

COMMITTEE DATE: 08/12/2022

APPLICATION No. 21/02138/MJR APPLICATION DATE: 02/09/2021

ED: **SPLOTT/RUMNEY**

APP: TYPE: FULL

APPLICANT: County Council of the City and County of Cardiff

LOCATION: Cardiff Coastal Flood Defences. The Severn Estuary Coastline and East and West Banks of the River Rhymney, Cardiff

PROPOSAL: The Construction of a Series of Fluvial and Coastal Flood Defences along the Severn Estuary Coastline and East and West Banks of the River Rhymney, to include Rock Armour Revetments, Concrete Erosion Protection Mats, Earth Bunds, a Double Flood Gate (at the Rhymney River Motor Boat Sail & Angling Club) and Sheet Piling

RECOMMENDATION 1:

That planning permission be **GRANTED** subject to the conditions listed below in section 12.

RECOMMENDATION 2:

That delegated authority is given to the Head of Planning & Operational Manager: Strategic Development & Placemaking, to make changes to the conditions and/or Heads of Terms of the required legal agreement, subject to consultation with the Chair of Planning, up to the point where the legal agreement is signed and planning permission issued.

1. BACKGROUND INFORMATION

1.1 This application is reported to Committee as it comprises 'major' development proposed by the Council. It is also of general public interest.

2. DESCRIPTION OF THE SITE AND AREA

2.1 The application site comprises 10.07Ha of land on both banks of the River Rhymney from where the A4232 crosses the river down to the confluence between the river and the Severn Estuary, and extending along the Severn Estuary coastline, east and west from the River Rhymney. This area includes the eastern extent of the Lamby Way landfill site to the northeast and the Rover

Way Traveller Site and Dwr Cymru Welsh Water (DCWW) Cardiff East Waste Water Treatment Works (WWTW) to the southwest (see Figure 1 for application site boundary).



Figure 1: Site Location Plan

- 2.2 To the west of the Rhyrne River, landward of Rover Way, land use is a mix of open, residential, commercial and industrial land. Rover Way itself runs parallel to the coastline and along the eastern bank of the river.
- 2.3 Along the coastline, west of Rover Way, the Celsa steelworks plant is situated with the adjacent area being used for storage of the waste generated by the plant. On the opposite side of Rover Way, the Cardiff Motocross centre operates on the land while further south along the road is DCWW Cardiff East WWTW.
- 2.4 To the east of the river Rhyrne, Lamby Way landfill extends along the eastern bank of the river and is bounded by Lamby Way road to the north.
- 2.5 The Rhyrne River Motor Boat, Sail & Angling Club is located on a narrow bankside area on a large meander of the river close to its confluence with the Severn Estuary, with extensive areas of saltmarsh habitat located on bankside areas immediately downstream, which provide high-tide roosting for a large number of wintering birds.

- 2.6 The Rhymney River flows along a wide, meandering course from the mainline railway line southwards to its confluence with the Severn Estuary. The channel is approximately 80m wide and contains extensive inter-tidal mudflats exposed at low tide. The Severn Estuary in this area contains a wide, shallow foreshore area, comprising extensive areas of inter-tidal mudflat and smaller areas of fringing saltmarsh habitat. Along the foreshore west of the river, immediately adjacent to higher ground, is a wide area of rocky rubble material, including remnants of building waste (e.g. bricks, slabs, concrete, rebar, etc) that is likely to have been eroded from the Frag Tip. To the east of the river, a rocky substrate is again present in the foreshore area adjacent to higher ground and includes the remnants of earlier rock revetment defences that have failed and eroded.

3. DESCRIPTION OF DEVELOPMENT

Background to the Project

- 3.1 The Rhymney River is a designated Site of Importance for Nature Conservation (SINC) and is one of the main rivers that runs through Cardiff, South Wales, starting in a Hamlet called Rhymney, located just south of the Brecon Beacons National Park. When it reaches Cardiff, it flows along a wide, meandering course towards its confluence with the Severn Estuary. The Severn Estuary is one of the largest estuaries in Britain located between South Wales and South West England. It is protected by UK legislation and is a designated Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar Site, and also as a Site of Special Scientific Interest (SSSI) for a range of habitats and species.
- 3.2 In the past, flood defences were built along the Severn Estuary and part-way up the River Rhymney. These defences were composed of rock armour revetments, a sheet-pile wall, earth embankments, and blockstone defences. Today, these defences are severely eroded from tidal and fluvial forces and in some sections are completely lost. The remaining defences are at significant risk of failure in the near future and no longer provide flood protection especially with sea level rise predictions.
- 3.3 The defences along the Severn Estuary coastline to the west of Rhymney River are in very poor condition with erosion occurring at a rapid rate. This is causing landfill material to be deposited into the Severn Estuary from the disused Frag Tip and the Travellers site to be at risk of disappearance. Along the river bank, sea level rise is predicted to cause overtopping of the existing defences causing increased flood risk to properties and key infrastructure. In addition, the Lamby Way roundabout and Rover Way are at risk of being undermined and lost to erosion within 20 years. The defences along the east bank of the river and along the coastline to the east of the Rhymney River are also at risk of erosion. It is predicted that erosion will increase and impact upon the disused Lamby Way Landfill within 20 years, causing landfill material to be released into the Severn Estuary if preventative works are not undertaken. Due to the land elevations being higher on this side of the river, flood risk will be limited however, the risk of erosion is up to 50m along the coast within 20 years, and 270m by 2117

The Proposals

- 3.4 Detailed planning permission is sought for the construction of a series of fluvial and coastal flood defences along the Severn Estuary coastline and east and west banks of the River Rhymney, to include rock armour revetments, concrete erosion protection mats, earth bunds, a double flood gate (at the Rhymney River Motor Boat Sail & Angling Club) and sheet piling. The project is being taken forward by Cardiff Council with support from Welsh Government.
- 3.5 The proposed scheme is to improve and extend coastal and fluvial defences along the coastline between the Dwr Cymru Welsh Water (DCWW) Cardiff East Waste Water Treatment Works (WWTW) to the west and the eastern extent of the Lamby Way landfill site to the east. It is anticipated that the project will prevent breaches of the existing defences, reducing erosion and flooding of critical transport, waste management, and energy infrastructure located immediately landward of the scheme, and of extensive residential and commercial areas in the surrounding hinterland.
- 3.6 The proposed development is anticipated to manage flood risk to 2,326 residential and 204 non-residential properties for over 100 years, as well as preventing erosion of landfill material, key road/rail infrastructure, and the Rover Way Traveller Site.
- 3.7 The proposals comprise of the construction of new embankments, raising of existing embankments, installation of sheet piling, and installation of scour protection. Rock armour revetment is proposed at Locations 11 and 12 on the coast. Improvements to earth embankments are proposed at Locations 22,42 and 52. Hybrid erosion protection (including elements of bio-engineering along with concrete erosion protection) is proposed in the remaining locations – Locations 21, 31 and 32.
- 3.8 Due to the size of the project the scheme has been split into sections 1 to 5 (see *Figure 2*) with the works to each section detailed below (see section 3.2 of the Planning, Design and Access Statement).

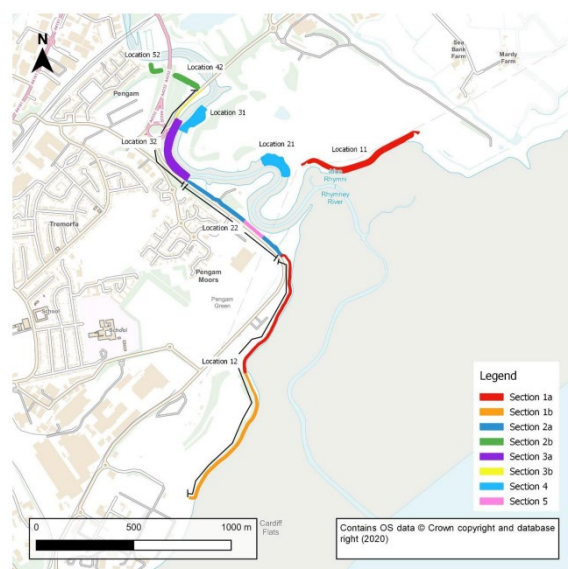


Figure 2: Location and scheme section plan

Section 1a/Locations 11 & 12: Severn Estuary coastline east and west of the confluence with the Rhymney River

- 3.9 These areas are generally natural coastline, although there is a short length of existing defence. The design cross-section includes a rock armour revetment on the foreshore area with an (imported) clay bund behind. To the east of the Rhymney, the bund is at approximately the same level of the existing ground, with rising levels behind. To the west of the Rhymney, the bund is at a higher level than existing, approximately 500mm above the rock crest. The bund will be covered in seeded topsoil and will double as pedestrian access.

Section 1b/Location 12: Severn Estuary coastline west of the confluence with the Rhymney River

- 3.10 This area is generally a natural coastline, although there is exposed manmade materials on the shallow cliff behind the beach. The design cross-section includes a rock armour revetment set forward on the foreshore area with an (imported) fill material slope behind. The slope behind the new rock revetment slackens the existing slope and ties into existing ground levels with a termination detail. Earthworks will be required to construct both the rock armour and slope behind, requiring granular fill material import. Additionally, various geotextiles and a turf reinforcement mat are included in the structure build-up.

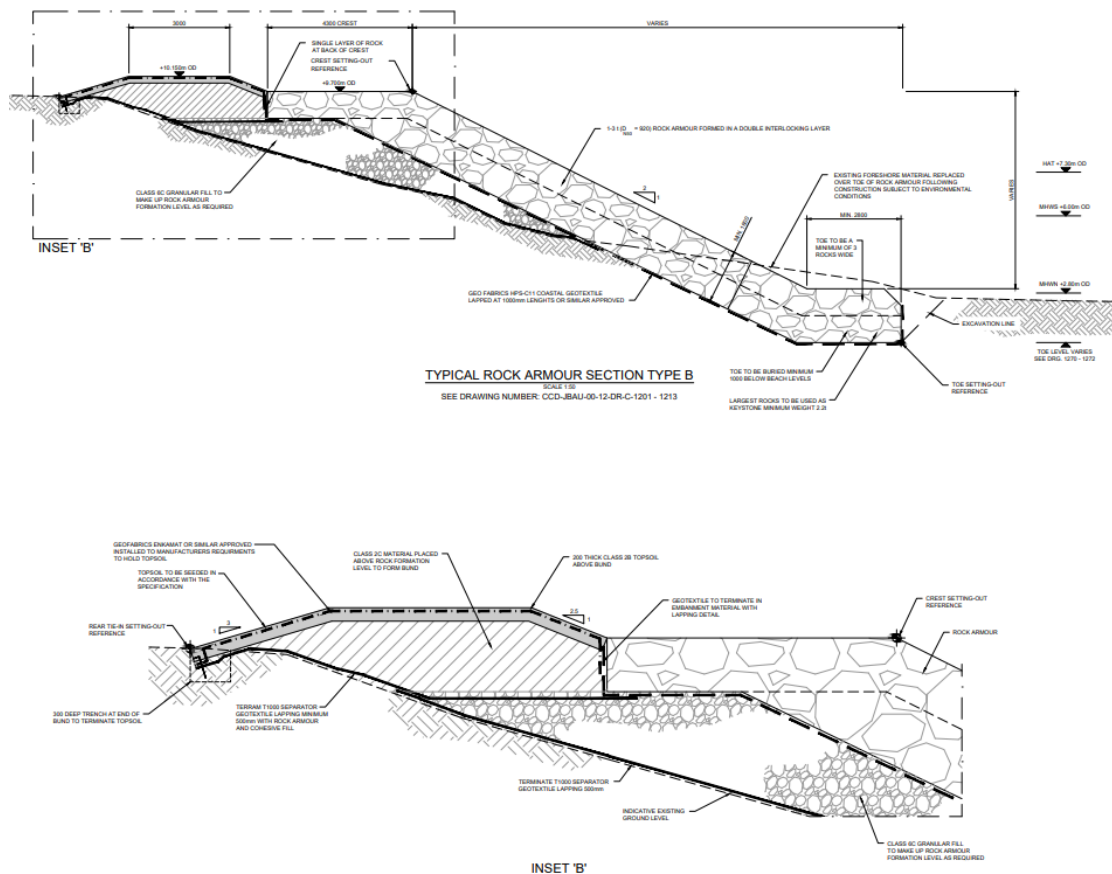


Figure 3: Typical Rock Armour section – location 12

Section 2a/Location 22: Segment of the west bank of the Rhymney River from its confluence with the Severn Estuary northwards to the southern approach to the Rover Way/A4232/Lamby Way roundabout

- 3.11 The proposed defence raises the existing bund (where present) to the required level, continuing the existing bund slope face adjacent to Rover Way up to the new crest level. The flood defence will be achieved using imported clay fill with a seeded topsoil finish. The crest of the embankment will provide pedestrian access alongside the Rhymney River. The frontage includes a double flood gate installed within a concrete housing structure to provide access to the Rhymney River Motor Boat Sail & Angling Club.

