

Environmental Impact Assessment Written Confirmation of the EIA Consent Decision

**Marine Works (Environmental Impact Assessment) Regulations
2007 (as amended) (“the Regulations”)**

**Cardiff Coastal Defence
CML2147**

07 July 2022

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1. Introduction

This document is the Environmental Impact Assessment ('EIA') Written Confirmation document for CML2147 Cardiff Coastal Defence ("the Project").

2. The Project

2.1 Project Background

An application for a Marine Licence for the Project was submitted to NRW by Cardiff Council on **10 September 2021**.

Cardiff Coastal Defence scheme aims to improve the existing coastal and fluvial defences to provide improved protection to people and property in parts of south east Cardiff from coastal erosion and flood risk and prevent the erosion of two decommissioned landfill sites; The Frag Tip and Lamby Way Tip.

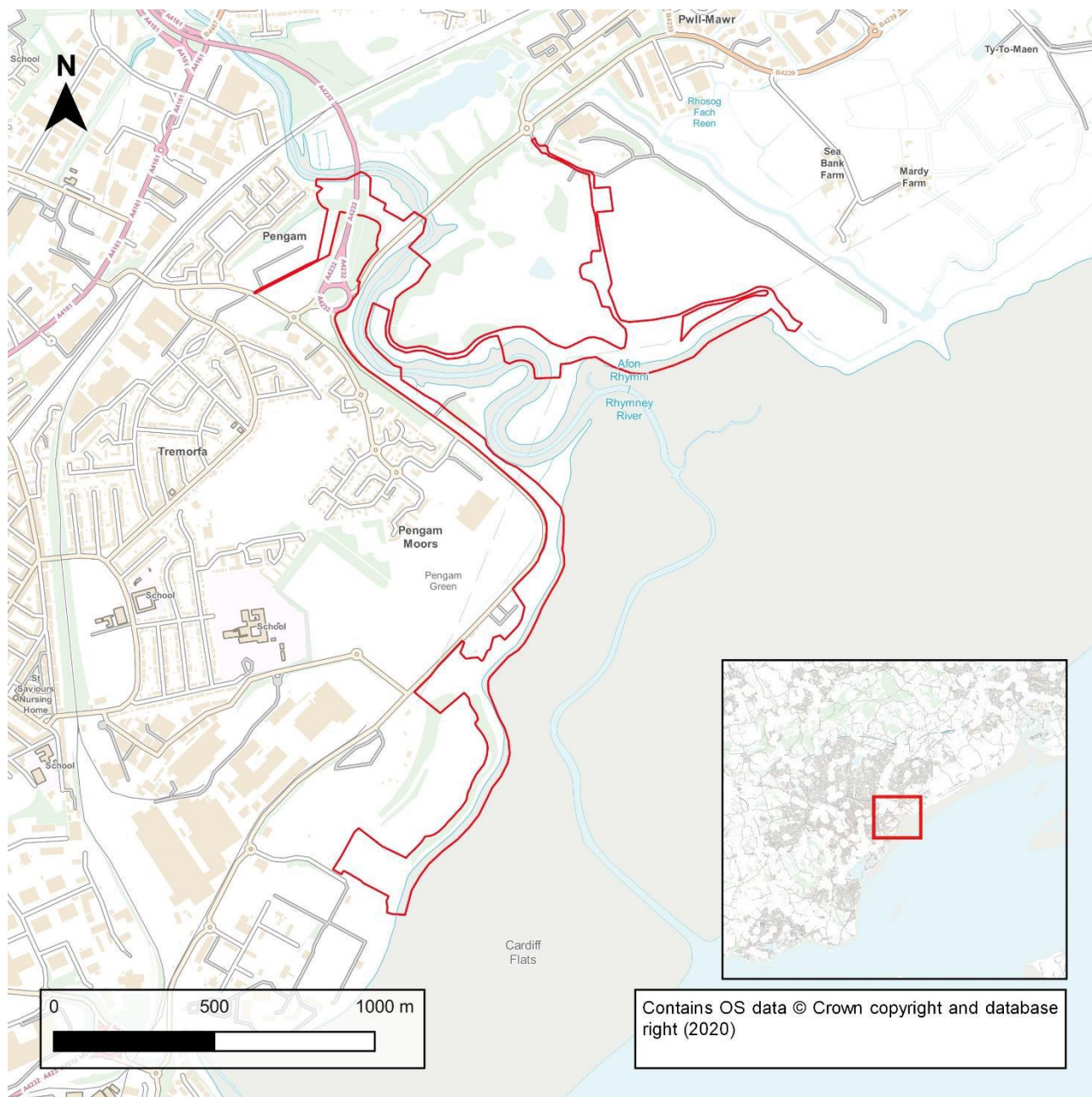
The project extends over an area of approximately 40ha and comprises of the following activities:

- Rock revetment along the coast to manage erosion and wave overtopping.*
- Sheet piling along Lamby Way roundabout.*
- Maintain earth embankments elsewhere and raise low points in earth embankments where required to reduce flood risk. *
- Rock scour protection added to Lamby Way Bridge.*
- Vehicular access to construction site and traffic management

All activities listed with a * require a Marine Licence under Part 4, (Chapter 1) Section 66 of the Marine and Coastal Access Act.

