot whale, killer whale), Basking shark, Marine fish and Commercial Fisheries.



Above Dwarf Minke Whales

As previously noted, 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 21st January, 5th March and 27th March 2025.

Supplemental Environmental Information

Supplemental Environmental Information was requested by Orkney Islands Council Planning and NatureScot which required an update to the shadow Habitats Regulations Appraisal (sHRA) and preparation of a Seal Risk Assessment.

The Supplemental Environmental Information Report (dated September 2025) contained the following information (with assessment provided within the Appendices as noted within the introduction of this NTS):

- Habitats Regulations Appraisal (Appropriate Assessment)
- Vessel Movements (Existing Baseline for Hatston)
- Vessel Movements During Construction
- Vessel Movements During Operation
- Effects of Increased Vessel Movements on Birds and Seals
- Effects of Drilling and Vibro-piling on Birds and Seals
- Effects of Blasting on Birds and Seals

- Underwater Noise Producing Activities – Auditory Injury
- Effects of Dredging on Birds and Seals
- General Disturbance (Seals)
- HRA in Combination Effects

Impact Assessment and Significance of Effects

In order to assess the significance of impacts, consideration was given to the predicted duration, frequency, timing, geographical extent and reversibility of impacts as well as the number of individual animals in a population who would be exposed, or the area of habitat affected.

The proposed works are outside of all the designated sites, with the exception of the North Orkney SPA, which overlaps with the site boundary. The protected sites considered within the assessment are designated for mobile species such as marine mammals or sea birds which could use the waters within and surrounding the site for finding food, resting, or travelling between other important habitats. It was considered that the area of habitat and number of individuals likely to be affected were small in comparison to the total habitat range and populations present within the Orkney Isles and that with some mitigation, no significant effects would occur.

A small area of Priority Marine Habitat, 'kelp and seaweed communities on sublittoral sediment' will be lost within the development of the footprint. This is un-avoidable; however, the habitat is relatively widespread within the Orkney Isles and the overall conservation status will not be affected.



Above View towards Hatston with seaweed in foreground

The site is not considered to be a key otter habitat. They might travel through it or look for food within nearby areas, but it is not important for breeding or providing shelter. They could be disturbed and avoid using the site during the construction works but this won't affect the local population as there is alternative habitats they can use.

For marine mammals and fish, the main impacts arising from construction are from underwater noise generated by activities such as blasting, piling and dredging. This noise can result in changes of behaviour, disturbance, injury or even death when experienced at close range. As these species can all swim freely within the water, as long as they are not too close to the source of the noise when it commences, they will be able to move away before it causes an issue.

Fish kept in commercial cages do not have the option to swim away and so additional mitigation will be needed to avoid causing harm to nearby caged salmon.

There is a clear decline in harbour seal populations based on reviews of population data over the years. However, although the cause for the decline has not yet been identified, coastal developments or vessel movements are not considered to be linked.

Some of the activities associated with the Hatston development (blasting, dredging, vibration piling and vessel movements) have

the potential to cause disturbance, injury or in extreme circumstances, death to individual seals. For the most part the activities associated with the proposed development will result in temporary avoidance of a small area of habitat available to individuals. It is considered that with mitigation described in the Seal Mitigation Plan (SMP) within the SEIR, the risk of death and injury this will be greatly decreased. It is not possible to rule out some level of disturbance to individuals which might be present within the area.

With reference to the Seal Risk Assessment, it is considered unlikely that disturbance of seals using haul outs and designated sites (SAC/SSSIs) would occur due to the distance from the works, however, it is possible that seals from the haul outs and designated sites may be present within the waters around the development and thus could be disturbed during in water works. However, the works are temporary in nature and mitigation will be implemented to avoid or reduce negative effects on the favourable conservation of the local seal population.

During the HRA Appropriate Assessment (AA) process it was possible to rule out adverse effects from impacts to the assessed designated sites.

Once the extension is operational, the main impact to marine mammals and large fish such as basking shark is from the increased risk of vessel strikes. The predicted increase in vessel movements is relatively small in comparison to current levels and mitigation will reduce the overall risk.