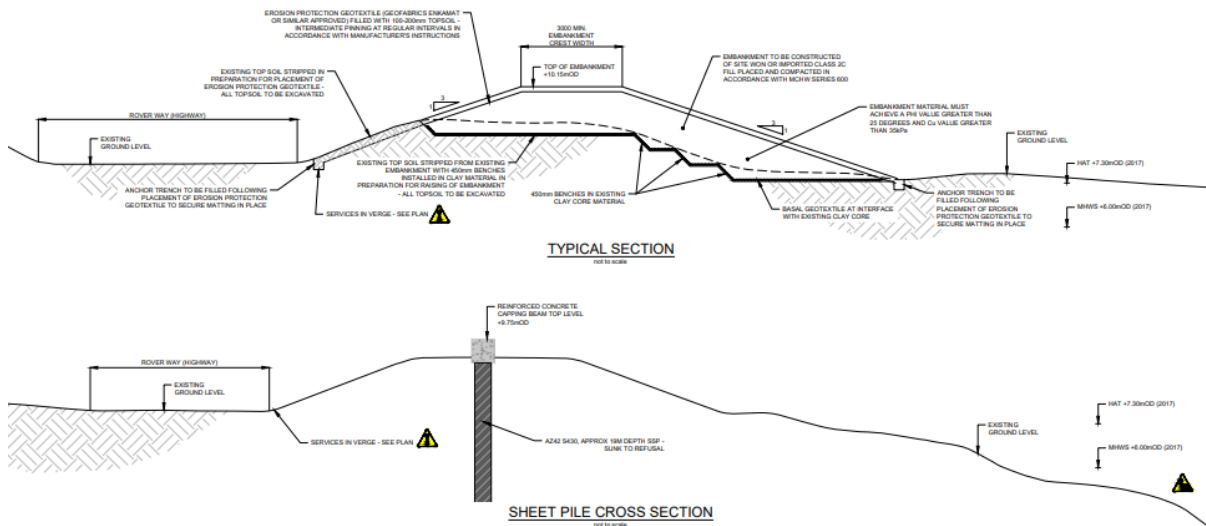


Figure 4: Earth embankment – location 22

Section 2b Locations 42 & 52: West bank of the Rhymney River from the Lamby Way road bridge, northwards to Page Drive

- 3.12 The proposed defence raises the existing bund (where present) to the required level, generally following the centreline of the existing where this is simply achieved. The flood defence will be achieved using imported clay fill with a seeded topsoil finish.

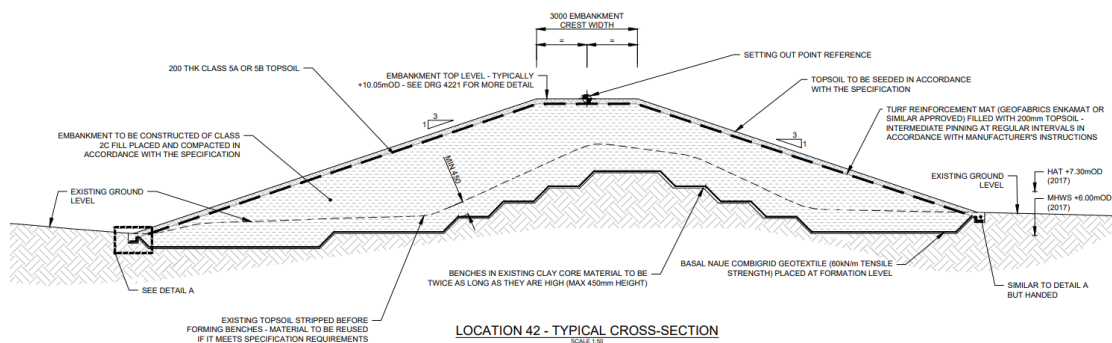


Figure 5: Typical Section - Location 42

Section 3a/Location 32: West bank of the Rhymney River, from the southern approach of Rover Way up to Rover Way/A4232/Lamby Way roundabout.

- 3.13 The design proposes concrete erosion protection mats installed on the riverbank, their toes secured by backfilling with rock armour units. On the lower portion of the bank, the mats will be exposed on the surface of the bank as required to manage scour action. The design proposes that at a suitable level, the erosion mats cut back into the bank and continue up under a depth of natural mud material. The risk of erosion of this mud layer is reduced, but over the service life there is the possibility that the erosion protection beneath may become exposed. At the transition point between buried and exposed erosion mats, wooden stakes and brushwood is proposed to facilitate establishment of the mud layer. To construct the rock revetment, earthworks will be required to shape formation level. As part of this, some granular fill material import will be required. Additionally, various geotextiles and a turf reinforcement mat are included in the structure build-up. At the top of the bank, a sheet piled flood defence is proposed completed with concrete capping beam. This will provide to the flood defence level.

Section 3b/Location 32: West bank of the Rhymney River, from the Rover Way/A4232/Lamby Way roundabout, northwards to the Lamby Way road bridge

- 3.14 This section is generally a natural riverbank alongside Lamby Way. There are signs that this area is currently accreting and so no erosion protection is proposed. At the top of the bank, a sheet piled flood defence is proposed completed with concrete capping beam. This will provide to the flood defence level.

Section 4/Locations 21 & 31: Segments of the East bank of the River Rhymney at the Lamby Way road bridge and the large meander opposite the Rhymney River boat club

- 3.15 This section is generally a natural riverbank adjacent to a historic landfill. There are signs of active erosion. The design proposes that concrete erosion protection mats are installed on the riverbank, their toes buried into the riverbed below the low water line and secured by backfilling with rock armour units. On the lower portion of the bank, the mats will be exposed on the surface of the bank as required to manage scour action. The design proposes that at a suitable level, the erosion mats cut back into the bank and continue up under a depth of natural mud material. The risk of erosion of this mud layer is reduced, but over the service life there is the possibility that the erosion protection beneath may become exposed. At the transition point between buried and exposed erosion mats, wooden stakes and brushwood is proposed to facilitate establishment of the mud layer.

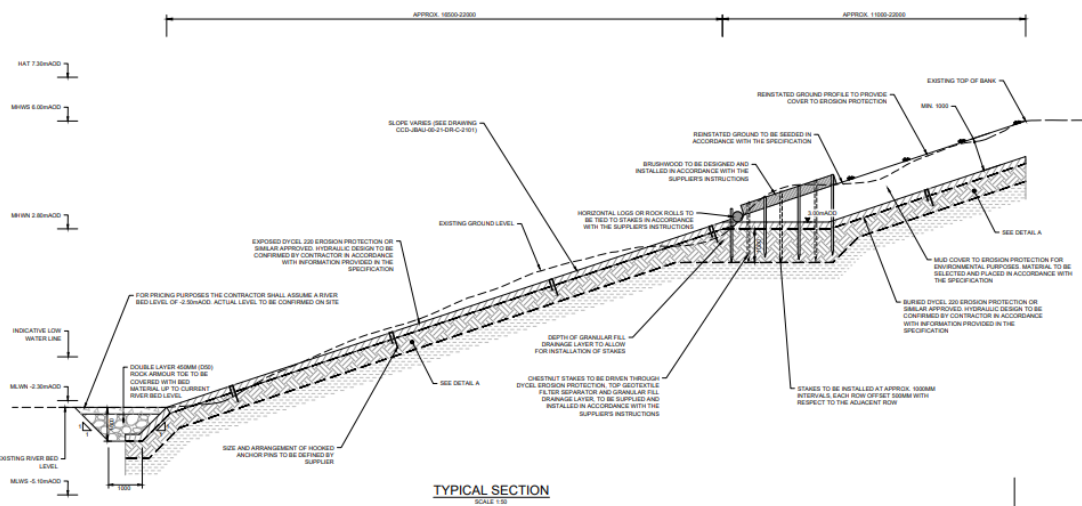


Figure 6: Erosion Protection Works – typical section – location 21

Section 5/Location 22: Segment of the west bank of the Rhymney River at the meander adjacent to Rover Way.

- 3.16 This section comprises an existing earth bund that is located between Rover Way and the Rhymney River channel. The proposed defence is a steel sheet pile wall complete with concrete capping beam. The sheet pile provides more resilience to erosion than a flood embankment in this location due to the restricted space between the highway and river channel
- 3.17 Construction is programmed to take approximately 18 months to 2 years to complete.
- 3.18 Three construction access points for all vehicles to the coast and riverside will be needed:
- West of Rhymney River - via Rover Way initially and then via an existing access point onto the Frag Tip/motocross track to the west of the Traveller's site.
 - East of Rhymney River – via Lamby Way or by turning off onto the existing vehicular entrance to Lamby Way Landfill. The construction vehicles will then access the river sections and Severn Estuary coastline via an existing vehicular access track across the landfill.
 - North of Lamby Way – via road bridge, vehicles will enter via a new access created off Lamby Way or via an existing vehicular route through the StarGarAllot Community Garden (Pengam allotments).

Marine Licensing

- 3.19 The Project overlaps between two consenting main regimes, with a marine licence - administered by Natural Resources Wales acting on behalf of the Licensing Authority (Welsh Ministers) - also required under the Marine and Coastal Access Act 2009.

3.20 The Marine License was issued on 7th July 2022 as follows: -

[Marine License](#)
[Marne License Regulatory Decision \(report\)](#)

Supporting Information

- 3.21 Cardiff Council provided their EIA screening and scoping response on the 16th April 2021, confirming that as flood relief works the proposed development falls within Schedule 2, Paragraph 10(h) of the Town and Country Planning EIA Regulations. Having considered the characteristics of the development, its location and potential impact it was concluded that the proposals would require statutory EIA.
- 3.22 The application has thus been identified as an EIA application as defined by the [Town and Country Planning \(Environmental Impact Assessment\) \(Wales\) Regulations 2017](#), ('the EIA Regulations') and an Environmental Statement (ES) has been provided. The EIA process aims to ensure that any significant effects arising from a development are systematically identified, assessed and presented to help local planning authorities in determining planning applications. If measures are required to minimise or reduce effects then these are clearly identified.
- 3.23 The development proposals also require (and have obtained) consent under the Marine & Coastal Access Act 2009, and therefore also fall within the requirements of the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended).
- 3.24 The submitted Environmental Statement (comprising non-technical summary, main text and technical appendices) has identified 'the baseline conditions', and assessed the potential effects of the development, in relation to:
- Geomorphology and Coastal Processes
 - Biodiversity and Nature Conservation
 - Landscape and Visual Impact
 - Historic Environment
 - Climate Change
 - Cumulative / Residual Effects
- 3.25 An ES Addendum (June 2022) has also been submitted which contained further information relating to:
- Biodiversity and Nature Conservation
 - Land Contamination
 - Flood Risk
- 3.26 The assessment below has had regard to all environmental information submitted within the ES (and addendum) along with the comments of statutory consultees on the information supplied, and the comments, observations and

representations provided by members of the public have been taken into consideration in the recommendation.

3.27 All documentation relating to the application, including plans, can be viewed on the Council's website using the following link: [21/02138/MJR](https://www.bwr.gov.uk/21/02138/MJR)

4. PLANNING HISTORY

4.1 The site has no relevant planning history.

5. POLICY FRAMEWORK

National Policy

5.1 The **Well-being of Future Generations (Wales) Act 2015** (WFG) imposes a duty on public bodies to carry out 'sustainable development' in accordance with the 'sustainable development principle'.

5.2 'Sustainable development' means the process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals.

5.3 'Sustainable development principle' means that Local Authorities must act in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.

5.4 Well-being goals identified in the Act are:

- A Prosperous Wales
- A Resilient Wales
- A Healthier Wales
- A More Equal Wales
- A Wales of Cohesive Communities
- A Wales of Vibrant Culture and thriving Welsh Language
- A Globally Responsible Wales

5.5 The **Environment (Wales) Act 2016** has been designed to complement the WFG Act. It imposes a duty to require all public authorities, when carrying out their functions in Wales, to seek to "maintain and enhance biodiversity" where it is within the proper exercise of their functions. In doing so, public authorities must also seek to "promote the resilience of ecosystems".