2.2 Location

The Project is located along the Severn Estuary and the Rhymney River. The project area extends up the Rhymney River to Lamby Way bridge (ST216780), and along the coast west, towards Dwr Cymru Welsh Water Works (ST214756), and east along the eastern extent of Lamby Way landfill (ST227777). The map for the project is below:



2.3 Statement of need

The objectives and need of the Project are described in Chapter 2 of the Environmental Statement. Existing flood defences in the scheme area, located along the Severn Estuary and the Rhymney River, have failed or are at significant risk of failing. Much of the coastline across the project area is eroding and, with predicted sea level rise due to climate change, the flood and erosion risk will increase into the future. The proposed scheme will manage flood risk to 2,326 residential and 204 non-residential properties over 100 years, as well as preventing erosion of landfill material, key road/rail infrastructure, and the Rover Way Traveller Site. This scheme is comprised of two main areas: a flood cell to the west and to the east of the Rhymney River.

2.4 Regulating regimes

The Project overlaps between two consenting main regimes.

- A marine licence under the Marine and Coastal Access Act 2009, administered by Natural Resources Wales acting on behalf of the Licensing Authority (Welsh Ministers)
- A planning permission under the Town and Country Planning Act 1990 from Cardiff Council which is currently under determination (Reference 21/02138/MJR).

3. The aspects applied for via a Marine Licence are identified in the section 2.1 Environmental Impact Assessment

Council Directive 2011/92/EU (as amended) on the assessment of the effects of certain public and private projects on the environment ("the EIA Directive") aims to protect the environment and the quality of life by ensuring that projects which are likely to have significant environmental effects by virtue of their nature, size or location are subject to an EIA before permission is granted.

The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) ("the Regulations") transpose the EIA Directive in Wales and England for marine licence applications.

Pursuant to Regulation 8 of the Regulations, NRW considered under case reference **SC2103** that the proposed works fell under Schedule A2, paragraph 69 of the Regulations specifically 69: "Coastal work to combat erosion and maritime works capable of altering the coast through the construction of, for example, dykes, moles, jetties and other sea defence works, excluding the maintenance and reconstruction of such works" and required an EIA due to its size and location.

NRW provided comments on a Screening and Scoping Report entitled "Cardiff Coastal Defences Environmental Impact Assessment Screening and Scoping Report", prepared by JBA Consulting for Cardiff Council on the 18 February 2021. Accordingly, the Marine Licence application required for the Project was accompanied by an Environmental Statement (ES).

3.1 The Environmental Statement (ES)

The Environmental Statement outlined the proposed project organised under the following topic headings

ES section	Section title
Non-Technical Summary	
Chapter 1	Introduction
1.1	Background to the proposed development
1.2	Description of the development site
1.3	Legislative basis of the Environmental Statement
1.4	Scope and content of the Environmental Statement
Chapter 2	Proposed development
2.1	Need for the proposed development
2.2	Identification of the preferred option for the proposed development
2.3	Ground Contamination
2.4	Detailed design of the proposed development
2.5	Outline construction methodology
2.6	Operational requirements and decommissioning
2.7	Planning policy context
2.8	Environmental constraints
Chapter 3	Environmental impact assessment methodology
3.1	The EIA process

3.2	EIA screening and scoping
3.3	The Environmental Statement
3.4	EIA method of assessment
Chapter 4	Geomorphology and Coastal Processes
Chapter 5	Biodiversity and Nature conservation
Chapter 6	Landscape
Chapter 7	Historic environment
Chapter 8	Climate Change
Chapter 9	Cumulative Effects
Chapter 10	Conclusions
10.1	EIA outcomes
10.2	Construction environmental management

The ES is considered to satisfy the requirements of Regulation 12 (2) and Schedule 3 of the Regulations. Specific comments pertinent to each ES chapter can be found in section 7.

3.2 Other Legislative and Policy Framework

Relative considerations under other legislation and / or policy are set out below:

3.2.1 Water Framework Directive (Council Directive 2000/60/EC)

The sea from the mean low water mark up to 1 nautical mile from shore is protected under the WFD which requires a project or activity does not cause or contribute to deterioration in status of European Union (EU) water bodies or 'prevent the water body achieving 'good status'.

The Potential effect of the Project was also screened against the Water Framework Directive objectives for the following Water Bodies:

- GB530905415401: Severn Lower
- GB40902G201500: SE Valleys Southern Devonian Old Red Sandstone & Triassic Mercia Mudstone
- GB109057027150: Roath Brook
- GB109057027280: Rhymney River
- GB109057027160: Nant GlandulasR

A Water Framework Directive Compliance Assessment was conducted for the proposal.

NRW TE raised concern that the scheme would impact the highly sensitive saltmarsh habitat and as such NRW TE considered it could prevent the water body from achieving Good Environmental Potential. However, following further consideration NRW TE later confirmed that values of direct and indirect losses (coastal squeeze and footprint) of saltmarsh habitat predicted did not result in a drop in class for the saltmarsh sub-element and therefore the angiosperms quality element. Therefore the risk of deterioration as a result of salt marsh habitat loss could be ruled out.