For the majority of features assessed, the impacts were considered not to be significant at any level once mitigation was taken into consideration. The loss of Priority Marine Habitat within the footprint of the development is considered to be significant

within the context of the site but not the wider Orkney Isles.

Proposed Mitigation Measures

A plan detailing all the mitigation requirements for the project will be drawn up ahead of construction and its implementation during construction will be audited by an independent person. This will include a detailed biosecurity plan to avoid the spread of marine invasive species as well as pollution prevention measures.

To avoid the risk of injury or death to wildlife from activities generating loud noises underwater, a designated person will visually search within a buffer area to make sure there aren't any sensitive species present.



Above Marine Mammal Observer

Underwater noise monitoring will be used to aid the search as well. Activities such as piling will also employ a 'soft start' approach, where the machinery starts up slowly and therefore more quietly before ramping up, giving mobile species a chance to move out of the area. Noise dampening devices such as bubble curtains will also be considered to reduce the distance the noise can travel over, protecting nearby commercial fisheries.

To reduce risk to offshore wildlife collisions, a Vessel Management Plan will be implemented

with agreed routes and safe speed limits for all vessels using the site during construction and operation.

Although the above mitigation will reduce the risk of disturbance to marine mammals and basking shark, it cannot be ruled out entirely so a derogation licence will be required for those species which are legally protected.

Habitat enhancements will also be made to compensate for the small areas which will be lost and provide some additional gains for biodiversity. These enhancements will include:

- Provision of bird nest boxes suitable for a mix of marine and terrestrial species;
- Enhancement of onshore habitats to increase the floral and faunal diversity through small tree and scrub planting, sowing of coastal grassland seed mixes and implementation of appropriate management.
- Enhancement of marine habitats through inclusion of artificial structures on the pier infrastructure and rock armour, mimicking rock pools or rocky reef habitats. These will support a diverse range of intertidal flora and faunal species.
- Creation of onshore insect shelters such as rock piles, dead wood piles or custom-made bug hotels.
- Progression of a native oyster (*Ostrea edulis*) re-introduction programme in conjunction with other proposed developments by OICHA.
- Funding to a PhD, which commenced in September 2024, which will investigate "*The Native Oyster (Ostrea edulis) Restoration Opportunity: optimising site selection modelling and the effect of climate change on oyster restoration.*"

Monitoring will be conducted throughout construction and operation of the pier to

check that mitigation and enhancement measures are achieving their proposed aims. If this is not the case, the mitigation strategies will be reviewed.

Archaeology and Cultural Heritage

Introduction

The assessment of direct impacts on the historic environment and on historic assets potentially indirectly affected by the proposed development affecting their setting was a desk-based exercise making use of project specific desk-based research, site visits, Zone of Theoretical Visibility (ZTV), assessment of regular sidescan sonar surveys undertaken on behalf of OICHA and assessment of stratigraphic records of core samples collected during geotechnical survey work.

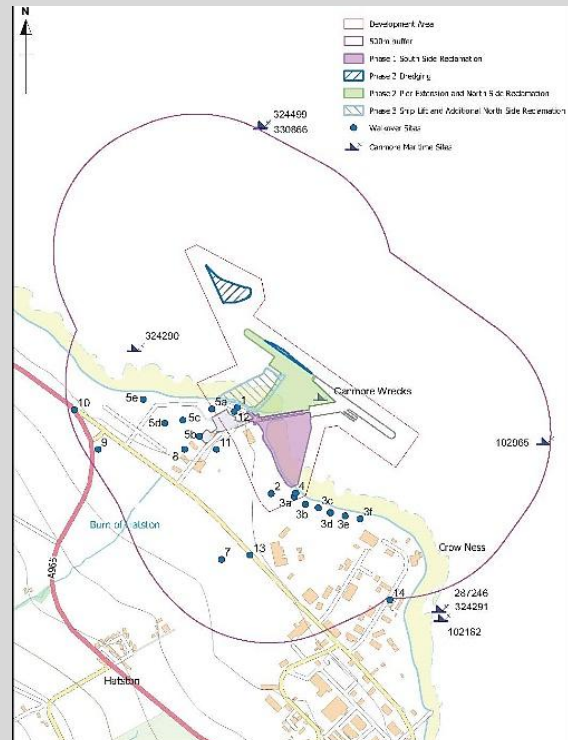
Impact Assessment and Significance of Effects

