Hunterston Construction Yard
Scoping Report

September 2023

CONTROL SHEET

Client: Clydeport Operations Limited
Project Title: Hunterston Construction Yard
Report Title: Scoping Report
Document number: 13561
Project number: 176482

Issue Record

Issue	Status	Author	Reviewer	Approver	Issue Date
1	Final	Jeet Shah	E Cormack	E Cormack	04/10/2023

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.

Contents

Appendices

Figures

Tables

1 INTRODUCTION

1.1 Background

EnviroCentre Ltd has been appointed by Arch Henderson on behalf of Clydeport Operations Ltd., to undertake an Environmental Impact Assessment (EIA) in relation to the upgrade of the existing Hunterston Construction Yard (HCY) into a harbour facility with a large working platform suitable for renewable industries. The purpose of this report is to seek a Scoping Opinion from the appropriate Regulatory Authority as required by The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 and The Marine Works (Environmental Impact Assessment) Regulations 2017).

This Scoping Report relates to the enabling phase of the development, which is the dredging (including ongoing maintenance dredging), infilling of the dry dock, quay wall construction, land reclamation/ reprofiling of existing land, utilities and associated temporary staff welfare and temporary operations office accommodation. This report has been laid out as follows:

- Section 1 introduces the applicant, the project team and the regulatory background to which this Scoping Request is made. It also sets out the approach to EIA based upon the legislative context;
- Section 2 sets out a description of the proposed development upon which to base an appraisal of potentially significant environmental effects upon;
- Sections 3 – 14 discuss potentially significant environmental effects on a topic-by-topic basis; and
- Section 15 draws together the conclusions reached for each topic considered in the Scoping Report.

1.2 The Applicant

Clydeport Operations Ltd. (Clydeport) is a subsidiary of Peel Ports Ltd. and the Statutory Harbour Authority for the Clyde area. Clydeport's operational marine division runs key ports on the West Coast of Scotland providing a wide range of port facilities and associated services.

In September 2021, Clydeport issued the Hunterston PARC Development Framework[1] for consultation purposes. The framework was approved by North Ayrshire Council Planning Committee in December 2021. The approval of Hunterston PARC ensures that the Development Framework will inform development proposals and will be a material consideration in the decision-making process.

HYC is part of Hunterston PARC and is located between the Hunterston Coal Terminal and Hunterston B Nuclear Power Station, to the south of the village of Fairlie (Refer to Drawing No. 176482-GIS004, Appendix A)

1.3 Project Team

This Scoping Report has been prepared by EnviroCentre Ltd with input from other organisations shown in Table 1-1.

[1] Peel Ports Group, 2021, Hunterston PARC Development Framework December 2021

Table 1-1: The Project Team

Topic	Specialist
EIA, Water Environment, Biodiversity, Noise, Accidents & Natural Disaster, Air Quality, Archaeology and Cultural Heritage, Land Quality, and Population and Human Health, Waste, Material Assets and Climate Change Assessments	EnviroCentre Ltd.
Planning	Cameron Planning Ltd.
Seascape, Landscape and Visual (SLV), Carbon, Climate Change and Greenhouse Gas Emissions, Socio-economics and Transport	SWECO Ltd.
Engineering Design	Arch Henderson LLP

1.4 The Legislative Context

The proposed development at HCY is subject to local, national, and European legislation of which the following are the principal legislation relevant to the current development programme:

- The Harbours Act 1964;
- The Town and Country Planning (Scotland) Act 1997, as amended by the Planning etc. (Scotland) Act 2006 – for works on land and to the mean low water mark. An application for Planning Permission will be submitted and thereafter be determined by North Ayrshire Council;
- The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (hereafter referred to as 'the EIA Regulations');
- The Marine (Scotland) Act 2010 (Marine Licences) – Under Section 20(1) of the Marine (Scotland) Act 2010 (from 0 -12nm) and Section 65(1) of the Marine and Coastal Access Act 2009 (from 12 – 200nm)[2]. A marine licence from Scottish Ministers is required if organisations intend on carrying out certain acts in the Scottish marine area such as:
    - the deposit or removal of a substance or object;
    - Construction, alteration and improvement works,
    - Dredging, and
    - The deposit or use of explosives.
- Marine Scotland stipulate that any associated dredging works taking place that involves disposal at sea, then a Marine Licence for Sea Disposal may also be required; and
- The Marine Works (Environmental Impact Assessment) Regulations 2017) (for works below the mean low water mark) (hereafter referred to as 'the Marine EIA Regulations').

As the proposed development contains elements which are above and below Mean High Water Springs (MHWS) consents will be required from both the Council and Marine Scotland.

In terms of Planning Policy, the current Development Plan for Hunterston comprises the adopted North Ayrshire Council Local Development Plan 2 (LDP), 2017, and National Planning Framework 4 (NPF4[3]) which was adopted by the Scottish Government in February 2023.

Hunterston Strategic Asset is defined as a national development within NPF4. Development associated with this asset is therefore classed a 'National Development' in terms of the Development Hierarchy Regulations, 2013.

The national development status confirms the strategic importance of Hunterston port and the adjoining former nuclear power station development and seeks to repurpose the area, which has:

> *"long been recognised as a strategic location for the port and energy sectors given its deepwater access and existing infrastructure. Hunterston is a key site, anchoring other opportunities around the Firth of Clyde."*

[2] Circular 1/2015 The Relationship Between the Statutory Land Use Planning System and Marine Planning and Licensing - http://www.gov.scot/Publications/2015/06/5851/4

[3] https://www.gov.scot/publications/national-planning-framework-4/

NPF4 notes that the area:

> *"offers potential for electricity generation from renewables, and a variety of commercial uses including port, research and development, aquaculture, the circular economy, and environmental and economic opportunities around nuclear decommissioning expertise."*

It must also be noted that the Hunterston Construction Yard benefits from a Certificate of Lawful Existing Use, approved by North Ayrshire Council under reference 22/00717/CLE on 23rd November 2022, which states that the use of the whole of the Construction Yard site for Use Class 5 General Industrial use, is certified as lawful.

Under The Town and Country Planning (Use Classes) (Scotland) Order 1997, Use Class 5 General Industry is defined as:

> *"Use for the carrying on of an industrial process other than one falling within class 4 (business)."*

This Certification means that the use of the Construction Yard for general industrial purposes does not require the express benefit of planning permission. The operational use of the Yard for construction purposes, falling within the meaning of general industrial activity, will not require planning permission.

The Certificate of Lawful Use approved by the planning authority was granted on the basis of evidence presented in the Certificate application documents, together with the Council's own historic evidence of the use of the site. The evidence shows that HCY has been operated for a period of circa 40 years as a fabrication and manufacturing yard. The planning authority considered the planning history background to the use of the yard, including the fact that there would be periods of inactivity between lengthy periods of manufacturing activity for various different industrial uses. The granting of a Certificate of Lawful Use is in recognition of the site's planning history and removed the need to secure planning permission for operational activities within the meaning of Use Class 5. It does not however extend to the provision of buildings and structures on site that would require planning permission.

The erection of buildings and other activities outside the description of general industrial use, will therefore likely require planning permission, except in circumstances where any such activity would fall within any class of development under The Town and Country Planning (General Permitted Development) (Scotland) Order 2011.

Part 8 of the General Permitted Development Order, 2011, relates to Industrial and Warehouse Development and covers the following, relevant, Classes of development:

Class 23 - The extension or alteration of an industrial building or a warehouse.

Class 24 - (1) Development carried out on industrial land for the purposes of an industrial process, consisting of:

(a) the installation of additional or replacement plant or machinery;

(b) the provision, rearrangement or replacement of a sewer, main, pipe, cable or other apparatus; or

(c) the provision, rearrangement or replacement of a private way, private railway, siding or conveyor.

Class 25 - The creation of a hard surface within the curtilage of an industrial building or warehouse to be used for the purpose of the undertaking concerned.

Under Class 24, development is not permitted where:

(a) it would materially affect the external appearance of the premises of the undertaking concerned; or

(b) any plant or machinery would exceed a height of 15 metres above ground level or the height of anything replaced, whichever is the greater.

Whilst the use of the site benefits from the Certificate of Lawful Existing Use in relation to the use of the yard, the erection of buildings will require an express grant of planning permission.

1.5 Screening Opinion

It is identified that the project is a Schedule 1 development as it falls within the description of Paragraph 8 (2) of both the terrestrial and marine EIA regulations. The paragraph refers to:

> "*Trading ports, piers for loading and unloading connected to land and outside ports (excluding ferry piers) which can take vessels of over 1,350 tonnes*".

Accordingly, an EIA is automatically required to support applications under both the Town and Country Planning (Scotland) Act and the Marine (Scotland) Act.

Moreover, as noted in Section 1.4, above, HCY benefits from an approved "Certificate of Lawful Use" for Class 5 general industrial activities. It is therefore considered that the operational use of the yard for industrial or construction purposes is already permitted, in broad terms. Both marine and planning licences/consents will nevertheless be required to cover the construction phase of the proposed development.

1.6 Scoping under the EIA and Marine EIA Regulations 2017

As the proposals fall under the description of a Paragraph 8 (2), Schedule 1 development of both the EIA and Marine EIA Regulations, we request a Scoping Opinion from both North Ayrshire Council (NAC) and MDLOT. This Scoping Report is therefore submitted to both regulatory authorities with the intention that it should form the basis of their Scoping Opinion.

The general environmental topic areas to be considered within the context of EIA are summarised below: -

- Accidents & Natural Disasters;
- Noise and Vibration;
- Air Quality;
- Archaeology & Cultural Heritage;
- Land Quality;
- Biodiversity (e.g. Fauna and flora);
- Climate (e.g. greenhouse gas emissions, carbon, impacts relevant to adaptation;
- Socio-Economics;
- SLVIA;
- Transport, Shipping & Navigation; and
- Water Environment (e.g. hydromorphological changes, quantity and quality).

Both terrestrial and marine EIA Regulations state that a developer may ask the relevant regulatory body for their formal opinion on the information to be supplied in the EIA Report (a 'scoping opinion'). This provision allows the developer to be clear about what the regulatory authority considers the significant effects of the development are likely to be and, therefore, the topics on which the EIA report should focus."

Additional objectives of EIA Scoping are to:

- Establish the availability of baseline data;
- Request that statutory consultees provide any relevant environmental information relating to the site and surrounding area;
- Define a survey and assessment framework through which comprehensive impact assessment can be achieved; and
- Provide a focus for the planning authority and the consultees' considerations – in terms of:
  - Potential impacts to be assessed;

- Assessment methodologies to be used;
- Other areas which should be considered; and
- Any other environmental issues of perceived concern.

Each regulation requires that any scoping request should be accompanied by:

- A description of the location of the development, including a plan to identify the land;
- A description of the proposed development, and of its likely significant effects on the environment; and
- Such other information or representations as the developer may wish to provide or make.

1.7 General Approach to Assessment

The project team benefits from significant experience and technical expertise in environmental assessment and development of such projects and will ensure that the EIA will be carried out in accordance with the EIA Regulations.

The potential environmental impacts will be identified and assessed in the EIA Report, based upon the recommendations of the technical EIA team, consultation with statutory consultees, other interested parties and local communities. Topic assessments will be undertaken using best practice methodology, following industry guidelines whenever appropriate and carried out by specialists with relevant professional experience.

Schedule 4 of the EIA Regulations states the information to be included within the EIA. Each assessment will consider these criteria and assess them whenever appropriate to the proposed development. This also highlights that the emphasis of the EIA process should be on assessing likely significant effects, rather than every environmental effect associated with a development.

Impartial professional consultants will assess the likely significant environmental effects identified. These specialist assessments will generally incorporate:

- Site visits;
- Collection of baseline data regarding the site and surroundings;
- Identification of the likely significant effects of the proposed development; and
- Recommendations on how these effects could be avoided or reduced.

It is essential that the methodology used for assessing the significance of environmental effects is set out clearly and transparently within an EIA Report and is justifiable. Significance is generally determined through a combination of the sensitivity of a receptor or resource to an effect and the magnitude of the change resulting from the proposed development, however where this differs the full methodology is explained within the relevant section as appropriate.

Significant effects are more likely to be predicted where important resources, or numerous or sensitive receptors, could be subject to impacts of considerable magnitude. Effects are unlikely to be significant where low value or non-sensitive resources, or a small number of receptors, are subject to minor impacts. The assessment of significance of an environmental effect resulting from the proposed development will have regard to the following:

- Sensitivity, importance or value of the resource or receptor;
- Extent and magnitude of the effect;
- Duration of the effect;
- Nature of the effect;
- Performance against environmental quality standards; and

- Compatibility with environmental policies.

The methods for predicting the nature and magnitude of any potential impacts vary according to the subject area. Quantitative methods of assessment can predict values that can be compared against published thresholds and indicative criteria in Government guidance and standards. However, it is not always possible to ascribe values to environmental assessments and thus qualitative assessments are used. Such assessments rely on previous experience and professional judgement. The methodologies used for assessing each topic area will be described within the individual chapters of the EIA Report and will follow best practice guidelines where applicable.

1.8 Mitigation

The EIA Regulations state that the EIA Report must contain a "*description of the measures envisaged in order to prevent, reduce and where possible, offset any significant adverse effects on the environment*."

As outlined in PAN 1/2017 there is a widely accepted strategy for mitigation which will be followed when considering the environmental effects of the proposed development. This comprises (in order of preference): avoidance, reduction, compensation and remediation. In addition, consideration will be given to providing the opportunity for enhancement. Mitigation and, if appropriate, monitoring proposals, will be described clearly within the ES. The mitigation will be achievable and will be delivered through appropriate mechanisms.

1.9 Requirements of the EIA Regulations

In addition to those items explained above, the EIA Report will either include discussion of, or scope out the following items:

- A description of the development, including description of the location, its physical characteristics, land-use requirements during construction and operation, a description of characteristics of the operational phase, and an estimate of the types and quantities of expected residues and emissions;
- A description of reasonable alternatives, including development design, size, scale, and a justification of the project choices made including a comparison of the environmental effects;
- A description of the baseline environmental situation and an outline of the likely evolution thereof without implementation of the proposed development;
- An assessment of the environmental baseline for each environmental topic scoped into the EIA, with reference to those items specified within Schedule 4 (5) of the EIA Regulations;
- A description of mitigation and monitoring measures (where applicable); and
- A description of any expected adverse impacts in relation to the vulnerability of the proposed development to risks of major accidents and/or disasters which are relevant to the project.

1.10 Appraisal of Potentially Significant Environmental Effects

As required, sufficient baseline information has been provided regarding the proposed development and the surrounding and receiving environment upon which to base a decision. The information contained in this document is based on our current understanding of the nature of the site and the proposed development and preliminary assessment of the potential environmental impacts of the proposed development.

The appraisals will consider the potential environmental impacts related to the construction phase, where applicable, and either scope in or out the need for further assessment through the EIA process. The approach to the appraisal of each of these topic areas is outlined in Sections 3 – 12 with the inclusion of baseline data where relevant and available.

1.11 Cumulative Assessment

It is not proposed to incorporate a section within the EIA report dedicated to cumulative assessment. Instead, the Chapter for each environmental discipline will consider the potential for cumulative impacts within their individual impact assessments.

1.12 Consultation and Stakeholders

The Applicant recognises the importance of consultation and community involvement throughout the project development process in line with "PAN 3/2010 Community Engagement" (PAN 3/2010). PAN 1/2013 also reinforces the importance of public involvement in the Scoping process and makes it clear that the EIA process is intended to ensure that consultation bodies and the public have the opportunity to express their opinion on both the proposed development and the EIA Report (EIAR).

The Applicant has already held informal discussions with local stakeholders and has sought initial advice from North Ayrshire Council (NAC) Planning Department, Marine Directorate Licensing Operations Team (MD-LOT) and NatureScot. This advice has been reflected in this Report and will be taken forward to the design of the proposed development as appropriate.

In addition, statutory community engagement is required under both Planning legislation and in terms of marine licensing, under The Marine Licensing (Pre-application Consultation) (Scotland) Regulations 2013.

1.13 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.

Whilst the Client has a right to use the information as appropriate, EnviroCentre Limited retains ownership of the copyright and intellectual content of this report. EnviroCentre Limited does not accept liability to any third party for the contents of this report unless written agreement is secured in advance, stating the intended use of the information.

EnviroCentre Limited accepts no liability for use of the report for purposes other than those for which it was originally provided, or where EnviroCentre Limited has confirmed it is appropriate for the new context.

2 THE PROPOSED DEVELOPMENT

2.1 The Site and Surrounding Area

HCY extends out into the Firth of Clyde with Hunterston Power Stations ~1km to the south, Fairlie village ~1.9km to the northeast, the island of Great Cumbrae ~1.4 km to the northwest and the redundant Hunterston Coal Terminal ~500m to the east. The Southannan and Hunterston Sands Sites of Special Scientific Interest (SSSI) bound the site to the northeast, east and southeast. The site is centred at Grid Reference NS 185 530.

Arch Henderson Drawing No 235001-HMY-AHN-DR-C-1000 (provided in Appendix A) details the Terrestrial Planning Consent Boundary (red line boundary) and the Marine Scotland Licence Application Boundary (green line boundary)

To provide further detail on the application boundary extents, Arch Henderson Drawing No 235001-HMY-AHN-DR-C-1001 (provided in Appendix A) details the Terrestrial Planning Boundary (red line boundary). Arch Henderson Drawing No 235001-HMY-AHN-DR-C-1002 details the Marine Scotland Licence Application Boundary (red line boundary).

It is a relatively flat reclaimed area of land approximately 40 Ha in size (800m x 500m at its widest point). It is accessible from the A78 via the Hunterston Roundabout and power station road leading onto Oilrig Road.

It has historically been used for industry and currently comprises an access road, service infrastructure, deep dry dock (approximately 20m deep) cut off from the Firth of Clyde by a sand bund and a hammerhead quay, the site is armour stone protected. HCY was constructed in the 1970s by infilling onto Hunterston and Southannan Sands. The yard was used to manufacture an oilrig base, dry dock and a gravity base tank prior to falling out of use in circa 1996. More recently, the site has been used as a wind turbine test site, however these features have been removed.

The site is currently vacant although a planning application (ref 23/00606/pp) has been submitted for preparation works, establishment of compound area and initial groundworks including landscaping and other required infrastructure associated with a proposed aquaculture facility on the northeastern corner of the yard.. In addition, there will be temporary use of the site for the Fastrig demonstration project. As mentioned in Section 1.4, the whole yard has an existing “Certificate of Lawful Existing Use” which allows the land to be used for general industrial (Use Class 5) purpose.

2.2 The Proposed Development

2.2.1 The Need for Development

Clydeport Operations Ltd. are currently considering the options for developing Hunterston PARC including the HCY to support the long-term sustainable development of various industrial users and specifically future use will be targeted towards providing a facility that supports the offshore wind industry for activities potentially including gravity-based structure construction, jacket construction, turbine assembly, and associated activities including the storage of components. On 29th June 2022, the North Ayrshire Council Planning Committee resolved to grant planning permission for XLCC’s HVDC subsea cable manufacturing operations at Hunterston PARC (ref .22/00133/PPPM).

As part of this optioneering the Company has identified that the modification of the HCY through demolition and infilling of the existing dry dock and provision of a new quay on the western side of the site would provide a facility suited primarily for the renewables sector and specifically the offshore wind industry. Please note: the development description may evolve as the engineering design progresses.

The specific details of the project will evolve during design development, but the main elements that are relevant to the act and require consideration are already well defined.

The proposed project site has the deepest sea entrance on the west coast of the UK which gives it a strategic advantage of accommodating the largest capacity sea vessels and handling bulk cargoes such as gravity base structures used by offshore wind industry. Also, as already mentioned in Section no 1.4, the proposed project is inline with the strategic planning as per the local development plan adopted by North Ayrshire Council and more recently National Planning Framework 4.

2.2.2 Development Description

In general, the new works will entail: -

- The construction of a new quay and associated quayside infrastructure on the western edge of the site to berth vessels;
- Works could include land reclamation, removal of the existing dock entrance bund, and/or removal of existing land to facilitate the construction of appropriate berths (Refer to Section 2.2.3 for further details);
- Demolition works of existing structures including removal of the base of the former dry dock.
- Infilling of the former dry dock basin to provide additional land for general industrial purposes;
- Ground improvement works including piling;
- Dredging (including future maintenance) to enable marine vessel access to quay areas;
- Provision of site utilities and any required foundations within storage areas; and
- Erection of temporary site offices and staff welfare buildings to accommodate site workforce.

The area of the construction works is approximately 40 hectares which includes the dry dock working area, access road and contractor compound (Refer to 235001-HMY-AHN-XX-XX-DR-C-0001, Appendix A).

Infill of the Dry Dock
Prior to infilling of the dry dock demolition works will be undertaken to remove the existing dry dock base and any other associated infrastructure.

It is anticipated circa 1.4million m^3 of suitable fill material will be required to infill the dry dock, including surcharge material. This would be achieved through the reuse of the sites dredge arisings. Should the proposed dredge not provide a sufficient volume of material to complete the infill research will also be undertaken to identify other dredging projects within the area in which the sediment is identified as being suitable for use as in fill material. It is envisaged that a possible source for the additional infill materials will come from routine maintenance dredging activities of the Clyde. All infill material will be brought to site by barge.

The engineering suitability of the sediment to be dredged at the site with respect to use during the infill is currently being investigated (i.e. its physical and chemical status) and disposal options will be considered including sediment reuse. A Best Practicable Environmental Options (BPEO) summarising the assessment conclusions will accompany the marine applications.

Dependant on final loadings and the nature of the infill material, this area will require implementation of ground improvement techniques to accommodate operational loads for future land use. Improvement techniques considered include primarily piling of the area, but pending on engineering development can involve the use of soil mixing techniques as well. Piled foundations may take the form of vertical steel or reinforced concrete piles driven into the ground to provide stability for any superstructures above ground i.e. buildings, hardstanding, etc. Soil mixing enhances the engineering properties of soils and reinforces soil masses by mechanically mixing the in-situ soils with a binder slurry (typically comprising either cement or bentonite slurry or a combination of the two), creates strengthened and stiffened individual ‘soilcrete’ elements, commonly called panels. Out with the footprint of potential substructures, ground improvement will not be required for ground stability.

Note: Some materials are likely to be delivered to site by road for specific aspects of the works i.e. surfacing material.

Quay Wall
Generally, the structure will take the form of a tied cofferdam wall consisting of a combined wall to the front and rear, made up of large diameter steel tubular piles with steel sheet piles between. The front wall will be connected to the rear wall using steel tie rods. The tubular piles that will form the cofferdam wall will be approximately 35m long, driven to refusal / into rock in order to create sufficient deep water berthing options to support future operations – subject to final design load requirements. Additional tubular piles may be installed within the structure in order to allow increased loads in specific areas.

Additional Features
Additional features that are currently being considered to be installed on the seafloor adjacent to the new quay following dredging are:

- A Roll-on Roll-off (RO-RO) facility; and / or
- A grounding pad (not exceeding 250m x 250m, exact location TBC) as a temporary fixed gravel platform for grounding two barges.
- A series of dolphins (typically 3 to 5) for berthing/mooring of barges.
- A catwalk for access to the berthed barges.

The grounding pad, dolphins and catwalk will be removed subsequently to the completion of loadout operations.

These features will be contained within the development boundary and as such are taken account of within the Scoping Report.

2.2.3 Quay Wall Design Options

At the time of writing, design options are being considered in relation to the quay wall design. All options include the demolition and infilling of the dry dock, however there are three options in relation to the quay configuration. The main features of each quay wall options are provided below and shown in Drawings HMY-AHN-ZZ-XX-SK-C-002, 003 and 004, Appendix A.

Option 1
Creation of a 450m long quay wall on the northwestern edge of the site with an additional 150m long quay wall at the east.

Option 2
Creation of a 450m long quay wall on the western edge of the site with a 150m long angled quay wall to the south west.

Option 3
Creation of a 250m long quay on the western edge of the site.

The EIA project boundary and the red line boundaries for planning and marine licensing present a potential development envelope within which all three quay options can be accommodated. To allow flexibility in the site design, the scoping request is based on the key features of each option that have the ability to significantly impact the environment. As such the red line boundary in the marine environment is larger than what will be dredged.

The delineation of a project envelope, in this way, will ensure that the final design scheme that will be taken forward for licensing and planning permission will have been assessed in terms of potential environmental effects.

2.2.4 Construction Description

It is envisaged that construction works for all 3 options will involve the activities listed below. A visual description of the works is provided in Drawing Nos HMY-AHN-ZZ-XX-SK-C-001, 002, 003, 004, 007 and 008(provided in Appendix A).

Enabling Works

- Site Clearance, demolition and crushing/screening of arisings.
- Contractor compound set up.
- Environmental mitigation measures deployed/established.
- Improvements to access.
- Fencing installed.

Dry Dock Works

- Removal of the concrete base from dry dock.
- Infilling of the dry dock utilising suitable engineering fill (potentially utilising dredge arisings).
- Dewatering works associated with the infill, including dewatering associated with the reuse of any dredge arisings.
- Tubular piles being vibrated/driven, vertically by impact techniques into deep strata. These piles may need fixed into the underlying rockhead by means of a rock socket. This may be formed by boring beyond the tubular pile toe into competent material, thus providing a socket in which some form of reinforcement can be placed and filled with concrete, providing a connection between the rockhead and the toe of the pile.
- Sheet piles installed vertically between the steel tubular piles. Sheet piles expected to be driven to shallower depths than the tubular piles.
- Anchor piles constructed behind the tubular piles, with either horizontal or inclined tie rods which connect tubular and anchor piles.
- Reinforced concrete capping beam is installed to complete the quay wall.
- Potentially encompass existing quay structure and tie in to new quay wall.
- Concrete relieving slab, which may also require to be piled.

Quay Construction

- Tubular piles being vibrated/driven into deep strata. These piles may need anchored by using a concrete pile toe bored into competent material through the tubular pile section.
- Sheet piles installed between the steel tubular piles. Sheet piles expected to be driven to shallower depths than the tubular piles.
- Reinforced concrete capping beam is installed to complete the quay wall.
- Potentially tie in and extend existing quay wall and new quay wall.

Dredging

- Dredge in front of New Quay wall to -12mCD (reuse of materials for dry dock infill or disposal if materials are unsuitable) and further future maintenance dredging.

Utilities

- Installation of utilities infrastructure in relation to Power, Water, Water Treatment / Drainage.

General site improvements

- Footpath formations;
- Fencing, security and signage;
- Terrestrial piling works;
- Landscaping; and
- Site surfacing.

2.2.5 Construction Transport

It is anticipated that there will be a short period of mobilisation when plant and equipment will be brought to site and remain there until no longer required. Due to the marine source of the infill material, it will be brought to site via sea for deposit in the existing dry dock. All other construction materials (including piles, sheet piles) associated with these proposed works will be brought to site and unloaded at Hunterston deep water jetty or imported to site via road from other areas. .

2.2.6 Construction Works Timing

It is anticipated that construction works will take up to two years to complete. During this period, demolition, piling and earthworks to place and compact materials to create the quay and infill the dock is estimated to last one year. The land-based piling which will incorporate piling in areas of the site to facilitate elements required for the subsequent operation of the site including piling to create a stable foundation in the area of the infilled dry dock is estimated to be completed within approximately 1 year.

Construction timelines are currently estimated based on similar schemes undertaken in recent years. Timelines also assume no restrictions on vessels, plant, manpower or equipment.