NRW TE initially advised that the scheme may require derogation under Article 4(7), specifically as it was considered the project was in conflict with the mitigation measures associated with the Severn Estuary Lower highly modified water body. These measures included "retain habitats", "enhance ecology", "preserve and restore habitats". However, following further consideration surrounding: (1) the scale of the impact in relation to the size of the water body; (2) the current status of the highly sensitive saltmarsh habitat in the

water body; (3) the uniqueness of saltmarsh habitat for the water body, and (4) its vulnerability to coastal squeeze and boundary erosion. NRW TE agreed that when considered alone and in-combination, the proposal will not pose a risk to deterioration of the Severn Lower water body. This was based on the proposal being considered of small scale in relation to the water body size and the habitat as having a stable status, not being unique for the water body or not being highly vulnerable to the main pressures

NRW PS is therefore content with the Water Framework Directive Compliance Assessment conclusion that the proposal, when considered alone and in-combination, will not pose a risk to deterioration of the above listed waterbodies.

Further details are described within the Water Framework Directive Compliance assessment.

3.2.2 Waste (England and Wales) Regulations 2011 (2011/988)

The Waste Regulations 2011 establishes a legal framework for treating waste in the EU. This is designed to protect the environment and human health by emphasising the importance of proper waste management, recovery and recycling techniques to reduce pressure on resources and improve their use.' Waste generated by a project or activity must be dealt with in an environmentally friendly way. To do this it applies the waste hierarchy from the Waste Regulations, which gives an order of preference for how waste is dealt with (prevention, re-use, recycling, recovery, disposal at sea).

See consideration under section 7

3.2.3 The Conservation of Habitats and Species Regulations 2017 (as amended)

European sites are those designated under The Conservation of Habitats and Species Regulations 2017 (as amended) ("Habitats Regulations") as Special Protection Areas ("SPAs"), Special Areas of Conservation ("SACs") or Sites of Community Importance ("SCIs").

The proposal is located within a European Protected Site.

The effects of proposal on the following European Sites, their features and conservation objectives have been considered by NRW during the licence determination:

- Severn Estuary Special Area of Conservation (SAC) – UK0013030
- Severn Estuary Special Protection Area (SPA) – UK9015022
- Severn Estuary Ramsar Site – UK11081

A Habitats Regulation Assessment (HRA) was carried out and concluded that adverse effects on the integrity of the Severn Estuary SAC could not be ruled out.

The scheme will result in permanent direct and indirect loss of Annex 1 intertidal habitats (*Mudflats and sandflats not covered by seawater at low tide* and *Atlantic salt meadows*). The proposed works will contribute to footprint and coastal squeeze losses in the Severn Estuary.

The works lie within Policy Unit CAR2 and CAR3 of the Severn Estuary Shoreline Management Plan. The proposal is in line with the policy recommendations for the area

which are Hold the Line. However the Plan also identify that putting the Hold the Line policy into effect will result in loss of Annex 1 habitat through coastal squeeze.

Following the conclusion of adverse effects on the integrity of a European Site, the licence determination proceeded under Article 6(4) of the Habitats Directive which provides a derogation which would allow a plan or project to be approved in limited circumstances even though it would or may have an adverse effect on the integrity of a European site. Under article 6(4) a plan or project can only proceed provided three sequential tests are met:

- There must be no feasible alternative solutions to the plan or project which are less damaging to the affected European site(s).
- There must be imperative reasons of overriding public interest for the plan or project to proceed.
- All necessary compensatory measures must be secured to ensure that the overall coherence of the network of European sites is protected.

It was considered that there were no feasible alternatives to the project and a Statement of Case was produced by NRW PS identifying the imperative reasons of overriding public interest for the plan, information to support this consideration was detailed in chapter 2 and within the Shoreline Management Plan. The Annex 1 habitat losses will be compensated through the Welsh Government National Habitats Creation Programme (NHCP). The Statement of Case was sent to Welsh Government on the 28 March 2022. Approval to grant a licence under Article 6(4) of the Habitats Directive was provided by Welsh Government on **19 June 2022**.

Further details are described within the HRA.

See further consideration under section 7

3.2.4 Marine Conservation Zones

Section 116 of the Act provides powers to Welsh Ministers to designate Marine Conservation Zones (“MCZs”) with the aim of contributing to the achievement of a network of ecologically coherent and well-managed marine protected areas.

The Project is not within a Marine Conservation Zone and was not identified to have an impact on any Marine Conservation Zone.

3.2.5 Wildlife and Countryside Act 1981 (as amended)

Sites of special scientific interest (“SSSIs”) are protected by law to conserve their wildlife or geology. The Wildlife and Countryside Act 1981 (as amended) ensures that SSSIs are protected and managed effectively.

The proposal has the potential of impacting the Severn Estuary SSSI and the Gwent Levels SSSI. NRW PS considers that when the activity is done in line with its conditions detailed in section 8, there will be no adverse impact on any of the features of the SSSIs. See consideration under section 7 for further details.

3.2.6 Marine Policy Statement and Welsh National Marine Plan

The UK Marine Policy Statement (“MPS”) is the framework for preparing Marine Plans and taking decisions affecting the marine environment. NRW must make licensing decisions in accordance with the MPS and the Welsh National Marine Plan unless relevant considerations indicate otherwise.

3.2.7 Shoreline Management Plan

Shoreline Management Plan (SMP) SMPs are non-statutory policy documents with the purpose of providing a large-scale assessment to support coastal support management planning.

The proposed works lie within the Severn Estuary Shoreline Management Plan 2 (SMP2) policy units CAR2 and CAR3. The policy for these units is Hold the Line, therefore, the Project at Cardiff Coastal Defence is in line with the SMP policy.