Six heritage assets or sites were identified within the onshore area of the site, although only one, a previously excavated souterrain, had the potential to be damaged by the development, with the remaining assets within the site located out with areas of proposed intrusive development. At the very worst the development would result in the removal of a limited section of any existing remains of the souterrain, which would not result in a significant impact.

The potential for impact upon previously unknown archaeological assets, of low

importance, was identified, which again would not result in a significant impact.

No known marine heritage assets were identified within the offshore area of the site or immediately adjacent to the site.



Above Historic Environment Assets

The risk of unknown marine and intertidal historic environment assets in the offshore area of the site is reduced because of the ongoing marine geophysical surveys conducted and reviewed. However, it is not possible to entirely discount their presence, as smaller artefacts/wreckage of stone, non-ferrous materials such as aluminium and wood might not be picked up by such surveys. The likelihood of impact on such assets is considered low. The proposed mitigation will ensure that if any impact did occur, it would not be significant.

No submerged palaeoenvironmental deposits were identified within the site following specialist review of the initial geotechnical investigations. No such deposits are known from other studies and the likelihood of impact on any such deposits is low. The

proposed mitigation will ensure that if any impact did occur, it would not be significant.

The potential that the site could have long-term effects on the setting of onshore historic environmental assets, affecting the way in which the assets are understood, appreciated and experienced, and thus the significance/ importance of the historic assets, was considered. A number of assets were assessed, and no significant impacts were identified.

Proposed Mitigation Measures

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 Planning and MD-LOT and fully implemented during the construction phase of the project. An Archaeological Watching Brief undertaken during any ground-breaking works in the vicinity of the known souterrain would mitigate any direct impacts through preservation by record; this could be written into the WSI/PAD.

The OICHA will contact the UK Hydrographic Office to mark the Grumman Wildcat wreck site on marine charts to prevent mariners from approaching, mitigating operational impacts.

Seascape, Landscape and Visual

Introduction

A seascape, landscape and visual impact assessment has been undertaken which considers the potential landscape (including townscape) and visual effects of the proposed development.

Impact Assessment and Significance of Effects

Potential effects of the proposed development have been considered for both the construction phase and the operational phase. Effects would potentially arise from permanent alterations which would include the extension to the existing pier and the areas of reclaimed land. During operation, effects would also potentially arise due to the activities that would be facilitated by the proposed development for example cargo storage, the use of cranes and movement of maritime vessels.

Construction activities would be centred around the existing Hatston Quay. During construction, one coastal character area and one landscape character area were identified as likely to experience effects as a result of the proposed development. However, these impacts would be contained to a relatively small area of the landscape character and would be temporary in that they would only last for the duration of the construction period. Therefore, the assessment of construction effects are determined to be Minor Adverse, no significant landscape or coastal character effects have been identified.

Visual effects have been assessed against eight representative viewpoints. Seven of the eight viewpoints were assessed as likely to experience Minor Adverse effects as a result of the proposed development and one was

likely to experience no effects. No significant visual effects have been identified.



Above View from Blackhill Road towards Hatston Quay and Kirkwall

Proposed Mitigation Measures

With the short-term impacts associated with construction, no measures are proposed.

Landscape design drawings will be submitted to OIC Planning for agreement.

Operational phase mitigation measures are included in the design of the proposed development. These measures include planting along the coastal front at the back of the new extended quayside, clearly defined visitor parking provision, occasional lengths of fencing, coastal seating (including the provision of rest seating between parking areas and the quayside for pedestrian users of the ferries), signage, and visitor information.

These changes would help create a welcoming environment when pier users transit through Hatston and integrate the new proposed development.