2.2.7 Operations

As detailed in Section 1.4 the Hunterston Construction Yard benefits from a Certificate of Lawful Existing Use, approved by North Ayrshire Council under reference 22/00717/CLE on 23rd November 2022, which states that the use of the whole of the Construction Yard site for Use Class 5 General Industrial use, is certified as lawful. The Certificate does not place any conditions or restrictions on the activities falling within Use Class 5 of the Use Classes Order and, therefore, does not limit the undertaking of activities at the HCY in terms of, for example, the hours of operation. The Certificate was granted on the basis of the evidence presented with the application and, as noted in the Report of Handling relative to the Certificate application, evidence already held by the planning authority.

A copy of North Ayrshire Council's Report of Handling for the Certificate of Lawful Use is provided in Appendix D. This summarises the relevant information provided by Clydeport that relates to the historical use of the site. It states:

The applicant has submitted evidence of how the site has been used during the above period (1975 onwards) Following creation of the yard until 1985, the site was leased by various engineering companies undertaking infrastructure projects including construction of oil rig platforms. Copies of the leases and information of the projects undertaken is provided.

For the period 1988 until 1996 the applicant has submitted evidence of further leases by engineering firms. The construction yard was extended during this period and work carried out included the construction of the floating Trident Dry Dock. Local newspaper extracts reporting on this work are also provided.

A marketing brochure from the mid-1990s, describing the dry dock as recent and stating the site is suitable for a range of "marine construction projects," is also submitted. The brochure includes photographs of a gravity base tank for an oilfield and a steel platform. A provided newspaper extract places the steel platform work to sometime after 1993.

For the period from 1998 onwards, further details of short leases taken of the site by fabrication and engineering companies are provided. From 2014 evidence of the permitted wind turbines, erected for the purposes of testing, being constructed on site is submitted.

The applicant has provided evidence of the use of the site for a period of more than 10 years, as far back as 1975. Whilst this evidence is not consecutive, it provides a picture of a site where various industrial projects have been undertaken.

With respect to operational activities at the site the existing baseline condition is considered to be defined by the Certificate of Lawful Use of the site for Class 5 General Industrial Use, which as noted above has incorporated marine construction activities including construction of gravity base tanks and fabrication activities (an historic photograph of the site being utilised for industrial activities is provided below). The future use of the site, which the proposed development works are to facilitate, is considered to accord with the existing baseline condition. As such, future operational activities are not considered to result in a change to the existing environmental conditions, in terms of giving rise to likely significant environmental effects. On this basis impacts on the environment from operation of the development are scoped out of the EIAR.

Figure 2-1 Historic Photograph of Operations At HCY

This conclusion will be kept under review, and an assessment of likely significant effects resulting from operation of the site facilitated by the proposed development works will be carried out, if required, in due course. Separately, it is recognised that operational impacts may be subsequently assessed as part of any Planning Applications for the future site use (i.e. for potential buildings or infrastructure that is required for future use of the site) and may also be regulated through other environmental permitting and regulations (such as Pollution Prevention and Control (Scotland) Regulations 2012 (PPC 2012) and/or Section 60 of the Control of Pollution Act 1974)

3 ACCIDENTS & NATURAL DISASTERS

3.1 Introduction

Major accidents and/or disasters is a topic introduced by the 2014/52/EU EIA Directive and subsequent national legislation. 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 will consider the potential for such eventualities in the context of the construction activities at HCY, as described in Section 2.

3.2 Baseline Conditions

As described in Section 2 HCY is part of Hunterston PARC which is zoned for industrial development. HCY is currently underutilised and is located on the eastern side of the main shipping channel on the west coast of Scotland.

The proposed development 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. Coastal flooding and sea level rise is considered within the Water Environment and Coastal Processes of this report.

3.3 Potentially Significant Effects

The Institute of Environmental Management and Assessment ("IEMA") 'Major Accidents and Disasters in EIA: A Primer' (September 2020), hereafter referred to as 'The Primer' was reviewed and informed whether there was potential for significant impacts to occur as a result of the development. The Primer provides 3 tests as follows:

Is the development itself a source of major accidents or is vulnerable to disasters?

The proposed construction works at HCY are not considered to be of a scale that would represent a significant source of major accidents. The construction work would also be covered by the Construction (Design & Management) Regulations 2015 (CDM Regs) which have been developed to prevent accidents and fatalities occurring.

The proposed works are not located within an area of significant seismic activity, nor are climatic factors prone to creating disasters such as tsunamis, hurricanes or catastrophic flooding.

Taking the above into account it is considered that the development itself will not be a source of major accidents or will be vulnerable to disasters.

Does the Development Interact with external hazards or associated activity?

The construction phase works are focussed on the HCY area and the only external interaction will be related to import of material to site as part of the works. The importation of material will utilise the jetty within the adjacent Hunterston Coal Yard which has been an active port until recent years when the importation of coal ceased. It is considered that the external interactions associated with these construction works will be comparable in nature to when the coal yard was operational. Similar to other ports, a Marine Safety Management System / Standard Operating Procedures in compliance with the Port Marine Safety Code was and still is enforced by Clydeport Ltd, the Statutory Harbour Authority at the site.

It is therefore considered that the development is unlikely to interact with external hazards or associated activities.

If an external major accident or disaster occurred would the existence of the development increase risk of significant effects to environmental receptors?

As noted above the proposed works are concentrated to HCY which is an area of reclaimed land that by its nature is isolated from the surrounding terrestrial area. The construction works are considered to be temporary in nature albeit it covers a 2 year period. However, the works at HCY will be conducted in accordance with:

- CDM Regs;
- Clydeport's Marine Safety Management System / Standard Operating Procedures; and
- A Construction Environmental Management Document (CEMD) will be developed taking into account industry standard and development specific mitigation measures. (Note: The development specific mitigation measures will be identified through the EIAR process. Section 11 provides further details on how the CEMD will be managed).

As such it is considered that should an external major accident or disaster occur that the existence of the development would increase the risk of significant effects to environmental receptors occurring.

3.4 Inclusion or Exclusion from the EIAR

As the development is compliant with the 3 tests noted above it is unlikely it will increase the risk of significant effects occurring during the construction phase. The consideration of accidents and natural disasters is therefore scoped out of the EIA.

4 AIR QUALITY

4.1 Introduction

During the construction phase there is potential for construction activities including earthworks, general construction activities and track-out to impact local air quality.

4.2 Baseline Conditions

The development site is located within a relatively rural area influenced by maritime weather conditions. In order to inform the Scoping Report, the relevant 1km background air quality concentration maps were obtained from the Scottish Air Quality and DEFRA websites. The 2021 measured annual average concentrations of NO_2, PM_{10} and $PM_{2.5}$ for Hunterston indicates that air quality is good with the pollutant concentrations being well below the relevant National Air Quality Objectives of 40µg/m^3, 18µg/m^3 and 10µg/m^3 respectively. The 2022 Air Quality Annual Progress Report for North Ayrshire Council (the most up-to-date report available) does not identify any Air Quality Management Areas (AQMAs) within the council area.

4.3 Potentially Significant Effects

It is envisaged at this stage in the project that the traffic generated by the development will be limited to site workers and some limited import of materials (i.e. site surfacing materials). Marine assets and supplies will largely be brought to and from site by sea with only some materials/goods being transported overland sporadically. As such the increase in traffic on the local road network as a result of the development is regarded as being insignificant.

The main concern in relation to air quality impacts is considered to be from construction generated dust emissions. As the site is not located within an Air Quality Management Area (AQMA) and there are no residential receptors immediately adjacent to the proposed construction works it is considered that there will not be significant effects associated with construction dust.

The potential for generation of construction dust is considered to be temporary and can be controlled through developing a site-specific Construction Dust Management Plan (CDMP) based on the conclusions of a Construction Dust Risk Assessment (CDRA)

The CDRA requires specific information on site operations during construction, including preparatory earthworks, general construction and the potential for trackout. Currently this information is still being finalised. It is therefore proposed to defer the CDRA and formulation of a CDMP until such time as details on construction activities have been finalised.

4.4 Inclusion or Exclusion from the EIAR

Based on the above, it is proposed to discount Air Quality from the EIAR.

5 ARCHAEOLOGY AND CULTURAL HERITAGE

5.1 Introduction

HCY is located on reclaimed land with a history of industrial usage; as such it is considered there is little potential for any archaeology remains to be present.

In association with previous plans for development of the site a desk top archaeological report was produced for the site by Headland Archaeology[4] . It is considered the findings of this assessment are still suitable with respect to the current proposed construction works at the site. The assessment incorporated a desktop review of the Study Area (SA) which extend 1km beyond the application site boundary, so as to include any heritage assets that may continue into the site, or which may be affected by indirect impacts or impacts on assets' settings.

A copy of this report is provided in Appendix B. The findings of this assessment are summarised below.

5.2 Baseline Conditions

5.2.1 Known heritage assets within the Site

The HCY is recorded on the Historic Environment Records (HER) as HER 13456. However, as a modern industrial structure of negligible cultural heritage significance, it is not considered a heritage asset in this assessment. There are no heritage assets within the proposed development area.

5.2.2 Archaeological potential of the Site

The building of HCY in the 1970s required the reclamation of approximately 50Ha of land from the sea and foreshore. Although archaeological features are known to be present in the vicinity of the proposed development area, the landscaping and groundworks involved in the building of the yard is highly likely to have removed, buried or otherwise destroyed any archaeological deposits that may have been present within the proposed development area. It is considered that there is no likelihood that any archaeological deposits or artefacts survive as buried remains within the proposed development area, and the archaeological potential of the proposed development area is nil.

5.2.3 Heritage assets in the Study Area Extending 1km from the Site

There are four Listed Buildings within 1km of the site. They comprise one Category A, one Category B and two Category C-listed buildings. All four are within the Hunterston estate (HER 53438) and include the late medieval Hunterston Castle (Category A); the eighteenth century Hunterston House (Category B), and a well and walled garden contemporary with the house (Category C).

Hunterston Castle (Category A, LB14313) consists of a late fifteenth century or early sixteenth century tower house/keep enlarged in the seventeenth century with the addition of a house. There are small courtyards to the north and south of the castle, but a range of buildings formerly attached to the castle have been demolished and replaced with a modern house. The castle was superseded as the Hunter family home in the eighteenth century when Hunterston House was built.

Hunterston House (Category B, LB14286) was built in 1799, and extended in the late nineteenth century. Approximately 280m north of Hunterston Castle, it is set among the traces of a formal lawn, planted with

[4] Headland Archaeology (2016) - Hunterston Marine Construction Yard, Archaeological Desk Based Assessment

trees. The house faces due north, allowing views over the much-reduced remains of a landscaped park towards Oilrig Road and the Firth of Clyde beyond.

The well (LB14287) and walled garden (LB14288) at Hunterston House are both Category C-listed. The well is a carved stone wellhead with an ornate wrought-iron superstructure. It is on a stone plinth in front of Hunterston House and resembles the Venetian courtyard wells of the eighteenth century. The walled garden is west of the castle and is believed to be eighteenth century with later alterations.

The buildings of Hunterston estate largely derive their heritage significance from their architectural and historic interest. The relationship and views between the buildings also contributes as the Hunter family's move from the castle to the later house is an important aspect of the estate's history, and the well and walled garden derive significance from being ornamental and functional features of the estate. Although Hunterston House was designed to offer wide northern views across the estate to the sea, these are now of less relevance to heritage significance. The construction of the Ore Terminal, the power station and the Construction Yard have reduced the sensitivity of these views and now they only make a limited contribution to the heritage significance of Hunterston House and its associated buildings.

5.2.4 Other Designated Heritage Assets

There are no Historic Marine Protected Areas, World Heritage Sites, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields, Scheduled Monuments or Conservation Areas within the SA.

5.2.5 Undesignated heritage assets

There are 13 entries recorded on the HER within 1km of the proposed development. Three of the entries (HER 5235, 5236 and 5246) record chance finds of artefacts – none of these will be subject to direct or indirect impacts. Two other entries (HER 5244 and 14108) record elements of the Hunterston nuclear power station; as modern industrial buildings neither is considered to be a heritage asset for the purposes of the assessment.

The remaining eight entries record upstanding features comprising six structures in and around Hunterston Bay including fish traps, a jetty, a harbour and a raised track; Hunterston estate designed landscape, and the gateway and gate piers into the estate.

The harbour at Little Brigurd (HER 5233), and the fish traps (HER 5243), structures (HER 62914 and 62915), jetty (HER 62916) and raised track (HER 62917) on and around Hunterston Sands derive their heritage significance from their location on the shore of the Clyde, and their immediate relationship with the coast, as well as from their intrinsic interest as archaeological resources. Wider views are of limited relevance to their heritage significance.

The gate piers and gateway (HER 42998) of Hunterston estate also derive most of their heritage significance from their relationship to nearby features, in this case the buildings and estate of Hunterston. Wider views are of limited relevance to their heritage significance. The gate piers are also not in their original location, which was at the eastern end of Largs Avenue where it met the A78. When the Ore Terminal was constructed requiring the realignment of the A78 in the 1970s, the gates were moved to their present location.

Hunterston (HER 53438) is recorded on the HER as a Designed Landscape based on historic map evidence from Blaeu, Roy and the Ordnance Survey. The core of the designed landscape comprises the parkland, woodland and avenues surrounding Hunterston Castle and Hunterston House, and the much more extensive area defined in the HER (which includes farmland and a section of the Hunterston Power Station complex) presumably reflects the original estate boundary. While this designed landscape is considered to be of medium importance as a whole, not all elements of the landscape within the area defined in the HER are of equal importance, and parts of the estate and its environs have seen great

change due to the construction of Hunterston Nuclear Power Station to the west, the Ore Terminal to the north and Hunterston Construction yard to the north-west.

A summary of the undesignated heritage assets is provided in Table 5-1.

Table 5-1: Undesignated heritage assets included in the assessment

HER Ref.	Name/Description	Type	Importance
53438	Hunterston (Huterston (Blaeu), Hunterstown (Roy))	Designed landscape	Medium
5233	Little Brigurd, Harbour	Structure	Low
5243	Hunterston Sands / Fairlie Roads, fish traps	Structure	Low
42998	Hunterston House, Gateway and Gate Piers	Structure	Low
62914	Hunterston Sands	Structure	Low
62915	Hunterston Sands	Structure	Low
62916	Hunterston Jetty	Structure	Low
62917	Hunterston, track	Structure	Low
5235	Fences - Cinerary Urn; Bead	Findspot	Negligible
5236	Hunterston Sands - Flint	Findspot	Negligible
5246	Hunterston / Hunterstone - Axe-hammer	Findspot	Negligible

5.3 Potentially Significant Effects

One known heritage asset has been identified within the footprint of the proposed development (both terrestrial and marine); this comprises the existing marine construction yard which is recorded on the North Ayrshire Historic Environment Record (maintained by the West of Scotland Archaeology Service).

Potential impacts arising from the proposed developments include direct impacts involving disturbance or removal of heritage assets by construction groundworks and setting impacts arising from changes to views from and of heritage assets.

All of the work is proposed to take place in areas already likely to have been extensively disturbed by historic dredging, land reclamation and the construction of the existing construction yard and dry dock. As the proposed development area is considered to be of nil archaeological potential, there is no risk of potentially significant impacts upon any previously unknown archaeological deposits.

5.4 Inclusion or Exclusion from EA

Based on the above Archaeology and Cultural Heritage is scoped out of the EIA.

6 BIODIVERSITY

6.1 Introduction

This section provides a description of the known baseline conditions and highlights key issues of the proposed development on the ecology of the area. For the purposes of the assessment, the ecological interests are sub-divided into Terrestrial Habitats (including faunal interests), Marine & Freshwater Aquatic Habitats (including faunal interests) and Ornithology. The following baseline information has been extracted from the Hunterston Power Station Environmental Statement (ES) (APL, 2010), and its Addendum document (APL, 2011), and from further studies conducted to inform historical upgrade options for the site.

6.2 Baseline Conditions

6.2.1 Designated sites

Marine Protection Areas (MPAs)
There are no Marine Protection Areas (MPA) located within or surrounding the development site. The nearest MPA is located approximately 20km to the south west at the Isle of Arran

Special Area of Conservation
There are no Special Areas of Conservation (SAC) located within or surrounding the development site. The nearest is Tarbert Woods SAC which is located approximately 30km to the west in Argyll & Bute.

Special Protection Areas
The proposed development is approximately 9.5 km for the Renfrewshire Heights SPA classified for its breeding population of <Redacted> and 19 km to the east of the Arran Moors SPA, also classified for its breeding population of <Redacted> .

The Inner Clyde SPA/RAMSAR and SSSI is approximately 25km to the northeast of the proposed site; the closest point is at Greenock. Located to the west of Glasgow it covers an area of 1,826.02ha. Although heavily industrialised along its length, upstream of Gourock and Helensburgh there are very extensive sand and mud flats. These have an abundant invertebrate fauna, the species composition of which has been changing consequent to recent improvements in the quality of water within the estuary. The Inner Clyde estuary is important for a range of wintering wading and waterbirds, notably Redshank (*Tringa totanus*).

Site of Special Scientific Interest (SSSI)
Site of Special Scientific Interest (SSSI) refers to areas which have been provided UK statutory protection for being the best examples of the UK's flora, fauna, or geological or physiographical features. The SSSI designation may extend into intertidal areas, out to the jurisdictional limit of local authorities, which is Mean Low Water Spring (MLWS) tides in Scotland. There is no provision for marine SSSIs beyond MLWS mark, although boundaries sometimes extend more widely within estuaries and other enclosed waters (JNCC, 2012ii).

Due to significant changes in land use, industrial reclamation, and development in the area since 1971, it was deemed necessary to review the Portencross Coast SSSI under current nature conservation legislation. The site was renotified in 2013 as two separate sites - Southannan Sands SSSI and Portencross Woods SSSI. This change brought a net reduction of approximately 200ha in the area of designated land.

- **Southannan Sands SSSI** is designated for sandflats. The site comprises a coastal section subdivided into three discrete areas - Southannan Sands, Fairlie Sands and Hunterston Sands. The subdivision of the site is created by HCY and the coal terminal conveyor. The proposed

development site is bounded by Southannan Sands to the north and Hunterston Sands to the south. Together the sandflats extend over a 4km of coastline, and covers 255.68ha supporting one of the best examples of intertidal sandflat habitat within the coastal cell covering the entire Clyde Coastline. Extensive areas of nationally scarce dwarf eelgrass (*Zostera noltei)* are a biologically and structurally important component of the intertidal sediment flats at this site. A mussel reef supporting a native oyster bed is located within 100m of the proposed dredge site. As the proposed development is outwith the SSSI, direct impact is considered unlikely, although post-dredging siltation may settle within the SSSI for a short period.

- **Portencross Woods SSSI** is designated for upland mixed ash woodland. The site lies approximately 1.95km south of the development site. It is considered highly unlikely that any development at Hunterston will affect this protected site.
- **Ballochmartin Bay SSSI** is a less than 2km stretch of shore on the east side of Great Cumbrae. The southern tip of the SSSI is approximately 2.8km north-west of the proposed development. It was notified in 1978 and re-notified in May 1985. It is also designated Cumbrae Marine Consultation Area (MCA), see below. The designated interest of the site are the flora and fauna of the intertidal area (the area between the highest and lowest tidal levels) which is of national importance. Ballochmartin Bay contains a number of habitat types and is the most varied section of coastline on Great Cumbrae. The flora and fauna of the inter-tidal and sub-littoral zone have been intensively surveyed. The beach is backed by herb-rich grassland and the road side verges support Slow Worm (*Anguis fragilis*). Carboniferous dykes are a characteristic of the island and the site is an important feeding area for waders and both common and grey seals are frequent in the area. It is highly unlikely that the proposed development will affect this protected site.
- **Kames Bay SSSI** is located on the southern shore of Great Cumbrae, within Millport Bay. The SSSI is in a sheltered location, behind Farland Point, approximately 2.1km north west of the proposed development area. It was notified in 1978 and re-notified in May 1985. It also carries the designation Cumbrae Marine Consultation Area (MCA), see below. The designated interest of the site are the flora and fauna of the intertidal area (the area between the highest and lowest tidal levels) which is of national importance. The coastland is unique and scientific work has been carried on there for over 100 years, since the Marine Station was established in 1896. Kames Bay is the only example on Great Cumbrae of a shore dominated by sands. These are fed with freshwater seepage and support a high faunal population. It is highly unlikely that the proposed development will affect this protected site.

Other designations of interest

- **Cumbrae Marine Consultation Area (MCA)** In 1990 Greater and Little Cumbrae were designated a Marine Consultation Area. This covers 2,823 ha. MCAs are identified and listed as deserving particular distinction in respect to the quality and sensitivity of their marine environment and where scientific information available fully substantiates their nature conservation importance. This is approximately 600m west of the site.
- The proposal site lies approximately 25km from the eastern boundary of the **North Arran National Scenic Area (NSA)**.
- **North Arran Wild Land Area (WLA)**, the proposed site lies approximately 30km to the southwest, and in our view, the proposal is unlikely to have any significant effects on the qualities of this, or any other, WLA.
- There are no Local Nature Reserves located within or surrounding the development site.

6.2.2 Terrestrial Habitat and Species

Habitats

Previous ecology walk-over surveys of the site concluded that there is in general a simple habitat mix present. The Phase 1 Habitat types, including buildings and boundary features, identified were:

- J1.3 Ephemeral short perennial
- H8.4 Coastal grassland

- J4 Bare ground

- **Ephemeral/Short perennial (J1.3)** habitat is found on relatively inhospitable substrate that is typically free draining and stony. This habitat type is typical of derelict urban and industrial sites and accounts for the majority of the site. Typical species noted were Broad-leaved Willow-herb (*Epilobium montanum*), Colt's-foot (*Tussilago Farfara*), Common Mouse-ear (*Cerastium fontanum*), Creeping Buttercup (*Ranunculus repens*), Sea Plantain (*Plantago maritima*), Dandelion (*Taraxacum officinale*) and White Clover (*Trifolium repens*).
- **Coastal grassland (H8.4)** is distinguished from other grassland types by the presence of distinctive maritime species and its development on substrates other than pure sand. It has developed along the shoreline in a single block south of HCY. It supports Common Scurvy Grass (*Cochlearia officinalis*), Sand Couch Grass (*Elytrigia juncea*), Sea-buckthorn (*Hippophae rhamnoides*), Seaside Centaury (*Centaurium littorale*), Scentless Mayweed (*Tripleurospermum inodorum*), Sea Radish (*Raphanus raphanistrum* subsp. *Maritimus*) and Sea Plantain. Common native grassland species also contribute to this habitat.
- The areas of bare ground and hardstanding are considered to have very limited value for wildlife.

Notable Flora

- **Seaside Centaury (*Centaurium littorale*)** The 2008 survey for a proposed redevelopment of the power station noted *C. littorale* colonies mainly on the access road to the Construction Yard, and within the Construction Yard. The NatureScot (previously Scottish Natural Heritage) commissioned Report: Nationally scarce plant survey and woodland National Vegetation Classification survey of Portencross SSSI, North Ayrshire D.H. Ecological Consultancy (2005) records the *C. littorale* population as representing a locally very significant population given the relative lack of suitable habitat for this species in North Ayrshire. The plant is classified as nationally scarce, as it was recorded in only 62 10km grid squares in the UK between 1987-1999 (Preston *et al*., 2002).

Notable Fauna

- <Redacted> has been recorded in the wider area, particularly using the Burn Gill, but no evidence has been recorded in the vicinity of the proposed development works.

6.2.3 Marine and Freshwater Aquatic Habitats

Habitats

As noted in the power station ES (APL, 2010), prior to 1974 the shore between Fairlie and Hunterston was a continuous area of sedimentary deposits, comprising medium sands with shell gravel, isolated mussel beds and significant cockle beds. The coal yard facility was constructed between 1974 and 1979, separating Fairlie Sands from Southannan and Hunterston Sands. Further development of HCY separated Southannan Sands from Hunterston Sands.

The shore between Hunterston Coal Terminal and start of the Construction Yard has a natural boundary comprising a thin strip of salt marsh and maritime grassland to the shoreward. Elsewhere the shore is backed by an armour stone revetment. The Burn Gill drains into Southannan Sands, south of the coal yard and fans out across the intertidal area.

Notable Flora

Eelgrass beds are noted as being of particular interest at this site.

A targeted survey of common eelgrass (*Zostera marina*), dwarf eelgrass (*Zostera noltii*), and horse mussel (*Modiolus modiolus*) was completed in 2012. The full survey is presented as Appendix C to this report. In addition to this, previous studies of the wider area have also shown the presence of eelgrass, though only dwarf eelgrass was identified, on both Southannan and Hunterston sands. EnviroCentre mapped the dwarf eelgrass bed of the Southannan Sands in 2010.

Notable Fauna

- **Large Pelagic Animals** Information obtained from the power station ES (APL, 2010) study was focused on the southern end of the Hunterston Channel, but information was also sought for the

wider area of the Clyde, particularly around Little Cumbrae and Great Cumbrae. The 2011 Addendum (APL, 2011) included a review of the Seawatch Foundation and Hebridean Whale and Dolphin Trust databases of recent cetacean sightings (2010-11), to provide a more up-to-date assessment of the baseline conditions in the Inner Clyde, particularly around the Hunterston, Fairlie Channel and Largs Channel areas. Sightings as far as Troon (approximately 15km downstream of Hunterston) and Gourock (approximately 20km upstream) were included, as large pelagics are likely to move freely throughout the Firth of Clyde and the vicinity of the project area.

Species of large pelagic animals that are listed on the UK BAP and Scottish Biodiversity List (SBL) most likely to be found in the study area are:

- Basking shark (*Cetorhinus maximus*);
- Harbour porpoise (*Phocoena phocoena*);
- Short-beaked common dolphin (*Delphinis delphinis*);
- Bottle-nosed dolphin (*Tursiops truncatus*);
- Grey seal (*Halichoerus grypus*); and
- Common seal (*Phoca vitulina*).

Both Grey seal and Common seal have been recorded in the vicinity of the development, although no breeding haul-out sites are located close by. As reported in the 2010 power station ES (APL, 2010), NatureScot (Previously SNH) indicates that the development area is not important for either species.

The commonest large pelagic animal in the area is harbour porpoise, which is frequently seen in the area (anecdotal evidence from EnviroCentre field surveyors, 2008-2016).

- **Designated haul-out sites for seals** There are no designated haul-out sites for seals located within or surrounding the development site. The closest designated haul-out site for seals is located at Lady Isle approximately 25km south of the Hunterston Site. This site protects harbour/common and grey seals, all year round.

- **Migratory Fish Species** Atlantic salmon and sea trout are known to migrate into the Clyde estuary and coastal streams and rivers. On returning to spawn, salmonids follow the coast. Based on catch data, the Clyde Salmon Fishery Statistical District (District 45) is not highly significant in national terms. To the south, the nearest salmonid rivers on the same coastline, are the Irvine and Garnock, which both have significant and robust salmon and sea trout populations. To the north the Noddsdale Water and Gogo Water at Largs both have salmon and sea trout runs, although small and precarious. In the inner Clyde estuary there are several salmon rivers, including the Kelvin, Clyde and Leven with large salmon and sea trout runs.