5.6 The **Welsh National Marine Plan (2019)** is directly informed by High Level Marine Objectives set out in the **Marine Policy Statement (2011)**. These objectives align with the Welsh Government's Well-being Goals and principles for sustainable development and the direction provided in the EU Directive on Marine Spatial Planning 89/2014.

5.7 The plan objectives of particular relevance to the scheme include:

- Plan Objective 7: Support enjoyment and stewardship of our coasts and seas and their resources by encouraging equitable and safe access to a resilient marine environment, whilst protecting and promoting valuable landscapes, seascapes and historic assets.
- Plan Objective 8: Improve understanding and enable action supporting climate change adaptation and mitigation.
- Plan Objective 9: Support the achievement and maintenance of Good Environmental Status and Good Ecological Status.
- Plan Objective 10: Protect, conserve, restore and enhance marine biodiversity to halt and reverse its decline including supporting the development and functioning of a well-managed and ecologically coherent network of Marine Protected Areas (MPAs) and resilient populations of representative, rare and vulnerable species.
- Plan Objective 11: Maintain and enhance the resilience of marine ecosystems and the benefits they provide in order to meet the needs of present and future generations.

5.8 The **National Strategy for Flood and Coastal Erosion Risk Management in Wales** sets out a framework to help communities, the public sector and other organisations work together to manage flood and coastal erosion risk. It supports local decision-making and engagement in flood and coastal erosion risk management, making sure that risks are managed in a co-ordinated way across Wales. This includes the development of Local Flood Risk Management Strategies by Local Flood Authorities.

5.9 The National Strategy sets out four main objectives for managing flood and coastal erosion risk:

- Reducing the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion;
- Raising awareness of and engaging people in flood and coastal erosion risk;
- Providing an effective and sustained response to flood and coastal events; and
- Prioritising investment in the most at-risk communities

5.10 The **Welsh Minister's Written Statement - Flood and Coastal Erosion Risk Management Programme for 2020-2021** identifies the unprecedented changes as a result of COVID-19 but emphasises that it is crucial that flood and coast risk is continued to be managed. The flooding Wales suffered during February 2020 was the worst in a generation and brought into sharp focus the importance of our flood and coastal risk management programme in protecting lives, homes and businesses. In addition to announcing the Government's flood and coastal risk management programme for 2020-21, it states there will be additional support to Local Authorities and Natural Resources Wales and that the programme will bring forward more flood defence projects and develop a stronger pipeline of future schemes while increasing grant support for scheme preparation, coastal works and natural flood management.

National Planning Policy

- 5.11 [Planning Policy Wales](#) (Edition 11) was revised and restructured in February 2021 to coincide with the publication of, and take into account the policies, themes and approaches set out in, [Future Wales - the National Plan 2040](#) (see below) and to deliver the vision for Wales that is set out therein.
- 5.12 The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015 and the Well-being of Future Generations (Wales) Act 2015.
- 5.13 PPW11 takes the seven *Well-being Goals* and the five *Ways of Working* as overarching themes and embodies a placemaking approach throughout, with the aim of delivering *Active and Social Places*, *Productive and Enterprising Places* and *Distinctive and Natural Places*. It also identifies the planning system as one of the main tools to create sustainable places, and that placemaking principles are a tool to achieving this through both plan making and the decision-making process.
- 5.14 Section 6.5 of PPW sets out the main principles for coastal places to reflect the principles of Integrated Coastal Zone Management. These principles are 'to support urban and rural development, whilst at the same time being aware of, and appropriately responsive to, the challenges resulting from the dynamic interaction of natural and development pressures in coastal areas.'
- 5.15 Section 6.6 of PPW deals with Water and Flood Risk and identifies that Government resources for flood and coastal defences are directed at protecting existing developments and are not available to provide defences in anticipation of future development. New or improved flood defences in coastal and/or riverside locations should be carefully planned, ensuring all potential environmental effects, both on and off-shore, and relevant SMP policies are taken into account. Flood defence works can provide opportunities to achieve wider social, economic and environmental benefits, which should be maximised where possible.

Technical Advice Notes

- 5.16 PPW is supported by a series of more detailed [Technical Advice Notes](#) (TANs), of which the following are of relevance: -
- TAN 5: Nature Conservation and Planning (2009);
Noting also the Chief Planning Officer letter dated 23/10/19:
securing bio-diversity enhancement;
 - TAN 11: Noise (1997)
 - TAN 12: Design (2016)
 - TAN 13: Noise (1997)
 - TAN 14 Coastal Planning

- TAN 15: Development and Flood Risk (2004)
- TAN 20: Planning and the Welsh Language (2017)
- TAN 24: The Historic Environment (May 2017)

- 5.17 On 16th July 2020 the Welsh Government published [Building Better Places: The Planning System Delivering Resilient and Brighter Futures](#) which provides planning policy guidance for local planning authorities and the development industry on priorities for the planning system to deliver post Covid-19. The guidance is to be read in conjunction with PPW, which contains the principles and policies needed for Wales to recover from Covid-19 in a positive manner, putting placemaking at the heart of future development.
- 5.18 It also emphasises that development management decisions should focus on creating healthy, thriving active places with a focus on a positive, sustainable future for our communities. The planning system has an important role in supporting healthier lifestyles and reducing inequalities. This includes both direct and indirect opportunities such as the allocation of land for health facilities, ensuring good design and barrier free development, jobs and skills, improving air quality, soundscapes and protecting and improving access to recreation and natural green spaces. These can provide both physical and mental health benefits, improve well-being and help to reduce inequality.

The Development Plan

- 5.19 Section 38 (6) of the Planning and Compulsory Purchase Act 2004, requires that, if regard is to be had to the development plan for the purpose of any determination to be made under the Planning Acts, the determination must be made in accordance with the plan unless material considerations indicate otherwise.
- 5.20 [Future Wales - the National Plan 2040](#) now forms part of the Development Plan for all parts of Wales, comprising a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities. All Development Management decisions, strategic and local development plans, planning appeals and all other work directed by the development plan need to accord with Future Wales.
- 5.21 Future Wales and the Welsh National Marine Plan work together to provide a framework for the management of change around our coast.
- 5.22 FW also identifies that flooding from rivers and the sea is a major issue across the South-East region, noting that Cardiff and Newport are estuarine cities while major rivers flow through all the south Wales Valleys, meaning many communities are at risk of flooding. Large parts of the region's key rail and road infrastructure are on valley floors or coastal locations and reliant on effective flood risk management to remain operational at all times.

5.23 Places in the region benefit from strong coastal defences, including the Cardiff Bay Barrage and the Gwent levels sea wall, but sea levels are expected to rise more on the south coast than any other part of Wales over the next thirty years. The potential for flooding in the National Growth Area has implications for the delivery of growth in the region.

5.24 Policy 8 thus sets out the national strategic approach to flood risk management and seeks to ensure growth aspirations in National Growth Areas are co-ordinated with strategic decisions on managing flood risk, when it states that:

Flood risk management that enables and supports sustainable strategic growth and regeneration in National and Regional Growth Areas will be supported. The Welsh Government will work with Flood Risk Management Authorities and developers to plan and invest in new and improved infrastructure, promoting nature-based solutions as a priority. Opportunities for multiple social, economic and environmental benefits must be maximised when investing in flood risk management infrastructure. It must be ensured that projects do not have adverse impacts on international and national statutory designated sites for nature conservation and the features for which they have been designated.

5.25 The supporting text to Policy 8 further emphasises the need to make sustainable development choices, noting that the Welsh Government and flood risk management authorities will focus on delivering nature-based schemes and on enhancing existing defences, to improve protection to developed areas. This can enable opportunities for the redevelopment of brownfield land in Growth Areas ... [although] ... It is important that proposals do not cause unacceptable impacts on the surrounding natural environment.

5.26 The Local Development Plan is the [Cardiff Local Development Plan 2006-2026](#) which was adopted in January 2016, and within which the following policies are of relevance:

KEY POLICIES

- KP5 Good Quality and Sustainable Design
- KP6 New Infrastructure
- KP15 Climate Change
- KP16 Green Infrastructure
- KP17 Built Heritage
- KP 18 Natural Resources

DETAILED POLICIES

Environment

- EN4 River Corridors
- EN5 Designated Sites
- EN6 Ecological Networks and Features of Importance for Biodiversity
- EN7 Priority Habitats and Species

- EN8 Trees, Woodlands and Hedgerows
- EN9 Conservation of the Historic Environment
- EN10 Water Sensitive Design
- EN11 Protection of Water Resources
- EN13 Air, Noise, Light Pollution and Land Contamination
- EN14 Flood Risk

Transport

- T1 Walking and Cycling
- T5 Managing Transport Impacts
- T6 Impact on Transport Networks and Services
- T8 Strategic Recreational Routes

Supplementary Planning Guidance:

5.27 The following [Supplementary Planning Guidance](#) (SPG) is of relevance to this application: -

- Archaeology and Archaeology Sensitive Areas (July 2018)
- Green Infrastructure (including Technical Guidance Notes relating to: Ecology and Biodiversity; Trees and Development; Public Rights of Way and Development; River Corridors; Protection and Provision of Open Space in New Developments; Soils and Development) (November 2017)
- Managing Transportation Impacts (Incorporating Parking Standards) (July 2018)

Shoreline Management Plan

5.28 Shoreline Management Plans (SMPs) set out a shared strategic approach for managing the coastline from coastal flooding and erosion risks. Their aim is to reduce the risks to people, the developed, historic and natural environments over the next century.

5.29 The [Severn Estuary Shoreline Management Plan 2](#) covers the Severn Estuary Coastline from Anchor Head to Lavernock Point. The policy for this SMP2 is 'Hold the Line' over the next three defined epochs (0-20 years, 20-50 year, 50-100 years). The SMP2 states this policy is required as further erosion into Lamby Way Industrial Site could be harmful to water quality, and the flood defences are also currently protecting important transport links.

6. INTERNAL CONSULTEE RESPONSES

6.1 The Council's **Ecologist** makes the following comments:

- Habitats Regulations Assessment (HRA) – the Appropriate Assessment (see Appendix 1) concluded that the loss of coastal habitat due to land take and future coastal squeeze required compensation via derogation. Welsh Government has been notified of the Council's intention to carry

out the project for 'Imperative Reasons of Overriding Public Interest' (IROPI). Their 21 day notification period expired on 7th December 2022.

- Conditions are recommended to secure a saltmarsh habitat management plan, a sediment sample plan, a construction environmental management plan, a biosecurity risk assessment, and repeat ecology surveys (if required).

6.2 The **Operational Manager (Traffic and Transportation)** raises no objection subject to conditions to address construction impacts, including:

- A phasing plan detailing the start and end dates, quantum of each phase of development; the transportation elements of each phase (including, but not limited to, access junctions).
- Construction Management Plan, to minimise the impact on the highway arising from on-site and off-site construction activities during the construction period
- Details of the scale and form of the junctions
- Active Travel routes - The provision of active travel routes within the site, which are to be made fully accessible, to be approved in writing by the LPA, incorporating the Wales Coastal Path and the Rhymney embankment PROW and the coastal PROW.

6.3 The **Operational Manager (Waste Management)** does not envisage any detrimental impact on the Lamby Way landfill infrastructure. They emphasise the need to ensure various historic leachate outfalls on the Lamby Way site remain sealed to prevent leachate from discharging into the river. They are also currently relocating perimeter monitoring locations at the Lamby Way site and construction activities will need to have regard to these also.

6.4 The **Operational Manager, Parks & Sport** expresses concern that the existing access track through the Pengam Allotments is intended to be used as one of the construction access points. He is concerned as the existing track is narrow (single width) and may result in damage and restricted access for existing allotment holders.

6.5 The Council's **Tree Officer** considers that a revised scrub mix for the proposed landscape mitigation at Queens Gate Roundabout and the Rover Way Travellers Site is required. He advises that a soil resource survey and plan inform the mix together with tree pit sections, plus an ecotone treatment to planting to prevent conflict with passing traffic, encourage habitat diversity and ensure wind flows are smooth and dissipated effectively. Relevant conditions are attached

6.6 The Council's **Public Rights of Way Team** considers that, following completion, the development will provide a more accessible route for the Wales Coast Path (WCP). An existing diversion route is currently in place which should be promoted during construction works as this brings the WCP through Splott instead of along the coastline. Confirmation of the precise position of the route is required.