3.2.8 Environment (Wales) Act 2016

Article 4 of the Natural Resources Body for Wales (Establishment) Order 2012, as amended by the Environment (Wales) Act 2016 requires NRW to pursue the sustainable management of natural resources in relation to Wales and apply the principles of sustainable management of natural resources in the exercise of its functions, so far as consistent with their proper exercise.

NRW considers that the procedures outlined in this Written Confirmation in the consideration of EIA consent are consistent with this requirement.

3.2.9 Well-being of Future Generations (Wales) Act 2015

This Act requires NRW, as a public body, to take reasonable steps in exercising its functions to work in accordance with the sustainable development principle, as set out in Section 5 of the Act.

NRW considers that the EIA process is consistent with the sustainable development principle described in the Act, and that the processes outlined in this Written Statement are sufficient to properly demonstrate the sustainable development principle. In particular, NRW acknowledges that the principles of sustainable management include taking account of all relevant evidence and gathering evidence in respect of uncertainties, and taking account of the short-, medium- and long- term consequences of actions. NRW further acknowledges that it is an objective of sustainable management to maintain and enhance the resilience of ecosystems and the benefits they provide and, in so doing, meet the needs of present generations of people without compromising the ability of future generations to meet their needs, and contribute to the achievement of the well-being goals in section 4 of the Well-being of Future Generations (Wales) Act 2015.

3.3 Further information provided by the applicant pursuant to a notification under regulation 14(1)

No further information was requested from the applicant pursuant to a notification under Regulation 14 (1).

4. Consultation with the public

4.1 Public Notices

Pursuant to Regulation 16, public notices were advertised to notify interested parties of the proposed works and give any interested parties or members of the public an opportunity to make representation on the application as necessary.

The application documents were made available as follows;

- a public notice advertising the Project was placed in *The Western Mail* on 17 and 24 of September 2021, and
- a notice was published on NRW's website.

The application documents were made available to the public via the NRW Public Register following the publication of the first public notice.

No public representations were received.

5. Consultation of EEA States

A Transboundary Screening Assessment did not identify potential for effects to any other EEA State.

Consequently, no material was provided to other EEA member States in relation to the application

6. Technical consultation

The Marine Licence application was consulted upon on 23 September 2021 for a period of 42 days, in accordance with Regulation 17 of the regulations. It was sent to the following consultation bodies:

Consultee	Response received (Y/N)	Date(s) of receipt
The Crown Estate / Swangrove Estate	N	
NRW	Y	05/11/2021
MoD - Safeguarding Defence	Y	19/10/2021
Maritime & Coastguard Agency	Y	04/11/2021
Trinity House	Y	19/11/2021
Royal Yachting Association	Y	21/10/2021
Local Biodiversity Officer	N	
Local Planning Authority	Y	01/12/2021
Local Harbour Authority	Y	23/09/2021
Local Port Authority	N	
Royal Society for the Protection of Birds (RSPB)	N	

Cadw	Y	19/10/2021
Welsh Archaeological Trusts	Y	03/11/2021
Royal Commission on Historic Monuments Wales	Y	01/11/2021
Department for Transport (DFT)	N	
Chamber of Shipping	N	
NERL Safeguarding	N	
Devon and Severn IFCA	Y	01/11/2021
UK Hydrographic Office	N	
Local Port Manager	N	
Welsh Fisherman Association (WFA)	N	

Details of the issues raised by the Consultation Bodies and how they have been addressed is set out in section 7.

Consultees who did not provide a response were assumed to have no comment.

7. Issues arising during the consideration of the Environmental Statement, Marine Licence Application and representations received

Material issues that were highlighted by the ES and consultation process and the extent to which they have been addressed are detailed in this section.

7.1 Geomorphology and Coastal Processes

NRW TE considered that the developer's inundation approach for coastal squeeze calculations presented with the application was not accurate. NRW TE proposed alternative modelled figures which result in far larger habitat loss estimates. Due to the low confidence in both of the presented methodologies, it was agreed by both the applicant and NRW TE that on a precautionary basis the value obtained for future intertidal habitat loss predictions should be based on the more precautionary NRW TE modelling approach. The modelling result was used to confirm the need of habitat compensation under the HRA process, this is further discussed in section 7.2 below.

NRW TE confirmed their agreement with other mitigation measures outlined in the ES, particularly in regard to sediment management and monitoring proposed by the developers for the first 5 years of the project post construction.

NRW PS is satisfied that the loss of intertidal habitat has been properly estimated in line with the precautionary principle and that physical processes have been adequately assessed.

7.2 Biodiversity and Nature conservation

The proposed works will contribute to footprint and coastal squeeze estuarine habitat losses in the Severn Estuary arising from the SMP2 Hold the Line (HTL) policy being put

into effect. The HTL policy recommends that the flood defences should be maintained and upgraded or replaced in their current position.

NRW TE was in disagreement with the habitat loss figures presented within the ES. Habitat loss figures were revisited, and agreement was obtained between NRW TE and the applicant in a meeting on the 10 December 2021 to cover the precautionary level due to indirect future intertidal habitat loss as a result of coastal squeeze. It was agreed that the scheme will result in significant permanent loss of Annex 1 intertidal habitats (*Mudflats and sandflats not covered by seawater at low tide* and *Atlantic salt meadows*) in the form of direct (1.17ha) and indirect loss (24.59ha) through coastal squeeze by the year 2122. The total 25.76ha of permanent direct and indirect Annex 1 habitat losses will be lost due to the construction and operation of the scheme. Due to the scale of an annex 1 feature adverse effect on the integrity of the Severn Estuary SAC could not be ruled out and therefore the plan can only proceed under Article 6(4) of the Habitat Directive. Justification for the need for works and consideration of alternative were presented within the chapter 2 of the ES and are also supported by the Severn Estuary Shoreline Management Plan. In line with Welsh Government policy¹ on the NHCP, compensation will be provided through Welsh Government's National Habitat Creation Programme. NRW PS are satisfied that all Annex 1 habitat losses will be compensation through the NHCP.