Socio-Economics

Introduction

An assessment was undertaken of the likely potential socio-economics effects associated with the short-term (construction) and long-term (operation) of the proposed development.

The assessment considered potential social and economic impacts from the proposed development at the site, in the local area, and on the wider population and environment of Scotland. The assessment considered:

- The local Orkney communities
- Local businesses
- Marine users
- Other local community assets

Impact Assessment and Significance of Effects

The assessment identified potential effects during both construction and operational phases including:

- Employment opportunities
- Local spend opportunities

- The ability of existing local businesses to access the pier to perform their job.
- Capacity of the local community and businesses to accommodate the inflow of workers and visitors associated with the development.

A summary of construction and operational phase effects is provided in the tables below.

Summary of the identified likely construction effects

Identified Construction Impacts	Identified Effects	Residual Effects
Likely temporary increase in employment / jobs for local, regional and national workers	Slight beneficial	Moderate beneficial
Likely economic impacts to the local businesses as a result of construction workers temporarily residing in Orkney and associated spend	Slight beneficial	Slight beneficial
Potential impact on access and operational activities of local businesses and marine users currently using the existing pier.	Slight adverse	Slight adverse
Potential impact on capacity of local accommodation during peak season and / or during key events and reducing availability of visitors / attendees / organisers outwith Orkney Islands Council area.	Moderate adverse	Slight adverse
Potential impact on the tourist offseason in relation to additional income.	Slight beneficial	Slight beneficial

Summary of the identified likely operation effects

Identified Operation Impacts	Identified Effects	Residual Effects
New, permanent jobs for local workers and wider opportunities	Slight beneficial	Moderate beneficial
Benefits to the Orkney economy	Slight beneficial	Moderate beneficial
Continued access and operations for existing local businesses	Slight adverse	Slight beneficial
Local community capacity and council services	Slight adverse	Slight adverse

Following review of the above, it is considered that National Planning Framework 4 (NPF4) Policy 25 is met.

“Policy 25 a) Development proposals which contribute to local or regional community wealth building strategies and are consistent with local economic priorities will be supported. This could include for example improving community resilience and reducing inequalities; increasing spending within

communities; ensuring the use of local supply chains and services; local job creation; supporting community led proposals, including creation of new local firms and enabling community led ownership of buildings and assets.”

Proposed Mitigation

Measures

Proposed mitigation measures can be summarised as follows:

- Construction
 - In terms of employment opportunities, a requirement upon the contractor to provide local jobs and local training to benefit the local communities.
 - We recommend consulting with local businesses in Orkney, including local tourist groups, to avoid a large arrival and presence of workers during peak tourist season and large-scale events on the island. Engagement with local businesses need to also consider if and how businesses will be able to access the pier during the construction and operation of the development and how these businesses day-to-day activities can continue should access to the pier be restricted. Any changes in accessing the pier and its surroundings (such as a road closure) should be communicated to local businesses (including if these changes to access are short term).
 - We recommend engaging with the Orkney Islands Council to ensure that the ability of council services and infrastructure (such as housing and public facilities) is sufficient to accommodate a large inflow of workers.
 - Continue discussions with Cooke Aquaculture, operators of the Quanterness fish farm, regarding the Hatston development proposals and development of Construction
- Operation
 - New permanent employment opportunities should be made available to island residents first, in combination with appropriate training, support and access to higher skill / paid jobs.
 - We recommend continuing consultation with Orkney Islands Council and to undertake ongoing monitoring of employment forecasts to inform housing need and implications for education and health.
 - We recommend ensuring that the operation of the development will not prevent existing local businesses accessing the new pier and continuing their current businesses activities. Ideally the development will improve how local businesses can access and use the pier.

Environmental Management Document.

- Community benefits should be maximised, such as the provision of apprenticeships, training, and work experience opportunities, especially for people between the age of 18 – 24.

Supporting Assessments

Accidents & Natural Disasters

Introduction

Major accidents and/or disasters should be considered where the development has the

potential to cause loss of life, permanent injury and or temporary or permanent destruction of an environmental receptor. This section considered the potential for such eventualities in the context of the new quay and laydown area at Hatston.