  The most significant salmon and trout river in the area is the River Irvine approximately 18km South East of the Hunterston site. The rod catches from 2012-2022 are summarised in Table 6-1, Figure 6-1 and Figure 6-2.[5]

[5] https://scotland.shinyapps.io/sg-salmon-sea-trout-catch/

Table 6-1: River Irvine Salmon and Trout Catch (Rod)

	Salmon			Trout		
Year	**Released**	**Retained**	**Total_catch**	**Released**	**Retained**	**Total_catch**
2012	132	135	**267**	1	23	**24**
2013	118	122	**240**	45	34	**79**
2014	97	74	**171**	51	21	**72**
2015	133	71	**204**	99	16	**115**
2016	197	0	**197**	57	0	**57**
2017	197	10	**207**	62	4	**66**
2018	188	15	**203**	48	1	**49**
2019	426	61	**487**	66	5	**71**
2020	353	26	**379**	45	3	**48**
2021	168	19	**187**	10	1	**11**
2022	228	0	**228**	54	1	**55**

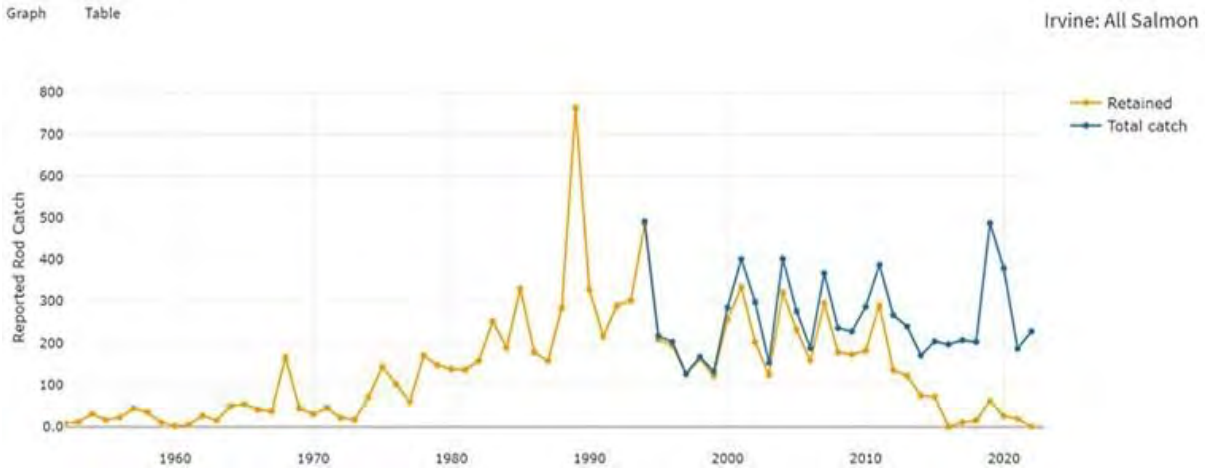


Figure 6-1: River Irvine Salmon Catch (Rod)

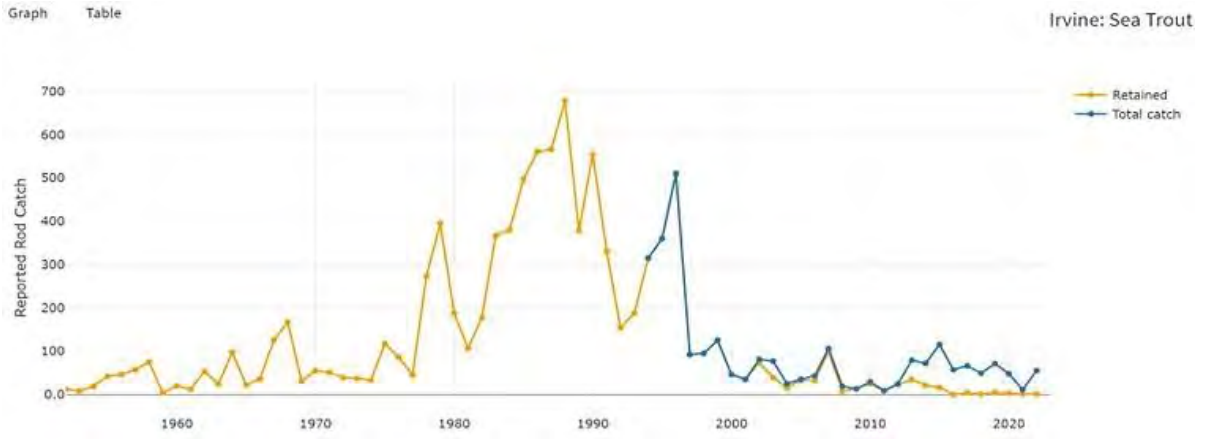


Figure 6-2: River Irvine Trout Catch (Rod)

Marine Scotland reviewed and summarised the available information on migratory routes and behaviour of Atlantic salmon, sea trout and European eel in a Scottish context (Malcolm et al 2010[6]), with regard to the development of marine renewables. For Atlantic salmon, broad scale patterns of migration are identified but available data is unlikely to be sufficient for site specific risk assessment. The limited information available on sea trout migration suggests predominantly inshore and local use of the marine environment; no specific migratory routes are discernible for either juvenile or adult sea trout. European eels in Scotland are part of the single European population. Their migratory routes are uncertain, but eels from a number of North European countries may migrate through Scottish waters.

For Atlantic salmon, the general picture for the Clyde is that during their second year the vast majority of juvenile salmon in freshwater transform into smolts that migrate downstream the following spring where they congregate in pools in the river before the smolt-run into estuarine water. The phase in estuarine waters is poorly understood; they are suggested to migrate from the Clyde system in April or May in their third year of life.

Ayrshire Rivers Trust report a wide variation in run timing for salmon populations in Ayrshire (likely due to genetic variations) with runs from March to November. This means that salmon may be passing through the area through most of the year. An extended salmon spawning season occurs in the Ayrshire rivers (from early November through January) with early running salmon breeding together while later running salmon spawn later and/or in different parts of the river so genetic isolation is maintained.

The Hunterston area may be used by salmonids. Sea trout in particular may feed in the area but there is no evidence of any particular parts of the Clyde coast being more important than others for this species.

The area immediately around Hunterston is not considered to be of any particular importance for salmon. The salmon run in the River Irvine is generally from May to January, with the peak run being July to November.

Non-Migratory Species

A range of common non-migratory fish and crustacean species will normally be associated both with the sands (e.g. flatfish, gobies; Brown shrimp, *Crangon crangon*) and the existing structures of HCY (both riprap armouring and the current quay structure). Structures such as quays act as nursery areas for juvenile fish (e.g. Saithe, *Pollachius virens*), as well as providing habitat for a range of generally more sessile fish species, such as Tompot blenny (*Parablennius gattorugine*) and Conger eel (*Conger conger*).

Mussels

Horse mussel (*Modiolus modiolus*) was included in a study of the marine habitat adjacent to the HCY quay (see Appendix C for the full report).

Found off all UK coasts, extensive beds of horse mussel are most common on northern and western coasts, but absent south of the Irish Sea and Humber estuary. Once established, large reefs of Horse mussels can form, with the otherwise mobile substrates becoming more stable. Due to the number of other species that find shelter within the reef structure, a feeding habitat for juvenile fish subsequently develops (SNH, 2012).

Blue mussel is also present in the Firth of Clyde. This species generally attaches to hard surfaces in more exposed conditions: the sandy substrate, though with some cobble material present, is therefore less suitable for this species.

Intertidal Habitat and Native Oysters

[6] Malcolm, I.A., Godfrey, J.D. & Youngson, A.F. (2010). Review of migratory routes and behaviour of Atlantic salmon, sea trout and European eel in Scotland's coastal environment: implications for the development of marine renewables. Scottish Marine and FreshwaterScience.1,14:1-72
(https://www.webarchive.org.uk/wayback/archive/3000/https://www.gov.scot/Resource/Doc/295194/0111162.pdf)

In July 2014, Scottish Ministers adopted a list of 81 priority marine features (PMFs) – many of which are features characteristic of the Scottish marine environment. A review of Marine Scotland Maps NMPi, indicates the extent of oyster (*Ostrea edulis*) and sea grass beds, both of which are Priority Marine PMFs, in the vicinity of the Site.

Marine Non-Native Invasive Species
Review of the Firth of Clyde Forum's *Firth of Clyde Biosecurity Plan 2012-2016* identifies a number of invasive species in the Clydeport area. Of these, only one, Japanese wireweed (*Sargassum muticum*), was identified by the power station ES Chapter 16 Marine Ecology (APL, 2010) as an issue for the development area. This species is noted as of "Medium Environmental Risk" within the Biosecurity Plan (FCF, 2012).

6.2.4 Ornithology

The proposed site is located within 5km of a number of designated sites with relevance to ornithology, plus the Inner Clyde Special Protection Area, which is 25km north of the site. These are listed and described in the following section.

Special Protection Areas (SPAs) are classified under the EC Directive on the Conservation of Wild Birds (79/409/EEC), the "Birds Directive". The Directive requires the Member States of the European Community to identify and classify the most suitable territories, in size and number, for certain rare or vulnerable species (listed in Annex I of the Directive) and for regularly occurring migratory species. SPAs are intended to safeguard the habitats of the species for which they are selected and to protect the birds from significant disturbance. Together with Special Areas of Conservation (SAC), which are designated under the Habitats Directive for habitats and non-bird species, SPAs form the Natura 2000 network of sites.

RAMSAR sites are wetlands of international importance designated under the Ramsar Convention (the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971) (JNCC, 2012i). The initial emphasis was on selecting sites of importance to waterbirds within the UK, and consequently many Ramsar sites are also SPAs classified under the Birds Directive.

As noted above SSSI's refers to areas which have been provided UK statutory protection for being the best examples of the UK's flora, fauna, or geological or physiographical features. These sites are also used to underpin other national and international nature conservation designations.

Southannan Sands SSSI (formerly Portencross Coast SSSI) is of primary importance to this application, as the site is adjacent to the current designation boundary.

SNH's (now NatureScot) previous study and review of the Portencross Coast SSSI assessed the following ornithological features:

- Aggregation of non-breeding birds - determined not to currently meet the SSSI selection criteria;
- Aggregation of breeding birds - determined not to currently meet the SSSI selection criteria; and
- Assemblage of breeding birds - determined not to currently meet the SSSI selection criteria.

The Dwarf eelgrass (*Zostera noltii*) beds which grow on the intertidal habitats are noted of national importance. Although no longer part of the designation, the congregation of waders and wildfowl supported by the area is noted as of regional importance, as it is only one of three areas supporting significant numbers of these species between Stranraer and Greenock.

The transition zone in the southern portion of the site is noted for its flora including the locally uncommon Parsley Water Dropwort (*Oenthe lachenalii*) and a nationally scarce plant the Seaside Centaury (*Centaurium littorale*). Additionally, the cliffs at the southern end of the site are noted as supporting woodland of the Ash-Rowan-Dog's Mercury type.

Inner Clyde SPA/RAMSAR and SSSI is approximately 25km to the northeast of the proposed site; the closest point is at Greenock. Located to the west of Glasgow it covers an area of 1,826.02ha. Although heavily industrialised along its length, upstream of Gourock and Helensburgh there are very extensive sand and mud flats. These have an abundant invertebrate fauna, the species composition of which has been changing consequent to recent improvements in the quality of water within the estuary. The Inner Clyde estuary is important for a range of wintering wading and waterbirds, notably Redshank (*Tringa totanus*).

Renfrewshire Heights SPA and SSSI has been designated for regularly supporting a breeding population, of European importance, of the Annex 1 species <Redacted> It supported an average of 10 breeding females annually between 1998 and 2004, 2% of GB. The SPA covers 8,943 hectares and is located approximately 10km north east of the site. It comprises a large area of upland moorland south of Greenock. The area is mainly covered by blanket mire, wet heaths and rough grassland. Much of the heath and mire is dominated by dwarf shrubs, especially Ling heather (*Calluna vulgaris*). The boundaries of the SPA are coincident with those of the Renfrewshire Heights SSSI.

6.2.5 Breeding Birds

The following information summarises the findings of 2008 and 2011 breeding bird surveys undertaken at Hunterston. No internationally or nationally important breeding bird populations were recorded at the site and no Schedule 1 Bird Species were previously recorded as breeding within the study area. The 2008 and 2011 breeding bird surveys recorded a total of 39 species over the two survey visits, of which 25 were confirmed or suspected of breeding within the original power station study area; of these, nine species have been recorded as breeding on the Construction Yard and the causeway access were: Black-headed gull (*Chroicocephalus ridibundus*), Chaffinch (*Fringilla coelebs*), Greenfinch (*Carduelis chloris*), Lapwing (*Vanellus vanellus*), Meadow pipit (*Anthus pratensis*), Oystercatcher (*Haematopus ostralegus*), Ringed plover (*Charadrius hiaticula*), Starling (*Sturnus vulgaris*) and Wheatear (*Oenanthe oenanthe*). Mute swan (*Cygnus olor*) and Shelduck (*Tadorna tadorna*) were also noted to be using the Southannan and Hunterston sands.

Lapwing and Starling are included on the Red List of the national Birds of Conservation Concern (BoCC), as their populations have undergone a rapid decline (>50%) over the last twenty five years.

None of the breeding species were recorded at nationally important numbers (usually assessed as >1% of national population). This corresponds with SNH's assessment that the assemblage and aggregation of breeding birds within the Portencross SSSI does not meet SSSI selection criteria.

Since the surveys were undertaken, the Construction Yard has undergone change, with the demolition of all buildings on site and the erection and subsequent removal of test wind turbines and associated infrastructure, further decreasing the suitability for breeding birds.

6.2.6 Wintering Birds

As part of the planning conditions for the National Offshore Wind Turbine Test Facility (NOWTTF), Through the Tide counts (TTT) have been undertaken between October and March at both Hunterston Sands and Southannan Sands (and a control site at Fairlie Sands) since October 2012 until 2015. Survey methods were similar to those used for the 2008/09 breeding bird surveys and surveys for the Hunterston Power Station ES, with the exception being that since 2012, the locations of species have been mapped during each count. This was to establish if birds have changed feeding/roosting areas during, and since, the construction of the turbines on site.

Total numbers of species recorded over each winter period remain similar to historical records. Peak counts of individual wader species remain broadly similar to those historical records referenced in the 2011 ES Chapter, whereas peak counts of several species of waterfowl have shown a significant increase in numbers over the last decade, as shown in **Table 6-2** below.

Table 6-2: Peak Overwintering Count of Selected Species at Hunterston Sands and Southannan Sands

Species	Peak Count at Hunterston Sands					Peak Count at Southannan Sands				
	2005/06	2008/09	2013/14	2014/15	2015/16	2005/06	2008/09	2013/14	2014/15	2015/16
Curlew	188	102	342	160	191	241	216	289	256	204
Oystercatcher	210	129	177	116	291	683	487	408	658	620
Redshank	89	23	44	47	25	66	18	77	101	157
Wigeon	33	11	1235	970	707	168	375	1519	1364	1193
Shelduck	72	48	63	58	43	185	69	158	80	66
Mallard	34	6	64	75	152	42	26	108	209	171

The results of the surveys indicate that the presence of the previous turbines on the construction yard did not result in a change in site use by any species of bird present or caused the abandonment of any traditional roost sites.

None of the wintering species were recorded at nationally important numbers (usually assessed as >1% of national population). This also corresponds with SNH's assessment that the aggregation of non-breeding birds within the Portencross SSSI does not meet SSSI selection criteria.

6.2.7 Disturbance monitoring

As enabling works (including piling) and construction activity within the NOWTTF site continued into the winter (October – March), an ornithologist was present on site to undertake disturbance monitoring on the causeway leading to the former Construction Yard for the 2013/14 winter period (October 2013 to March 2014) and the 2014/15 winter period (October 2014 to March 2015).

The causeway stretches between Hunterston Sands and Southannan Sands, and all vehicular activity along the causeway was recorded with any obvious disturbance events being noted and assigned into the following categories (this included any disturbance as a result of enabling works e.g. piling):

1) Minor disruption: birds walk or fly but return to the study area within 400m of the previous position.
2) Local displacement: birds take flight and return to a different position over 400m away but within the study area.
3) Major displacement: birds take flight and abandon the study area.

In 2013/14, there was a total of 130 disturbance events over the survey period:

- Category 1: 2 events;
- Category 2: 101 events; and
- Category 3: 27 events

Table 6-3,

Table 6-4 and Table 6-5 below show the activities that led to these disturbance events.

Table 6-3: Category 1 Disturbance Events 2013/14

Activity	Number of events	% of Total
Construction Works (including vehicles in and out of site)	1	50
Dog Walkers	1	50

Table 6-4: Category 2 Disturbance Events 2013/14

Activity	Number of Events	% of Total
Recreation (dog walkers, walkers, joggers, cyclists, horse riders)	55	54.4
Construction Works (including vehicles in and out of site)	27	26.7
Bait Diggers	5	4.9
Vehicles along main power station road	6	5.9
Birds of Prey/Corvids/Gulls	6	5.9
Other	2	1.9

Table 6-5: Category 3 Disturbance Events 2013/14

Activity	Number of Events	% of Total
Recreation (dog walkers, walkers, joggers, cyclists, horse riders)	8	29.6
Construction Works (including vehicles in and out of site)	4	14.8
Bait Diggers	7	25.9
Vehicles along main power station road	4	14.8
Birds of Prey/Corvids/Gulls	4	14.8

In 2014/15, there was a total of 101 disturbance events over the survey period:

- Category 1: 40 events;
- Category 2: 48 events; and
- Category 3: 13 events

Table 6-6, Table 6-7 and Table 6-8 below show the activities that led to these disturbance events.

Table 6-6: Category 1 Disturbance Events 2014/15

Activity	Number of Events	% of Total
Recreation (dog walkers, walkers, joggers, cyclists, horse riders)	22	55
Construction Works (including vehicles in and out of site)	16	40
Bait Diggers	2	5

Table 6-7: Category 2 Disturbance Events 2014/15

Activity	Number of Events	% of Total
Recreation (dog walkers, walkers, joggers, cyclists, horse riders)	24	50
Construction Works (including vehicles in and out of site)	18	37.5
Bait Diggers	4	8.3
Birds of Prey/Corvids/Gulls	2	4.2

Table 6-8: Category 3 Disturbance Events 2014/15

Activity	Number of Events	% of Total
Recreation (dog walkers, walkers, joggers, cyclists, horse riders)	10	76.9
Construction Works (including vehicles in and out of site)	1	7.7
Vehicles along main power station road	1	7.7
Bait Diggers	1	7.7

Recreational activities (particularly dog walkers) are the main factors for disturbance on the site. It is considered that the works undertaken at the NOWTFF site during the monitoring period resulted in no significant change of behaviour in the birds utilising the site.

6.3 Potentially Significant Effects

6.3.1 Terrestrial and Marine Ecology

This section identifies the potential impacts on ecology at and around the site during the construction of the proposed works.

The potential impacts from the proposed works are considered to include:

- Accidental spills from vessels, plant and on-site storage of fuels and chemicals leading to pollution of habitats and potential harm to a range of species and habitats;
- Increased noise through construction activities (dredging, piling, plant movement, etc.) leading to disturbance and displacement of foraging, roosting or nesting species;
- Disturbance/killing/injury to marine mammals and fish directly during works or via noise and vibrations during quayside construction
- A potential change of hydrological flow which may alter the composition of the habitats present including those within the SSSI;
- Disturbance to terrestrial mammals (in particular otter) during the proposed development works;
- Loss of marine habitat adjacent to the works including within the SSSI;
- Loss of terrestrial habitat on the Construction Yard; and
- Sediment blanketing of the sea bed during dredging works (which may affect benthic communities and eelgrass beds within the SSS).

The baseline disturbance to the faunal interests has to take into account the current industrial baseline of the area, with particular reference to the Hunterston Coal Terminal and the shipping currently operating in the Firth of Clyde.

6.3.2 Ornithology

The construction and operation of the proposed development would involve the following main features from the point of view of potential impacts on Ornithology:;

- Piling associated with the new quay and terrestrial construction works;
- Formation of concrete slab on quay wall;
- General construction works;
- Dredging;
- Demolition and infilling of basin;
- Site drainage and discharge during construction and operation.

This section identifies the potential environment impacts on Ornithology at and around the site during the construction and operation of the proposed works.

The potential impacts from the proposed works are considered to include:

- Disturbance to roosting and feeding over-wintering birds during piling and dredging works; and
- Disturbance to breeding birds during proposed development works.

6.4 Inclusion and Exclusion from EIAR

6.4.1 Terrestrial and Marine Ecology

Terrestrial and Marine habitats and species will be scoped in to the EIAR.

6.4.2 Ornithology

Long term research undertaken in Cardiff Bay (Burton et al 2002 and 2002b) and the Humber Estuary (ERM 1996) indicate that noise from machinery etc on construction and industrial sites can disturb feeding or roosting waders. A study undertaken by Burton and Armitage (2005), found that the feeding population of waders on mudflats immediately adjacent to active construction sites was significantly lower than unaffected mudflats up to a distance of 200-300m. After this distance, numbers of waders appeared to be unaffected. Waders also avoided roosting near active construction sites.

Research by the Environment Agency (EA) for the Humber Estuary Tidal Defences Scheme concluded that a sudden noise in the region of 80dB appears to elicit a flight response in waders up to 250m from the noise source. They also found that levels of approximately 70dB caused flight or anxiety behaviour in some species. This is one of the few published findings on threshold noise levels for wader disturbance. Several studies have shown that waders are generally disturbed by sudden (abrupt) loud noises, known as “startling”, but have the ability to habituate to long term, high noise levels.

Drawing No 168612-003, Appendix A show the main roosting sites for waders at Southannan and Hunterston Sands. The closest roost is 370m from the existing dry dock.

The works associated with piling for the quay walls and dredging falls within a small area of intertidal habitat that could be used by feeding waders and waterfowl. However, the area is not a main feeding site by birds, as highlighted by the through the tide counts undertaken between 2012 and 2016. At low tide, birds primarily tend to feed on the mussel bed areas and the eastern side of Southannan Sands. In addition, by applying a soft-start approach to piling for the quay, it is likely that waders and wildfowl will become habituated to this short-term and temporary activity.

Speed restrictions are also in place along the access road to the construction yard, which aids in avoiding significant disturbance to birds.

There is the potential for construction works to impact on breeding birds, although this can be managed through pre-construction works such as pre-works surveys, putting measures in place to dissuade birds from nesting within construction zones (there is sufficient locally available habitat in the wider area of the Construction Yard to support nesting wader species such as Lapwing and Oystercatcher) and applying exclusion zones around nests to ensure disturbance does not occur.

Given the above, and through the surveys already undertaken on site, it considered that there would be a negligible impact on birds as a result of the proposed development.. A statement on ornithology would be included within the Ecology section of the EIAR. In addition confirmatory monitoring will be undertaken as a stand-alone assessment to confirm that current conditions are similar to those noted during the previous detailed survey work.

6.5 Assessment Methodology

The assessment of predicted impacts will be undertaken against a baseline and the significance of effects assessed using standard EIAR criteria (i.e. as developed by the Institute of Environmental Management and Assessment (IEMA)).

The methodology for the Ecological Impact Assessment (EcIA) will follow the Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, Version 1.1 (CIEEM, 2018 (updated 2019)). The British Standard for Biodiversity: Code of Practice for Planning and Development (BS 42020:2013) cites the CIEEM EcIA Guidelines as the acknowledged reference on ecological impact assessment. The guidelines are consistent with the British Standard, which provides recommendations on topics such as professional practice, proportionality, pre-application discussions, ecological surveys, adequacy of ecological information, reporting and monitoring.

The assessment will include all direct and indirect, lethal and non-lethal impacts on ecology that could reasonably occur during construction work and in operation of the development.

A standalone Preliminary Ecological Assessment (PEA) and National Vegetation Classification (NVC) Report will be produced for the site to provide an updated assessment in relation to current site condition.

6.6 Mitigation and Enhancement

Full mitigation and enhancement measures will be determined through the EIA process following all appropriate ecological survey work identified.

The following good practice mitigation is however recommended based on the current level of available site information.

6.6.1 Designated sites

In-water works should be appropriately planned and include measures to prevent the release of contaminants (i.e. concrete, fuel etc.) into the Firth of Clyde. In order to prevent an accidental pollution event, the following mitigation should be implemented:

- Compliance with SEPA Guidelines for Pollution Prevention (GPPs)[7];
- Compliance with a suitable and site-specific construction environmental management plan (CEMP); and
- Compliance with a suitable and site-specific wastewater management plan (WMP), or similar, identifying how wastewater shall be managed to avoid pollution of the River Clyde.

6.6.2 Fauna

The following general mitigation measures should be followed in relation to all fauna:

- Care must be taken during clearance/groundworks/water removal to ensure wildlife is not harmed. In the event any protected species are found when the ecologist is not in attendance, works must stop, the animal must not be handled and EnviroCentre Limited contacted immediately;
- Any works causing high levels of noise or vibration should be limited to daylight hours where possible to reduce disturbance to nocturnal or crepuscular species in the locale such as bats or otter;

[7] SEPA (n.d.) *Guidance Documents* [online]. Available from: https://www.sepa.org.uk/regulations/water/guidance/

- Any excavations must be covered at night wherever practical. Where excavations are left open, a means of escape must be provided in the form of a ramp to allow trapped fauna to escape;
- Excavations must be managed to avoid the formation of temporary waterbodies; and
- All temporarily exposed pipes must be capped overnight to prevent animals gaining access and later becoming trapped.

Specific mitigation recommended in relation to notable species on/in proximity to the site is listed below:

- Otter: A pre-commencement otter survey is to be carried out within three months of commencement works;
- Birds (General): Given the protection afforded to all nesting birds, any removal of vegetation or features supporting nesting birds should be undertaken during September to February (inclusive) outside of the main bird breeding season. If any active bird's nests are found, works must stop in the area and an appropriate buffer zone (as determined by the ecologist, usually approximately 5m) must be established around the nest. The buffer must remain intact and the nest undisturbed until it has been confirmed that the young have fledged, and the nest is no longer in use;
- Cetaceans and Pinnipeds: A marine mammal protection plan will be produced and implemented, following 'The Statutory Nature Conservation Agency Protocol for Minimising the Risk of Injury to Marine Mammals from Piling Noise'[8] and employing a Marine Mammal Observer prior to the commencement of works.
- Fish: Where possible, the timing of construction activities, especially piling and any works in open water, would take place in daylight hours and avoid sensitive periods for fish species, especially if water quality was poor. Any use of an intake pump to remove water should be screened to prevent fish from being injured. Where appropriate, measures should be implemented for any fish rescue within the confines of dry working area.

6.6.3 Underwater Noise Modelling

Underwater noise modelling and risk assessment will be undertaken to assess the potential for impact to fish and marine mammals associated with the proposed construction works, principally the risks associated with piling. The assessment will incorporate source modelling, underwater noise propagation modelling and noise impact modelling.

6.6.4 Intertidal survey

A review of existing intertidal survey information will be undertaken, where it is deemed a requirement and updated intertidal survey will be carried out to determine the range, distribution and extent of the habitats present by assigning biotopes in situ on vertical (i.e. running from high to low shore) transects, in accordance with best practice guidance. The collection and analysis of the data will be completed in accordance with Common Standards Monitoring guidance (JNCC, 2004[9]) and procedural guidelines outlined in the Marine Monitoring Handbook (Davies et al., 2001[10]) and the CCW Handbook for Marine Intertidal Phase I Survey and Mapping (Wyn, et al., 2006[11]).