NRW TE raised concerns regarding the risk of spread of Invasive Non-Native Species (INNS). A Biosecurity Risk Assessment will be produced prior to commencement of works to reduce the risk of transfer or movement of INNS.

To minimise the impact to saltmarsh habitat, a Saltmarsh Management Plan will be produced to demonstrate mitigation and enhancement measures to be carried out during construction and post-construction, to benefit this habitat and associated species. The Plan will include pre- and post-construction monitoring and identify points at which intervention may be required. Further details are in section 8.

The applicant has committed to produce a Construction Environmental Management Plan (CEMP) prior to commencement of works. The CEMP will detail the environmental management and mitigation actions required during the construction phase. Monitoring of the CEMP will be undertaken by the Environmental Clerk of Works (ECW). Supporting the ECW would be an appropriately qualified Ecologist (as an Ecological Clerk of Works, ECoW) and Archaeologist. Further details are in section 8.

NRW TE raised concerns with the sampling presented as part of the ground investigations work within the application as it did not appropriately cover intertidal sediments. An appropriate Sediment Sample Plan was agreed as part of the determination process for the development within the intertidal environment. This plan will be implemented, and the analysis results and sediment management strategy will be submitted for agreement before excavation works start. This is to manage any contaminated sediment resulting from the development where works are taking place seaward of MHWS.

NRW TE requested further surveys to fully understand habitat loss, particularly up-to-date Phase 1 intertidal habitat survey data to accurately describe the habitat type and extent of Annex 1 intertidal habitat being lost, and NVC survey data to demonstrate that areas of notable plant species will be avoided during construction. However, NRW TE was satisfied that after the agreement on the context of compensation approach and outcomes of the meeting of 10 December 2021, Phase 1 intertidal habitat mapping provided with the

¹ [WELSH GOVERNMENT policy clarification note of August 2021](#)

application will suffice on this instance as great part of the habitat loss is related to coastal squeeze. However, the applicant has agreed to update the NVC survey to cover NRW TE requirements through the Saltmarsh Management Plan.

NRW TE expressed their concerns regarding the Gwent levels SSSI and the Severn Estuary SSSI, particularly for impacts on features not covered under the Severn Estuary SAC, SPA and Ramsar designations, such as the notable plant species Bulbous Foxtail (*Alopecurus bulbosus*) and Slender Hare's-ear (*Bupleurum tenuissimum*). NRW TE also raised their concern regarding habitat continuity and integrity of the saltmarsh that provides a habitat corridor to Shril Carder Bee, a feature which has been recorded on the site. NRW TE has been satisfied that an adequate survey and appropriate mitigation can be incorporated as part of the proposed Saltmarsh Management Plan to ensure the features of the SSSI are protected.

There are also five non-statutory designated sites located within 1km of the proposed development. These are referred to as Sites of Importance for Nature Conservation (SINC): Lamby North, Lamby Saltmarsh, Lamby Way, Rhymney Grassland Easy, and The Rhymey River SINC. NRW PS has received confirmation from the Cardiff Planning Authority on 24 November 2021 that all five SNICs will be considered within the planning application.

NRW TE raised concerns with regards to the impact pathway from noise and vibration upon twaite shad. To alleviate these concerns the developer has committed not to pile below highest astronomical tide (HAT) and to use vibration piling as the preferred methodology. Percussive piling will only be used when it is strictly necessary and will only take place above HAT. In addition, during the peak shad migration period (April and May) percussive piling will only take place beyond 30m of the HAT line. NRW TE is content with the proposed measures.

NRW PS are satisfied that biodiversity and nature conservation have been appropriately assessed and that the mitigation required can be secured using appropriate conditions. As part of the mitigation the applicant will be required to produce and implement a CEMP, Saltmarsh Management Plan, Biosecurity Risk Assessment and Intertidal Sediment Analysis. Further detail of the mitigation including requirements of the CEMP is detailed in section 8.

7.3 Landscape

No representations were made on the subject of Landscape and visual. Chapter 6 of the ES considers and discusses the landscape and visual impact of the scheme. The site location is a predominantly flat landscape with a few small hills that have been created by landfill sites in the surrounding area. It is considered that the proposed scheme would not create intrusive landscape features and therefore would not have any significant long-term impact in regard to landscape or visual amenity. The landscape and visual impact associated with the construction phase of the scheme will be suitably controlled and mitigated through the implementation of the submitted Landscape Mitigation Plan (Appendix H of the ES). The mitigation options include accelerated recovery by replacing lost trees and vegetation, planting to provide a natural screen, and the erection of private fencing.

NRW PS concluded that the potential impacts due the Project have been adequately addressed within the ES.

7.4 Historic environment

Cadw agrees with the conclusions of the ES and considers that the proposed development will not have any direct impact on any designated historic assets and any indirect impacts will not be significant.