Impact Assessment and Significance of Effects

The potential for major accidents and/or disasters was considered in accordance with the recent Institute of Environmental Management and Assessment (IEMA) guidance document “*Major Accidents and Disasters in EIA: A Primer*”, hereafter referred to as “The Primer”. Informed by The Primer, the assessment considered the following:

- The development itself was considered in regard to being a source of major accidents or vulnerability to disasters;
- Interactions with external hazards or associated activity were also considered; and
- If a major accident or disaster occurred would the existence of the development increase risk of significant effects to environmental receptors.

In accordance with the relevant regulations, the movement of explosive materials is strictly controlled, and the storage of such materials is not permitted on site. The Site is not located within an area of significant seismic activity, nor are climatic factors prone to creating natural disasters such as tsunamis, hurricanes or catastrophic fluvial flooding.

It should also be noted that:

- Orkney Islands Council Harbour Authority have an existing Safety Management System, which aims to enhance safety within the Harbour Authority area by ensuring that all marine navigation hazards are identified, control measures are in place, and levels of risks are acceptable.

- The Harbour Authority are compliant with the Department for Transport; Port Marine Safety Code; and
- The OIC Marine Services division of OICHA ensures that all operations under their jurisdiction are done in such a manner so as to keep safe its users, the public, the harbour area and the surrounding environment.

The assessment, conducted in accordance with The Primer, concluded that:

1. The development itself is not a source of a hazard that could result in a major accident and/or disaster.
2. The development does interact with external sources of hazard as the creation of additional quay will result in additional vessel movements. Vessel movement hazards were assessed further.
3. The development will not increase the risk of significant effects due to other hazards occurring.

Regarding the potential hazards associated with vessel operations, the Navigation Risk Assessment (NRA) for the site was updated to take into account the proposed development. All construction and operation phase hazards identified were assessed in accordance with the International Maritime Organisation Formal Safety Assessment methodology. No hazards were found to be in the High Risk or Significant Risk band. The NRA concluded that both existing and anticipated future traffic levels will be relatively low with conflicts between different harbour users also likely to be low.

On the basis of the NRA carried out for the Hatston development the risk of major accident and/or disaster from shipping associated with the development is not considered significant.

Proposed Mitigation Measures

As no significant adverse impacts were predicted, the only mitigation considered necessary is the ongoing updating and review of existing protocols described above, either in response to legislation changes, if port operations are modified in the future, or as part of normal OICHA periodic review.

Airborne Noise

Introduction

A noise impact assessment (NIA) was carried out for the proposed development. Noise from the proposed development has the potential to impact surrounding existing residential receptors. Assessment of both construction noise and operational noise has been included in the EIA to address the requirements of the Orkney Islands Council and Marine Directorate. This has been supported by measurements of baseline background noise at areas representative of the most exposed properties surrounding the development site.

Impact Assessment and Significance of Effects

Construction Phase

Significant noise generating construction activities associated with the construction of the pier extension and laydown area, including blasting, piling and dredging have been assessed. There are no works scheduled to be carried out over a 24-hour period. All activities are expected to have finished by 7 pm on a daily basis.

The outcome of the assessment is that Neutral impacts are predicted during all construction phases. There are no significant adverse impacts in EIA terms.

The change in road traffic noise from Heavy Goods Vehicle (HGV) movements associated with import of infill material has been

assessed for residential receptors located along the routes to and from the site from Heddle and Cursiter quarries.

The maximum change in noise level as a result of construction HGVs is predicted to be less than 1dB along the routes. The maximum significance of effects as a result of the construction traffic is Slight, which is not significant in EIA terms.

Construction activities have been highlighted in the Airborne Noise Impact Assessment, and noise contour maps have been prepared as having noise creation levels of >65dB at source, with noise levels decreasing over distance to below 50dB 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.

Operational Phase

The operational noise assessment considers the increase in potentially significant noise generating activities post development completion.