6.6.5 Subtidal survey

A review of existing subtidal survey information will be undertaken, where deemed a requirement updated survey information will be undertaken. The subtidal survey work will comprise a drop-down

[8] JNCC. (August 2020). Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise. [Online] Available from: jncc.gov.uk (Accessed May 2022)
[9] JNCC (2004). Common Standards Monitoring Guidance for Marine, Version August 2004, ISSN 1743- 8160.
[10] Davies, J., Baxter, J., Bradley, M., Connor, D., Khan, J., Murray, E., Sanderson, W., Turnbull, C. & Vincent, M. (2001). Marine Monitoring Handbook, 405 pp, ISBN 1-85716-550-0.
[11] Wyn, G., Brazier, P., Birch, A.B., Cooke, A., Jones, M., Lough, N., McMath, A. & Roberts, S. (2006). Handbook for Marine Intertidal Phase 1 Biotope Mapping Survey. Countryside Council for Wales, 114pp.

camera survey for the acquisition of high-definition video and high-resolution still images and a grab sampling survey to acquire samples for macrobenthic invertebrate assessment and particle size analysis (PSA).

7 CARBON, CLIMATE CHANGE & GREENHOUSE GASES

7.1 Introduction

This section of the Scoping Report identifies potential impacts with regard to climate change that may occur during the construction phase of the proposed development and outlines whether these will be addressed further in the Environmental Statement (ES).

The EIA Directive (2014/52/EU) and the 2017 updates to UK EIA regulations include the requirement to assess the potential impacts of the proposed development on climate change and its vulnerability to climate change.

The term 'carbon' is used throughout as shorthand to refer to all relevant greenhouse gas (GHG) emissions.

7.1.1 Carbon Impact Assessment

In accordance with the EIA Regulations, the carbon impact assessment involves the evaluation of the potential effects of the development on the climate. This assessment will follow IEMA's guidance[12]. In accordance with the modules contained within *PAS 2080:2023 Carbon Management in Buildings and Infrastructure* (CLC, 2023) and industry best practice, this assessment will measure embodied carbon associated with the materials used to construct the proposed development, the emissions involved transporting the materials to site and construction emissions from use of plant and machinery.

Although the scope of the ES is to consider the environmental impacts associated with enabling phase, it is advised that operational carbon emissions are to be quantified, to provide a whole life carbon assessment as required by the Environmental Impact Assessments (EIA) Directive 2014/52/EU.

7.1.2 Climate Change Resilience Assessment

The climate change resilience assessment investigates the effects of projected climate change on the development and environmental identified receptors. This assessment will comply with the requirements of the IEMA guide to Climate Change Resilience and Adaptation (IEMA, 2020). This qualitative risk assessment involves assessing the resilience of the proposed development and surrounding environment to climate change.

This assessment will consider mitigation of receptor vulnerability to climate change, that are proposed to exist within design, for the determination of resilience to climate change.

7.2 Baseline Conditions

7.2.1 Carbon Impact Assessment

As per IEMA guidance (IEMA, 2022), the baseline for the carbon impact assessment is taken as a 'business as usual' scenario, prior to existence of the proposed development. It represents existing carbon emissions from the assessment prior to construction the project under consideration. If the proposed development is located on a brownfield site, the current operations of the application site will be assessed as part of the baseline assessment. Where a baseline involves existing infrastructure, typical baseline carbon emission sources would include maintenance works (e.g., the embodied carbon of

[12] Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2022).

materials used), operational energy (e.g., lighting) and user emissions (i.e., emissions from vehicles using the road).

The study area for the assessment encompasses a wider extent than the site boundary due to the consideration of embodied carbon emissions from products and materials, the transport of materials to site and installation processes on site. The study area also includes activities that may be avoided or displaced because of the proposed development, namely construction and operational transport, heating and electricity production activities. The baseline carbon emission sources thus comprise embodied carbon and operational utility consumption (electricity, gas and water consumption).

7.2.2 Climate Change Resilience Assessment

The baseline for the climate change resilience assessment is based on the current climatic conditions, existing at the site and surrounding environment as recorded by the Met Office. The future baseline then describes the projected changes to climatic impacts (e.g., temperature, precipitation and wind), as relevant to the geographical location, characteristics, and timeframe of the project. Future climatic projections are modelled via UKCP18 data (Met Office, 2023) and are depicted based on the most applicable grid resolution of the UKCP18 projections, to the site location. This data will be disseminated around the environmental disciplines to ensure sensitivity of environmental receptors are appropriately considered.

7.3 Potentially Significant Effects

Table 7-1 identifies the likely impacts, in respect of emission source, that will arise from the proposed development during the enabling phase.

Table 7-1: Potential sources of emissions

Lifecycle Stage	Activity	Primary Emission Source
Preconstruction	Land clearance	Emissions associated with loss of carbon sink, e.g., tree removal or peat disturbance.
Product stage	Raw material extraction and manufacturing of products/materials	Emissions associated with raw material extraction and manufacturing of products/materials
Construction process stage	Transport of materials to project site	Transport of materials to site
	On-site construction activity	Emissions associated with energy (electricity, fuel, etc.) consumption from construction activity and processes.
	Disposal of construction waste	Emissions from disposal of waste

7.4 Inclusion or Exclusion from EIA

7.4.1 Carbon Impact Assessment

The carbon impact assessment of the enabling phase will involve assessing the physical infrastructure assets associated with the proposed development. It includes the embodied carbon of proposed development materials and emissions associated with construction activities. These are defined in terms of lifecycle stages, detailed in of the Guidance Document for *PAS 2080:2023: Carbon Management in Buildings and Infrastructure*, as follows:

- **Preconstruction (A0)** – land use change and associated loss of carbon sinks

- **Products and materials (A1-3)** – use of materials for temporary and permanent construction activities
- **Transport to works site (A4)** – the transportation of materials to the Proposed Scheme site, e.g., by HGV
- **Construction and installation processes (A5)** - construction plant use

Scope of assessment covers the extent of emission sources listed in Table 7-1.

Emission sources to be scoped out include those associated with the operational phase, due to the scope of the EIA. This includes emissions associated with electricity, water consumption, building maintenance and operation-related transport, and decommissioning.

With Scotland's 2045 net zero target, it is advised that consideration is given to operational emissions within this chapter, to assess the proposed development's compliance with national net zero targets and associated emission mitigation efforts.

7.4.2 Climate Change Resilience

Although the proposed development may be subject to weather extremes during construction, it is not anticipated that verifiable climate change would occur between the time of design to the end of the enabling phase. Therefore, the impact of climate change on the enabling phase, with regard to the project's resilience, is scoped out.

It is advised that the scope of assessment is broadened to allow for the assessment of climate change resilience of the proposed development during its operational phase. It is very likely that the proposed development will be susceptible to climate-related impacts, particularly with its coastal location. Otherwise, climate change resilience will not be assessed which doesn't align to 2017 UK EIA regulations requirement for the assessment of project vulnerability to climate change.

Overall, climate change will be scoped in the EIA as a Carbon Impact Assessment of the enabling phase. Climate change will have a material impact on the resilience of the proposed development during operation and therefore it is advised both the Carbon Impact Assessment and the Climate Change Resilience Assessment are considered in the Climate Change Chapter.

7.5 Assessment Methodology

7.5.1 Receptors

7.5.1.1 Carbon Impact Assessment

For the carbon impact assessment, the receptor is the global atmosphere. The sensitivity of the receptor (global climate) to increases in carbon emissions is always defined as high as any additional carbon impacts could compromise the UK's ability to reduce its carbon emissions and therefore meet its future carbon budgets.

7.5.1.2 Climate Change Resilience

If considered for operational phase, the IEMA (2020) guidance will be adopted. Within which, it defines the key potential receptors for consideration within the assessment, as follows:

- Buildings and infrastructure receptors (including equipment and building operations)
- Human health receptors (e.g., construction workers, occupants and site users)
- Environmental receptors (e.g., habitats and species)
- Climatic systems.

The in-combination impact on the UKCP18 projections of climate change on the receptors listed above, are assessed by each technical discipline that will be scoped into the ES. The receptors are qualitatively assessed against a range of climatic impacts (temperature, precipitation, and wind) and their respective change, as modelled by UKCP18 climate projections. Once the future baseline is established, the receptors are assessed for their resilience against the projected climatic changes.

7.5.2 Calculation Methodology

For the assessment of the development's impact on climate change, a calculation method is used following data collection. The calculation of GHG emission followed that provided within the GHG Protocol and is defined as:

Activity Data x Emission Factor = tonnes of Carbon Dioxide equivalent (tCO2e)

7.5.3 Assessment of Significance

7.5.3.1 Carbon Impact Assessment

The assessment of significance associated with the estimated emissions, as defined by IEMA (2022) guidance, will consider proposed mitigation and the development's ability to meet regional and national policy requirements. The Carbon Impact Assessment will include opportunities for mitigation to be considered in the design of the proposed development in line with design hierarchy of **'build less, build clever, build efficiently'** as set out in IEMA 2022 guidance and PAS2080.

7.5.3.2 Climate Change Resilience

If considered for the operational phase, the climate change resilience assessment involves consultation with all other scoped-in environmental disciplines, to determine any relevant receptors and impacts that could be affected by the climate change parameters and in turn, to identify any potentially significant in-combination impacts. This would also include consultation with the designers to ensure that the proposed development was considering future climatic scenarios and ensuring the development is not vulnerable to climate change.

Significance of effects will be determined in accordance with IEMA (2020) Guidance that involves using a matrix comparing the likelihood of climate hazards with the consequence of in-combination impacts. The likelihood of climate hazards will be defined using an assessment of the regional climatic data, derived from the UKCP18 Climate Projections, combined with professional judgement. The consequence of in-combination impacts will be based on the change to the significance of the effect of the proposed development on the resource or receptor for each relevant environmental discipline, given existing mitigation measures.

8 SEASCAPE/LANDSCAPE AND VISUAL

8.1 Introduction

This chapter sets out the proposed approach to assessing the potential effects of the proposed development on coastal and landscape character, and visual amenity through a Seascape, Landscape and Visual Impact Assessment (SLVIA).

This chapter focusses solely on seascape, landscape, and visual amenity matters. Any reference henceforth to seascape is considered to refer to coastal character, with the seascape aspect of the SLVIA based on an assessment of coastal character areas.

With the application site having a "Certificate of Lawful Use" for Class 5 industrial activities, it is our understanding that the operation of the site is considered to be permitted development. As a consequence, this chapter only considers the prospect for potential construction stage effects.

The SLVIA will be prepared in accordance with guidance contained within the Third Edition of the Guidelines for Landscape and Visual Impact Assessment (GLVIA3)[13].

The SLVIA will be undertaken by experienced Chartered Landscape Architects at SWECO, which is a registered practice with the Landscape Institute.

8.2 Baseline Conditions

8.2.1 Application Site

The existing construction yard, which extends into the Firth of Clyde, lies in a low-lying area on the coastal hinterland between the Fairlie Roads sea channel and higher moorland to the east. At present, ground cover on the application site comprises reclaimed land which has been formed to accommodate an access road, service infrastructure, a deep dry dock, and a hammerhead quay.

Within approximately 5km of the application site, the Hunterston peninsula and surrounding area is characterised by a combination of coastal, residential, recreational, and industrial land uses. The designed landscapes of Kelburn and Hunterston also characterise the hinterland. There are many industrial buildings, structures, and facilities in the immediately surrounding landscape, which are largely associated with the Hunterston Power Stations, and the redundant Hunterston Coal Terminal. Operational wind turbines are a further influencing presence in the landscape setting of the application site (5km-15km).

Residential development in Millport is located on the island of Great Cumbrae approximately 1.4km northwest. The village of Fairlie lies approximately 1.9km northeast whilst the hamlet of Portencross is located approximately 3.5km south-southwest. Other settlements include the village of West Kilbride, which lies over 4km southeast, and the town of Largs, which lies over 5km northeast.

Beyond 5km from the application site lies the Isle of Bute (to the northwest), the smooth Waterhead moorland hills (to the northeast), the settled and urbanised Ayrshire lowlands (to the southeast), and the Firth of Clyde (to the southwest).

[13] Landscape Institute and the Institute of Environmental Assessment (2013) Guidelines for Landscape and Visual Impact Assessment. 3rd Edition.

8.2.2 Seascape Character

According to the Seascape/Landscape Assessment of the Firth of Clyde produced by the Clyde Marine Planning Partnership (CMPP)[14], the application site lies on the Upper Firth of Clyde and the Cumbraes stretch of coastline.

To better understand the potential impact of new development on the coastal character of the Firth of Clyde, the strategic assessment divided the Upper Firth of Clyde coastline into the following fourteen Coastal Character Areas (CCAs) (as shown on Figure 8.1, Appendix A):

- Cloch Point to Kip Marina.
- Kip Marina to Wemyss Bay.
- Skelmorlie.
- Skelmorlie to Largs.
- Largs.
- Largs to Goldenberry.
- Goldenberry to Farland Head.
- Great Cumbrae Island.
- Millport.
- Little Cumbrae Island.
- Bute: Garroch Head to White Port.
- Bute: White Port to Kerrytonlia Point.
- Bute: Kerrytonlia Point to Bogany Point.
- Toward to Dunoon.

Of these, the Largs to Goldenberry, and Great Cumbrae Island CCAs are of most interest. The strategic assessment has provided the following opportunities and guidance for built development on Largs to Goldenberry:

- *"Views to the sea and Great Cumbrae from Kelburn Castle and the Country Park are highly sensitive, and incursion into the designed landscape by housing development should be discouraged.*
- *Continued undertaking an audit of the signage, footpath network and the 'street furniture' within this area, to encourage use of the access network.*
- *Consider facilitating access to the shore for bird watching at Hunterston Sands and Gull's Walk.*
- *There may be scope for linking the Ayrshire Coastal Path up to the top of Goldenberry Hill, and facilitating a limited amount of car parking.*
- *Consider ways to reclaim and celebrate the history of the Fife yachts at Fairlie."*

The strategic assessment has provided the following opportunities and guidance for built development on Great Cumbrae Island:

- *"It is important to minimise the urbanisation of the rural shoreline of Big Cumbrae to retain the contrast with the resort of Millport.*
- *Further built development should be resisted to retain the contrast between rural Cumbrae and the resort of Millport.*
- *Views to Arran, Bute and Little Cumbrae are a particular feature of this stretch of coast, and should be considered in the siting of off shore structures.*
- *There is no lighting at the coast, except at the slipway, and a policy of minimising lighting should be maintained to reinforce the remote character of the coast and the 'dark skies' potential of the west coast.*
- *The easy accessibility of this stretch of secluded and isolated coast is likely to make it as suitable for kayaking and exploration from the sea as from the land, and this should be considered in assessing the impacts of any future development or recreational interest.*
- *There may be opportunities to promote and improve pedestrian access to the shore at Portachur Point.*

[14] Firth of Clyde Forum (2013) Seascape/Landscape Assessment of the Firth of Clyde

- *Litter can be a problem that reduces the aesthetic appeal at popular locations: community engagement in clean-up operations may be appropriate.*
- *Consider reducing the area of manicured mown grass at the Tattie Pier, or reducing the number of cuts, to reduce the stark contrast with the semi-natural shore."*

8.2.3 Landscape Character

According to NatureScot[15], the application site is located in Landscape Character Type (LCT): 59 Raised Beach Coast and Cliffs, as shown on Figure 8.1, Appendix A.

The guidance lists the following as key characteristics:

- *"Raised beach, visible as a level shelf backed by a steep, sometimes craggy escarpment representing the former cliff line, above which lies more gently rising land.*
- *Rocky coastline, sometimes with cliffs, with narrow sand and shingle beaches, and mud flats in estuarine locations.*
- *Varied land uses but mainly farmed; the raised beaches also provide a level terrace for settlement and communication.*
- *Large parts of the former cliff line are also characterised by dense, often wind sheared broadleaf woodland.*
- *A number of hillforts, promontory forts, mottes and castles reflecting the strategic importance of this coastal landscape.*
- *Small, historic settlements sit comfortably against the steep former cliff line and use building materials which reflect the local geology.*
- *Some modern growth has taken the form of ribbon development and includes caravan parks and holiday development; tall structures such as masts are relatively few.*
- *Landscape of visual drama and contrast with a strong sense of seclusion, and where less accessible a strong sense of remoteness.*
- *Views tend to be longer distance and focussed seaward."*

8.2.4 Designated Landscapes and Wild Land Areas

According to the North Ayrshire Adopted Local Development Plan 2[16] (LDP2), there are no statutory or non-statutory landscape-led planning designations covering the application site (see Figure 8.2, Appendix A).

As illustrated on Figure 8.2, Appendix A, there are several designated landscapes located within 15km of the application site such as the Waterhead Moor – Muirshiel Wild Land Area (WLA), the Mainland Special Landscape Area (SLA), the Great Cumbrae SLA, the Little Cumbrae SLA, Clyde Muirshiel Regional Park, and Eglinton Country Park. There are also Inventory-listed Garden & Designed Landscapes (GDL) at Kelburn Castle (ref: GDL00233) and Mount Stuart (Kirrieniven) (ref: GDL00291).

With reference to LDP2, the following designated landscapes are located beyond 15km:

- North Arran National Scenic Area.
- North Arran WLA.
- North Arran SLA.

Potential construction stage effects on the non Inventory-listed Hunterston Estate designed landscape will also be considered in the SLVIA owing to its proximity to the application site.

[15] NatureScot (2019) Landscape Character Types (LCTs) SNH 2019. Available online: https://www.arcgis.com/apps/webappviewer/index.html?id=e3b4fbb9fc504cc4abd04e1ebc891d4e&extent=-2030551.0017%2C6851563.2052%2C1100309.6769%2C8923312.4198%2C102100

[16] North Ayrshire Council (2019) North Ayrshire Adopted Local Development Plan

For the assessment of designated landscapes, the theoretical inter-visibility with the proposed development will be described, alongside an understanding of the special qualities of each designation, as a means of identifying which areas require further assessment.

8.2.5 Visual Receptors

The SLVIA will consider potential effects upon visual receptors, i.e., the people who may be affected by changes in views resulting from construction of the proposed development. Visual receptors to be considered will include:

- Residents in settlements, scattered communities, and individual residential properties (where relevant).
- People travelling on roads and railways.
- People using walking routes and cycle routes, including minor roads.
- People visiting areas of interest such as visitor attractions, scenic viewpoints, and hill summits.

There are a number of properties in the settlement extents of Millport and Fairlie that lie within 2km of the application site. Other settlements within 15km of the application site include West Kilbride, Largs, Skelmorlie, Kilbirnie, Beith, Dalry, Saltcoats, and Kilwinning.

Road users on the A78 and A737 will be considered as will motorists on other A-class, B-class, and minor roads in vicinity of the application site that display theoretical visibility of the proposed development with reference to the final Zone of Theoretical Visibility (ZTV) pattern. Rail passengers and travellers on the Ayrshire Coast railway line will also be considered.

Visual receptors also include recreational users of the area e.g., those travelling on the Core Path network and long-distance routes such as the Ayrshire Coastal Path, the West Island Way, and National Cycle Network Route 753 (NCR 753). Recreational receptors visiting landmarks such as hill tops/cairns in the agreed study area will also be considered as will receptors visiting recreational resources in proximity of the application site such as Hunterston Castle, Glaid Stone Viewpoint, Lion Rock Viewpoint, Fairlie Viewpoint, and Portencross Castle and Harbour.

In the assessment of potential construction stage effects, ZTV analysis and field survey work will ultimately determine which visual receptors are to be included for detailed assessment in the SLVIA.

8.2.6 Visual Baseline Overview

An initial bareground ZTV has been prepared to illustrate the potential visual effects attributable to the construction stage of the proposed development (see Figure 8.3 Appendix A).

The ZTV is based on nominal points in the vicinity of the proposed development and is run at two AOD elevations:

- 10m AOD as proxy for ground level activity at the proposed quay.
- 50m AOD to capture a likely upper limit for the height of any larger temporary structures that might in due course be associated with construction of the quay e.g., the potential temporary presence of cranes.

According to the enclosed ZTV, it can be determined that the topography of the Clyde Muirshiel hills and Great Cumbrae largely restrict theoretical visibility of the proposed development to a 5km radius across mainland areas, with theoretical visibility at distances beyond 5km largely covering elevated areas of land and the Firth of Clyde.

8.3 Potentially Significant Effects

During the construction stage, there is potential for the proposed development to directly affect landscape resources on the application site, which may influence local coastal and landscape character or how the application site is perceived in views from the surrounding landscape.

As a result, the SLVIA will consider direct and indirect effects on any landscape resources, coastal and landscape character areas, designated landscapes, and WLAs that fall within the study area. The nature and extent of effects arising from the construction of the new quay, associated quayside infrastructure, access road, and contractor compound will be assessed in the SLVIA.

There is potential for effects with existing industrial infrastructure during the construction stage; however, it is our prediction that steps can be taken during the design process to create a defensible and evidence-based design that can be integrated successfully into the landscape without creating a confusing visual appearance, and thereby, without leading to unacceptable levels of visual effects at local settlements, recreational routes, and transport corridors.

8.4 Inclusion or Exclusion from EIA

As the Hunterston peninsula is considerably industrialised at present, the locale appears to be a suitable location for further built development. The shoreline surrounding the application site has been considerably modified; with minimal natural features remaining. As a result, any associative landscape impacts are predicted to be limited to the built footprint of the proposed development and the immediate landscape setting (up to 2km).

When considering the baseline visual context, it is predicted that the construction work and activities associated with the proposed development will most commonly be seen in the sightlines of existing industrial built form and vertical structures. As a result, any associative visual effects are predicted to be limited to the immediate landscape setting (up to 2km); although, it is recognised that selected sensitive visual receptors in the local landscape setting (2km-5km) may also have the potential to perceive significant adverse changes in their views, and this needs to be further examined.

With regards to the potential to view construction work and activities, the theoretical visibility pattern shown on the enclosed ZTV appears to indicate limited potential for the proposed development to exert a level of influence that would result in significant visual effects, or create a defining landscape/seascape characteristic, and therefore a significant effect, beyond distances exceeding 5km from the proposed development during the construction stage. This is particularly true when considering the visual screening influence provided by intervening built form, woodland, and forestry, as well as viewing distances.

Consequently, whilst a SLVIA is proposed to be scoped into the assessment, we propose to discount all coastal and landscape character receptors, and visual receptors located beyond distances exceeding 5km from the proposed development based on the above information.

8.4.1 Study Area

Based on the results of our desk-based research, we propose a 5km study area for the SLVIA.

We propose to illustrate ZTV maps, CCAs, LCTs, designated landscapes, and recreational routes, across the same extents.

8.4.2 Potential Effects Scoped into Assessment

The receptors considered to have the greatest potential to experience significant, adverse effects during the construction stage of the proposed development are predicted to be those located within the

immediate landscape setting (up to 2km) and local landscape setting (2km-5km) of the application site. The potential visual screening influence provided by landform, built form, and woodland is expected to considerably limit the potential for significant coastal, landscape, and visual effects beyond these extents as evidenced by Figures 8.3 – 8.5, Appendix A.

Given this, and with reference to the baseline conditions, it is proposed that potential construction stage effects are assessed for the following receptors only:

- CCAs and LCTs within a 5km radius of the proposed development where there may be potential for significant landscape effects.
- Designated landscapes within a 5km radius of the proposed development where there may be potential for the proposals to affect special qualities.
- Residential receptors living nearby, including residents of West Kilbride, Fairlie, and Millport.
- Users of key transport routes within a 5km radius of the proposed development, including the A78, B7048, B896, Oilrig Road, and Power Station Road, as well as rail passengers and travellers on the Ayrshire Coast railway line.
- Recreational receptors e.g., those at recognised attractions (including Hunterston Castle, Glaid Stone Viewpoint, Lion Rock Viewpoint, Fairlie Viewpoint, and Portencross Castle and Harbour); and those on recognised walking/cycling routes including the Ayrshire Coastal Path, NCR 753, and the Core Path network.

Ultimately, the final selection of receptors to be included for detailed assessment will be based on field survey work and an analysis of the final ZTV pattern, with only those coastal, landscape, and visual receptors predicted as possible to experience significant effects during the construction stage carried forward for detailed assessment. Effects that are not likely to be significant do not require assessment under the EIA Regulations.

8.4.3 Matters Scoped Out

Based on the baseline conditions recorded and distance from the application site, it is proposed that the following are scoped out:

- CCAs and LCTs with limited theoretical visibility and/or those located beyond 5km from the proposed development, where the potential for significant effects on coastal and landscape character is limited.
- Designated landscapes with limited theoretical visibility and/or those located beyond 5km from the proposed development, where the potential for significant effects on the special qualities is limited.
- Visual receptors, including those residing in settlements or utilising transport and recreational routes with limited theoretical visibility and/or those located beyond 5km from the proposed development, where the potential for significant visual and sequential effects is limited.

As operational developments and developments under construction at the time of assessment will form part of the baseline and be considered in the SLVIA, we propose to scope out cumulative assessment of potential coastal landscape, and visual effects.

8.5 Assessment Methodology

8.5.1 Assessment of Effects

As per guidance contained within GLVIA3, landscape and visual effects will be considered separately. The sensitivity of coastal and landscape receptors will be based on the perceived value and susceptibility of the receptor to the type of development proposed, whilst the sensitivity of visual receptors will be based on the susceptibility of the viewer to the type of development proposed.

An overall judgement will be made on the sensitivity of each receptor and the likelihood for potentially significant effects resulting from the proposed development. Judgements will be based on value, susceptibility, scale, geographical extent, duration, and reversibility.

Potential effects will be considered whilst the proposed development is under construction only. The SLVIA will consider potentially adverse effects during this stage to inform the mitigation response.

As effects may be of variable duration, mention will be made to whether effects are direct or indirect; and beneficial, adverse, or neutral against the baseline landscape and visual conditions. As the construction stage will not last beyond five years, all effects will be considered to be short-term, and temporary.

A detailed methodology outlining the assessment criteria will be included as an appendix to the SLVIA.

8.5.2 Seascape/Landscape Effects

Predicted changes to both the physical landscape of the application site, and coastal and landscape character within the study area will be identified. The assessment of coastal and landscape character effects will take account of the sensitivity of the landscape, acknowledging any value placed on the landscape through formal designation at either a national or local level.

Coastal and landscape effects will be determined in relation to the magnitude and type of change, in accordance with GLVIA3.

The SLVIA will consider the potential for direct effects on the 'host' CCA and LCT, i.e., the CCA/LCT in which the proposed development will be constructed as well as indirect effects upon neighbouring CCAs/LCTs in the agreed study area.

We propose assessment of potential construction stage effects on coastal and landscape character areas during daylight hours and during one season only, i.e., summer or winter.

8.5.3 Visual Effects

Visual effects resulting from the proposed development will be considered within the context of the existing baseline conditions, which includes existing industrial infrastructure. The assessment of visual effects arising from the construction of the proposed development will be based on analysis of ZTVs, field survey work and a consideration of changes in views from representative viewpoints.

We propose assessment of potential construction stage effects on visual receptors during daylight hours only and during one season, i.e., summer or winter.

8.5.4 Residential Visual Amenity

With reference to the Landscape Institute Residential Visual Amenity Assessment Technical Guidance Note 2/19[17], a "*Residential Visual Amenity Assessment (RVAA) is a stage beyond LVIA and focusses exclusively on private views and private visual amenity."*

The guidance further states *that "the purpose of RVAA is to provide an informed, well-reasoned answer to the question: 'is the effect of the development on Residential Visual Amenity of such nature and/or magnitude that it potentially affects 'living conditions' or Residential Amenity'?",* which is also referred to as the Residential Visual Amenity Threshold.

Whilst there are residential properties located within 2km of the application site, it is our opinion that no property would meet the Residential Visual Amenity Threshold owing to the established presence of

[17] Landscape Institute (2019) Residential Visual Amenity Assessment Technical Guidance Note 2/19

industry at the application site and on the Hunterston peninsula. As a result, we suggest a Residential Visual Amenity Assessment (RVAA) does not need to accompany the SLVIA.