Cadw and the Royal Commission on the Ancient and Historic Monument in Wales (RCAHMW) indicated that the proposed development is in an area where significant archaeological sites have previously been discovered and that there is a possibility that similar sites could be affected by the proposed development. Therefore, the RCAHMW has requested monitoring of the mudflat levels within the sites 100m buffer, and the wider inter-tidal area adjacent to the site, as far as the mean low water mark. This monitoring will be undertaken over a period of five years through the proposed annual drone monitoring of the mudflats.

The RCAHMW and the Glamorgan-Gwent Archaeological Trust (GGAT) had no objections to the project provided the Licence Holder submit a Written Scheme of Investigation (WSI) for a programme of archaeological work.

NRW PS are therefore satisfied that the historic environment has been appropriately assessed and that the mitigation required can be secured using appropriate conditions within the marine licence. These include the mitigation proposed within the ES, controlled through the WSI and implemented through the CEMP (ensuring issues identified in the WSI are addressed and resourced) to ensure that any impacts to non-designated pre-historic sites will not be significant.

7.5 Climate Change

The scheme will have a large positive impact providing improved resilience to flooding to the surrounding area in response to the consequences of climate change (Chapter 8 of the ES). The scheme has been designed to incorporate climate change allowances and therefore adapts to future climate change. A Flood Consequence Assessment concluded that when analysing the effect of the proposed coastal scheme for the lifetime of its construction the benefits of the scheme to the wider community greatly outweigh the potential present-day detriment to a small number of properties. A significant reduction in flood risk and coastal erosion will provide long-term benefits to the local community, commercial properties, and highways infrastructure.

The ES further considers the potential for carbon emissions from the construction of the proposed development, and highlights opportunities to reduce the emissions such as the use of hybrid or electric plant, biofuels, and low carbon concrete and increasing carbon sequestration through enhanced vegetation. No representations were made on the subject of Climate Change.

NRW PS is satisfied that the potential impacts due the Project have been adequately addressed within the ES.

7.6 Cumulative Effects

Cumulative Effects have been considered within chapter 9. No representations were made on the Cumulative Effects. NRW PS concluded that the potential impacts due to the project have been adequately addressed in the ES.

8. Mitigation or monitoring measures to be taken

8.1 Features or measures to avoid, prevent, reduce or offset likely significant effects

In reaching the conclusion about Environmental Impact (Regulation 21A of the Regulations), NRW must consider any features of the project, or proposed measures, to avoid, prevent, reduce or offset any likely significant adverse environmental effects (regulation 21A (1)(f)).

NRW considers that the following features of the project, or measures included within the project proposal, as described in the application form, Environmental Statement and other supporting information, would avoid, prevent, reduce or offset any likely significant adverse environmental effects

The Scheme has been designed, as far as practicable, to minimise effects on built heritage and archaeology, climate, seascape and landscape, population and human health. For example, trees and vegetation lost will be replaced with new growth designed to integrate with existing vegetation, provide natural screening and visual interest for the public; archaeological finds will be fenced for protection; coastal defence monitored for damage and repaired during operation.

The Project has committed to producing a **CEMP** in line with the outline CEMP which will include measures to manage and reduce potential risks that construction activities could cause to the environment.

The project has also committed to producing a **Saltmarsh Management Plan** in line with the outline Saltmarsh Management Plan which will include measures to manage and reduce potential risks to the saltmarsh habitat.

Impacts on archaeological environment will be mitigated through the submission of a **WSI**.

Further mitigation includes the efficient use of material following a waste hierarchy to be implemented throughout construction and reuse of excavated material as infill if suitable. During construction, the materials will be delivered to the intertidal area via an access route on the embankment. No materials, including excavated sediment, will be stored on the foreshore. Further measures will also be taken to help to reduce adverse landscape and visual effects of the project and are encompassed in the Landscape Mitigation Plan (Appendix H to the ES).

8.2 Mitigation or monitoring required to be attached to the consent (Regulation 22 (c)-(e))

In reaching the EIA Consent Decision required under Regulation 22, NRW must make consideration of the requirement for any mitigation measures or monitoring required to be attached to the consent.

Section 7 outlines where NRW PS considers that there is a requirement for mitigation and/or monitoring and sets out the measures we consider necessary to address potential impacts identified through the EIA process. These are summarised below:

NRW PS are satisfied that, in line with Welsh Government policy², appropriate intertidal habitat loss compensation will be provided through Welsh Government's National Habitat Creation Programme and no licence condition is required for this purpose.

Licence conditions will be required to ensure that the following are submitted to the Licensing Authority for approval prior to commencement of works:

1. A **CEMP** to include, but not limited to:
 - Environmental permitting requirements and environmental planning conditions.
 - Protected species and habitat monitoring.
 - Providing toolbox talks on environmental issues.
 - Dust suppression measures.
 - Site waste management.
 - Materials management advice.
 - Pollution prevention and control.
 - Noise management.
 - Visual impacts.
 - Site security and delineation of working areas/exclusion areas including signage.
2. The implementation of the **Sediment Sample Plan** and sample results compared against CEFAS action levels. If contaminants are found to be present above Action Level 2, they will be disposed of to land; if below action level 1, they will be replaced during construction of the defences, and if between levels 1 and 2, the appropriate treatment will be agreed with NRW.
3. The development of a **Saltmarsh Management Plan** to include, but not limited to:
 - Pre-construction surveys to confirm the extent of valuable and sensitive saltmarsh habitat, to identify areas of erosion/accretion, baseline invertebrate survey, rare plant survey and review need of further mitigation measures
 - Agree mitigation of temporary works impacts
 - Requirement for a qualified Ecological Clerk of Works (ECoW)
 - Commit that best practice construction methods are followed
 - Post construction monitoring of saltmarsh plant species composition to inform needs for restoration of the saltmarsh
4. A **WSI** to include, but not limited to:
 - Completion/updating of the 2017 walkover survey to complete baseline.
 - Implementation of watching briefs to include ground-breaking and any further ground investigation works to take place prior to construction.