- 6.7 **Shared Regulatory Services (Environment Team)**, having considered the application and accompanying Environmental Statement, notes that the concentration of potential contaminants of concern were below the screening levels for public open space and risks to human health were low. However, they consider it is possible to encounter contaminants of concern during the construction phase. In addition, despite low concentrations of ground gas being recorded during monitoring, there remains potential for gas generation on the site, due to the landfill and therefore they consider some mitigation including monitoring will be necessary. Relevant conditions and an informative are recommended to ensure that the safety of future occupiers is not prejudiced in accordance with Local Development Plan Policy EN13 (Air, Noise, and Light Pollution).
- 6.8 **Shared Regulatory Services (Noise and Air)** recommends conditions be attached in respect of a Construction Environmental Management Plan (CEMP) and details regarding piling activities which should take place during daytime hours wherever possible.

7. EXTERNAL CONSULTEE RESPONSES

- 7.1 **Dŵr Cymru Welsh Water**: Raise no objection to the proposal but highlight that they are in discussions with the applicant concerning proximity to their public sewerage assets. They are seeking clarification regarding the raising of ground levels and the additional loading and future access arrangements to ensure that they can carry out their duties. They are satisfied that their concerns can be mitigated and through careful design ensure that there is no impact on their assets.
- 7.2 **Natural Resources Wales**: Makes the following comments having considered the Environmental Statement Addendum:
- Habitats Regulations Assessment (HRA) – a likely significant effect cannot be ruled out and as such the authority should carry out an Appropriate Assessment under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended). They request to be consulted. Their assessment under the Marine Licensing Regime concluded the project will have adverse effects on the integrity of the Severn Estuary SAC, SPA and Ramsar site. As such, the project was progressed to Stage 4 (imperative reasons of overriding public interest (IROPI)) of HRA which requires ministerial approval for compensatory measures. (Approval from the Ministers was received and the Licence issued in July 2022).
 - Coastal Squeeze – clarification and justification has been resolved through the Marine Licensing Regime (MLR) and used to address compensatory measures under HRA.
 - Intertidal Habitats – survey methodology and maps are sufficient.
 - Contaminated Sediment – they are satisfied with sediment sample plans and therefore the principle of how contaminated sediment will be managed. Condition requested.
 - National Vegetation Classification (NVC) survey data – resolved following further details justifying methodology and giving confidence in results.

- SSSI features – the outline Saltmarsh Management plan and CEMP, also submitted via the MLG, should safeguard SSSI features. Conditions advised.
- European Protect Species – resolved following justification provided in December 2021.

7.3 **Glamorgan Gwent Archaeological Trust (GGAT)** advise that the proposals has an archaeological restraint. They have consulted the regional Historic Environment Record (HER) and have considered Chapter 7 (Historic Environment) of the Environmental Statement plus the desk-based assessment at Appendix I. Several archaeological sites have been identified and, to mitigate, an archaeological watching brief is proposed during GI work together with a targeted watching brief during the construction phase. They consider this to be an acceptable approach and a relevant condition is recommended.

8. REPRESENTATIONS

- 8.1 The application was advertised on the Council Website and by way of neighbour notification letters, site notices and advertisement in the local press on 23rd September 2021.
- 8.2 Following receipt of additional information in support of the application in respect of biodiversity and nature conservation, land contamination, and flood risk, additional publicity was undertaken on 7th July 2022 in accordance with Regulation 24 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (requiring site and press notice providing an additional 30 day's consultation).
- 8.3 1 no. letter objecting to the proposals has been received to date, on the grounds that the application does not confirm that proposed flood defences will not increase flood risk for dwellings at Pengam Green.
- 8.4 3 no. letters expressing concerns have been received to date querying the effectiveness of various aspects of the proposals (e.g. flood gate to sailing club, retention of existing embankments), alternative design solutions (e.g. barrage) as well as the timing and duration of works.
- 8.5 All public representations made on the application are available to view in full on the Council's website at: - [21/02138/MJR](#)

9. ANALYSIS

- 9.1 The key material considerations in the determination of this application are:
- Land Use / Principle of Development
 - Landscape and Visual Impacts
 - Ecology and Biodiversity
 - Heritage and Archaeology
 - Water Framework Directive
 - Flood Risk; and

- Impacts on Highways including Public Rights of Way

Land Use / Principle of Development

- 9.2 Future Wales: The National Plan 2040, Planning Policy Wales, Technical Advice Note 15 and LDP Policies KP15, EN11 and EN14 all look to reduce flood risk and the associated measures to manage the potential for flooding.
- 9.3 The objectives and need of the Project are described in Chapter 2 of the Environmental Statement, which notes that 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.
- 9.4 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.
- 9.5 The scheme is comprised of two main areas:
- 9.6 *Land to the west of the Rhymney River* - The coastal defences along this section of the Severn Estuary are in very poor condition and erosion is taking place at a rapid rate. Landfill material is eroding into the Severn Estuary from the disused Frag Tip, while the Rover Way Travellers Site is at risk of being lost to erosion and flooding. The coastal defences here are already at risk of breach due to erosion, leading to flooding of the land behind. Along the west bank of the river there are low sections of defence which will overtop as sea levels rise, increasing flood risk to people and property to the west of the river. The Lamby Way roundabout and Rover Way, key infrastructure supporting the economy of Cardiff, are situated immediately behind the embankment on the outside of the river meander and are at risk of being undermined and lost to erosion within 20 years. Here people and property are at risk from coastal erosion and flooding from the sea. In addition, fluvial erosion and tidal flooding can occur from the River Rhymney. The frequency and likelihood of both significantly increases in the future as a result of climate change.
- 9.7 *Land to the east of the Rhymney River* - The defences along the east bank of the river and the coastal defences to the east of the river mouth are also at risk of erosion. It is estimated that if no works are undertaken along the coast, erosion will continue to increase and will impact upon the disused Lamby Way Landfill within 20 years, releasing landfill material into the Severn Estuary and having significant environmental impacts. Land elevations are higher on this side of the river leading to more limited flood risk but there is a risk of up to 50m of erosion along the coast within 20 years, and 270m by 2117.
- 9.8 The flood risk is predicted to increase in the future with the effects of climate change, leading to over 2,656 residential and 294 non-residential properties being at risk in the year 2119 if the flood risk is not managed.

- 9.9 The Severn Estuary Shoreline Management Plan 2 (SMP2) policy for these sections of the coastline is to 'Hold the Line' (HTL). This means that the flood defences should be maintained and upgraded or replaced in their current position. Substantial new flood defences are required to maintain and improve the level of protection currently provided.
- 9.10 The proposed scheme seeks to respond to the consequences of climate change which will continue to cause flood events to be more frequent, more severe and less predictable. The scheme has been designed to incorporate allowances for current and future climate change over the next 100-year period. A Flood Consequences Assessment (FCA) has been submitted in support of the application which concludes 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.
- 9.11 Having regard to the above, the principle of the proposed development is acceptable insofar as it provides a 'Hold the Line' scheme as required by the Severn Estuary Shoreline Management Plan 2 and will manage flood risk taking into account climate change over the next 100-year period. Furthermore, it is also considered to be compliant with key policies KP5 and KP15 and Policies EN4 and EN14 of the Cardiff Local Development Plan (2006-2026).
- 9.12 It would accord with the national principles of the Welsh National Marine Plan (2019), the National Strategy for Flood and Coastal Erosion Risk Management in Wales, the Welsh Minister's Written Statement - Flood and Coastal Erosion Risk Management Programme for 2020-2021, Future Wales: The National Plan 2040, Planning Policy Wales, and Technical Advice Notes 14 and 15 and the Wellbeing of Future Generations (Wales) Act 2015.

Landscape and Visual Impact

- 9.13 Much of the site lies on the edge of National Landscape Character Area 35, Cardiff, Barry and Newport. Part of the site lies on the far western edge of National Landscape Character Area 34, Gwent Levels. The site is also just to the west of The Gwent Levels, a Registered Landscape of Outstanding and of Special Interest in Wales. This has been designated due to its extraordinarily diverse environmental and archaeological potential. The site is part of Marine Character Area 29 Severn Estuary (Wales).

Construction Impacts

- 9.14 During the construction phase, there will be slight effects to landscape features and landscape character due to the operation of machinery and excavation of landscape features including the riverbanks and channel. There will be moderate impacts upon the coastal area resulting from significant increases in noise pollution during construction activities. This disturbance will also have a moderate-substantial adverse impact on receptors on the Wales Coast Path (WCP) and Public Rights of Way (PRoW). Such impacts are, however,

temporary.

- 9.15 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.

Operational / Post-Construction Impacts

- 9.16 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.
- 9.17 During the operational phase there will be slight beneficial impacts upon the coastal area due to an improvement in the appearance of man-made coastal defences. The defences will have a slight adverse effect upon the river, although these impacts will reduce once mud begins to accrete on the surface. There will continue to be slight moderate adverse effect upon trees as colonisation of the bare earth will take time.
- 9.18 After 15 years, the accretion of mud will have helped blend the defences into the natural environment, thus the visual impact on the river will be negligible. Trees will have grown in stature by this stage and thus the visual impact will reduce. Impacts upon urban areas will be negligible.
- 9.19 Residents of the Traveller site on Rover Way will continue to be able to see walkers on the WCP/PRoW, though this may have reduced slightly over time with some natural vegetation growth along the boundary between the site and the coast. Effects on most other receptors at this point are likely to be negligible.

The Queen's Gate Roundabout

- 9.20 Trees and vegetation lost in this area during the works will be replaced with new planting that will be designed to integrate with the species that remain, to provide visual interest, and to provide some screening of the busy road network for those using the WCP/PRoW. The planting, which will be secured via condition, will be required to make a positive contribution to the overall landscape character of the area.

The Traveller Site

- 9.21 There will be planting to provide a natural screen between the Traveller Site and the WCP/PRoW. By Year 15 in winter the new planting will be providing an improvement to the baseline with visual interest, as well as acting as a visual screen, and adding a positive feature to the landscape character in this area. Planting details will be secured via condition.

Transportation / Highway Impacts

- 9.22 The only highway-related impacts arising from the proposals relate to the construction phase, with construction programmed to take approximately 18 months to complete.
- 9.23 The overall construction site boundary extends to approximately 39.8 hectares which includes the footprint of the permanent works (the application site boundary) the areas needed to accommodate construction compounds and storage facilities, and the construction access routes from the public highway to facilitate access for construction plant, vehicles and staff.
- 9.24 Construction Access for all vehicle types to the west of Rhymney River will be via Rover Way initially and then via an existing access point onto the Frag Tip/motocross track to the west of the Traveller site. Access to the east of Rhymney River will be via Rover Way and then Lamby Way before turning off onto the existing vehicular entrance to Lamby Way Landfill. The construction vehicles will then access the river sections and Severn Estuary coastline via an existing vehicular access track across the landfill. To access the construction areas north of the Lamby Way Road bridge, vehicles will either turn off Rover Way via an existing vehicular access through the Stargarallot Community Garden (Pengham allotments) (to gain access to areas west of the river) and or via a new access to be created off Lamby Way. Most construction materials i.e., sheet piles, earth, etc, will be brought to the construction site via the existing highway network (primarily via Rover Way from Cardiff Docks). Rock will be brought to the site by road.
- 9.25 The works programmed at location 32 (sheet piling adjacent to the A4232/Lamby Way/Rover Way roundabout) may require temporary changes to the highway network to provide additional room to enable two lane traffic to be maintained throughout the construction period. Alternatively, should it not be feasible to reduce lane widths work at this location would be carried out in the off-peak hours between 9.30 am and 3.30 pm to ensure minimal disruption to traffic. Any such necessary work would be programmed with the highway team through a Construction Traffic Management Plan which is recommended to be controlled by condition (within the CEMP).

Impact on Rights of Way

- 9.26 LDP Policies T1, T6 and T8 look to enhance people's accessibility to sustainable transport routes and the provisions for walking and cycling.
- 9.27 The Wales Coast Path runs directly through the site from the east, heading south west along the top of the Lamby Way Landfill and crosses the Rhymney River, where it is currently diverted inland to the west before re-joining the Coast at Cardiff Bay. Having crossed the River Rhymney, The Wales Coast Path continues as a footpath heading south east from Lamby Way, parallel to Rover Way, continuing along the River Severn estuary foreshore to the south.