8.5.5 Field Survey

Field survey work will be carried out to appraise the application site and surroundings, and to obtain viewpoint photography from identified viewpoint locations. Whilst the dates for site visits will be dependent on receipt of feedback on the contents of this chapter, we propose to visit the study area to obtain viewpoint photography during one season only, i.e., summer or winter.

8.5.6 Visualisations

Visual representations accompanying the SLVIA will be prepared with reference to the Visual Representation of Development Proposals – Technical Guidance Note 06/19[18].

We propose production of Type 1: Annotated Viewpoint Photographs to consider and illustrate changes to views during the construction stage. The visualisations will involve overlaying a computer-generated application site boundary onto baseline photographs to provide an indication of the site extents against the baseline visual context.

We propose production of visualisations during daylight hours and during one season only, i.e., summer or winter.

8.5.7 Zone of Theoretical Visibility Maps

As the final design of the proposed development is yet to be finalised, this ZTV represents the bareground scenario only to illustrate potential 'worst case' visibility outcome for larger temporary construction activities and uses. The final ZTV package prepared to support the SLVIA, may also include a 'with visual screening influences' alternative to illustrate the potential visual screening effects provided by intervening built form, and vegetation.

All ZTVs accompanying the SLVIA will be prepared in accordance with best practice guidance contained within GLVIA3.

We intend on presenting the ZTVs at a suitable scale to fit an A3 page layout, with the ZTV extents displayed against 1:50k mapping only unless otherwise advised.

8.5.8 Proposed Assessment Viewpoint Locations

The following table sets out the proposed SLVIA representative assessment viewpoints, which are also shown on the enclosed ZTV (see Figure 8.3, Appendix A).

Table 8-1: Proposed Assessment Viewpoints

VP	Viewpoint Name	Grid Reference	Approximate Distance to Application Site (km)	Primary Reasons for Selection
1	Hunterston House	219200, 651772	0.3km S	Recreational
2	Ayrshire Coastal Path at Inner Brigurd Point	218375, 651968	0.6km SW	Recreational / Road users

[18] Landscape Institute (2019) Visual Representation of Development Proposals – Technical Guidance Note 06/19

VP	Viewpoint Name	Grid Reference	Approximate Distance to Application Site (km)	Primary Reasons for Selection
3	Fairlie Moor Road at Glenside Wood	221092, 652591	1.1km E	Road users
4	Lion Rock Viewpoint	217994, 654979	1.7km NNW	Recreational / Road users
5	Fairlie Viewpoint	220708, 654595	2.2km NE	Recreational / Residential
6	Pier Road, Fairlie Picnic Area	220679, 655899	3.3km NE	Recreational / Residential
7	Portencross Castle and Harbour	217558, 648926	3.5km SSW	Recreational / Residential
8	Glaid Stone Viewpoint	216760, 657007	4.1km NE	Recreational

8.5.9 Design Considerations

The construction stage design of the proposed development will aim to achieve a coherent and balanced layout whilst adopting sustainable construction methods. The following will be key considerations for the SLVIA:

- Effects on the landscape fabric of the application site and effects on coastal and landscape character.
- Effects on the special qualities of designated landscapes.
- Visual effects on sensitive residential receptors including nearby settlements and any dispersed properties located in vicinity.
- Visual effects on sensitive recreational receptors in-and-around the Fairlie Roads including popular coastal routes.
- Effects on sensitive recreational receptors using the Core Path network, Ayrshire Coastal Path, and NCR 753.
- Effects on receptors travelling along the major road and rail network.

The EIA Report will present the rationale behind the final construction stage design and document the iterative design process in response to the technical and environmental constraints identified through the EIA process. The results of this process will directly inform the assessment of potential construction stage effects on coastal and landscape character, and visual amenity.

8.5.10 Approach to Mitigation

The primary form of mitigation for potential coastal, landscape, and visual effects during the construction stage of the proposed development is through iterative design of the layout and associated infrastructure, with reference to key views, viewpoints, and receptors.

8.5.11 Consultation

It is proposed that the following stakeholders will be consulted in relation to the assessment:

- NatureScot.
- North Ayrshire Council.

8.5.12 Policy and Guidance

8.5.12.1 Relevant Planning Policies

From a landscape planning perspective, the proposed development will need to comply with National Planning Framework 4 (NPF4)[19] sustainable development goals (SDG) 1, 2, 8, 9, 11, 14 as Hunterston is listed as a Strategic Asset. At the local level, the proposed development will need to comply with North Ayrshire Local Development Plan (LDP2) Strategic Policy 3: Strategic Development Areas, as Hunterston has been identified as a Strategic Development Area.

Other LDP2 planning policies of interest include:

- Policy 11: Historic Gardens and Designed Landscapes.
- Policy 15: Landscape and Seascape.
- Policy 17: Clyde Muirshiel Regional Park.
- Policy 24: Alignment with Marine Planning.

Policy 24: Alignment with Marine Planning references Scotland's National Marine Plan[20] and the emerging Regional Marine Plan for Clyde Marine Region[21]. Both publications will be used as a point of reference in the SLVIA, with General Planning Principle: GEN 7 Landscape/seascape in the National Marine Plan, and Policies SCAPE 1 and SCAPE 2 from the Clyde Regional Marine Plan Pre-consultation Draft of particular interest.

8.5.12.2 Guidance

The following publications will be referred to where appropriate:

- Guidelines for Landscape and Visual Impact Assessment. Third Edition. (GLVIA3).
- Landscape Character Assessment: Guidance for England and Scotland[22].
- Topic Paper 6. Techniques and Criteria for Judging Capacity and Sensitivity[23].
- Assessing impacts on Wild Land Areas – technical guidance[24].
- Visual Representation of Development Proposals – Technical Guidance Note 06/19.
- Residential Visual Amenity Assessment (RVAA) – Technical Guidance Note 02/19.
- Seascape/Landscape Assessment of the Firth of Clyde.

A summary of planning policy and guidance relevant to landscape and visual amenity will be included as an appendix to the SLVIA.

[19] The Scottish Government (February 2023) National Planning Framework 4
[20] The Scottish Government (2015) Scotland's National Marine Plan
[21] Clyde Marine Planning Partnership (2019) Clyde Regional Marine Plan Pre-consultation Draft
[22] Countryside Agency and SNH (2002) Landscape Character Assessment: Guidance for England and Scotland
[23] Countryside Agency and SNH (2004) Topic Paper 6. Techniques and Criteria for Judging Capacity and Sensitivity
[24] SNH (2020) Assessing impacts on Wild Land Areas – technical guidance

9 LAND QUALITY

9.1 Introduction

The primary purpose of this exercise is to undertake a sufficient level of assessment to identify any environmental effects of the project associated with soil and subsoil pollution of the site which could be significant and which should, therefore, be taken forward for more detailed assessment if required.

9.2 Baseline Conditions

9.2.1 Geological Setting

The BGS Geoindex[25] identifies that the superficial deposits at the site and the surrounding area comprise Holocene marine beach deposits formed of sands and gravels. Bedrock at the site consists of the Kelly Burn Sandstone deposit (Mainly red, cross-bedded, pebbly sandstone with subordinate conglomerate beds).

In the spring of 2018, Structural Soils Ltd. drilled 11 boreholes in the Marine Construction Yard area of the site. Boreholes were drilled to a maximum depth of 38.85m below ground level.

The borehole logs confirm that the reclaimed land that forms the HCY and Dry Dock area is comprised primarily of sand. Natural deposits beneath the reclaimed land comprise primarily sand and clay.

A limited intrusive investigation was undertaken by EnviroCentre Ltd. in July 2018 on the floor of the dry dock basin in the HCY. The purpose of the investigation was primarily to characterise shallow ground conditions in the peripheral areas between the existing concrete pads and to determine the presence and extent of unexposed hardstanding.

It was noted that ground conditions in the peripheral areas of the concrete pads were variable, with most having an upper layer of Type 1 angular hardcore underlain by red or light brown sand, or very occasionally by concrete. Water ingress occurred in several excavations with water present at between 0.2m and 1.1m below ground level. It is likely that groundwater level within the dry dock will be affected by the tidal state.

9.2.2 Soil Resources

The site is not in agricultural use and has not historically been used for agriculture The Scottish Governments Scotland's Soils[26] resource confirms that the site area is classified in relation to land capability for agriculture as 3.1 – Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common.

With respect to capability for Forestry the site is classified as F7 – Land unsuitable for producing tree crops.

[25] British Geological Society Geoindex - https://mapapps2.bgs.ac.uk/geoindex/home.html

[26] Scotland's Soils - Home | Scotland's soils (environment.gov.scot)

9.2.3 Coal

The Coal Authority Interactive Map[27] indicates the site is not located in a Coal Mining Reporting Area with no mine entries identified within 250m of the site.

9.2.4 Designated Sites of Geological Interest

The site area is not within a designated site of geological interest. There are no designated sites of geological interest within 2kms of the site.

9.2.5 Hydrogeology

SEPA's Interactive Water Environment Hub[28] identifies that the eastern half of the site is located in the North Ayrshire Coastal Groundwater Body (Good Condition). The west of the site is located in the West Kilbride Groundwater Body (Good Condition).

9.2.6 Land Use

Hunterston Construction Yard is located on reclaimed coastline on the site of the former Poteath or Gull's Walk and Poteath Cottage. The Hunterston Construction Yard was constructed in the 1970s by infilling onto Hunterston and Southannan Sands. The yard was used to manufacture an oilrig base, dry dock and a gravity base tank prior to falling out of use in circa 1996.

9.3 Potentially Significant Effects

In general, the new works will entail: -

- The construction of a new quay and associated quayside infrastructure on the western edge of the site;
- Works could include land reclamation and/or removal of existing land to facilitate the production of appropriate berths for future use (Refer to Section 2.2.3 for further details);
- Demolition and infilling of the former dry dock basin to provide additional land for general industrial purposes;
- Dredging (including future maintenance) to enable shipping access to quay areas,
- Provision of site utilities and any required foundations within storage areas.
- Erection of temporary site offices and staff welfare buildings to accommodate site workforce

The construction yard was historically an area of reclaimed land subsequently utilised for industrial use in relation to manufacture of oilrig bases and gravity base tanks. The proposed use for the site will incorporate the area being retained for industrial use with further land reclamation in relation to infilling of the dry dock.

The proposed construction works incorporate limited requirement for disturbance of existing ground, with the key elements relating to potential removal of existing land and works associated with foundations.

As part of the construction works the following elements will be undertaken:

- Design and construction methods will take into account land quality issues. To inform this a Phase I Preliminary Risk Assessment and further intrusive site investigation works will be undertaken with assessment and production of remedial specification if required.

[27] Coal Authority Interactive Map - Interactive Map Viewer | Coal Authority (bgs.ac.uk)
[28] SEPA's Interactive Water Hub - https://www.sepa.org.uk/data-visualisation/water-environment-hub/

- The proposed dredged material for use for the infill of the dry dock will be assessed to confirm chemical quality (including assessment for potential radionuclide assessment). A detailed risk assessment in relation to the re-use of this material will be undertaken. The reuse of the material will be undertaken via a Marine Construction Licence.
- A Construction Environmental Plan will be produced including a soil management plan detailing mitigation measures which minimise potential risks associated with the placement of imported dredged material and existing ground conditions on site.

On the basis of the noted site investigation, assessment and construction mitigation measures being in place there are not considered to be any potentially significant effects associated with land quality.

9.4 Inclusion or Exclusion from EIA

The proposed works are not expected to result in any significant adverse effects on land quality. Therefore, it is proposed that land quality is scoped out of the EIA.

10 SOCIO-ECONOMICS

10.1 Introduction

The socioeconomics scoping chapter considers potential impacts from the construction phase of the proposed development on sensitive receptors that are likely to result in potentially significant effects.

10.2 Baseline Conditions

Table 10-1: Population receptors in proximity to the site

Name	Location	Baseline Sensitivity
Within red line boundary	-	No receptors
Fairlie	Nearest population, 2km to the north	High
Millport	Great Cumbrae, 2.5km west across the Firth of Clyde	High
Largs	North on A78 (c. 5km)	High
West Kilbride, Seamill and Ardrossan	South on A78 (c. 5km)	High

10.2.1 Employment Opportunities

North Ayrshire, as a local authority, has a lower percentage of economically active[29] (April 2022 to March 2023) at 72.3% compared with Scotland and the UK at 77.4% and 78.4% respectively. For the same year and study areas, unemployment is also lower at 3.4%, compared with 3.5% and 3.6%.

Economic inactivity is predominantly driven with high rates of long-term sick (40.4%) and retired (17.0%) compared with UK levels of 26.5% and 13.3% respectively.

10.2.2 Short-term Accommodation

There is a wide selection of accommodation available in the region locally.

10.2.3 Healthcare facilities

There are no healthcare facilities within 2km of the site. The site is located within SIMD data zone S01011308, which is ranked in the least deprived for geographic access indicator[30]. This indicator includes average drive time / public transport to a GP surgery and indicative availability. SIMD data zones to the north and south in Fairlie and West Kilbride also score highly.

10.3 Potentially Significant Effects

Effects of moderate or above are considered significant (highlighted bold), as shown in Table 10-2.

[29] https://www.nomisweb.co.uk/reports/lmp/la/1946157425/report.aspx?town=North%20Ayrshire#tabempunemp
[30] Simd.scot

Table 10-2: EIA significance matrix

	Impact Magnitude			
Receptor Sensitivity/ Value	Negligible	Minor	Moderate	Major
Low	Negligible	Negligible	Negligible	Slight
Medium	Negligible	Negligible	Slight	**Moderate**
High	Negligible	Slight	**Moderate**	**Substantial**
Very High	Slight	**Moderate**	**Substantial**	**Substantial**

The length of construction phase is described as approximately one or 2 years to complete, including; site clearance, infill, piling, and quay construction. The temporary nature of the impacts makes it likely to be of minor magnitude or less in the context of socioeconomics.

The delivery of materials via barge is likely to circumnavigate local populations and less likely to have a direct impact.

The construction description of the works in Chapter 2, does not include a large number of highly paid, long term employment opportunities for local workers.

The assessment does recognise that the operational activities does have the potential to have longer term beneficial impacts on employment, but this is not part of the scope of this EIA (as per Section 1.5).

Based on the anticipated scale and nature of the construction activities, it is not considered likely that the construction phase would have a measurable, material impact on the local populations or the regional economy for the following:

- Generation of temporary employment opportunities and supply chain benefits during construction
- Effects on availability of short-term accommodation within the local area
- Effects on healthcare (GP Surgeries and A&E facilities)
- Disruption to local life from short-term construction activities, including impacts on local traffic and site access.

In the absence of impacts of magnitude moderate or greater, it is not considered likely for there to be significant effects as a result of the proposed development for socioeconomics.

10.4 Inclusion or Exclusion from EIA

It is not anticipated that there will be direct measurable changes or impacts in sufficient magnitude to result in likely significant effects for socioeconomics. Therefore, the construction phase of the proposed development is proposed to be scoped out of the EIA process.

11 TERRESTRIAL NOISE

11.1 Introduction

The construction phase of the proposed development has the potential to impact the ambient airborne noise environment on surrounding residential properties during the construction phase.

11.2 Baseline Conditions

The locations considered to best represent the most exposed noise sensitive receptors in the surrounding area are as follows:

- Holiday accommodation by Hunterston Castle;
- Residence at Glenside Cottage to the west;
- 25A Main Road, Fairlie;
- Elevated residential properties around Castlepark Drive in Fairlie; and
- Residential properties on Marine Parade on Great Cumbrae (near Millport).

Table 11-1 below shows the distances to these receptors and also provides some context in relation to any existing screening or otherwise. Drawing No 176482-003, Noise Sensitive Receptors, Appendix A shows the location of these receptors.

Table 11-1: Noise Receptors

Receptor	Approximate Distance (metres from nearest point of Yard area)	Existing Context
Holiday cottage within grounds of Hunterston Castle	1400	Views generally towards the site, although views partially restricted by bund on eastern boundary of site and topography.
Glenside Cottage	1550	Partial long range view of northern part of the site (including the quay). Rest of site mainly hidden by trees.
25A Main Road, Fairley	2300	Some direct but restricted long range views of the platform area. Activities on the eastern part of the platform will be separated from direct view by the perimeter bund on the northern boundary of the site.
Castlepark Drive	2700	Long range views of the platform areas and much of the dry dock
Marine Parade	1700	Views of the platform area but no view into dry dock

11.3 Potentially Significant Effects (Construction)

The noise associated with certain construction works activities have the potential to impact upon existing noise sensitive receptors. Works details have not been finalised at this stage. The degree of impact will depend upon;

- The nature of enabling work activities being carried out; this includes the type and size of machinery/plant involved, combinations of activities happening simultaneously and HGV routes in and around the site;
- Location of enabling work activities relative to the closest noise sensitive receptors;
- Duration of proposed activities;
- Site operating times; and
- Extent of noise mitigation measures in place.

Noise generating enabling construction stages include;

- Construction of new quay wall;
- Site earthworks and demolition;
- Dredging;
- Infilling of the dry dock;
- Revetment drainage; and
- Site drainage.

The key considerations in relation to the noise assessment are as follows:

- Construction works noise impacting on existing residential receptors;
- Construction work related vehicle noise; and
- Noise from any plant associated with temporary compound buildings and proposed servicing areas associated with the construction works.

11.4 Inclusion or Exclusion from EIA

Due to the proximity of the works to existing receptors there is potential for construction noise to impact residents. A construction noise impact assessment shall therefore be included in the EIA to comment on likelihood of adverse impact and inform potential mitigation measures (if required) to be included in the construction noise management plan.

Details of phasing of the enabling activities have not been finalised at this stage. Typically, the specifications, locations and durations of potentially noise plant and equipment will be determined upon the appointment of a contractor.

The following noise mitigation measures will be included:

- Use of Best Practicable Means (BPM), which may include restricted hours of operation for certain activities, the selection of low noise plant, and the use of temporary barriers; and
- A construction noise management plan, to help mitigate any effects at the most exposed sensitive receptors.

11.5 Assessment Methodology

The assessment shall utilise a combination of measured on-site baseline noise levels, and noise propagation modelling. It is noted that there is existing baseline noise data from previous noise assessment carried out at the site which will be reviewed and utilised where appropriate. The data was captured in 2019 and 2020.

Construction noise is variable, therefore a sample of scenarios representing the highest noise generating periods will be considered. Predicted increases in levels above baseline shall be assessed in order to determine the significance of effects.

The scope of works is anticipated to comprise the following;

- Consultation with North Ayrshire Council Environmental Health Department to agree assessment methodology and assessment criteria;
- Review existing noise baseline data for the daytime, evening and night-time periods to determine construction noise limits in accordance with the ABC method of BS 5228-1:2009+A1:2014[31];
- Review data on proposed construction schedule, locations and associated noise generating activities / plant;

[31] British Standards Institution (2014), BS 5228-1:2009+A1:2014 – Noise and Vibration Control on Construction and Open Sites

- Identify a sample of worst-case significant noise generating activities / phases;
- 3D digital noise propagation modelling of construction noise at surrounding residential receptors with reference to guidance contained within BS5228-1:2009+A1:2014;
- Assess the predicted impact of construction noise in accordance with agreed criteria;
- Provide recommendations of likely mitigation measures, if appropriate; and
- Present the findings in a detailed technical report.

The findings of the noise assessment shall be used to inform the Construction Noise Management Plan (as part of a Construction Environmental Management Plan (CEMP)) which will define the measures to control and limit noise emissions at sensitive receptors in the vicinity of the Project. BPM of noise control will be applied during construction works to minimise noise at neighbouring residential properties and other sensitive receptors arising from noise generating activities.

12 TRAFFIC, SHIPPING AND NAVIGATION

12.1 Introduction

This chapter of the Scoping Report identifies potential impacts with regard to transport and access that may occur during the construction phase of the proposed development and outlines whether these will be addressed further in the Environmental Impact Assessment Report (EIAR).

12.2 Baseline Conditions

The application site will be accessed via Power Station Road and Oilrig Road, via the Hunterston Roundabout. Construction vehicles will enter Hunterston Roundabout from the A78 Irvine Road from the north and south.

The A78 Irvine Road is a trunk road which runs north to south between Greenock and Prestwick. It contains sections of single and dual carriageway and has varying speed limits throughout. It will form the key construction vehicle route.

Power Station Road is a two-way single carriageway road which is accessed from the A78 via the Hunterston Roundabout. A footway is provided between Power Station Road and Oilrig Road It is unlit.

Oilrig Road connects with Power Station Road and provides access to the development site. It is unlit and does not provide pedestrian infrastructure.

The data underpinning the assessment will be based on publicly available traffic data and construction traffic data provided by the client. Recent automatic traffic count data on the A78 Irvine Road is available on the DfT Road Traffic Statistics page. A DfT automatic traffic counter located on the A78, approximately 1.7km south of Hunterston Roundabout, recorded a two-way flow of 7,461 vehicles in 2022.

Construction traffic data will be provided by the client, including the likely phasing of the development.

The assessment will consider the potential impacts on the road network of interest, which includes the A78 Irvine Road, Power Station Road, and Oilrig Road.

Hunterston is Scotland's largest strategic deep-water port operated by Clydeport who are the Harbour Authority of the River Clyde and its estuary, managing a jurisdiction of 450 square miles.

12.3 Potentially Significant Effects

The key potential receptors that are sensitive to the potential impact of traffic increase are as follows:

- Local farm buildings;
- Local farm vehicles;
- People walking;
- People cycling;
- Shipping.

12.4 Inclusion or Exclusion from EIA

Table 12-1 presents a summary of the proposed scope. It identifies which likely environmental effects, with respect to transport and access will be assessed in the EIA (i.e., considered to be likely significant effects and therefore scoped in) and those which will not be assessed further (i.e., scoped out).

Table 12-1: Potential TRANSPORT AND ACCESS impacts - construction

Potential Impact	To be assessed in EIA	Reason
Disruption to local traffic patterns	Yes	Construction traffic management may increase driver delays on roads local to the application site.
Construction traffic	Yes	While some construction materials will be transported to site by sea, other construction materials may be transported to site by road which may increase traffic on the local road network. Assessment of the potential impact related to construction traffic will be undertaken once further construction activity details are available and included as a Chapter in the EIAR.
Impacts associated with shipping	No	The site is an operational port facility. The applicant is the controlling Port Authority. A suitable Navigational Risk Assessment will be undertaken with respects to the proposed development.

As shown in Table 12-1, it is proposed that construction transport and access is scoped in the EIA. Stand alone assessment will be undertaken as detailed in Section 12.5.

12.5 Assessment Methodology

The scope of the assessment is to illustrate the routes to be used by traffic generated by all construction phases, estimate traffic volumes, and provide an assessment of the resulting environmental impacts. This assessment will be made when construction traffic data is available.

Many construction traffic movements will occur outside of the traditional peak hours for background traffic reflecting the start and finish times for workers on site and the day-to-day construction operations. The assessment will examine the environmental impacts of construction generated traffic.

12.5.1 Guidance

The environmental impacts of the development generated traffic will be assessed with reference to the 'Guidelines for the Environmental Assessment of Road Traffic'[32] (EART).

Reference will also be made to guidance given in the 'Design Manual for Roads and Bridges' (DMRB)[33] and the 'Manual for Streets'[34] , as required.

12.5.2 Approach to Assessment

As indicated, the environmental impacts of the development generated traffic will be assessed with reference to EART and using professional judgement, as appropriate.

[32] Institute of Environmental Assessment (1992)- Guidelines for the Environmental Assessment of Road Traffic
[33] Highways England (2020) - Design Manual for Roads and Bridges
[34] Department for Transport (2007) Manual for Streets

12.5.3 Screening Assessment

The EART guidance recommends two rules to be considered when determining whether the impact of traffic should be assessed on a road link:

- Rule 1: Include road links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where total traffic flows have increased by 10% or more.

The 30% threshold is based upon research and experience of the environmental effects of traffic, with less than a 30% increase generally resulting in imperceptible changes in the environmental effects of traffic. The guidance considers that projected changes in total traffic flow of less than 10% creates no discernible environmental effect.

Where the thresholds are exceeded, issues including severance, driver delay, pedestrian amenity, fear and intimidation, accidents and road safety will be assessed for their magnitude of change.

It is understood that Power Station Road is currently access restricted. Therefore, the percentage increase in vehicles associated with construction on Power Station Road and Oilrig Road will be high.

12.5.4 Consideration of Receptors and Sensitivity

The determination of the sensitivity of receptors to environmental effects will be based on DMRB guidance. In terms of transport impacts, receptors comprise people living, using facilities and transport networks in the area. Where appropriate sensitivity to changes in transport conditions considers vulnerable user groups, which includes school children and the elderly. Table 12-2 summaries the general criteria for identifying receptor sensitivity by relating the presence of vulnerable groups to identifiable physical features within the environment.

Table 12-2: Sensitivity of Receptors

Sensitivity	Definition
Very High	Those receptors with high sensitivity with site-specific reasons for being particularly sensitive to changes in traffic flows (e.g., community with high incidence of mobility impairment requiring to crossroads to access essential facilities).
High	Receptors of greatest sensitivity to traffic flows (e.g., schools, colleges, playgrounds, accident black spots (with reference to accident data), retirement homes, urban/residential roads without footways that are used by pedestrians, etc)
Medium	Traffic flow sensitive receptors (e.g., congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, unsegregated cycleways, community centres, parks, recreational facilities, etc)
Low	Receptors with some sensitivity to traffic flow (e.g., places of worship, public open space, nature conservation areas, listed buildings, tourist attractions and residential areas with adequate footway provision, etc)
Negligible	Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions.

12.5.5 Magnitude of Impact

Magnitude is defined in general terms in guidance contained in LA 104 of DMRB and is summarised in the context of transport in Table 12-3.

Table 12-3: Magnitude of Impact

Magnitude of Impact	Description
Major	Substantial or total loss of capability for movement along or across transport corridors, loss of access to key facilities and loss of highway safety. Severe delays to travellers (Adverse).
	Large scale improvement in the capability for movement along and across transport corridors, major improvement in access to key facilities, in highway safety and in delays to travellers (Beneficial).
Moderate	Moderate loss of capability for movement along or across transport corridors, loss of access to key facilities and loss of highway safety. Severe delays to travellers (Adverse).
	Moderate improvement in the capability for movement along and across transport corridors, major improvement in access to key facilities, in highway safety and in delays to travellers (Beneficial).
Minor	Some measurable loss of capability for movement along and across transport corridors, some measurable loss of access to key facilities and some measurable loss of highway safety. Some measurable increases in delays to travellers (Adverse).
	Some measurable increase in the capability for movement along and across transport corridors, some measurable increase in access to key facilities and some measurable increase in highway safety. Some measurable increase in delays to travellers (Beneficial).
Negligible	Very minor loss of capability for movement along and across transport corridors, very minor loss of access to key facilities and very minor loss of highway safety. Very minor increase in delays to travellers (Adverse).
	Very minor increase in the capability for movement along and across transport corridors, very minor increase in access to key facilities and very minor increase in highway safety. Some measurable increase in delays to travellers. Very minor decreases in delays to travellers (Beneficial).
No change	No loss of capability for movement along and across transport corridors, no change of access to key facilities.

With particular relevance to severance for high trafficked roads the above categories of magnitude of impact can be defined by the percentage change ranges set out in Table 12-4 is based on EART guidance.