² [WELSH GOVERNMENT policy clarification note of August 2021](#)

- Monitoring of mudflat levels within the site 100m buffer, and the wider inter-tidal area adjacent to the site, as far as the MLWM. The monitoring is to be conducted in an annual basis for 5 years.
- Details of the scope and methodology of an archaeological watching brief, with contingencies for sampling, reporting and archiving archaeological finds/remains.
- Implementation of a Protocol for Archaeological Discoveries for the project.

5. A **Biosecurity Risk Assessment** to reduce risk of spreading INNS.

Licence conditions will be required to ensure that pollution prevention best practice will be adhered to, this would include that appropriate bunding and storage facilities are installed to contain and prevent the release of fuel, oils and chemicals associated with the plant, refuelling and construction equipment into the marine environment. Conditions will also be required to ensure appropriate control of the use of concrete in the marine environment. This will mitigate possible impacts on water quality.

Licence conditions will be required to ensure the UK Hydrographic Office are notified prior to commencement and on completion of Licensed Activities. This will ensure the promulgation of Maritime Safety Information and the updating of nautical charts and publications to ensure other vessels in the vicinity can safely plan and conduct their passage.

9. Regulation 21A Conclusion about Environmental Impact

In reaching a Conclusion about Environmental Impact, as required by Regulation 21A, NRW has considered the following (Regulation 21A(1)):

- The application for a Marine Licence
- The Environmental Statement submitted
- Further information provided, as outlined in section 3.3
- The responses to public consultation outlined in sections 4 and 7
- The responses to the technical consultation outlined in sections 6 and 7
- Any comments received from another EEA state, as outlined in section 5 and 7
- Any features of the project, or proposed measures, to avoid, prevent, reduce or offset any likely significant adverse environmental effects as outlined in section 8

NRW, as appropriate authority, has considered the likely significant effects of the project, and reached a conclusion of the likely significant effects of the project with regard to the following (Regulation 21A(2)):

- Population and human health (9.1)
- Biodiversity (9.2)
- Land, soil, water, air and climate (9.3)
- Material assets, cultural heritage and landscape (9.4)

- Risk of major accidents and disasters relevant to the project (9.5)
- Cumulative impacts and in-combination impacts (9.6)

9.1 Population and human health

The Cardiff Coastal Defence scheme aims to improve the existing coastal and fluvial defences to provide improved protection to people and property in parts of south east Cardiff from coastal erosion and flood risk and prevent the erosion of two decommissioned landfill sites; The Frag Tip and Lamby Way Tip. NRW PS is satisfied that by its nature it will provide beneficial outputs for population and human health. The risks to human health associated with the proposed works are considered to be low and with the proposed controls and mitigations in relation to pollution/contamination and landscape the risks are negligible. NRW PS are satisfied that there will be no significant impact on population or human health as a result of the project.

9.2 Biodiversity

There are several protected areas which have the potential to be affected by the Project. A Habitat Regulation Assessment concluded that adverse effects on the integrity of the Severn Estuary SAC could not be ruled out. The proposed works will contribute to footprint and coastal squeeze losses in the Severn Estuary SAC. NRW PS considers that the works are justified on grounds of no alternative solutions and 'imperative reasons of overriding public interest' (IROPI). Therefore, these losses will be compensated through the Welsh Government National Habitats Creation Programme (NHCP).

The ES considered potential for other impacts on biodiversity including on saltmarsh and water quality and considered that additional mitigation was required. NRW PS consider that although there is potential impact on these features, any significant impact can be avoided through the implementation of appropriate mitigation as detailed in section 8, this includes; Spread of INNS will be controlled through a Biosecurity Risk Assessment, impact to saltmarsh habitat through a Saltmarsh Management Plan, pollution/noise/disturbance through a CEMP and potential sediment contamination will be assessed through a Sediment Sample Plan and Analysis.

NRW PS conclude that considering mitigation proposed within the ES and the licence conditions as outlined in section 8, no significant impact on biodiversity is predicted.

9.3 Land, soil, water, air and climate

The installation, operation and maintenance of the Project will not give rise to the production of any hazardous waste. However, there is an impact pathway to water quality through an accidental pollution event also an increase in greenhouse emission from the construction of the Project. The ES has assessed impacts to land, soil, water, and air and proposed mitigation measures and adherence to best working practice to reduce its impacts. Mitigation measures include management of risks of accidental pollution events through pollution prevention best practice and implementation of a CEMP. Additionally, the implementation of the Sediment Sample Plan will ensure that appropriate management of any contaminated sediment is followed.

The scheme has been designed to incorporate climate change allowances and protect people and infrastructure from flooding as a consequence to climate change. Adequate

mitigation has been put in place to reduce/offset emissions from its construction such as the use of alternative materials, low carbon fleet/plan, increase carbon sequestration and the use of hybrid or electric plant where possible.