- 9.28 The Rights of Way Officer has reviewed the Public Right of Way alignment, which also has the Wales Coast Path along it, and advises that the coastal defence project will provide a more accessible route. A relevant condition is attached to secure details of its provision.
- 9.29 The proposals will maintain the current route (and proposed route over Lamby Way landfill site) of the Public Right of Way (PROW) over which the WCP route runs along, with no permanent diversions to any existing PROWs proposed in relation to this scheme (although some temporary diversions would be required during construction).
- 9.30 Overall it is agreed that the short-term impacts from diversions during construction will be outweighed by the increased protection from flood risk and erosion once the scheme is operational, ensuring the Public Rights of Way can continue to be used long-term. The scheme will also encourage increased recreational use of the area by providing a convenient and attractive route in accordance with the national principles of Planning Policy Wales (Edition 11) and the Wellbeing of Future Generations (Wales) Act 2015, thus complying with Policies T1, T6 and T8 of the Local Development Plan.

Heritage and Archaeology Impacts

- 9.31 LDP Policy EN9 (Conservation of the Historic Environment) requires any development relating to historic assets (including their settings) to demonstrate that it preserves or enhances that asset's architectural quality, historic and cultural significance, character, integrity and/or setting.
- 9.32 The Environmental Statement (Chapter 7) identifies that the wider study area contains several designated heritage assets, but none of these will be significantly affected by the scheme. GGAT agree with the archaeological sites that have been identified and proposed mitigation. They also agree that a watching brief during GI work and the construction phase should be conditioned.

Impact on Amenity

- 9.33 The only material amenity impacts arising from the development are considered to be during the construction phase, both in terms of the impact on landscape features and landscape character, and in terms of noise 'pollution' due to the operation of machinery including piling activities and excavation of landscape features including the riverbanks and channel.
- 9.34 In addition to such temporary impacts on persons using the area for recreation and leisure (notably on the Wales Coastal Path), there are a number of nearby residential receptors, with the closest properties being: -
- Page Drive off Beaufort Square (near Location 52); and
 - The Traveller Site on Rover Way (near Location 12)

- 9.35 Each of these areas could be affected by construction noise impacts during both the daytime and night-time, including from increases in construction related traffic. Nevertheless, given the existing baseline lighting, noise and traffic levels along Rover Way, such impacts are not expected to be significant.
- 9.36 Potential construction impacts arising will be addressed through the development of a detailed Construction Environmental Management Plan (CEMP) that sets out the controls to be implemented during construction to effectively manage environmental risks such as noise, dust and tranquillity, pollution, amenity and health are minimised. This will be required by condition.
- 9.37 The applicant also advises that a Community Liaison Officer will be appointed during the construction phase of the project to communicate and coordinate between the construction contractor and local residents. This will ensure that any disruptive construction activities are well communicated to residents in advance, and that the views or concerns of residents are taken into account by the construction contractor when planning any disruptive works. The Community Liaison Officer would also assist residents with complaints, with a view to having any issues of concern addressed.
- 9.38 With particular reference to the Travellers site, it is also noted that the submissions (Landscape Mitigation Plan – ES Appendix H) propose a new fence boundary, together with hedge planting, to protect their amenity. Implementation of the mitigation will be required by condition.

Water Framework Directive Assessment

- 9.39 The WFD assessment accompanying the application acknowledges that the assessment cannot yet be finalised because the scheme design has not yet been finalised. For example, details of construction methods are not known at this stage and therefore further assessment may be required once these details are known.
- 9.40 NRW notes these matters but also expresses its satisfaction that further details can be provided through conditions and compensatory provision through the HRA process.

Flood Risk

- 9.41 Technical Advice Note 15 and Local Development Policy EN14 (Flood Risk) are relevant, the latter states development will not be permitted within tidal or fluvial flood plains unless it is justified in line with national guidance, where flood risk increases, where maintenance and improvements are hindered, where adverse effects on defence integrity occurs or where ground floor bedrooms are proposed in areas subject to high risk of flooding.
- 9.42 Section 5.3 and Table 5.3 of the submitted FCA outline the post-development scenario with the scheme in place. This demonstrates the predicted significant reduction in the number of properties affected by flooding during the 0.5% (1 in 200 year) and 0.1% (1 in 100 year) tidal events in both 2019 and 2119 if the

scheme is constructed. Whilst there is still predicted to be flooding within the scheme development site, particularly within the channel of the Rhymney River and existing flood plain on Llanrumney sports fields and Parc Tredelerch, other areas are predicted to benefit from reduced risk over the lifetime of the scheme.

- 9.43 In the predicted 0.5% (1 in 200 year) tidal event in the year 2119 the scheme is shown to provide significant benefits in terms of the numbers of properties at risk of flooding and depths of flooding over a wide area. It is also demonstrated that no properties experience detriment in terms of increased flooding.
- 9.44 In the predicted present day 0.5% (1 in 200 year) event the FCA states that flood depths inside the application site boundary increase but this is largely within the channel of the Rhymney River and therefore the FCA considers this to be acceptable. Outside of the site boundary some other areas of existing flood plain on public open space and greenfield land experience increased flood depths, predicted to increase by between 6mm to 9mm.
- 9.45 Table 5-5 outlines the significant overall reduction in numbers of properties at risk of flooding in each scenario as a result of the scheme. It is stated that in the 2119 0.5% (1 in 200 year) event flood risk will be mitigated for approximately 2326 residential and 204 commercial properties.
- 9.46 In the predicted 0.1% (1 in 1000 year) tidal event in 2119 the scheme is shown to provide significant benefits in terms of the numbers of properties at risk of flooding and depths of flooding over a wide area. It is also demonstrated that no properties experience detriment in terms of increased flooding.
- 9.47 In the present day 0.1% (1 in 1000 year) event the FCA confirms that whilst the overall flood extent is reduced in many areas there is again an increase in flood depths inside the site boundary which the FCA considers to be acceptable. There is also a larger increase in depths in the open spaces outside the site boundary of up to 62mm. It is however also stated that in the present day 0.1% (1 in 1000 year) event a number of existing residential and commercial properties will experience increased flood depths of up to 53mm.
- 9.48 Table 5-6 confirms that in the present 0.1% (1 in 1000 year) event whilst there is an overall reduction in the number of properties at risk, 121 properties will experience detriment in terms of increased flooding.
- 9.49 Of the 121 properties experiencing detriment the FCA states that 4 of these did not previously flood but that the depth of flooding predicted means that only the curtilages will flood, floodwater is not anticipated to enter the buildings. The other 117 properties are already predicted to flood but will experience increased flood depths.
- 9.50 The FCA accepts that the construction of flood defences can result in some negative impacts due to disruption of flow paths and displacement which can increase flooding to some areas. It is also accepted that building flood defences in an urbanised area can make it very difficult to avoid all negative impacts and detriment to existing property in all scenarios. Increasing flooding elsewhere is

not in line with TAN15 requirements, meaning that any scheme that results in such detriment cannot fully comply. However, the FCA argues that a risk-based approach should be adopted in such instances and that the overall betterment provided by the scheme, over its lifetime, outweighs any detriment. We can therefore advise that the FCA has considered and assessed the relevant requirements of TAN15 and provides sufficient information to inform a decision.

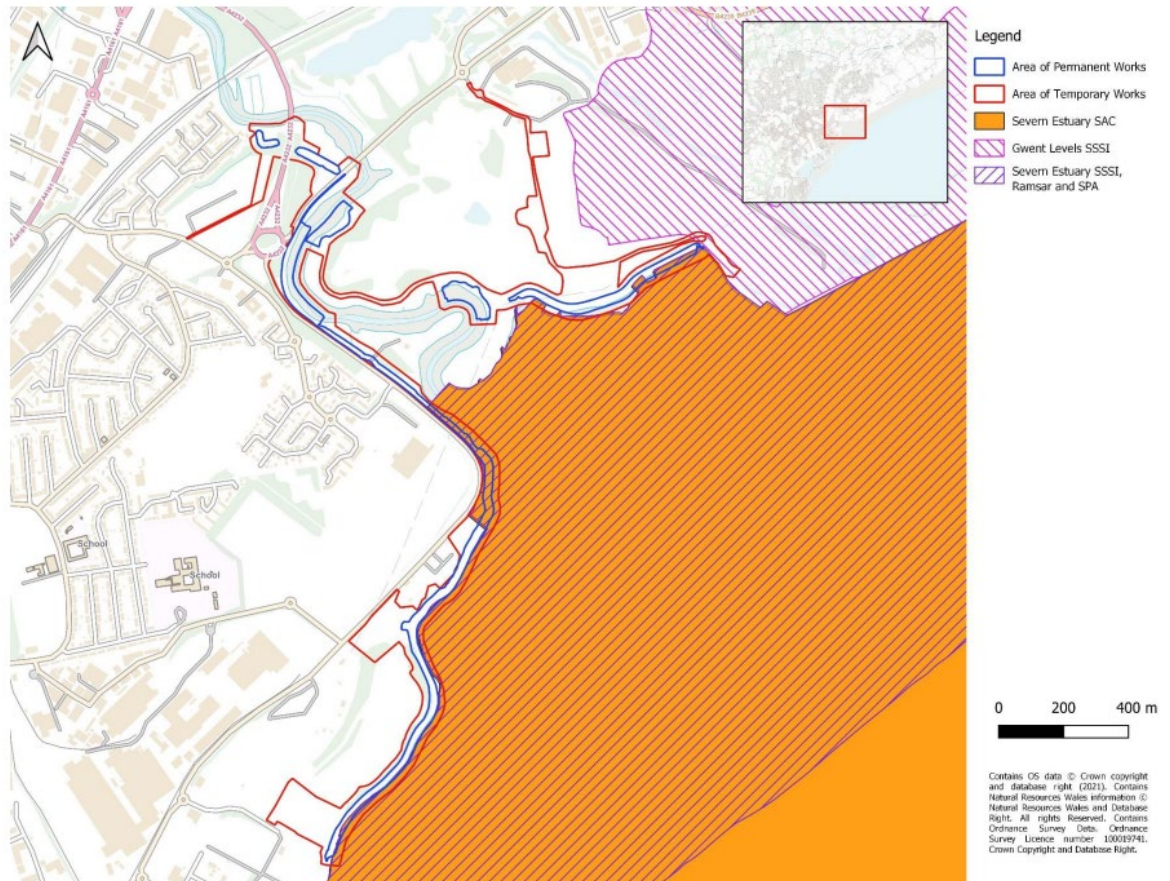
- 9.51 It is recognised that the scheme does cause detriment but there is also an overall betterment regarding the wider scheme. In particular, it was put forward as the best compromise on the basis that the significant benefits in the more frequent events outweighed the detriment in the extreme event.

Impact on Ecology

- 9.52 Future Wales Policy 9 Resilient Ecological Networks and Green Infrastructure requires developers to ensure the enhancement of biodiversity, the resilience of ecosystems and provision of green infrastructure. In all cases, action towards securing the maintenance and enhancement of biodiversity (to provide a net-benefit), the resilience of ecosystems and green infrastructure should be demonstrated as part of development proposals.
- 9.53 LDP Policy EN 8 states development will not be permitted that would cause unacceptable harm to trees, woodlands and hedgerows of significant public amenity, natural or cultural heritage value, or that contribute significantly to mitigating the effects of climate change
- 9.54 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.
- 9.55 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
- 9.56 The Council has carried out a Habitats Regulation Assessment (HRA) (see Appendix 1), for which the Appropriate Assessment concluded that the integrity test failed due to damage and loss of coastal habitats (Annex 1 intertidal habitats) during construction and due to future coastal squeeze as these effects cannot be fully mitigated for. Only permanent losses of the above-mentioned habitats are considered to require compensation.