The following activities have been identified as having the potential to increase noise levels in the surrounding area;

- Increased ship berthing and mooring, including use of onboard ship generators;
- Ship loading / unloading activities;
- Movement of materials, including renewables components between ships and laydown area;
- HGV movements associated with increased activities;
- Boat lifting and transport between pier and storage areas.

An assessment of operational noise has been conducted. During the day and night-time periods noise levels are predicted to increase

by up to 1dB at surrounding residential receptors as a result of the increased operational activities at Hatston. The maximum significance of the changes in noise levels is Neutral / Slight, which is not significant in EIA terms.

Proposed Mitigation Measures

No significant adverse impacts are predicted during the construction phase.

Site activities during the construction phase will be carried out during the specified working hours and will follow best practice noise management techniques. No additional mitigation measures are proposed.

No significance adverse impacts are predicted during the operational phase. No mitigation measures are therefore proposed.

Air Quality

Introduction

A construction dust risk assessment was completed to allow for mitigation measures to be identified during the construction phase.

Impact Assessment and Significance of Effects

Potential impacts were identified and can be summarised as follows:

- Pollutant emissions:
 - The numbers of HGV movements associated with the construction phase fall below the assessment criteria and therefore a detailed assessment is not required.
 - The nearest residential property is over one kilometre from the development and based on the relevant guidance criteria, no further assessment is required on the number of ship movements associated with the proposed development. An adverse impact is not considered likely on the

North Orkney Special Protection Area (SPA).

- Dust impacts:
 - Potential impacts upon local residents during the construction phase from fugitive dust emissions (emissions released into the air from industrial activities) has been identified.
 - This assessment concluded that there was a low risk of dust impacts from earthworks and construction activities, due to the distances of sensitive receptors from the activities. However, there was a medium risk of dust impact from trackout activities (sediment leaving or being tracked out from the construction site as dirt, mud or other sediment attached to vehicles).

Proposed Mitigation Measures

To further reduce any potential emissions to air it is recommended that renewable energy sources are considered (wind power, battery storage, tidal and hydrogen fuel) that could be used to power ships at berth (i.e. shoreside power supply).

Mitigation measures to reduce any impacts from dust emissions associated with trackout have also been proposed. These measures will be included within the Construction Environmental Management Document, which will be produced by the contractor prior to construction and signed off by Orkney Islands Council Planning.

Carbon, Climate Change and Greenhouse Gas Emissions

Introduction

The purpose of this assessment was to establish the carbon emissions associated with the construction and maintenance of the proposed development.

PAS 2080 - Carbon Management in Infrastructure is a specification for whole life carbon management within the infrastructure sector (transport, energy, water, waste and communications) and sets out the general principles of a carbon management process, to promote carbon and cost reduction in infrastructure delivery. The framework looks to reduce carbon and cost through more intelligent design, construction and use.

Impact Assessment and Significance of Effects

The total carbon emission for the project is 84,641 tonne of carbon dioxide equivalent (tCO₂e) for both construction and operational phases.

Emission arising from the construction phase are driven by materials and total 83,590 tCO₂e. Therefore, these are the main contributor to climate change. Emissions associated with core fill and quay work are the most carbon intensive at this stage.

Total carbon emissions associated with the operation phase are estimated to be 1,051 tCO₂e. Core fill had the highest emission total associated with the operational stage. Dredging has no emissions associated with operation as it is a one-time activity that occurs during the construction phase.

Climate change projections suggest a general trend of warmer, drier summers and milder, wetter winters. With the development in close proximity to the coastline, it is likely that sea level rise and storm surges, as an indirect impact to the projected changes in climate, will become more of a threat to the development in Orkney. The development has therefore been designed at a height that sustains current high tide and projected sea level rise height.