NRW consider that the works have been appropriately assessed and that considering mitigation proposed within the ES and the licence conditions outlined in section 7 and section 8, that no significant impact on water quality is predicted.

9.4 Material assets, cultural heritage and landscape

The ES appropriately assesses the impact of the Project on designated historic assets and any direct or indirect impacts will not be significant. The proposed development is in an area where significant archaeological sites have previously been discovered and that there is a possibility that similar sites could be affected by the proposed development. Mitigation required will be secured using appropriate conditions within the marine licence controlled through the WSI and implemented through the CEMP .

Chapter 6 of the ES considers and discusses the landscape and visual impact of the scheme. The site location is a predominantly flat landscape with a few small hills that have been created by landfill sites in the surrounding area. It is considered that the proposed scheme would not create intrusive landscape features and therefore would not have any significant long-term impact in regard to landscape or visual amenity. Any landscape/visual impact due to the project construction is expected to be temporary. The landscape and visual impact associated with the construction phase of the scheme will be suitably controlled and mitigated through the implementation of the submitted Landscape Mitigation Plan (Appendix H to the ES). The mitigation options include accelerated recovery by replacing lost trees and vegetation, planting to provide a natural screen, and the erection of private fencing.

NRW PS consider that the works have been appropriately assessed and that considering mitigation proposed within the ES and the licence conditions outlined in section 8 will ensure no significant impact on cultural heritage and landscape.

9.5 Risk of major accidents and disasters relevant to the project

The Project is not considered to have a high vulnerability to major accidents and disasters. The principal aim of the Project is to improve coastal defence and reduce the risk of erosion and damage to key infrastructure in the Cardiff/ Rhymney area. Construction best practice would be utilised to reduce any risk during the construction phase and further risk of major accidents and disasters is not considered to be significant.

A Flood Consequence Assessment was carried out as part of the ES and demonstrated that the works were not anticipated to increase flood risk within the area.

Due to the nature and scale of the operation, the risk of a major accident or disaster is low. In addition, sufficient pollution prevention measures have been proposed to reduce the risk of a major accident or pollution event.

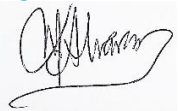
9.6 Cumulative impacts and in-combination impacts

NRW PS concluded that the potential impacts due to the project have been adequately addressed in the ES. As detailed in section 3.2.3 NRW PS carried out a Habitat Regulation Assessment as part of which concluded that adverse effects on the integrity of the Severn Estuary SAC could not be ruled out. However, compensation for the Annex 1 habitat

losses have been secured through the Welsh Government National Habitats Creation Programme (NHCP). Further assessments have concluded subject to appropriate mitigation that the works would not cause a significant impact alone or in combination on other designated sites, including SSSIs and SINCs. Similarly, there will be no cumulative or in-combination impact on any other features of the wider environment. NRW PS are satisfied that cumulative impacts have been adequately addressed in the ES.

Produced By: Maria Alvarez

Signed:



Date: 7 July 2022

Approved by: Emmer Litt

Signed:



Date: 7 July 2022

10. Regulation 22 EIA Consent Decision

The Marine Licensing Team has considered the application CML2147 and information provided in support of the application and is now in a position to make an EIA consent decision to Cardiff Council.

In accordance with Regulation 22 of the Regulations, NRW PS, as appropriate authority, have considered:

- The application for a Marine Licence
- The Environmental Statement submitted
- Further information provided, as outlined in section 3.3
- The Conclusion about Environmental Impact (under Regulation 21A(2)) in section 9 (dated 07 July 2022), which we consider to be up to date
- The responses to public consultation outlined in sections 4 and 7
- The responses to the technical consultation outlined in sections 6 and 7
- Any comments received from another EEA state, as outlined in section 5 and 7
- Whether monitoring of the significant adverse environmental effects of the Project is appropriate (as outlined in section 8), including whether

- Existing monitoring can be relied upon
- Conditions should be attached to the regulatory approval
- Whether conditions to make provision for potential remedial action are required, as outlined in section 8
- Whether any other conditions need to be attached to the regulatory approval, with respect to the likely significant environmental effects of the Project, as outlined in section 8.

After conducting a full and comprehensive review of the Project and applying appropriate additional external expertise, we conclude that the environmental impacts of the Project have been adequately identified, described and assessed. Accordingly, we conclude a favourable determination and that EIA consent for the project should be given.

Adequate mitigation strategies have been agreed to minimise, or altogether remove, the potential significant impacts associated with the construction and operational phases of the Project. Where this has not been possible (i.e., intertidal habitat loss), adequate compensation has been secured through the NHCP.

We consider that the monitoring and mitigation conditions outlined in section 8 should be considered in the regulatory decision.

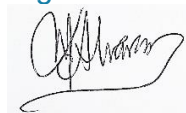
This Written Confirmation of the EIA Consent Decision will be sent to the following, in accordance with Regulation 23 of the Regulations:

- Cardiff Council
- Any person from whom NRW received representation arising from the consultation described in section 4
- Any EEA states consulted (see section 5)
- All consultation bodies listed in section 6

This Written Confirmation of the EIA Consent Decision is available on the NRW online public register at <https://publicregister.naturalresources.wales>

Produced By: Maria Alvarez

Signed:



Date: 7 July 2022

Approved by: Emmer Litt

Signed:



Date: 7 July 2022