Table 1 – Permanent and Temporary Losses of Annex 1 Habitats					
	Total	Annex 1 habitat – mudflats and sandflats not covered by seawater all the time (ha)	Annex 1 habitat – Atlantic Salt Meadows (ha)	Total Annex 1 – mudflats and sandflats not covered by seawater all the time and Atlantic Salt Meadow (ha)	Other Habitat (ha)
Permanent works (outside SAC)	4.59	1.26	1.51	2.77	1.82
Permanent Works (within SAC)	3.37	1.09	0.08	1.17	2.20
Temporary Works (outside SAC)	31.11	6.20	3.38	9.58	21.52
Temporary Works (inside SAC)	5.67	1.50	0.49	1.99	3.68

- 9.57 Scheme operation will also result in indirect loss of Annex 1 intertidal habitats (Mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows) through coastal squeeze. Coastal squeeze calculations predict a loss of 24.59 ha by the year 2122. Therefore, a total of 25.76 ha of permanent direct and indirect losses of habitat will need to be compensated.
- 9.58 The Appropriate Assessment also concluded that adverse effects may also occur on estuaries, mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadow, dunlin, redshank, shelduck, gadwall, waterfowl assemblage, fish assemblage, migratory fish, fish features as a result of mobilisation/introduction of contaminants of synthetic and non-synthetic compounds during construction; adverse effects on estuaries, mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadow from introduction of non-native species; disturbance to birds during construction and operation; and disturbance of sensitive fish species and migratory fish through vibration of the water column during construction.
- 9.59 Damage to habitats and disturbance to birds and fish features will be minimised through mitigation measures including a sediment sample plan, a saltmarsh management plans, a construction environmental management plan, and a biosecurity risk assessment.



9.60 Following the conclusion of adverse effects on the integrity of a European Site, the HRA proceeded to Stage 3 (Derogation). The Council, as the competent authority, notified Welsh Government of its intention to proceed with the project under Regulation 64(5) of the Habitats Regulations. The Regulation provides a derogation which would allow a plan or project to proceed in limited circumstances even though it would or may have an adverse effect on the integrity of a European site. Under Regulation 64 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.

No Feasible Alternative Solution

9.61 The Severn Estuary Shoreline Management Plan policy for the relevant sections of the coastline is to ‘Hold the Line’ (HTL). This means that the flood defences should be maintained and upgraded or replaced in their current position. The relevant policy unit numbers within the SMP are CAR2 and CAR3. The SMP was subject to assessment in accordance with Regulation 63 of Conservation of Habitats and Species Regulations 2017. That assessment

concluded that the delivery of the SMP would adversely affect the integrity of the Natura 2000 sites. The SMP was nevertheless approved by the Welsh Ministers as a derogation in accordance with the provisions regulation 64 of the Regulations, namely that there are no alternative solutions, and that the SMP is necessary for imperative reasons of over-riding public interest.

- 9.62 A variety of alternatives or options have been assessed in the ES (chapter 2.3) and the Outline Business Case. As per government guidance 1, valid alternative/s must meet the original objectives of the proposal and only be acceptable if: achieves the same overall objective as the original proposal; are financially, legally, and technically feasible; and is less damaging to the European site and/or does not have an adverse effect on the integrity of this or any other European site.

Imperative Reasons of Overriding Public Interest

- 9.63 The project is imperative for the improvement and extent of the coastal protection asset at Cardiff along Rhymney and Severn estuaries. The Severn Estuary Shoreline Management Plan policy for the relevant section for the coastline is to 'Hold the Line' (HTL). This means that flood defences should be maintained and upgraded or replaced in their current position.
- 9.64 The project is in the public interest as it will manage flood risk to approximately 2,326 residential properties and approximately 204 commercial properties over 100 years as well as preventing erosion of landfill material, key road/rail infrastructure, and the Rover Way Travellers Site.
- 9.65 The Lamby Way roundabout and Rover Way, key infrastructure supporting the economy of Cardiff, are situated immediately behind the embankment on the outside of the River Rhymney meander and are at risk of being undermined in and lost to erosion within 20 years.
- 9.66 For these reasons the project is considered to be in the public interest, both locally and regionally.
- 9.67 These reasons are overriding because the works have a very small footprint (1.17ha of Annex 1 habitats directly affected within the SAC) in relation to the size of the Severn Estuary SAC and SPA (73,714.11ha) and Severn Estuary Ramsar (24,701ha). The predicted coastal squeeze which may affect Annex 1 habitats (24.59ha) is also small in relation to the size of the designation. The 25.76ha loss is able to be compensated for as described below and the implementation of a Saltmarsh Management Plan will benefit this habitat and the species associated with it in this area.
- 9.68 Furthermore, the proportion of the bird populations recorded within the SPA which may be affected by habitat loss will be small, compensation for loss of habitats can be provided, disturbance effects on birds in the area during construction works will be mitigated and the implementation of a Saltmarsh Management Plan will benefit this habitat and the bird species associated with it.

- 9.69 It is considered that the imperative reasons of overriding public interest outweigh the relatively small proportion of the Severn Estuary SAC/SPA and Ramsar Annex 1 habitats and percentage of the wintering bird populations that will be affected.
- 9.70 The Annex 1 habitat losses will be compensated through the Welsh Government National Habitats Creation Programme (NHCP). NRW's NHCP programme manager has confirmed that compensation at Cwm Ivy should be sufficient to cover losses identified.

Impact on SSSI

- 9.71 The proposal has the potential to impact upon the Severn Estuary SSSI and the Gwent Levels 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 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.
- 9.72 NRW is 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, such that NRW considers that when the activity is completed in line with its recommended conditions, there will be no adverse impact on any of the features of the SSSIs.

Invasive Species

- 9.73 Following expressions of concern from NRW 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.

Construction Impacts

- 9.74 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. The ECoW will support supervision of the construction phase and associated weekly environmental audits, advise the project team on ecological risks, and support the contractor to effectively manage any unforeseen ecological issues. The ECoW will also monitor adherence to the CEMP.

Impact on Non-Statutory Sites of Importance for Nature Conservation (SINC):

- 9.75 There are also five non-statutory Sites of Importance for Nature Conservation (SINC): located within 1km of the proposed development, namely: Lamby North, Lamby Saltmarsh, Lamby Way, Rhymney Grassland Easy, and The Rhymey River SINC.
- 9.76 These SINCS include the River Rhymney itself plus bankside habitats. Impacts to these habitats have been considered and mitigation developed including measures in the draft CEMP. Subject to relevant conditions it is considered that the interests of these local designations can be satisfactorily safeguarded.

Conclusion

- 9.77 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. The works are considered to be 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. Although there is potential impact on these features, any significant impact can be avoided through the implementation of appropriate mitigation including a Biosecurity Risk Assessment, a Saltmarsh Management Plan, a CEMP and a Sediment Sample Plan. Considering the mitigation proposed within the ES and the recommended conditions, no significant impact on biodiversity is predicted.

Waste

- 9.78 Any waste removed from site will be subject to waste management controls. Waste must be dealt with appropriately and be in line with all relevant waste legislation including Duty of Care Regulations and Hazardous Waste Regulations. Should waste be removed from site it must be taken to an appropriate facility authorised to accept this waste.

Overall Assessment – 'The Planning Balance'

- 9.79 PPW11 refers to the need to assess the Sustainable Benefits of Development and (at 2.27) emphasises that Planning authorities should ensure that social, economic, environmental and cultural benefits are considered in the decision-making process and assessed in accordance with the five ways of working to ensure a balanced assessment is carried out to implement the Well-being of Future Generations Act and the Sustainable Development Principle.
- 9.80 Paragraph 3.38 of PPW states that the countryside is a dynamic and multi-purpose resource. In line with sustainable development and the national

planning principles and in contributing towards placemaking outcomes, it must be conserved and, where possible, enhanced for the sake of its ecological, geological, physiographic, historical, archaeological, cultural and agricultural value and for its landscape and natural resources. The need to conserve these attributes should be balanced against the economic, social and recreational needs of the local communities and visitors.

- 9.81 There may be occasions when one benefit of a development proposal outweighs others, and in such cases robust evidence should be presented to support these decisions, whilst seeking to maximise contributions against all the well-being goals.
- 9.82 Key factors in the assessment process include:
- *Social Considerations*, including: - who are the interested and affected people and communities; who will benefit and suffer any impacts from the proposal; what are the short and long-term consequences of the proposal on a community;
 - *Economic Considerations* including: - the numbers and types of long term jobs expected to be created or retained; whether, and how far, the development will help redress economic disadvantage or support regeneration priorities, for example by enhancing local employment opportunities;
 - *Cultural Considerations* including: - how far the proposal supports the conditions that allow for the use of the Welsh language; whether or not the development protects areas and assets of cultural and historic significance; have cultural considerations and their relationships with the tourism industry been appropriately maximised; and
 - *Environmental Considerations* including: - will important features of the natural and built environment be protected and enhanced; are the environmental impacts of development on health and amenity limited to acceptable levels and the resilience of ecosystems improved.
- 9.83 At 2.29 it further refers to the need to have an integrated approach to balancing priorities against policy on an individual basis, which enables the full range of costs and benefits over the lifetime of development to be taken into account.
- 9.84 Section 5 of PPW11 provides further emphasis on the need to develop 'Productive and Enterprising Places' which promote our economic, social, environmental and cultural well-being by providing well-connected employment and sustainable economic development.
- 9.85 The role of the Local Planning Authority is therefore to balance the weight to be attributed to each of the positive and negative impacts of the development and come to a balanced conclusion as to whether the development is acceptable or not.
- 9.86 It is recognised that some adverse environmental effects will occur should the development proceed, notably by losses to the Severn Estuary SAC through the development footprint and coastal squeeze, plus associated biodiversity

impacts on water quality and saltmarsh habitat. However, these can be mitigated for, to a certain degree, through the imposition of conditions and it must be noted that the losses of SAC are relatively small in comparison to the overall designation.

- 9.87 The FCA also identifies that in the present 0.1% (1 in 1000 year) event whilst there is an overall reduction in the number of properties at risk, 121 properties will experience detriment in terms of increased flooding (curtilage flooding only), of which 4 did not previously flood.
- 9.88 These adverse impacts need to be balanced against the benefits of the project proceeding, which will result in the effective management of flood risk to approximately 2,326 residential properties and approximately 204 commercial properties over 100 years, as well as preventing erosion of landfill material, key road/rail infrastructure and the Rover Way Travellers site. These social and economic considerations weigh heavily in favour of the development proceeding.
- 9.89 It is also accepted that there may be some short-term adverse social effects during construction, which is estimated to take 18 months. Noise and air disturbance may occur for nearby residential properties from plant and machinery however conditions are recommended to mitigate against these impacts.
- 9.90 Overall, there are imperative reasons of overriding public that are considered to outweigh the environmental harm that would be caused by the development, such that they justify a conclusion being reached that subject to conditions planning permission should be granted for the development.

Other Matters Not Assessed Above

- 9.91 As identified earlier in this report, 1 no. objection and 3 no. letters of concern were received in response to the publicity exercise. In response to the main issues raised which have not been addressed elsewhere in this report, the following comments are made:
- A condition is recommended to approve details of the flood gates to the River Rhymney Sailing Club;
 - Alternative design solutions have been considered (see ES 2.3).

10 CONCLUSION

- 10.1 The decision to recommend planning permission has been taken in accordance with Section 38 of The Planning and Compulsory Purchase Act 2004, which requires that, in determining a planning application the determination must be in accordance with the Development Plan unless material considerations indicate otherwise. The Development Plan comprises the Cardiff Local Development Plan (2011–2026) adopted January 2016. In addition, the Council, in accordance with Section 3(3) of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017, has taken all

the environmental information into consideration.

- 10.2 The proposed development will construct a series of fluvial and coastal flood defences along the Severn Estuary coastline and east and west banks of the River Rhymney.
- 10.3 The development will manage and reduce erosion along the coast to reduce the risk of failing coastal flood defences and the release of contaminated landfill material into the Severn Estuary from the Lamby Way Tip and the Rover Way Frag Tip, in the immediate future and over the next 100 years. It will also reduce and manage the flood risk to approximately 2,326 residential properties and 204 commercial properties for a 0.5% AEP event over the same period.
- 10.4 Given the hard-engineered composition of the scheme it is considered that the structure would be low maintenance over the 100-year design life of the scheme. The proposals respect the character of the area and surrounding land uses and encourage increased recreational use of the area through improved public rights of way.
- 10.5 The technical assessments that have been prepared in support of the planning application have demonstrated that there will be no significant adverse effects arising from the proposed development in terms of landscape and visual impacts or biodiversity or ecology. Any short-term impacts of the construction phase of development will be mitigated through conditions.
- 10.6 The proposed development is fully in accordance with the provisions of national planning guidance as well as those policies of relevance within the Local Development Plan. As such, it is considered that there is a compelling case for this flood defence scheme.
- 10.7 Accordingly, the proposed development is in accordance with LDP Policies KP5, KP6, KP15, KP16, EN4, EN5, EN6, EN7, EN8, EN9, EN10, EN11, EN13, EN14, T1, T5, T6, T8.