Table 12-4: Magnitude of Impact on Severance

Change in Traffic Flow	Magnitude (Adverse or Beneficial)
Change in total traffic or HGVs flows over 90%	Major
Change in total traffic or HGVs flows 60 - 90%	Moderate
Change in total traffic or HGVs flows 30 - 60%	Minor
Change in total traffic or HGVs flows of less than 30%	Negligible

12.5.6 Assessment of Significance

Transport environmental effects will also be assessed in terms of their duration, their frequency and in terms of their reversibility. These will be considered in identifying the significance of the transport environmental effects of the proposed development.

The significance of effects will be evaluated, taking into consideration the likely changes to baseline conditions. The significance levels will also be informed by the sensitivity and magnitude of effects and the significance matrix set out in Table 12-5.

Table 12-5: Significance Matrix

	Magnitude of Impact

		No change	Negligible	Minor	Moderate	Major
Sensitivity	Very High	Neutral	Slight	Moderate or large	Large or very large	Very large
	High	Neutral	Slight	Slight or moderate	Moderate or high	Large or very large
	Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
	Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
	Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

For the purpose of the assessment, those effects identified as being of 'moderate' or greater significance will be regarded as being significant. Effects of 'slight' or lesser significance will be identified but are not considered significant. Effects will either be adverse or beneficial.

With respects to risks to shipping and navigation a Navigational Risk Assessment will be produced. This will be produced in line with Clydeport Operations Ltd. Marine Navigational Safety Policy. All construction works will be undertaken under a Clydeport Operations Ltd. Work Licence with notice to mariners published appropriately as required.

13 WATER ENVIRONMENT AND COASTAL PROCESSES

13.1 Introduction

This Section provides an appraisal of the implications of the proposed development on the water environment and coastal processes. The water environment is considered to encompass hydrology, hydrogeology and artificial drainage systems, whilst coastal processes are considered to encompass tides, waves and sediment transport processes.

The Water Framework Directive (WFD) (Council Directive 2000/60/EC) aims to protect and enhance water bodies within Europe and covers all estuarine and coastal waters out to 1 nautical mile. This requires that there is no deterioration in the quality of surface or groundwater bodies and aims to achieve good ecological status or potential. The implications of the WFD must be considered when assessing this project and the details provided of how compliance will be achieved.

The assessment will identify sensitive issues within the site by establishing the current baseline and examining the proposed development design within this context. A large amount of baseline data was collected for the Hunterston Clean Coal Power Station development[35] (application withdrawn) the subsequent Hunterston Quay Remedial Works Environmental Review[36] and Construction Yard Coastal Report[37]. This baseline information has been drawn upon in this appraisal.

13.2 Baseline Conditions

13.2.1 General Site Description

The existing site ground level of the HCY is generally 5-6mAOD. There is a bund along part of the northwestern and northeastern boundary with the top of the bund being 8-9mAOD. The internal base of the construction yard sits at around -12.5m OD. The hammerhead quay berth is located on the north-eastern corner of the construction yard. The approach channel to the hammerhead quay berth has previously been maintained to a dredged level of -3m CD (Chart Datum). Whilst the approach to the construction yard has also been dredged previously (EnviroCentre, 2013). The Hunterston Channel between the site and Great Cumbrae reaches a maximum depth of around -30m OD.

As previously stated the hammerhead quay berth is dredged routinely to maintain access conditions. The area of the hammerhead quay berth is sheltered by the Construction Yard to the south and southwest, the spit of the Southannan Sands SSSI to the north and further afield by the Cumbraes to the west.

13.2.2 Surface and Groundwater

The site forms a small, well defined, self-contained catchment area for surface water runoff. Rainfall on the site shall either runoff to the shoreline, or into the construction area, depending on the location.

- An active pumping system exists within the site, preventing accumulation of water within the yard. Two pipe outfalls discharge to the coast, one at the western corner of the construction yard, and the other at the northern corner.

[35] Ayrshire Power Limited (2010) – Hunterston Clean Coal Power Station
[36] EnviroCentre (2013) - Hunterston Quay Remedial Works Environmental Review
[37] EnviroCentre (2019) - Construction Yard Coastal Report

13.2.3 Water Quality

SEPA's RBMP (River Basin Management Planning) water body classification in 2014 (SEPA, n.d.) shows that the Largs Channel (Fairlie Roads) coastal waterbody within the vicinity of the site has a water quality, physical condition and overall status of good.

There are two designated Bathing Waters close to the site – Pencil Beach, Largs (~6km) and Millport, Great Cumbrae (~3km). SEPA has monitored the water quality in these areas since 2000 due to their general recreational use.

Previous turbidity measurements at the Construction yard (EnviroCentre, 2013) showed the water locally to be clear with no suspended solids (<5mg/l) during the summer months, whilst occasional short bursts of increased turbidity appear to be associated with small amplitude wave action.

13.2.4 Tidal Levels

The closest tide table port to the site is at Millport, Great Cumbrae, <3km from the quay. The astronomical tidal range for Millport is shown in Table 13-1, where the highest astronomical tide is 3.9m CD which is equivalent to 2.3mAOD.

Table 13-1: Tidal range at Millport

Tide condition	Chart Datum (mCD)*	Ordnance Datum (mAOD)**
Highest Astronomical Tide	3.9	2.3
Mean High Water Spring	3.4	1.78
Mean High Water Neap	2.7	1.08
Mean Level	1.99	-0.26
Mean Low Water Neap	1.0	-0.62
Mean Low Water Spring	0.4	-1.22
Chart Datum	0	-1.62

** Admiralty Tide Tables*

*** Chart Datum correction for Ordnance Datum is -1.62m (relative to OD at Newlyn)*

13.2.5 Extreme water levels

The lower lying internal area of the HCY shown on the SEPA indicative flood map as being at risk of flooding from the sea. SEPA's Extreme Sea Level datasets for Scotland indicate the 1 in 200 year and 1 in 1,000 year return period extreme still water level for Hunterston Construction Yard is 3.67mAOD and 4.03mAOD respectively, with a confidence interval of 0.5m and 0.7m respectively.

13.2.6 Wave Climate

A spectral wave modelling study previously undertaken (EnviroCentre, 2019) highlights that offshore of the construction yard, towards the Hunterston channel, the highest significant wave heights can be expected to occur during wind from the 240° sector, with wind from the 270° sector also producing similar wave heights. In this area modelled 5-year return period (RP) significant wave heights range between 0.95 m and 1.40 m under wind forcing from the 240° sector, and between 0.95 m and 1.25 m under wind forcing from the 270° sector. In the vicinity of the jetty and the adjacent SSSI, modelled 5-year RP significant wave heights range between 0.60 m and 0.85 m under wind forcing from the 300° sector. Under mean wave and wind conditions significant wave heights towards Hunterston channel are predicted to be between 0.10 m and 0.25 m. For the same conditions, further east around the jetty and on Southannan Sands, predicted significant wave heights are less than 0.10 m..

13.2.7 Tidal Currents

Tidal currents in this area are generally slow, with mid depth velocities in the development site not expected to exceed 0.3m/s. Previous modelling studies have shown that current speeds vary locally from above 0.4 m/s in the deeper water of Hunterston Channel, to less than 0.05 m/s in the shallow margins of Southannan Sands. Wave action in shallow water (<10m) can generate strong flows during storm conditions or with an incoming swell. A combination of tidal currents and wave action will produce the highest energy conditions in the vicinity of the site, with the greatest potential for sediment transport (Ayrshire Power Limited, 2010; EnviroCentre, 2013 & 2019).

13.2.8 Sediment Transport

In the Southannan and Hunterston Sands area there is a large thickness of Pleistocene deposits overlying rockhead. Boreholes from the Hunterston Terminal have shown these to be largely fluvio-glacial in origin, but there are areas where large boulders lie on the seabed, winnowed from Pleistocene deposits by recent marine action likely arising from ice-rafting from the retreating ice-fronts within the Late Devensian glacial lake that occupied this area

The margin between the side slope of the Hunterston Channel and the flat zone of Southannan and Hunterston sands is characterised by the extensive exposure of winnowed outcrop of these Pleistocene deposits. In waters both immediately shallower and deeper there are typically deposits of medium sand, probably derived from erosion of these outcrops and certainly transported by bedload processes under combined wave and tide action.

The deepening of the area north of the construction yard, both to provide access and fill for the marine yard opening, and to provide access to the supply (hammerhead) quay, is clearly evident in the available bathymetry and aerial photography. Since the dredging of this area, sampling exercises have shown that the deepest sites have slowly filled with fine and very fine sand, which accumulates from suspension processes. Bedload medium sand transport vectors appear generally to have been less effective sources of infill within this over-deepened area. This is an important observation which indicates that bedload sand transport processes in this zone are slow, and that therefore there is no strong feed of medium sand onto Southannan sands from around the north shore of the Construction Yard (Ayrshire Power Limited, 2010; EnviroCentre, 2013).

13.2.9 Future Climate

13.2.9.1 Tidal Water Levels

The UKCP18 future projections of relative sea-level rise have previously been obtained for Millport for the period 2007 to 2100 for the RCP 8.5 scenario. The 95th percentile projections of sea level rise from 2007 to 2050 is +0.28 m, which are considered to provide an appropriate time period for the proposed works at Hunterston. The effect of this at Southannan Sands in terms of low water extents, would be to shift the Lowest Astronomical Tide extent landwards by between 4 – 125 m, and shift the mean low water spring tide extent landward by between 10 – 185 m. In terms of wider projections beyond this timescale, the projected sea level rise from 2007 to 2080 for this scenario is +0.62 m.

13.2.9.2 Wind

The UKCP18 wind speed analysis concludes that there are no compelling trends in storminess, as determined by maximum gust speeds, from the UK wind network over the last four decades. The global projections over the UK show an increase wind speeds over the UK for the second half of the 21st century for the winter, associated with an increase in frequency of winter storms over the UK, while overall there is no trend in the wind speed over the UK.

13.2.9.3 Waves

The likely impact of climate change on wave height remains an area of significant uncertainty. The current SEPA climate change guidance (SEPA, 2023) does not provide recommended allowances. It is

noted that the size of waves at the coast is often limited by depth of water, and therefore sea level is likely to have a greater impact on wave overtopping. The guidance recommends that wave model sensitivity to offshore wave height is tested through an increase of 10 – 20% in offshore wave height to account for changes as a result of climate change.

13.3 Potentially Significant Effects

The sensitive receptors to potential impacts on the water environment and coastal processes have been identified as:

- Southannan Sands SSSI (coastal processes); and
- Firth of Clyde (water quality).

The potential impacts from the proposed works are considered to include:

- Contamination of coastal water and sediments by oil, fuels and suspended solids through spillages during construction, dredging, dewatering of drydock including during infilling and site drainage/discharge;
- Interactions between water environment impacts and ecology (see the Biodiversity section of this document);
- Changes to local tidal current velocities (local changes in flow current velocities and direction);
- Changes to local wave climate;
- Associated impact on sediment transport processes; and
- Flooding.

13.4 Inclusion or Exclusion from EIA

Given the identified potential receptors of concern, including the considerations for impact to Southannan Sand SSSI, Water Environment and Coastal Processes will be scoped into the EIA.

13.5 Assessment Methodology

Assessment of the potential for particulate and chemical contamination of water as a result of the proposed dredging and construction works will be central to the assessment. The prevention of pollution during construction will be a specific focus, with recommendations made for the adoption of good working practices in line with appropriate guidance.

It is proposed to scope in further impact assessment of wave climate and tidal currents in the form of an updated coastal modelling study, and to provide further consideration of the impact on sediment transport processes in the form of a qualitative assessment utilising the updated hydrodynamic modelling results and up to date bathymetric data. The coastal modelling study will include modelling of dredge plume dispersal to inform the assessment of impact on water quality.

It will also address the impacts on biodiversity by predicting the effects of dredging induced sediment plumes both in terms of exposure rates of suspended sediment dispersion in the water column and sediment deposition on the seabed so that impacts on sensitive species can be assessed. It will also predict changes to hydrodynamic conditions and corresponding changes to sediment erosion and deposition so that impacts on the SSSI can be assessed.

The proposed development will also be considered with respect to coastal flood risk (including wave overtopping).

14 ISSUES NOT REQUIRING FULL EIA

This section provides a summary of additional potential environmental effects or features which are relevant to the proposed development but have not been scoped into the full EIA given significant effects are not deemed to be likely.

It is proposed to include a chapter within the EIAR to provide a summary on these individual topics. This chapter will not draw conclusions on the level of significance based upon detailed methodology (as per the other chapters outlined throughout this EIAR), but instead offer a synopsis of relevant information, alongside a relevant level of assessment specific to each feature of this chapter.

On the basis of professional judgement and review of baseline conditions, full impact assessment is not considered necessary for the following topics:

- Population and Human Health;
- Material Assets and Waste.

The justifications for our intended discounting of the above noted environmental topics from inclusion as full chapters in the EIAR are provided below.

14.1 Population and Human Health

The 2017 EIA Regulations require an examination of population and human health to be considered within EIA projects. Given the proposed development will assist the local economy, it is unlikely to create significant effects, either positive or adverse, on the integrity of local population numbers.

Human health is a loose and wide term for a number of components that influence public health including pollution, amenity and opportunities gained or lost by direct land-take.

The proposed work is within an operational industrial site which is restricted to members of the general public. Clydeport Operations Ltd. ensures all employees adhere to their H&S management system which is continually reviewed and updated as required to protect employee health. During construction existing legislation and health and safety requirements will be used to identify risks and help protect human beings and the environment. During its construction it is therefore considered there will be no significant direct or indirect impact on either population or human health as a result of the proposal.

14.1 Material Assets and Waste

The construction works will utilise material assets but given the scale of the development this is not considered to be substantial. As such, significant effects are not considered to be likely.

The waste associated with the proposed works will incorporate construction waste, potentially waste soils and dredge arisings.

A Marine Scotland dredge disposal licence will be required for any dredge arisings that are proposed to be disposed at a licensed receiving site (the closest site being Cloch Point).

Prevent the unauthorised or harmful disposal of your waste by another person by storing waste appropriately and using only licensed companies for removal off-site.

With respect to terrestrial transfer of construction wastes or soil the following duty of care requirements will be in place:

- Any waste transfer is to an authorised person or a person for authorised transport purposes;

- There is a written description of the waste, to enable other people to avoid the unauthorised or harmful disposal of the waste and to comply with their Duty of Care. Waste transfer notes will be produced to record each removal.

A Site Waste Management Plan shall be prepared to ensure adequate measures for waste management are in place prior to and during the construction works.

15 CONCLUSIONS

The conclusions of the detailed scoping appraisals are summarised in Table 15-1.

Table 15-1 Summary of Scoping Appraisals

Topic	Scoped In/Out	Comments
Air Quality	Out	The development has the potential to impact local air quality through construction dust emissions. This however is considered to be a temporary impact and will be controlled through developing a site-specific Dust Management Plan as part of a Construction Environmental Management Plan (CEMP).
Archaeology and Cultural Heritage	Out	All of the work is proposed to take place in areas already likely to have been extensively disturbed by historic dredging, land reclamation and the construction of the existing construction yard and dry dock. As the proposed development area is considered to be of nil archaeological potential, there is no risk of potentially significant impacts upon any previously unknown archaeological deposits.
Biodiversity	In	Key elements for focus will be consideration of potential for impact to the SSSI associated with the proposed dredging activity incorporating a benthic survey. Underwater noise impacts to marine mammals related to construction works (primarily piling will be assessed). Supporting documents will include a PEA, targeted bird survey work to confirm conditions are similar to previous survey findings and a Marine Mammal Risk Assessment.
Carbon/Climate Change	In	A carbon impact assessment of the enabling phase will involve assessing the physical infrastructure assets associated with the proposed development. It includes the embodied carbon of proposed development materials and emissions associated with construction activities.
Seascape, Landscape and Visual	In	A SLVIA is scoped into the assessment. This assessment will discount all coastal and landscape character receptors, and visual receptors located beyond distances exceeding 5km from the proposed development.
Land Quality	Out	Design and construction methods will take into account land quality issues. To inform this a Phase I Preliminary Risk Assessment and further intrusive site investigation works will be undertaken with assessment and production of remedial specification if required. The proposed dredged material for use for the infill of the dry dock will be assessed to confirm chemical quality (including assessment for potential radionuclide assessment). A detailed risk assessment in relation to the re-use of this material will be undertaken. The reuse of the material will be undertaken via a Marine Construction Licence. A Construction Environmental Plan will be produced including a soil management plan detailing mitigation measures which minimise potential risks associated with

Topic	Scoped In/Out	Comments
		the placement of imported dredged material and existing ground conditions on site. On the basis of the noted site investigation, assessment and construction mitigation measures being in place there are not considered to be any potentially significant effects associated with land quality.
Socio-Economics	Out	It is not anticipated that there will be direct measurable changes or impacts in sufficient magnitude to result in likely significant effects for socioeconomics. Therefore, the construction phase of the proposed development is proposed to be scoped out of the EIA process.
Terrestrial Noise	In	A Noise Risk Assessment will be undertaken to assess the potential impacts associated with construction noise. The data from the assessment will subsequently inform the production of a Construction Noise Management Plan.
Water Environment and Coastal Processes	In	An updated coastal modelling study will be produced. The coastal modelling study will include modelling of dredge plume dispersal to inform the assessment of impact on water quality. Assessment of the potential for particulate and chemical contamination of water as a result of the proposed dredging and construction works will be central to the assessment. The prevention of pollution during construction will be a specific focus.
Issues Not Requiring Full EIA	In	It is proposed to include a chapter within the EIAR to provide a summary on the individual topics covered within this section. This chapter will not draw conclusions on the level of significance based upon detailed methodology (as per the other chapters outlined throughout this EIAR), but instead offer a synopsis of relevant information, alongside a relevant level of assessment specific to each feature of this chapter.
Traffic, Shipping and Navigation	In (Construction Traffic) Out (Shipping and Navigation)	While some construction materials will be transported to site by sea, other construction materials may be transported to site by road which may increase traffic on the local road network. Assessment of the potential impact related to construction traffic will be undertaken once further construction activity details are available and included as a Chapter in the EIAR. The site is an operational port facility. The applicant is the controlling Port Authority. A suitable Navigational Risk Assessment will be undertaken with respects to the proposed development. Shipping and navigation are therefore scoped out of the EIA.

The Highland Council Guidance Note – Construction Environmental Management Process for Large Scale Projects[38] sets out a robust Environmental Management Process that incorporates the findings of the EIAR as well as other requirements from consents, licenses, legislation and best practise. It is proposed that a Construction Environmental Management Document and Plans (CEMD and CEMPs) be

[38] The Highland Council Guidance Note – Construction Environmental Management Process for Large Scale Projects, dated August 2010.

developed in accordance with this Guidance Note so as to provide site specific practical mitigation measures to ensure that during the construction phase the environment is protected.

The CEMD and associated CEMP's 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 and associated CEMPs, ensuring that all agreed measures are applied and adhered to.

Note: The CEMD and associated CEMPs would be finalised on receipt of Planning / Marine Consent and would aid discharge of planning/marine license conditions. It would also form part of the tender documents during the contracting phase of the development.

GLOSSARY

AOD	Above Ordnance Datum
AQ	Air Quality
BGS	British Geological Survey
BPEO	Best Practicable Environmental Option
CD	Chart Datum
CEMD	Construction Environmental Management Document
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
ECoW	Ecological Clerk of Works
EHD	Environmental Health Department
EHO	Environmental Health Officer
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIA Regulations	Town & Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017
EnvCoW	Environmental Clerk of Works
GHG	Greenhouse Gas
Ha	Hectares
HGV	Heavy Goods Vehicles
IEF	Important Ecological Features
IEMA	Institute of Environmental Management and Assessment
IES	Institute of Environmental Science
IMO	International Maritime Organisation
JNCC	Joint Nature Conservation Committee
mAOD	Metres Above Ordnance Datum
MD-LOT	Marine Directorate Licensing Operations Team
Marine EIA Regulations	Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017
MMPP	Marine Mammal Protection Plan
MMO	Marine Mammal Observer
mNNIS	Marine Non Native Invasive Species
MWHS	Mean Water High Springs
NVC	National Vegetation Classification
NTS	Non-Technical Summary
O&M	Operations & Maintenance
PAC	Pre-Application Consultation Report
PEA	Preliminary Ecological Appraisal
PMF	Priority Marine Features
PPG	Pollution Prevention Guidance
RAMS	Risk Assessments and Method Statements
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SPA	Special Area of Protection
SBL	Scottish Biodiversity List
SDWQ	Scapa Deep Water Quay
SEPA	Scottish Environmental Protection Agency
SLVIA	Seascape, Landscape & Visual Impact Assessment
SPA	Special Area of Protection
SPMT	Self-Propelled Modular Transporter
SSSI	Sites of Special Scientific Interest
SUDS	Sustainable Urban Draining System
SWMP	Site Waste Management Plan

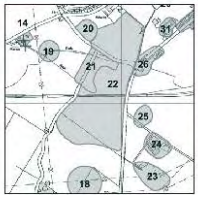
WFD	Water Framework Directive
WSI	Written Scheme of Investigation
ZOI	Zone of Influence
ZTV	Zone of Theoretical Visibility

APPENDICES

A DRAWINGS

B HUNTERSTON MARINE CONSTRUCTION YARD, ARCHAEOLOGICAL DESK BASED ASSESSMENT

HMCY16








HUNTERSTON MARINE CONSTRUCTION YARD

Archaeological Desk-based Assessment

for Envirocentre

13 December 2016

HEADLAND ARCHAEOLOGY

HUNTERSTON MARINE CONSTRUCTION YARD

Archaeological Desk-based Assessment

for Envirocentre

13 December 2016

HA Job no.:	HMCY16
NGR:	NS 18593 53062
Parish:	West Kilbride
Council:	North Ayrshire Council
Project Manager:	Paul Masser
Author:	Tom Janes
Fieldwork:	n/a
Graphics:	Tom Janes
Approved by:	

CONTENTS

LIST OF ILLUSTRATIONS

HUNTERSTON MARINE CONSTRUCTION YARD

ARCHAEOLOGICAL DESK-BASED ASSESSMENT

SUMMARY

It is proposed to construct and operate a marine-related decommissioning yard and associated infrastructure in the existing Marine Construction Yard, Hunterston. The site is intended to allow reverse engineering and decommissioning of marine structures, oil industry structures, and obsolete vessels. Although the yard is currently designed to serve as a dry dock, a new purpose built access structure will be required. This is expected to consist of a concrete caisson type structure to allow ready access and egress to the dry dock. In addition it is expected that the existing quay will require extending and strengthening.

One known heritage asset has been identified within the footprint of the proposed development; this comprises the existing marine construction yard which is recorded on the North Ayrshire Historic Environment Record (maintained by the West of Scotland Archaeology Service).

Due to previous land reclamation works and the construction of the existing yard, there is no risk of direct impacts upon known or unknown archaeological features as any such deposits that may have existed within the construction footprint are highly likely to have been removed.

Four Listed Buildings and 13 HER entries were assessed for potential setting impacts. These include the Category A-listed Hunterston Castle and Category B-listed Hunterston House, and associated C-listed buildings on the Hunterston estate. Hunterston House was designed with sea views in mind. However modern developments such as the Hunterston power station, the ore terminal and the existing construction yard have reduced the sensitivity of these views. The proposed development will have no significant setting impacts upon these assets.

1 INTRODUCTION

1.1 Planning Background

Peel Ports Ltd. is making a planning application to North Ayrshire Council for the construction and operation of a marine-related decommissioning yard and associated infrastructure in the existing Marine Construction Yard, Hunterston. The site is proposed to also allow reverse engineering and decommissioning of marine structures, oil industry structures, and obsolete vessels. Although the yard is currently designed to serve as a dry dock, a new purpose built access structure will be required. This is expected to consist of a concrete caisson type structure to allow ready access and egress to the dry dock. In addition it is expected that the existing quay will require extending and strengthening.

Envirocentre have commissioned Headland Archaeology (UK) Ltd to produce this archaeological desk-based assessment to inform the application.

1.2 Site Description

The existing Peel Ports Hunterston Marine Construction Yard is on an artificial peninsula approximately 48Ha in area and lies on the Firth of Clyde, north of the EDF Hunterston Power Stations and west of the Hunterston

Coal Terminal. The site is adjacent to the Offshore Wind Turbine Test Facility operated by SSE, but is otherwise vacant at present, although maintenance is ongoing.

The site currently consists of a large scale dry dock with associated pumping infrastructure, laydown area/operational land and a hammerhead quay on the northern part of the construction yard with associated dredging activity. Previously to provide egress from the dry dock it was necessary to dredge out the northwest facing bund area and then replace it, also through dredging, to close off the dock again.

1.3 Consultation

No formal consultation with historic environment organisations has taken place. However the West of Scotland Archaeology Service (WoSAS) was contacted in order to obtain a digital data extract from the Historic Environment Record (HER) for North Ayrshire.

2 AIMS AND OBJECTIVES

The assessment has been carried out according to the *Standard and guidance for historic environment desk-based assessment* published by the Chartered Institute for Archaeologists (CIfA 2014), and aims to:

- Collate all available written, graphic, photographic and electronic information relevant to the development site;
- Describe the nature, extent and significance of the historic environment within the area potentially affected by the development, identifying any uncertainties in existing knowledge;
- Determine the potential impact of the proposed development; and
- Identify any requirements for further investigation that may be necessary to understand the effects of the proposed development on the historic environment.

3 METHODOLOGY

3.1 Study areas

The Proposed Development Area (PDA) corresponds to the application boundary in order to include any known or unknown heritage assets at risk of direct and indirect impacts.

The Study Area (SA) extends 1km beyond the application site boundary, so as to include any heritage assets that may continue into the site, or which may be affected by indirect impacts or impacts on assets' settings.

3.2 Data sources

The assessment has been based on a study of all readily available documentary sources, following the CIfA Standards and Guidance (CIfA 2014). The following sources of information were referred to:

- Designation data downloaded from the Historic Environment Scotland website on 11 August 2016;
- The National Record of the Historic Environment (NRHE), including the Canmore database and associated photographs, prints/drawings and manuscripts held by HES;
- Historic Landscape Assessment data, viewed through the HLAMap website;

- The West of Scotland Archaeology Service (WoSAS) Historic Environment Record (HER) – digital data extract received 8 December 2016;
- The National Collection of Aerial Photography (NCAP);
- Lidar data supplied by the Scottish Government;
- Geological data available online from the British Geological Survey;
- Historic maps held by the National Library of Scotland;
- Ordnance Survey Name Books
- Unpublished maps and plans held by the National Records of Scotland;
- Relevant internet resources, including www.hunterston.eu
- Readily available published sources and unpublished archaeological reports.

Following study of historic mapping and an appraisal of their present locations, it was apparent that the PDA would not merit a study of existing LiDAR data. Hunterston Marine Construction Yard is in an area of reclaimed land, heavily landscaped and developed in the mid twentieth century. Landscaping works and standing buildings would obscure above-ground traces of any potential archaeological deposits.

3.3 Identification of heritage assets

The assessment aims to identify all known heritage assets potentially affected by the proposed development, and to estimate the potential for currently unknown heritage assets. A heritage asset is defined as any element of the historic environment which has cultural significance. Both discrete features, and extensive landscapes defined by a specific historic event, process or theme, can be defined as heritage assets; and assets may overlap or be nested within one another. Some heritage assets are designated as Scheduled Monuments, Listed Buildings, World Heritage Sites, Conservation Areas, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields, Historic Marine Protected Areas, or locally designated through policies in the Local Plan. Undesignated assets may be recorded in the NRHE or Historic Environment Records, while many other assets are currently unrecorded.