Proposed Mitigation Measures

Carbon mitigations measures can be summarised as follows:

- **Construction:**

- **Materials:** Using materials with a lower carbon impact (for example, low carbon concrete or recycled steel) would significantly reduce emissions. The proposed development will aim to use material sourced from nearby local commercial quarries. Doing so will minimise emissions associated with transporting materials to site during the construction phase.
- **Material efficiency:** Only use the necessary quantity and type of materials. Build efficiently and optimise the use of materials through design, procurement, and the construction phase.
- **Construction site management:** Sourcing energy efficient plant, regular vehicle maintenance and putting in good practice site procedures (for example, reducing vehicle/plant idling) to make operations more efficient.
- **Site Waste Management Plan:** Promoting the reduction and effective management of waste during construction, following the waste mitigation hierarchy and relevant national waste reduction policies. This will fall within the Construction Environmental Management Plan that will be produced.
- **Operation**
 - Consideration to measures of emission reduction should follow the Energy Hierarchy to reducing operational energy consumption detailed in the figure below.



Above The Four Tier Approach to the Energy Hierarchy

In terms of **climate change resilience**, this has been incorporated in the design of the development. It is therefore assumed that the development will be resilient to projected climate change and associated impacts over the assessed 60-year period.

Transport

Introduction

Based on information supplied on the operation of the proposed development, it is considered that the construction phase will generate a higher level of traffic than the operational phase.

Impact Assessment and Significance of Effects

The proposed development aims to improve the space at the existing dock and allow for less constricted ferry timetabling. Currently no other boat is able to dock when the cruise liner is in port. There will be no increase in parking provision on site.

The operational traffic will include additional staff however all traffic will be lower than that of the construction phase.

Early indications suggest that the traffic impact of the proposed development is insignificant, with the threshold showing a lower than 30% percentage increase in traffic levels.

The estimated HGV traffic is 6 to 7 HGV per hour for Phase 1 and Phase 2, and 3 to 4 HGVs an hour for Phase 3. The assessments show there is an 8% or less increase on all arms of the road network for each phase of the proposed development, which is considered to be insignificant. Therefore, it is predicted there will be a negligible impact on the surrounding road network.

Options to promote sustainable transport have also been considered, such as the provision of electric vehicle charging points, electric bicycles, electric vehicles as part of car-pooling schemes and linkages with existing and future public transport, walking and cycling networks.

To address the sustainable transport commitments, drawings showing off site active travel provisions are to be submitted for agreement with OIC Planning.

Overall, the likely land-based traffic impacts resulting from the construction phases of the proposed development are insignificant, and therefore no detailed assessment has been provided. The traffic generated during the operation phases is lower than that in the construction phase and will therefore also have an insignificant impact on the surrounding road network.

Proposed Mitigation Measures

The intention to deliver active travel measures and active travel infrastructure for the users of the existing/Hatston facilities is proposed.

To address the above, drawings are to be submitted for agreement with OIC Planning.

EIAR

Conclusions

Schedule of Mitigation

The mitigation and enhancement measures identified by the specialist environmental studies throughout the EIA and SEIR process are compiled to form a Schedule of Mitigation. The Schedule is designed to provide a comprehensive summary of all mitigation measures that would require to be carried out in the construction and operation of the proposed development, to ensure that the environmental assessment outcomes discussed throughout the EIAR and SEIR are reached, e.g. to ensure that significant adverse effects are avoided where applicable and possible.

The Schedule of Mitigation would form the basis of the subsequent Construction Environmental Management Document (CEMD).

The CEMD would be a working document which would be updated throughout the construction phase of the project. It would also provide a clear roadmap of the key roles and responsibilities during construction works. An

Environmental Manager would be identified who would be responsible for the implementation of the CEMD ensuring that all measures identified within the Schedule of Mitigation are applied and adhered to.

The CEMD would be approved with the regulators prior to construction works commencing.

Summary of Significance of Effects

This NTS reports upon the findings of the EIAR and SEIR, which have been shaped by survey, consultation and assessment. The purpose of the EIAR and SEIR, and the EIA process, is to establish potentially significant environmental effects and avoid or mitigate these where applicable.

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

Summary of Significance of Effects (Residual Post-Mitigation)

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	Not Significant	Not Significant
Socio-Economics	Not Significant	Not Significant
Topics Not Requiring Full EIA (inc. Accidents and Natural Disasters, Airborne Noise, Air Quality, Carbon, Climate Change and Greenhouse Gas Emissions and Transport.	Not Significant	Not Significant