11 OTHER MATTERS RELEVANT TO THE CONSIDERATION OF THIS APPLICATION

- 11.1 Crime and Disorder Act 1998. Section 17(1) of the Crime and Disorder Act 1998 imposes a duty on the Local Authority to exercise its various functions with due regard to the likely effect of the exercise of those functions on, and the need to do all that it reasonably can to prevent, crime and disorder in its area. This duty has been considered in the evaluation of this application. It is considered that there would be no significant or unacceptable increase in crime and disorder as a result of the proposed decision.
- 11.2 Equality Act 2010. The Act identifies a number of 'protected characteristics', namely age; disability; gender reassignment; pregnancy and maternity; race; religion or belief; sex; sexual orientation; marriage and civil partnership. The Council's duty under the above Act has been given due consideration in the determination of this application. It is considered that the proposed

development does not have any significant implications for, or effect on, persons who share a protected characteristic, over and above any other person.

- 11.3 Well-Being of Future Generations Act 2016. Section 3 of this Act imposes a duty on public bodies to carry out sustainable development in accordance with the sustainable development principle to act in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs (Section 5). This duty has been considered in the evaluation of this application. It is considered that there would be no significant or unacceptable impact upon the achievement of wellbeing objectives as a result of the recommended decision. It is also noted that section 2(5) of the Planning (Wales) Act 2015 affords protection to decisions taken under Part 3 of the 1990 Act, in that the Well-being of Future Generations (Wales) Act 2015 does not alter whether regard is to be had to any particular consideration under section 70(2) of the 1990 Act or the weight to be given to any consideration to which regard is had under that subsection. This means the provisions of the development plan, so far as material to the application, and any other relevant other material considerations remain the primary considerations when determining planning applications.
- 11.4 Section 6 of Environment (Wales) Act 2016 subsection (1) imposes a duty that a public authority must seek to maintain and enhance biodiversity in the exercise of its functions, and in so doing promote the resilience of ecosystems, so far as is consistent with the proper exercise of those functions. In complying with subsection (1), a public authority must take account of the resilience of ecosystems, in particular the following aspects:
- (a) Diversity between and within ecosystems;
 - (b) The connections between and within ecosystems;
 - (c) The scale of ecosystems;
 - (d) The condition of ecosystems (including their structure and functioning);
 - (e) The adaptability of ecosystems.

It is considered that the LPA has considered its duty under this Act and has met its objectives for the reasons outlined above.

12 RECOMMENDATION

12.1 RECOMMENDATION 1:

That planning permission be **GRANTED** subject to the conditions listed below.

12.2 RECOMMENDATION 2:

That delegated authority is given to the Head of Planning & Operational Manager: Strategic Development & Placemaking, to make changes to the

conditions subject to consultation with the Chair of Planning, up to the point where the planning permission issued.

12.3 CONDITIONS

1. The development permitted shall be begun before the expiration of five years from the date of this planning permission.

Reason: In accordance with the provisions of Section 91 of the Town and Country Planning Act 1990.

2. The development shall be carried out in accordance with the following approved plans:

Drawing title	Reference	Revision
Overview of plan scheme locations	CCD-JBAU-00-00-SK-Z-0001	P02
Site location and red line boundary plan		
Temporary land requirements plan		
Location 11 – Embankment tie-ins	CCD-JBAU-00-11-DR-C-1106	P01
Location 11 – General Arrangement	CCD-JBAU-00-11-DR-C-100	P01
Location 11 – Site Plan 1 of 5	CCD-JBAU-00-11-DR-C-1102	P01
Location 11 – Site Plan 2 of 5	CCD-JBAU-00-11-DR-C-1102	P01
Location 11 – Site Plan 3 of 5	CCD-JBAU-00-11-DR-C-1103	P01
Location 11 – Site Plan 4 of 5	CCD-JBAU-00-11-DR-C-1104	P01
Location 11 - Site Plan 5 of 5	CCD-JBAU-00-11-DR-C-1105	P01
Location 11 - Typical Rock Armour Section	CCD-JBAU-00-11-DR-C-1150	P01
Location 11 – Rock Armour Tie-ins	CCD-JBAU-00-11-DR-C-1151	P01
Location 12 – Embankment Tie-in	CCD-JBAU-00-12-DR-C-1214	P01
Location 12 – General Arrangement	CCD-JBAU-00-12-DR-C-1200	P02
Location 12 – Site Plan (1 of 13)	CCD-JBAU-00-12-DR-C-1201	P01
Location 12 – Site Plan (2 of 13)	CCD-JBAU-00-12-DR-C-1202	P01
Location 12 – Site Plan (3 of 13)	CCD-JBAU-00-12-DR-C-1203	P01
Location 12 – Site Plan (4 of 13)	CCD-JBAU-00-12-DR-C-1204	P01
Location 12 – Site Plan (5 of 13)	CCD-JBAU-00-12-DR-C-1205	P01
Location 12 – Site Plan (6 of 13)	CCD-JBAU-00-12-DR-C-1206	P01
Location 12 – Site Plan (7 of 13)	CCD-JBAU-00-C-DR-1207	P01
Location 12 – Site Plan (8 of 13)	CCD-JBAU-00-12-DR-C-1208	P01
Location 12 – Site Plan (9 of 13)	CCD-JBAU-00-12-DR-C-1209	P01
Location 12 – Site Plan (10 of 13)	CCD-JBAU-00-12-DR-C-1201	P01
Location 12 – Site Plan (11 of 13)		
Location 12 – Site Plan (12 of 13)	CCD-JBAU-00-12-DR-C-1212	P01
Location 12 – Site Plan (13 of 13)	CCD-JBAU-00-12-DR-C-1213	P01
Location 12 – Typical Rock Armour Section – Type A	CCD-JBAU-00-12-DR-C-1251	P01
Location 12 – Typical Rock Armour	CCD-JBAU-00-12-DR-C-1251	P01

Section – Type B		
Location 21 – Flank Detail	CCD_JBAU-00-21-DR-C-2151	P01
Location 21 – General Arrangement	CCD-JBAU-00-21-DR-C-2100	P01
Location 21 – Site Plan	CCD-JBAU-00-21-DR-C-2101	P01
Location 21 – Typical Section	CCD-JBAU-00-21-DR-C-2150	P01
Location 22 – General Arrangement	CCD-JBAU-00-22-DR-UT-2200	P02
Location 22 – Site Plan (1 of 5)	CCD-JBAU-00-22-DR-UT-2201	P02
Location 22 – Site Plan (2 of 5)	CCD-JBAU-00-22-DR-UT-2202	P02
Location 22 – Site Plan (3 of 5)	CCD-JBAU-00-32-DR-C-2203	P01
Location 22 – Site Plan (4 of 5)	CCD-JBAU-00-22-DR-UT-2204	P02
Location 22 – Site Plan (5 of 5)	CCD-JBAU-00-22-DR-UT-2205	P02
Location 22 – Typical Embankment Section	CCD-JBAU-00-22-SK-Z-0005	P02
Location 31 - Flank Detail	CCD-JBAU-00-31-DR-C-3151	P01
Location 32 – General Arrangement	CCD-JBAU-00-31-DR-C-3100	P01
Location 32 – Site Plan (1 of 4)	CCD-JBAU-00-32-DR-D-3201	P01
Location 32 – Site Plan (2 of 4)	CCD-JBAU-00-32-DR-C-3202	P01
Location 32 – Site Plan (3 of 4)	CCD-JBAU-00-32-DR-C-3203	P01
Location 32 – Site Plan (4 of 4)	CCD-JBAU-00-32-DR-C-3204	P01
Location 32 – Typical Section (1 to 2.5 slope detail)	CCD-JBAU-00-32-DR-C-3251	P01
Location 32 – Typical Section (1 to 3 slope detail)	CCD-JBAU-00-32-DR-C-3250	P01
Location 42 – General Arrangement and Site Plan	CCD-JBAU-00-42-DR-C-4200	P01
Location 42 – Typical Section	CCD-JBAU-00-42-DR-C-4250	P01
Location 52 – General Arrangement and Site Plan	CCD-JBAU-00-52-DR-C-5200	P01
Location 52 – Typical Section	CCD-JBAU-00-52-DR-C-5250	P01
Landscape Mitigation Plan		

The development shall be carried out in accordance with the following approved documents:

Document title	Reference	Revision
Environmental Statement (including Appendices C & D)	CCD-JBAU-00-00-RP-EN-0002	P04
Non-Technical Summary	CCD-JBAU-00-00-RP-EN-0003	P01
ES – Appendices E,F,G,H and J	CCD-JBAU-00-00-RP-EN-0002	P04
ES – Appendix I & K – GGAT		
Archaeological desk-based assessment and site walkover		
ES – Appendix L – Ground Investigation Report	CCD-JBAU-ZZ-00-RP-GT-0001-GIR	
ES – Appendix L-1 – Contaminated Land Review	CD-JBAU-ZZ-00-RP-GT-0002	P01
Flood Consequence Assessment	CCD-JBAU-XX-XX-RP-HM-0001	P01
Water Framework Directive Assessment	CCD-JBAU-XX-XX-RP-EN-0003	P01

Coastal Processes Impact Statement		
Coastal Squeeze Methodology and Calculations		
Detailed Botanical Survey Report	CCD-JBAU-XX-XX-TN-EN-0001	P01
Rover Way Coastal Squeeze and HRA NRW		
Cardiff Coastal Design PEA Update	CCD-JBAU-00-00-TN-EN-0002	P01
Water Framework Directive Assessment (update)	CCD-JBAU-XX-XX-RP-EN-0003	P02
Coastal Squeeze Numbers Clarification	CCD-JBAU-00-00-TN-EN-0001	P01
Cardiff Preliminary Ecological Appraisal Update		
Environmental Statement Addendum		

Reason: To ensure satisfactory completion of the development and for the avoidance of doubt in line with the aims of Planning Policy Wales to promote an efficient planning system.

- The development hereby permitted shall be carried out in substantial accordance with the principles and mitigation measures as set out within the Environmental Statement and Addendum unless provided for in any other conditions attached in this permission.

Reason: The proposed development is the subject of an Environmental Impact Assessment and due regard must be had to the principle impacts of the development in the operation of the site. Any material alteration to the proposal may have an impact which has not been assessed by the process.

PRE-COMMENCEMENT CONDITIONS

- No development shall take place until a phasing plan and schedule has been submitted to and approved in writing by the Local Planning Authority. The plan and schedule shall detail the projected start and end dates for construction, the quantum of development per phase, and the transportation elements including, but not limited to, access junctions per phase. The development shall be carried out in accordance with the approved phasing plan and schedule unless otherwise agreed in writing by the Local Planning Authority.

Reason: To ensure the development is carried out in a comprehensive, sustainable and coherent manner.

- No development, including site clearance, shall commence until a Construction Environmental Management Plan (CEMP) has been submitted to and approved in writing by the Local Planning Authority. The CEMP shall include details of:
 - Construction methods: details of materials, sediment management measures (including if contaminated sediment present); how waste generated will be managed; linked to Construction Method Statement and Contaminated Sediment Plan or Strategy (subject to separate conditions)
 - General Site Management: the construction programme including timetable, details of site clearance; details of site construction drainage, containments

areas, appropriately sized buffer zones between storage areas (of spoil, oils, fuels, concrete mixing and washing areas) and any watercourse or surface drain, piling type and timings; vehicle access routes over sensitive habitats e.g. saltmarsh and associated protection measures; contaminated sediment plan and strategy

- Biodiversity Management: details of saltmarsh habitat protection; measures to avoid disturbance to overwintering and ground nesting birds; invasive species management including link to biosecurity risk assessment and management plan; measures to protect otter and badger during construction and avoidance measures for foraging and commuting bats; Precautionary Working Method Statement for amphibians and reptiles; other species and habitats protection, avoidance and mitigation measures (to include breeding birds, bats, dormouse, water vole and invertebrates). To be informed by update and pre-construction surveys as necessary.
- Soil and Sediment Management: details of topsoil strip, sediment removal, storage and amelioration for re-use. Link to contaminated sediment plan and strategy.
- Measures to ensure new bunds will naturally regenerate or if seeded, the use of locally sourced seeds;
- Control of Nuisances: details of restrictions to be applied during construction including timing, duration and frequency of works; details of measures to minimise noise and vibration including piling activities, for example acoustic barriers; details of dust control measures; measures to control light spill and the conservation of dark skies;
- Resource Management: details of fuel and chemical storage and containment; details of waste generation and its management; details of sediment management; details of water consumption, wastewater and energy use
- Traffic Management: details of site deliveries, plant on site, wheel washing facilities; site hoardings, dedicated vehicle access routes, construction staff parking, traffic management and habitat protection measures;
- Pollution Prevention: demonstrate how relevant Guidelines for Pollution Prevention and best practice will be implemented, including details of emergency spill procedures and incident response plan; details of how contaminated sediments will be dealt with.
- Details of the persons and bodies responsible for activities associated with the CEMP and emergency contact details
- Contact details of the Community Liaison Officer who will communicate and coordinate between the construction contractor and local residents
- Landscape/ecological clerk of works to ensure construction compliance with approved plans and environmental regulations;
- NVC maps to inform construction access routes and compound locations so to avoid sensitive places.