Heritage assets in the SA are shown on Illus. 1 and listed in Tables 3 and 4. Designated heritage assets are labelled with the reference number assigned by Historic Environment Scotland (prefixed by 'LB' for Listed Building); undesignated assets with the reference number in the HER.

3.4 Assessment of cultural significance and importance

Heritage assets are assessed in terms of their cultural significance and importance. Cultural significance is a quality that applies to all heritage assets, and as defined in 'Historic Environment Scotland Policy Statement 2016' (Annex 1, paragraph 3), may be artistic, archaeological, architectural, historic, traditional, aesthetic, scientific or social, and may be *'inherent in the monument itself, its fabric, setting, use, associations, meanings, records, related monuments and related objects'*. Following 'Scottish Planning Policy' paragraph 137, the analysis of a heritage asset's cultural significance aims to identify its 'special characteristics' which should be protected, conserved or enhanced. Such characteristics may include elements of the asset's setting, which is defined in Historic Environment Scotland's guidance as *"the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated"* (HES 2016 'Managing Change in the Historic Environment: Setting', Section 1).

The importance of a heritage asset is the overall value assigned to it based on its cultural significance, reflecting its statutory designation or, in the case of undesignated assets, the professional judgement of the

assessor (Table 1). Assets of national importance and international importance are assigned a high and very high level respectively. The criterion for Listing is that a building is of 'special architectural or historic interest'; following HESPS Note 2.17, Category A refers to 'buildings of national or international importance', Category B to 'buildings of regional or more than local importance', and Category C to 'buildings of local importance'. Any feature which does not merit consideration in planning decisions due to its cultural significance may be said to have negligible heritage importance; in general, such features are not considered as heritage assets and are excluded from the assessment.

Table 1: Criteria for Assessing the Importance of Heritage Assets

Importance of the asset	Criteria
Very high	World Heritage Sites and other assets of equal international importance
High	Category A Listed Buildings, Scheduled Monuments, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields, Historic Marine Protected Areas and undesignated assets of national importance
Medium	Category B Listed Buildings, Conservation Areas, and undesignated assets of regional importance
Low	Category C Listed Buildings and undesignated assets of lesser importance

3.5 Potential for unknown heritage assets

Archaeological features are often impossible to identify through desk-based assessment. The likelihood that significant undiscovered heritage assets may be present within the PDA is referred to as *archaeological potential*. Overall levels of potential can be assigned to different landscape zones, following the criteria in Table 2, while recognising that the archaeological potential of any zone will relate to particular historical periods and types of evidence. The following factors are considered in assessing archaeological potential:

- The distribution and character of known archaeological remains in the vicinity, based principally on an appraisal of data in the HER;
- The history of archaeological fieldwork and research in the surrounding area, which may give an indication of the reliability and completeness of existing records;
- Environmental factors such as geology, topography and soil quality, which would have influenced land-use in the past and can therefore be used to predict the distribution of archaeological remains;
- Land-use factors affecting the survival of archaeological remains, such as ploughing or commercial forestry planting; and
- Factors affecting the visibility of archaeological remains, which may relate to both environment and land-use, such as soils and geology (which may be more or less conducive to formation of cropmarks), arable cultivation (which has potential to show cropmarks and create surface artefact scatters), vegetation, which can conceal upstanding features, and superficial deposits such as peat and alluvium which can mask archaeological features.

Table 2: Archaeological potential

Potential	Definition
High	Undiscovered heritage assets are almost certainly present, and these are likely to include assets of high or medium importance.
Medium	Undiscovered heritage assets are likely to be present, and it is possible, though unlikely, that these may include assets of high or medium importance.

Potential	Definition
Low	The study area may contain undiscovered heritage assets, but these are unlikely to be numerous and are highly unlikely to include assets of high or medium importance.
Negligible	The study area is highly unlikely to contain undiscovered heritage assets of any level of importance.
Nil	There is no possibility of undiscovered heritage assets existing within the study area.

4 RESULTS

4.1 Overview of the historic environment

Previous investigations

The WoSAS HER records four previous archaeological investigations and surveys within 1km of the PDA. Two of these were related to Hunterston Power Station (Event 4378 and Event 5582) and the other two related to work at Hunterston Castle (Event 838) and the Firth of Clyde Coastal Zone Assessment Survey (Event 768).

Event 4378 was a desk-based assessment and walkover survey carried out in 2010 in advance of a proposed new power station at Hunterston. This survey identified some coastal features which were subsequently added to the WoSAS HER. Event 5582 was the 2014 excavation of prehistoric features in advance of the construction of a new substation at Hunterston North. The features included a roundhouse and some pits which yielded a number of lithic and pottery finds.

The work at Hunterston Castle (Event 838) identified nothing of archaeological significance, and the Coastal Zone Assessment (Event 768) undertaken in this area was part of a wider survey of the Firth of Clyde coastal zone. Features identified during this survey have been added to the HER.

Geology and geomorphology

The local bedrock of the area is sandstone of Devonian age (Old Red Sandstone) belonging to the Kelly Burn Sandstone Formation, overlain by glacial sand and gravel and raised marine deposits of Quaternary age.

Glacial and post-glacial activity beginning approximately 20,000 years ago resulted in sea-level changes along the west coast of Scotland. The retreat of glaciers caused the land to slowly rise as the weight of ice was lifted. The melting ice also caused sea-levels to increase, but along the Ayrshire coast the land rose faster and further than the sea. This is evidenced by a series of raised beaches along the Ayrshire coast; these are more apparent further south of the PDA around Northbank and Portencross. By around 10,000 years BP the fertile soil left by the retreating glaciers had given rise to birch forests, and Mesolithic hunter-gatherers had found their way to the coasts.

The PDA is entirely on an artificial island reclaimed from the sea during the creation of the Hunterston Marine Construction Yard in the 1970s. The land comprises a mixture of dredged sand and sandstone quarried from Campbelton Hill, to the south-east of the SA.

Prehistoric

Recent excavations associated with development at Hunterston Power Station (HER Event 5582) have revealed evidence of multiphase activity with finds dating from the Mesolithic, Bronze Age, Iron Age and medieval period, and features of Iron Age date indicating the presence of settlement and possibly ironworking in the area.

The HER also records chance finds of prehistoric artefacts in the area; in 1896 a perforated stone axe-hammer was found near Hunterston Castle (HER 5246); in 1927 prehistoric pottery and beads were found during ploughing at Fences farm steading (HER 5235), and in 1976 a single flint arrowhead was discovered on the foreshore at Hunterston (HER 5236).

Roman

There is very little definitive evidence of Roman activity in the Study Area. A harbour at Little Brigurd (HER 5233) was identified in a 1976 study of aerial photographs and suggested as being Roman. The feature was visited by Wessex Archaeology and RCAHMS in 2013 and is described in Canmore thus;

"A stone-built harbour lies at the very low water mark on Brigurd Point. Rectangular on plan but open to the sea on the south-west, it measures 61m from north-east to south-west by at least 46m transversely over a ruinous wall constructed of large boulders but now standing no more than two courses high. The external corners of this wall are faceted and the outer, seaward, face on the NW appears to have been strengthened by incorporating large boulders and positioning them so that their flat, long sides faced outwards. Aerial photographs appear to indicate that there is a cleared area of sea-bed directly outside the mouth of the harbour."[1]

However, the date of the harbour remains unclear following this investigation, and the report suggests a variety of dates; nineteenth century, thirteenth century or later, or Roman[2]. The location of the harbour could indicate that it became submerged following a rise in sea-levels, or it could be that the harbour was sited at the edge of the deep waters of the Clyde to allow ships to dock without risking the sandbanks of Hunterston Sands.

Medieval

As well as the possible medieval harbour at Little Brigurd (HER 5233), a number of probable fish traps (HER 5243) have been identified in the inter-tidal zone of Hunterston Sands. Appearing as stone walls and circular stone features substantial timbers were discovered beneath one of them. Dendrochronological samples taken from these timbers returned an early thirteenth century date[3].

Post-medieval and modern

Although the harbour at Little Brigurd (HER 5233) may have been in use during the medieval and post-medieval period, the only definitive post-medieval features within the study area are those within the Hunterston estate. Hunterston Castle was built in the late fifteenth or early sixteenth century, and the estate itself is named (as 'Hunterstoun') on Gordon's map of 1636-52, indicating that it was established by this date. Roy's map of the 1750s depicts neat plantings of ornamental woodlands amid fields at 'Hunterston'. The Hunterston estate policies as defined by the WoSAS HER (HER 53438) appear to correspond with those broadly defined on Armstrong's 1775 map and the 1st Edition OS map of 1857.

Early twentieth century activity within the study area is represented by the jetty (HER 62916) and track (HER 62917) at Hunterston. These are first depicted on the 1911 OS 6-inch map, and it is presumed that they were built around the turn of the century.

[1] https://canmore.org.uk/site/40655/brigurd-point-hunterston-sands
[2] Wessex Archaeology Coastal and Marine, 2014, Coastal Archaeological Landscape: Intertidal & Estuarine Survey Project, Data Structure Report
[3] ibid

Modern activity recorded on the HER comprises the two nuclear reactors at Hunterston Power Station. Hunterston A (HER 5244) was opened in 1964 and closed in 1990. It is currently being decommissioned and dismantled. Hunterston B (HER 14108) was opened in 1976 and is still operational. Both stations occupy land that formerly belonged to the Hunterston estate. The Hunterston Construction Yard within the PDA is also recorded on the HER (HER 13456) and is discussed below.

4.2 Assessment of heritage significance

Known heritage assets within the Inner Study Area

The Hunterston Construction Yard is recorded on the HER as HER 13456. However, as a modern industrial structure of negligible cultural heritage significance, it is not considered a heritage asset in this assessment.

There are no heritage assets within the PDA.

Archaeological potential of the Inner Study Area

The building of the Hunterston Marine Construction Yard in the 1970s required the reclamation of approximately 50Ha of land from the sea and foreshore. Although archaeological features are known to be present in the vicinity of the PDA, the landscaping and groundworks involved in the building of the yard is highly likely to have removed, buried or otherwise destroyed any archaeological deposits that may have been present within the PDA.

It is considered that there is no likelihood that any archaeological deposits or artefacts survive as buried remains within the PDA, and the archaeological potential of the PDA is nil.

Heritage assets in the Outer Study Area

Listed Buildings

There are four Listed Buildings within the SA. They comprise one Category A, one Category B and two Category C-listed buildings. All four are within the Hunterston estate (HER 53438) and include the late medieval Hunterston Castle; the eighteenth century Hunterston House, and a well and walled garden contemporary with the house.

Table 3: Listed Buildings included in the assessment

LB no.	Name	Category
LB14313	Hunterston Castle	A
LB14286	Hunterston House	B
LB14287	Hunterston House, Well	C
LB14288	Hunterston House, Walled Garden	C

Hunterston Castle (Category A, LB14313) consists of a late fifteenth century or early sixteenth century tower house/keep enlarged in the seventeenth century with the addition of a house. There are small courtyards to the north and south of the castle, but a range of buildings formerly attached to the castle have been demolished and replace with a modern house. The castle was superseded as the Hunter family home in the eighteenth century when Hunterston House was built.

Hunterston House (Category B, LB14286) was built in 1799, and extended in the late nineteenth century. Approximately 280m north of Hunterston Castle, it is set among the traces of a formal lawn, planted with

trees. The house faces due north, allowing views over the much-reduced remains of a landscaped park towards Oilrig Road and the Firth of Clyde beyond.

The well (LB14287) and walled garden (LB14288) at Hunterston House are both Category C-listed. The well is a carved stone wellhead with an ornate wrought-iron superstructure. It is on a stone plinth in front of Hunterston House and resembles the Venetian courtyard wells of the eighteenth century. The walled garden is west of the castle and is believed to be eighteenth century with later alterations.

The buildings of Hunterston estate largely derive their heritage significance from their architectural and historic interest. The relationship and views between the buildings also contributes as the Hunter family's move from the castle to the later house is an important aspect of the estate's history, and the well and walled garden derive significance from being ornamental and functional features of the estate. Although Hunterston House was designed to offer wide northern views across the estate to the sea, these are now of less relevance to heritage significance. The construction of the Ore Terminal and the Construction Yard have reduced the sensitivity of these views and now they only make a limited contribution to the heritage significance of Hunterston House and its associated buildings.

Other Designated Heritage Assets

There are no World Heritage Sites, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields, Scheduled Monuments or Conservation Areas within the SA.

Undesignated heritage assets

There are 13 entries recorded on the HER within 1km of the proposed development. Three of the entries (HER 5235, 5236 and 5246) record chance finds of artefacts – none of these will be subject to direct or indirect impacts. Two other entries (HER 5244 and 14108, not on Illus. 1) record elements of the Hunterston nuclear power station; as modern industrial buildings neither is considered to be a heritage asset for the purposes of this assessment.

The remaining eight entries record upstanding features comprising six structures in and around Hunterston Bay including fish traps, a jetty, a harbour and a raised track; Hunterston estate designed landscape, and the gateway and gate piers into the estate.

Table 4: Undesignated heritage assets included in the assessment

HER Ref.	Name/Description	Type	Importance
53438	Hunterston (Huterston (Blaeu), Hunterstown (Roy))	Designed landscape	Medium
5233	Little Brigurd, Harbour	Structure	Low
5243	Hunterston Sands / Fairlie Roads, fish traps	Structure	Low
42998	Hunterston House, Gateway and Gate Piers	Structure	Low
62914	Hunterston Sands	Structure	Low
62915	Hunterston Sands	Structure	Low
62916	Hunterston Jetty	Structure	Low
62917	Hunterston, track	Structure	Low
5235	Fences - Cinerary Urn; Bead	Findspot	Negligible
5236	Hunterston Sands - Flint	Findspot	Negligible
5246	Hunterston / Hunterstone - Axe-hammer	Findspot	Negligible

The harbour at Little Brigurd (HER 5233), and the fish traps (HER 5243), structures (HER 62914 and 62915), jetty (HER 62916) and raised track (HER 62917) on and around Hunterston Sands derive their heritage

significance from their location on the shore of the Clyde, and their immediate relationship with the coast, as well as from their intrinsic interest as archaeological resources. Wider views are of limited relevance to their heritage significance.

The gate piers and gateway (HER 42998) of Hunterston estate also derive most of their heritage significance from their relationship to nearby features; in this case the buildings and estate of Hunterston. Wider views are of limited relevance to their heritage significance. The gate piers are also not in their original location, which was at the eastern end of Largs Avenue where it met the A78. When the Ore Terminal was constructed requiring the realignment of the A78 in the 1970s, the gates were moved to their present location.

Hunterston (HER 53438) is recorded on the HER as a Designed Landscape based on historic map evidence from Blaeu, Roy and the Ordnance Survey. The core of the designed landscape comprises the parkland, woodland and avenues surrounding Hunterston Castle and Hunterston House, and the much more extensive area defined in the HER (which includes farmland and a section of the Hunterston Power Station complex) presumably reflects the original estate boundary. While this designed landscape is considered to be of medium importance as a whole, not all elements of the landscape within the area defined in the HER are of equal importance, and parts of the estate and its environs have seen great change due to the construction of Hunterston Nuclear Power Station to the west, the Ore Terminal to the north and Hunterston Construction yard to the north-west.

5 PREDICTED EFFECTS OF THE DEVELOPMENT

Description of the Proposed Development

The proposed development comprises the redesign and upgrading of the existing dry dock entrance/exit with the construction of a concrete caisson, and the strengthening of an existing quay.

Potential Impacts

Potential impacts arising from the proposed developments include direct impacts involving disturbance or removal of heritage assets by construction groundworks and setting impacts arising from changes to views from and of heritage assets.

Predicted Direct Impacts

All of the work is proposed to take place in areas already likely to have been extensively disturbed by land reclamation and the construction of the existing construction yard and dry dock.

As the PDA is considered to be of nil archaeological potential, there is no risk of direct impacts upon any previously unknown archaeological deposits.

Predicted Setting Impacts

The proposed development will comprise the redesign and upgrading of the existing dry dock facility and quay. The existing structure is visible from heritage assets in the SA, and the proposed development will not constitute a change in views towards the PDA. The operation of the facility may involve intermittent and temporary changes to views as vessels are brought into the dry dock for decommissioning.

The proposed development and operations of the dry dock are likely to be visible in views from and across Hunterston House (LB14286), Hunterston Castle (LB14313), the well (LB14287) and walled garden (LB14288), and the Hunterston estate (HER 53438). However, although Hunterston House was designed to offer wide

northern views across the estate to the sea[4], these are now of less relevance to heritage significance. The construction of the Ore Terminal and the Construction Yard have reduced the sensitivity of these views and now they only make a limited contribution to the heritage significance of Hunterston House, the estate and its associated buildings. There will be no significant setting impacts upon Hunterston estate and its associated buildings from the proposed development or its operation.

Wider views are of limited relevance to nine of the remaining 12 undesignated heritage assets within the SA. There will be no significant setting impacts upon the harbour at Little Brigurd (5233); the fish traps (5243); structures (62914 and 62915); the jetty (62916); the raised track (62917); the gate piers and gateway (42998) of Hunterston estate, or Hunterston Nuclear Generating Stations (5244 and 14108).

The final three of the HER entries record chance finds of artefacts – none of these will be subject to direct or indirect impacts.

6 CONCLUSIONS

Within the PDA, there will be no significant direct impacts upon HA1. As the PDA is considered to be of nil archaeological potential, there is no risk of direct impacts upon any previously unknown archaeological deposits.

Four designated assets and 13 undesignated assets within the SA were assessed for potential setting impacts. These include one Category A-listed building, one Category B-listed building and two Category C-listed buildings, as well as an undesignated designed landscape within which the four Listed Buildings are located.

The proposed development will have no significant setting impacts upon any of the four designated or 13 undesignated assets within the SA.

Mitigation

As there are likely to be no direct or setting impacts affecting the heritage significance of the heritage assets within and outside the PDA, it is considered that no further mitigation is required with respect to these.

7 REFERENCES

Bibliographic references

Davis, Michael C., 1991 *The Castles and Mansions of Ayrshire*

Headland Archaeology, 2009 'Chapter 9 – Archaeology and Cultural Heritage' in *Hunterston Windfarm: Environmental Statement*

Headland Archaeology, 2010 'Chapter 17 – Archaeology and Cultural Heritage' in *Ayrshire Power Station: Environmental Statement*

Headland Archaeology, 2014 *Hunterston Estate Solar Farm: Archaeological Desk-Based Assessment*

[4] Davis, 1991 p289

Wessex Archaeology Coastal and Marine, 2014, Coastal Archaeological Landscape: Intertidal & Estuarine Survey Project, Data Structure Report

Digital references

Archaeology Data Service – www.archaeologydataservice.ac.uk

British Geological Survey; www.bgs.ac.uk

National Library of Scotland (historic maps); www.maps.nls.uk

http://virtual.hunterston.eu/index.htm

Historic maps

Gordon, R ca. 1636-52 *Cunningham*

Blaeu. J 1654 *Cuninghamia*, in *Blaeu Atlas of Scotland*

Armstrong, A 1775 *A new map of Ayrshire*

Ainslie, J 1821 *Ainslie's map of the Southern Part of Scotland*

Thomson, J 1828 *Northern Part of Ayrshire*, in *John Thomson's Atlas of Scotland*

Ordnance Survey Six-inch first edition: Ayrshire sheets 6 & 10 (surveyed 1855, published 1857-8)

Ordnance Survey Six-inch second edition: Ayrshire sheets VI.SE & X.NE (revised 1895, published 1897)

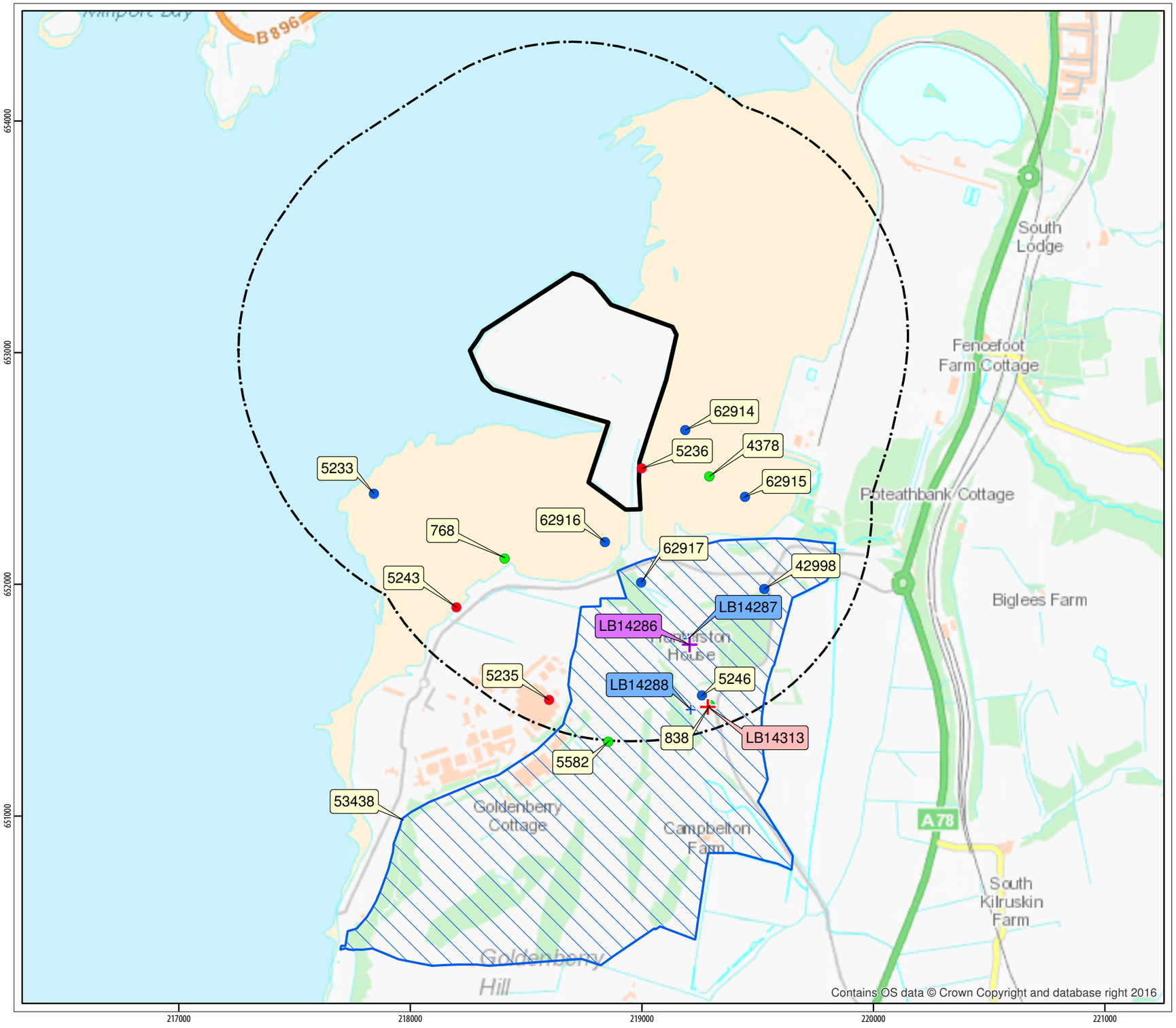
Ordnance Survey Six-inch third edition: Ayrshire sheets VI.SE and X.NE (revised 1908, published 1911

Aerial Photographs

Table 5: Prints held by National Collection of Aerial Photography at HES

Library Ref	Sortie	Date	Frame nos.
C_0001	106G/UK/0077	10/5/46	6007-6010
B_0155	106G/UK/0084	10/5/46	4273
C_0049	106G/UK/0084	10/5/46	6121
B_0172	CPE/UK/0261	13/8/47	3231-3233, 3270-3272
B_0412	542/0145	11/3/55	0122
B_0439	58/2517	17/7/58	0027-0029

HEADLAND ARCHAEOLOGY
SCOTLAND
13 Jane Street
Edinburgh EH6 5HE
0131 467 7705
www.headlandarchaeology.com



KEY

- Category A Listed Building
- Category B Listed Building
- Category C Listed Building
- Heritage Asset
- Heritage Asset
- HER Event Record
- HER Artefact Find
- 1km Radius
- Proposed Development Area

Historic Environment Record information
derived from WoSAS data
dated 8 December 2016 © Crown Copyright (area office)

Listed Building data provided by Historic Environment Scotland
dated 11 August 2016 © Crown Copyright
(Historic Environment Scotland)

N

1:18,000 @ A4

0 440m

ILLUS 1 Site Location and Heritage Assets within Study Area

C HUNTERSTON QUAY REMEDIAL WORKS - EELGRASS AND HORSE MUSSEL INTERTIDAL SURVEY

Hunterston Quay Remedial Works
Eelgrass and Horse Mussel Intertidal Survey

September 2012

EnviroCentre Document No.	5079
EnviroCentre Project No.	161511j
Status	Final
Project Manager	Jackie Webley
Project Director	Emma Cormack
Date of Issue	September 2012

EnviroCentre
11 Bridgefield
Stonehaven
AB39 2HY

t 01569 760661
f 01569 760662
w *www.envirocentre.co.uk*
e *stonehaven@envirocentre.co.uk*

Offices
Glasgow
Belfast
Stonehaven

Hunterston Quay Remedial Works
Eelgrass and Blue Mussel Intertidal Survey

Table of Contents

Appendices

List of Tables

Drawings

Drawing No 105069/002 Rev A	Site Layout
Drawing No 161511j-003	Eelgrass and Horse Mussel Intertidal Survey

1. INTRODUCTION

1.1 Background

Clydeport Ltd (client) plans to upgrade and extend an existing quay at their construction yard and to undertake associated dredging. A Screening Opinion from Marine Scotland was requested by the client to determine if an Environmental Impact Assessment (EIA) would be required. Marine Scotland consulted the Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH) and North Ayrshire Council and concluded that an EIA would not be required (Ref: Mike Bland, letter dated 15/03/2012).

Marine Scotland have however requested that an Environmental Review is completed that gives consideration to a number of issues which were listed in their correspondence (letter dated 15/03/12) concerning the need for species specific surveys, mitigation to protect adjacent habitats, biosecurity and pollution prevention measures.

EnviroCentre Ltd was commissioned to undertake field survey and reporting for horse mussel (*Modiolus modiolus*), common eelgrass (*Zostera marina)* and dwarf eelgrass (*Z. noltii*) (referred to as 'target species') to address Issue 1:

> *"There is potential for the presence of eel grass beds featuring Zostera noltii and Z. marina on the site of the proposed dredge pocket. These are Scottish Biodiversity strategy/List priority habitats. There is also potential for UKBAP horse mussels within the proposed dredging footprint. The presence of horse mussels and zostera should be checked and, if present, mitigation proposals to maximise the conservation of these habitats/species incorporated in the application."*

This report provides the following in order to address Issue 1:

- Methods;
- Desk Study;
- Field Survey Results; and
- Mitigation Measures, where appropriate.

Drawing No 105069/002 Rev A, Appendix A shows the site layout.

2. METHODS

2.1 Desk Study

The desk study involves a search for any statutory or non-statutory designated sites and existing records of horse mussels and eelgrass within a 2km radius, using the following sources:

- SNH SiteLink[1] for information on statutory designated sites;
- The North Ayrshire Local Plan[2] for non-statutory designations;
- Scottish Biodiversity List[3] for species considered important to the conservation of biodiversity;
- NBN Gateway[4] for previous records of protected or notable species;
- Marine Life Information Network (MarLIN)[5] for general species information; and
- UK Biodiversity Action Plan (BAP)[6] and Ayrshire Local Biodiversity Action Plan (LBAP)[7] for priority species records.

Previous reports[8] have been completed on the intertidal habitats located immediately to the north, south and east of the proposed quay extension and dredge pocket and this information has been used to inform the field survey and reporting.

2.2 Field Survey

A series of transects were undertaken at 20m intervals parallel to the shoreline and these extended across the intertidal flats into the channel, as far as could be safely waded. A glass-bottomed bucket was used to view the substrate and search for the target species. At the furthest point from shore, where the water depth prevented the surveyor from continuing, the grapnel was thrown out into the channel to trawl for species evidence.

The following equipment was used:

- Grapnel;
- Glass-bottomed bucket;
- GPS; and
- Camera.

The area surveyed is shown in Drawing No 161511j/003, Appendix A.

[1] SNH SiteLink, available from http://gateway.snh.gov.uk (accessed 24/05/12)
[2] http://www.north-ayrshire.gov.uk/BusinessAndTrade/PlanningAndBuildingStandards/LocalPlan-GeneralInformation.aspx (accessed 24/05/12)
[3] http://www.biodiversityscotland.gov.uk/advice-and-resources/scottish-biodiversity-list/how/ (accessed 24/05/12)
[4] NBN Gateway Available from http://data.nbn.org.uk (accessed 24/05/12)
[5] http://www.marlin.ac.uk/species.php (accessed 24/05/12)
[6] http://jncc.defra.gov.uk/page-5717 (accessed 24/05/12)
[7] http://www.ayrshire-jsu.gov.uk/albap_reports.html (accessed 24/05/12)
[8] Marine Environmental Consultants (2005) Intertidal habitat Survey: Portencross SSSI, North Ayrshire, ERT 1415.
DH Ecological Consultancy (2005) Nationally Scarce plant survey and woodland national Vegetation Classification survey of Portencross SSSI, North Ayrshire. Scottish Natural Heritage Commissioned Report No. 080 (ROAME No. FO4L107)

2.3 Constraints

There is an area of subtidal habitat located immediately in front of the existing quay that has previously been dredged. This area was too deep to safely wade and the sea bed could not be viewed with the glass-bottomed bucket. The grapnel was thrown out into the dredge area to check for the target species. However, it was not possible to reach all areas of the dredge footprint due to the depth of the channel. This restriction was not considered to significantly affect the survey results for the following reasons:

- The target species are unlikely to utilise habitat in deep water (eelgrass is associated with water depths up to four metres and horse mussel will tolerate depths up to five metres).
- The grapnel, when trawled into the dredge pocket returned with large wrack species. These species shade out species such as eelgrass.
- No evidence of washed out eelgrass or horse mussels was found in the intertidal habitat immediately adjacent to the dredge area. This could be expected where beds of these species are present.

3. RESULTS

3.1 Desk Study

The desk study results are presented in Table 3.1. These relate the existence and details of designated areas and of previous data available on the habitats and species of interest.

Table 3.1: Desk Study Results

Source	Feature	Description
SNH Sitelink	Portencross Site of Special Scientific Interest (SSSI)	• Located immediately adjacent to the south east of the proposed works. • A great variety of seashore habitats with interesting plants and the best mud flats for wildfowl and waders in the Clyde.
North Ayrshire Local Plan	Southannan Site of Importance for Nature Conservation (SINC)	• Located approximately 1.5km to the north east of the proposed works. • SINC No. 86 in Local Development Plan.
Scottish Biodiversity List	Eelgrass and Horse mussel Dwarf eelgrass	• Included on the priority list for the UK, and which are present in Scotland. • Included to ensure consistency in approach between terrestrial/freshwater habitats/species and marine features and ensures that Scotland can help the UK to meet its international obligations for marine features. • Identified as important by the Scottish public. • An observed, estimated, inferred or suspected significant decline (exceeding expected or known natural fluctuations) in numbers, extent or quality of a marine habitat or species in Scotland (for species, quality relates to life history parameters). Significant decline should be assessed as 25% reduction of area or numbers, or other appropriate threshold (which must be stated and justified). -included to be consistent with the UK criteria.
NBN Gateway	Horse mussel (*Modiolus modiolus*) Eelgrass (*Zostera marina*) Eelgrass (*Zostera noltii*)	• No records within site boundary. Closest records of blue mussel beds are at Millport approx.1.5km to the west. • No records within search area. • No records within search area.
UK BAP	Seagrass (eelgrass) Beds Horse Mussel Beds	• UK Priority Habitat with a Habitat Action Plan (HAP) • UK Priority Habitat with a Habitat Action Plan (HAP)
Ayrshire LBAP	Intertidal Zone: sediment shores and Benthic Zone	HAP to safeguard the associated sublittoral flora and fauna. The target species (*Zostera and Modiolus*) are not listed as priority species under the LBAP but form components of the key habitats for which Local HAPs have been prepared.

Table 3:1 Desk Study Results (Cont'd)

Marine Life Information Network (MarLIN)	Common eelgrass Dwarf eelgrass Horse mussel	• National Importance – scarce • National Importance – scarce • Not listed under any importance categories
Intertidal Habitat Survey: Portencross Coast (SSSI), North Ayrshire	Dwarf eelgrass	• *Zostera noltii* bed on Southannan Sands opposite Fairlie Village, approx 1.7km from the proposed works. • *Zostera noltii* bed on Hunterston sands approx. 700m to the south of the site. • Significant densities of eelgrass were recorded at each of the above sites. The survey was completed during 2005.
Nationally Scarce Plant Survey and woodland National vegetation Classification survey of Portencross SSSI, North Ayrshire	Common eelgrass Dwarf eelgrass	• No plants were found. • Extensive beds were recorded covering 15ha on Southannan Sands and 18ha on Hunterston Sands immediately adjacent to the site.
EnviroCentre Report	Dwarf eelgrass	• *Zostera noltii* bed on Southannan Sands was surveyed and mapped in 2010.

Blue mussel (*Mytulus edulis*) has not been identified by Marine Scotland as a target species for inclusion in the Environmental Review. However, this species forms a UK BAP Priority Habitat for which a HAP has been prepared. Extensive blue mussel beds have been recorded on the lower shore on Southannan Sands opposite Fairlie Village, approx 1.7km from the proposed works[9].

3.2 Field Survey

The survey was completed on 3rd May 2012 during optimal survey conditions, low tide (0.4m), flat sea, excellent visibility (Photo 1).

Photo 1: Optimal survey conditions

No evidence of dwarf or common eelgrass, horse mussel or blue mussel was discovered in the survey area.

[9] Marine Environmental Consultants (2005) Intertidal habitat Survey: Portencross SSSI, North Ayrshire, ERT 1415.

The survey area is characterised by fine sand and sandy mud substrates with occasional cobbles and pebbles close to the strandline and bordering the rock armour that forms the landward survey boundary (Photos 2 and 3).

Photo 2: Foreshore where extended rock armour and dredging will occur.

Photo 3: Area in front of existing quay to be dredged.

3.3 Discussion

The survey area is located on a moderately exposed shoreline, resulting in suboptimal conditions for the target species (horse and blue mussel can tolerate moderately tide swept areas). Exposed areas of coast receive greater wave action and turbulence which can prevent the target species becoming established. The existing colonies of eelgrass, blue and horse mussel (refer to Table 4.1) are found in sheltered areas of coastline. Furthermore, the presence of these species in areas adjacent to the site in conjunction with their absence from within the site, suggests habitat conditions are unsuitable as otherwise these species would extend their current distribution in the locality.

3.4 Conclusion

The survey concludes that eel grass beds featuring *Zostera noltii* and *Z. marina*, blue mussel (*Mytulus edulis*) and horse mussel (*Modiolus modiolus)*, although they have been identified in areas adjacent to the site, are not present within the dredging footprint at Hunterston Quay.

4. MITIGATION

The following mitigation is provided as eelgrass and mussel beds are present adjacent to the site. The target species are sensitive to smothering and increases in suspended sediment/turbidity in the water column and these effects could result from dredging activities. As such:

1. Consideration should be given to the use of a suction hoe dredger as this will reduce the quantity of sediments in the water column.
2. Activities where there is a higher risk of sediment being released in larger quantities could be undertaken when the tide is receding thus sediments would not be washed onto the shoreline.

APPENDIX A
Drawings

NOTES

1 FOR DETAILS OF NEW JETTY, REFER TO Drg. No. 105069/003.

SITE BOUNDARY OF PLATFORM YARD (1979)

SITE BOUNDARY OF PLATFORM YARD (1979)

AREA DREDGED TO −10M C.D

TOP OF DREDGE SLOPE

BOTTOM OF DREDGE SLOPE

1:6 DREDGE SLOPE

GENERAL CARGO 20,000t (dwt) L=166m, B=25m, D=10.0m

NEW JETTY

EXISTING JETTY ACCESS

1:2 ROCK ARMOUR SLOPE

BOTTOM OF ROCK ARMOUR

MLWS

MLWS

HUNTERSTON SANDS

Boulders

BH 202

BH 203

BH 204

−10.0m

−9.0m

−8.0m

−7.0m

−6.0m

−5.0m

−4.0m

−3.0m

−2.0m

−1.0m

0.0m

REV	DATE	REVISION DESCRIPTION	DRN	VER
A	10.05.12	M.H.W.S. LINE SHOWN ON NEW WORKS DRAWING SHEET & PROJECT NAME REVISED	G.A.M.	J.B.

Arch Henderson 1919

Civil Engineers
Structural Engineers
Architects
CDM Co-ordinators
Geotechnical services
Environmental services

142 St. Vincent Street, Glasgow G2 5LA.
Tel : 0141 227 3060 - Fax : 0141 248 9542
www.arch-henderson.co.uk - email : glasgow@arch-henderson.co.uk

Offices in : Aberdeen, Dundee, Glasgow, Lerwick, Lisboa (Portugal), Stromness and Thurso

PROJECT :
CLYDEPORT PROPERTIES Limited
HUNTERSTON QUAY

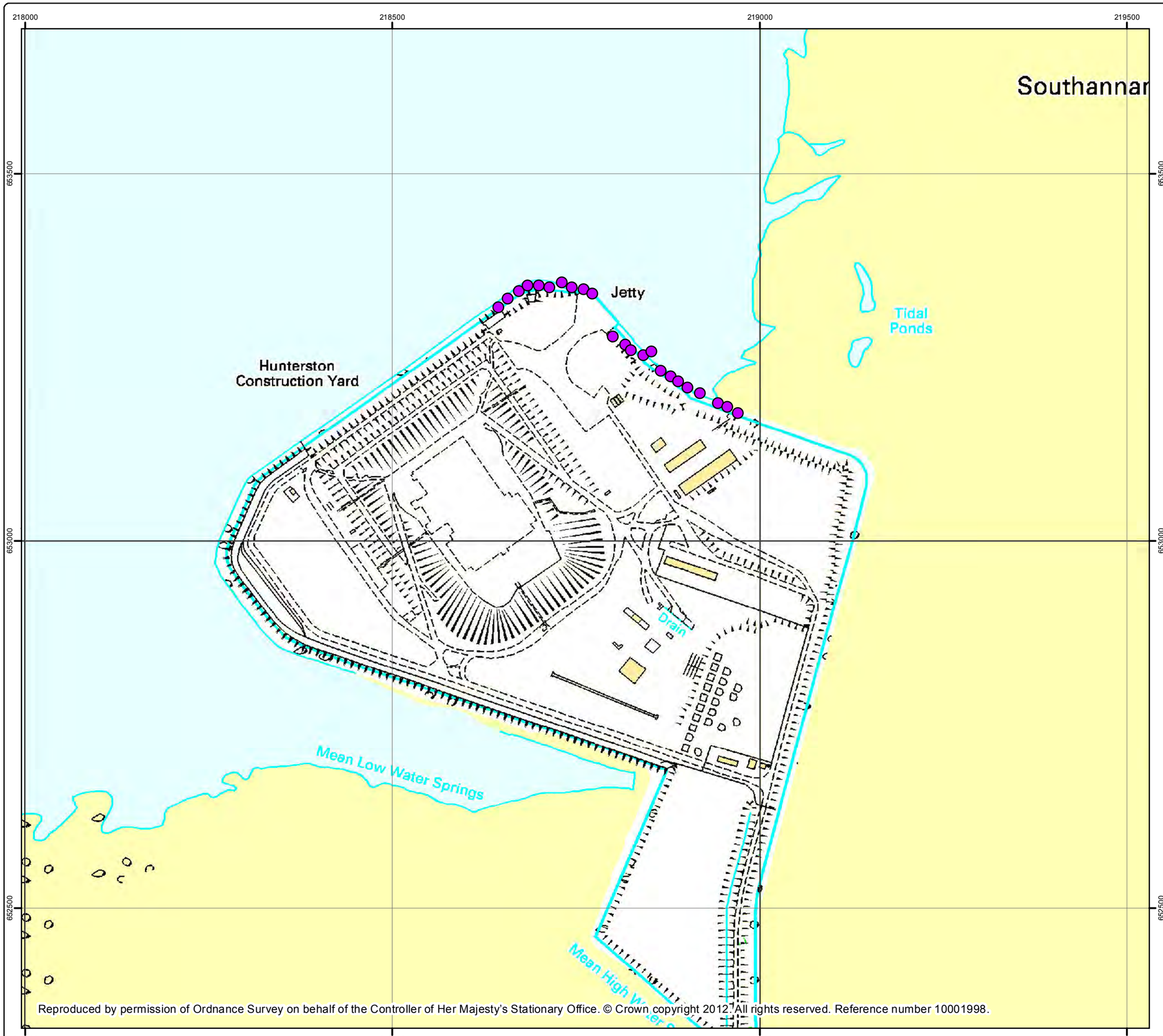
TITLE :
SITE LAYOUT

DRAWN :	DATE :	VERIFIED :	APPROVED :
G.B.	11.04.11	JB	J.B

SCALE : (A1)	DRAWING STATUS :
1:1000	REPORT

DRAWING No : 105069/002 REV : A

DO NOT SCALE



Legend

- Transect Locations

Do not scale this map

Client
Clydeport

Project
Hunterston Quay

Title
Eelgrass & Horse Mussel Intertidal Survey

Status
FINAL

Drawing No.
161511j-003

Revision

Scale
1:5,000

A3

Date
30 August 2012

Drawn	Checked	Approved
MN	JW	EC

ENVIRO Centre
Craighall Business Park, Eagle Street, Glasgow, G4 9XA
Tel: 0141 341 5040
Fax: 0141 341 5045

D CERTIFICATE OF LAWFULNESS REPORT OF HANDLING

22/00717/LUE

North Ayrshire Council
Comhairle Siorrachd Àir a Tuath

CERTIFICATE OF LAWFUL USE OR DEVELOPMENT

Town and Country Planning (Scotland) Act 1997: Sections 150 and 151
Town and Country Planning (General Development Procedure) (Scotland) Order 1992: Article 28 (7)

North Ayrshire Council **hereby certify that** on (a) 12th October 2022 the use* /~~operation*~~ /~~matter*~~ described in the First Schedule hereto in respect of the land specified in the Second Schedule hereto and edged* /~~hatched*~~ / ~~coloured*~~ (b) Red on the plan attached to this certificate, was* /~~would have been*~~ lawful within the meaning of Section 150 of the Town and Country Planning (Scotland) Act 1997, for the following reason(s):

That use of the land for general industrial (Class 5) use is lawful

Signed: [redacted] (for North Ayrshire Council)

Date: 23rd November 2022

*Delete where appropriate (a), (b), (c) and (d) - (see notes over)

FIRST SCHEDULE (c)

General industrial (Class 5) use

SECOND SCHEDULE (d)

Hunterston Construction Yard
Fairlie
Largs

NOTES

1. This certificate is issued solely for the purpose of Section 150* /151* of the Town and Country Planning (Scotland) Act 1997.

2. It certifies that the use* /operation* /matter* described in the First Schedule taking place on the land specified in the Second Schedule was* /would have been* lawful, on the specified date and, thus, was not* /would not have been* liable to enforcement action under Section 127 of the 1997 Act on that date.

3. This certificate applies only to the extent of the use* /operation* /matter* described in the First Schedule and to the land specified in the Second Schedule and identified on the attached plan. Any use* /operation* /matter* which is materially different from that described or which relates to other land may render the owner or occupier liable to enforcement action.

*4. The effect of the certificate is also qualified by the proviso in Section 151(4) of the 1997 Act, which states that the lawfulness of a described use or ~~operation is only conclusively presumed where there has been no material~~ change, before the use is instituted or the operations begun, in any of the matters relevant to determining such lawfulness.

*Delete where inappropriate.

Insert:

(a) date of application to the Council.

(b) colour used on the plan.

(c) full description of use, operations or other matter, if necessary, by reference to details in the application or submitted plans, including where appropriate a reference to the use class of any order made under Section 26(2) (f) of the Town and Country Planning (Scotland) Act 1997 within which the certified use falls.

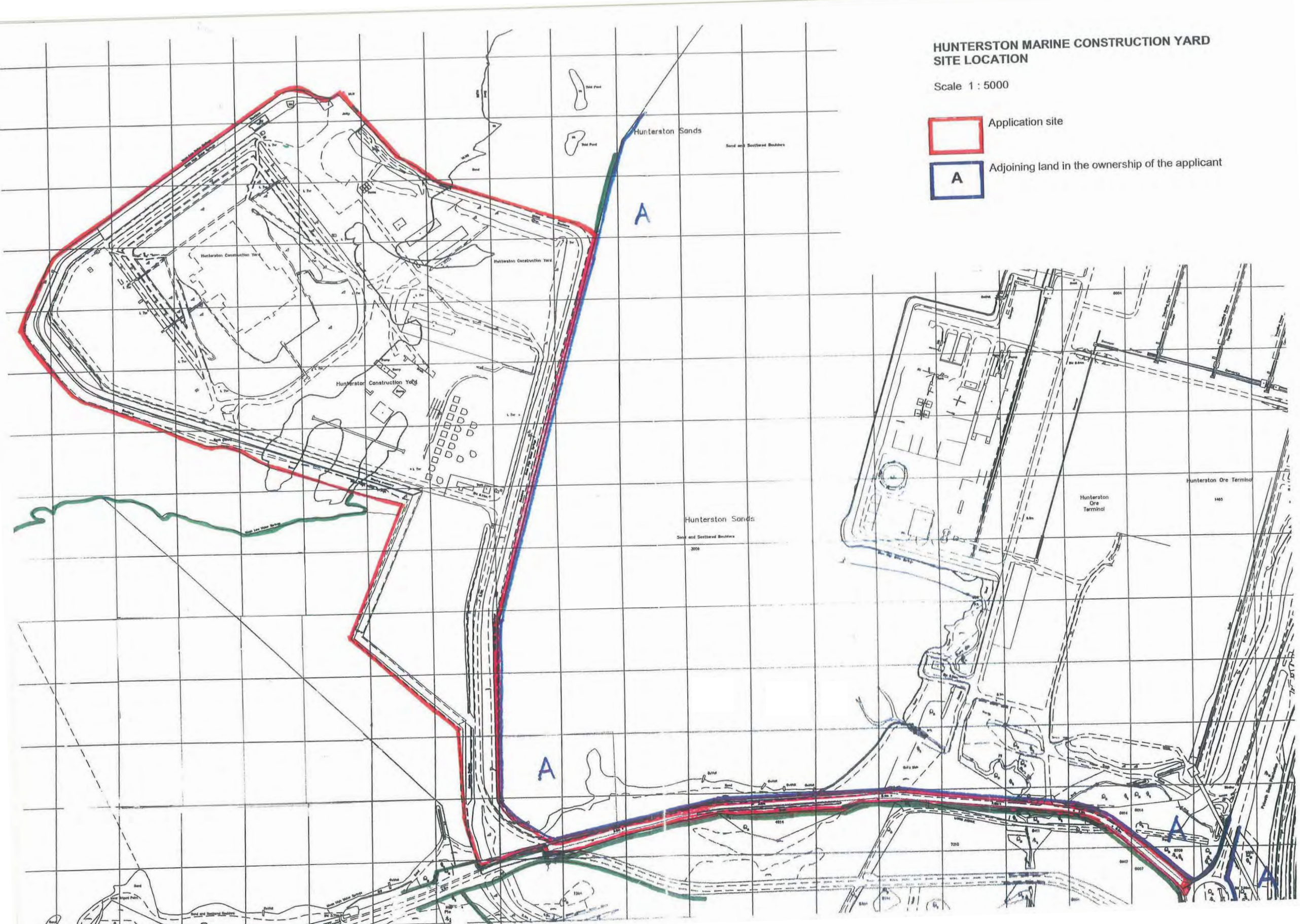
(d) address or location of the site.

HUNTERSTON MARINE CONSTRUCTION YARD
SITE LOCATION

Scale 1 : 5000

Application site

A Adjoining land in the ownership of the applicant



REPORT OF HANDLING

North Ayrshire Council
Comhairle Siorrachd Àir a Tuath

Reference No:	22/00717/LUE
Proposal:	Certificate of Lawfulness for existing general industrial use (Class 5)
Location:	Hunterston Construction Yard, Fairlie, Largs, Ayrshire
LDP Allocation:	Countryside/Rural Community
LDP Policies:	/
Consultations:	None Undertaken
Neighbour Notification:	None Required
Advert:	Not Advertised
Previous Applications:	None

Appeal History Of Site:

17/00004/NONDET for Variation of planning condition no. 1 on planning permission N/14/00164/PPM to extend the operational time period of the National Offshore Wind Turbine Testing Facility until 14th October 2019 was ALLOW on 09.01.2018

Relevant Development Plan Policies

Description

This Certificate application seeks to confirm that the use of the site for general industrial (Class 5) uses is lawful.

The site is some 51ha in area, including access road. The access road connects to the west side of the Hunterston Roundabout on the A78. The access road is currently closed to traffic but provides access to the site and secondary access to the Former Hunterston Coal Terminal and to the Hunterston Power Station. The main site itself projects to the north from the mainland and is an irregular hexagonal shape. The main site is some 46.5ha in area.

A Class 5 (General Industrial) use is defined by the Town and Country Planning (Use Classes) (Scotland) Order 1997 ("the GPDO") as any industrial process not falling within Class 4 (Business). Class 4 allows any industrial process "which can be carried on in any residential area without detriment to the amenity of that area by reason of noise, vibration, smell, fumes, smoke, soot, ash, dust or grit."

The application site is identified as part of the Hunterston Strategic Development Area and as a site suitable for Business and Industry in the Local Development Plan.

Consultations and Representations

No neighbour notification or publicity measures are required for Certificate of Lawfulness applications and no consultations were undertaken.

Analysis

Section 150 of the Town and Country Planning (Scotland) Act 1997, allows an application to be made for a Certificate of Lawful Use or Development (CLUD) to ascertain whether any operations, use of land or building or a breach of a planning condition is or would be lawful. It is not equivalent in law to a grant of planning permission but the purpose of a CLUD for an existing use is usually to secure immunity from enforcement action by the Planning Authority or to provide certainty for future planning applications.

In this case of a Class 5 (General industry) use, if the use has been in existence for ten years or more, it is immune from planning enforcement action and a CLUD has to be issued. The legislation makes it clear that the onus of proof rests with the applicant. In order to justify the issuing of a CLUD for such an existing use, the applicant must be able to demonstrate that the use has existed for at least ten years prior to the date of the application. The relevant test of such applications is on 'the balance of probability' rather than 'beyond reasonable doubt.'

The planning history for the site dates back to the mid-1970s. In July 1975 the Secretary of State for Scotland granted consent for the construction of the yard. In January 1988 planning permission was granted for the continued use of the site, enlargement of the platform and associated land reclamation. This permission was subject to a condition which limited the duration of the use. This permission was extended in December 2005 and May 2011.

On the 31st August 2016, planning permission was granted for the removal of the condition which limited the duration of the use. This meant that the planning permission would not lapse for the use of the land as a construction yard. This permission allowed the use of the site for construction and repair. A subsequent application to vary they types of structures which could be constructed, repaired, or decommissioned was granted 25th April 2018 and remains extant.

Other planning permissions granted for the site since 2002 include permissions allowing the erection of up to three wind turbines for the purposes of testing.

The applicant has submitted evidence of how the site has been used during the above period. Following creation of the yard until 1985, the site was leased by various engineering companies undertaking infrastructure projects including

construction of oil rig platforms. Copies of the leases and information of the projects undertaken is provided.

For the period 1988 until 1996 the applicant has submitted evidence of further leases by engineering firms. The construction yard was extended during this period and work carried out included the construction of the floating Trident Dry Dock. Local newspaper extracts reporting on this work are also provided.

A marketing brochure from the mid-1990s, describing the dry dock as recent and stating the site is suitable for a range of "marine construction projects," is also submitted. The brochure includes photographs of a gravity base tank for an oilfield and a steel platform. A provided newspaper extract places the steel platform work to sometime after 1993.

For the period from 1998 onwards, further details of short leases taken of the site by fabrication and engineering companies are provided. From 2014 evidence of the permitted wind turbines, erected for the purposes of testing, being constructed on site is submitted.
The applicant has provided evidence of the use of the site for a period of more than 10 years, as far back as 1975. Whilst this evidence is not consecutive, it provides a picture of a site where various industrial projects has been undertaken.

The Council has no evidence to the contrary. Indeed, the information the Council, as Planning Authority, retains supports the applicant's narrative as to the use of the site. This evidence includes the planning records for the site and various photographs. The Council has photographs of the site from 1995, 2003, 2011 and 2016 which show either industrial processes being undertaken, or the site being occupied by buildings and structures required for carrying out industrial processes.

Whilst the above evidence shows a site where various industrial projects have been undertaken, it is acknowledged that the evidence is not consecutive and there have been periods where no works on site appear to have occurred. Periods of non-use do not necessarily affect the lawful use of a site. In planning terms non-use will only affect the lawful use of a site if it has led to the site being 'abandoned.' Abandonment is considered in several terms including (i) the period of non-use; (ii) the physical condition of the site; (iii) whether there has been an intervening use; and (iv) evidence regarding the owner's intentions.

Whilst the evidence of use, particularly for the last 10 years, is intermittent, it is clear that the site has been for industrial processes. There is no long period of sustained non-use in the history of the site. The site has been kept throughout in a condition that would allow for its use for industry. There has been no intervening use of the site that would not fall within Class 5 of the GPDO.

The landowner's intentions have been for industrial use as evidenced by the planning history and the marketing material. The current Local Development Plan (LDP) identifies the site as being suitable for industrial development. This LDP was adopted in 2019. The previous LDP was adopted in 2014 and also identified the site as being an industrial area. The identification of the site for industry was a continuation from the North Ayrshire Local Plan (excluding Isle of Arran) adopted 2005, the Ayrshire Structure Plan adopted 1999 and likely prior. Although planning policies have no bearing on the determination of a CLUD, the policy history shows the long-term identification of the site with industrial uses.

It is therefore not considered that any use of the site for general industrial purposes has been abandoned.

Given all of the above it is considered, on the balance of probability, that the lawful use of the site is Class 5 (General industry).

It is noted that this conclusion would not prejudice any future planning applications. The principle of the use of the site for industrial purposes has in effect already been established by the LDP allocation. Planning permission would be required for development of new buildings and any use which did not fall within general industry including mixed or 'sui generis' uses, such as scrap yards and waste disposal.

Decision

Certificate Issued

Case Officer - Mr Iain Davies

Appendix 1 - Drawings relating to decision

Drawing Title	Drawing Reference (if applicable)	Drawing Version (if applicable)
Location Plan		