The CEMP shall be implemented as approved during the site preparation and construction phases of the development.

Reason: In the interests of highway safety, protection of the environment and public amenity in accordance with Local Development Plan Policies T5

(Managing Transport Impacts), T6 (Impact on Transport Networks and Services), EN5 (Designated Sites), EN6 (Ecological Networks and Features of Importance for Biodiversity), EN10 (Water Sensitive Design), and EN13 (Air, Noise, Light Pollution and Land Contamination).

6. No development of any phase shall take place until details of the temporary construction access serving that phase has been submitted to and approved in writing by the Local Planning Authority. The submitted details shall include, as required, junction scale and form, ducting and cabling, CCTV, pedestrian/cycle crossings and details of repair and restoration. The temporary construction access shall be constructed in accordance with the approved details and the access shall be restored to its original condition following completion of construction in that location.

Reason: To manage construction traffic effectively in accordance with Local Development Plan Policies T5 (Managing Transport Impacts) and T6 (Impact on Transport Networks and Services).

7. No piling activities shall take place until details have been submitted to and approved in writing by the Local Planning Authority to demonstrate:
 - no unacceptable risk to groundwater
 - no adverse impact on the amenities of the nearest noise sensitive residential receptors when assessed against BS5228 2009 'Code of Practice for Noise and Vibration on Construction and Open Sites'.
 - all piling works will be undertaken above Highest Astronomical Tide (HAT);
 - vibration piling is the preferred method of piling and that percussive piling will only be undertaken where it is evidenced that vibration piling is not possible due to e.g. ground conditions;
 - percussive piling within 30m above HAT conducted between October-March (inclusive) can occur without tidal restrictions; percussive piling within 30m above HAT conducted between June-September (inclusive) can only occur on the ebb tide to protect upstream migrating Atlantic salmon and sea trout; and no percussive piling within 30m above HAT shall be conducted during April and May to protect upstream migrating shad and European eel glass eels from disturbance, together with downstream migrating Atlantic salmon and sea trout smolts.

The piling activities shall be implemented in accordance with the approved details.

Reason: To ensure that the development can be carried out safely without unacceptable risks to groundwater nor cause unacceptable harm to designated sites, and to safeguard the amenities of neighbouring occupiers EN13 (Air, Noise, Light Pollution and Land Contamination).

8. No development or phase of development including site clearance shall be carried out until a detailed Saltmarsh Habitat Management Plan has been submitted to and approved in writing by the Local Planning Authority. The Saltmarsh Habitat Management Plan shall be implemented in accordance with the approved details.

Reason: To ensure the Annex 1 habitat Atlantic saltmarsh and other valuable saltmarsh habitats are protected, reinstated where necessary and enhanced to benefit this habitat and associated species in accordance with Local Development Plan Policies EN5 (Designated Sites) and EN6 (Ecological Networks and Features of Importance for Biodiversity).

9. No development or phase of development, including site clearance, shall commence until a detailed sediment sampling plan based on the "*Proposed Sediment Sample Plan 1.0 28.01.2022*" has been submitted to and approved in writing by the Local Planning Authority. Sampling shall be undertaken in accordance with the sampling plan and analysed at an NRW approved laboratory. Written results of the sediment sampling shall be submitted for approval by the Local Planning Authority prior to construction of the coastal defences along the coastline and along the riverbank of the River Rhymney and shall include an outline of an assessment of alternative uses for the sediment that is to be disposed.

Reason: To ensure the risks associated with contamination at the site have been fully considered prior to commencement of development as controlled waters are of high environmental sensitivity in accordance with Local Development Plan Policies EN5 (Designated Sites), EN6 (Ecological Networks and Features of Importance for Biodiversity) and EN13 (Air, Noise, Light Pollution and Land Contamination).

10. No development or phase of development, including site clearance, with the potential to impact on invasive non-native species, shall commence until a site wide or phase Biosecurity Risk Assessment has been submitted to and approved in writing by the Local Planning Authority. The risk assessment shall include measures to control, remove or for the long-term management of invasive non-native species both during construction and operation. The Biosecurity Risk Assessment shall be carried out in accordance with the approved details.

Reason: To secure measures to control the spread and effective management of any invasive non-native species at the site in accordance with Local Development Plan Policies EN5 (Designated Sites), EN6 (Ecological Networks and Features of Importance for Biodiversity) and EN13 (Air, Noise, Light Pollution and Land Contamination).

11. No development shall take place until a written scheme of historic environment mitigation has been submitted to and approved in writing by the Local Planning Authority. Thereafter, the programme of work shall be fully carried out in accordance with the requirements and standards of the approved scheme.

Reason: To identify and record any features of archaeological interest discovered during the works, in order to mitigate the impact of the works on the archaeological resource in accordance with Local Development Plan Policy 9 (Conservation of the Historic Environment).

12. No development shall take place until a method statement and risk assessment to protect the structural integrity of the strategic and public sewers within and adjacent to each development location on drawing no. CCD-JBAU-00-00-SK-Z-0001 Revision P02 hereby approved, have been submitted to and approved in writing by the Local Planning Authority. The approved protection measures shall be implemented in full prior to the commencement of that part of the development and shall be retained at all times for the duration of those approved operations including any restoration works.

Reason: To ensure that the proposed development does not affect the integrity of the public water supply system in the interests of public health and safety in accordance with Local Development Plan Policy EN11 (Protection of Water Resources).

13. No development shall take place in each of the 'Locations' 12, 22, 32, 42 and 52 (as shown on drawing no. CCD-JBAU-00-00-SK-Z-0001 Revision P02) until full details of soft landscaping for that Location have been submitted to and approved in writing by the Local Planning Authority. The details shall include:

- A soft landscaping implementation programme.
- Scaled planting plans prepared by a qualified landscape architect.
- Evidence to demonstrate that existing and proposed services, lighting, CCTV, drainage and visibility splays will not conflict with proposed planting.
- Schedules of plant species, sizes, numbers and densities prepared by a qualified landscape architect.
- Scaled tree pit sectional and plan drawings prepared by a qualified landscape architect that show the Root Available Soil Volume (RASV) for each tree.
- Topsoil and subsoil specification for all planting types, including full details of soil assessment in accordance with the Cardiff Council Soils and Development Technical Guidance Note (i.e. Soil Resource Survey and Plan), soil protection, soil stripping, soil storage, soil handling, soil amelioration, soil remediation and soil placement to ensure it is fit for purpose. Where imported planting soils are proposed, full specification details shall be provided including the parameters for all imported planting soils, a soil scientists interpretive report demonstrating that the planting soil not only meets British Standards, but is suitable for the specific landscape type(s) proposed. The specification shall be supported by a methodology for storage, handling, amelioration and placement.
- Planting methodology and post-planting aftercare methodology prepared by a qualified landscape architect, including full details of how the landscape architect will oversee landscaping implementation and report to the LPA to confirm compliance with the approved plans and specifications.

The submitted details shall be consistent with other plans submitted in support of the application and the landscaping shall be carried out in accordance with the approved design and implementation programme.

Reason: To maintain and improve the amenity and environmental value of the area, and to monitor compliance in accordance with Local Development Plan

Policy KP16 (Green Infrastructure).

14. No development that affects the Wales Coast Path shall take place until details of the alignment, surface treatment and signage for that section or sections of the Wales Coast Path have been submitted to and approved in writing by the Local Planning Authority. The development shall be implemented in accordance with the approved details.

Reason: To maintain and enhance the Wales Coast Path in accordance with Local Development Plan Policies EN4 (River Corridors) and T8 (Strategic Recreational Routes).

ACTION CONDITIONS

15. If site clearance in respect of the development hereby approved does not commence (or, having commenced, is suspended for more than 12 months) within 2 years from the date of the most recent survey for wintering birds, otter, badger, bat roost potential of trees and habitats/vegetation communities, the approved ecological measures secured through (other planning conditions) shall be reviewed and, where necessary, amended and updated. The review shall be informed by further ecological surveys commissioned to:

- i) establish if there have been any changes in the presence and/or abundance of wintering birds, otter, badger, bat roost potential of trees and habitats/vegetation communities; and
- ii) identify any likely new ecological impacts that might arise from any changes. Where the survey results indicate that changes have occurred that will result in ecological impacts not previously addressed in the approved scheme, the original approved ecological measures will be revised, and new or amended measures, and a timetable for their implementation, shall be submitted to and approved in writing by the Local Planning Authority prior to the commencement of development. Works shall then be carried out in accordance with the approved ecological measures and timetable.

Reason: To ensure that the assessment of the impacts of the development upon the species concerned, and any measures to mitigate those impacts, are informed by up-to-date information to comply with the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended), the Wildlife and Countryside Act 1981 (as amended), the Section 6 Duty of the Environment (Wales) Act 2016, and Local Development Plan Policy EN7 (Priority Habitats and Species).

16. In the event that contamination is found at any time when carrying out the approved development that was not previously identified it must be reported in writing within 2 days to the Local Planning Authority, all associated works shall stop, and no further development shall take place unless otherwise agreed in writing until a scheme to deal with the contamination found has been approved in writing. An investigation and risk assessment shall be undertaken and where remediation is necessary a remediation scheme and verification plan shall be submitted to and approved in writing by the Local Planning Authority. Following

completion of measures identified in the approved remediation scheme a verification report shall be submitted to and approved in writing by the Local Planning Authority. The timescale for the above actions shall be agreed with the Local Planning Authority within 2 weeks of the discovery of any unsuspected contamination.

Reason: To ensure that any unacceptable risks from land contamination to the future users of the land, neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

17. Any aggregate (other than virgin quarry stone) or recycled aggregate material to be imported shall be assessed for chemical or other potential contaminants in accordance with a scheme of investigation which shall be submitted to and approved in writing by the Local Planning Authority in advance of its importation. Only material approved by the Local Planning Authority shall be imported. All measures specified in the approved scheme shall be undertaken in accordance with the relevant Code of Practice and Guidance Notes. Subject to approval of the above, sampling of the material received at the development site to verify that the imported material is free from contamination shall be undertaken in accordance with a scheme and timescale that shall first be approved in writing by the Local Planning Authority.

Reason: To ensure that the safety of future occupiers is not prejudiced in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

18. Any site won material including soils, aggregates, recycled materials shall be assessed for chemical or other potential contaminants in accordance with a sampling scheme which shall be submitted to and approved in writing by the Local Planning Authority in advance of the reuse of site won materials. Only material which meets site specific target values approved by the Local Planning Authority shall be reused.

Reason: To ensure that the safety of future occupiers is not prejudiced in accordance with Local Development Plan Policy EN13 (Air, Noise, Light Pollution and Land Contamination).

19. Prior to its erection on site, details of a suitable means of enclosure to the Rover Way Traveller Site shall be submitted to and approved in writing by the Local Planning Authority. The enclosure shall be constructed in accordance with the approved details prior to beneficial completion of works within Location 12 on drawing no. CCD-JBAU-00-00-SK-Z-0001 Revision P02 and retained thereafter.

Reason: In the interests of visual amenity and to safeguard the privacy of occupiers of the traveller site in accordance with Local Development Plan Policy KP5 (Good Quality and Sustainable Design).

20. Prior to their installation, details of the Flood Gates at the entrance to the River Rhymney Sailing Club shall be submitted to and approved in writing by the Local Planning Authority. The gates shall be constructed in accordance with the approved details prior to the beneficial completion of works within Location 22 on drawing no. CCD-JBAU-00-00-SK-Z-0001 Revision P02 and retained thereafter.

Reason: In the interests of visual amenity in accordance with Local Development Plan Policy KP5 (Good Quality and Sustainable Design).

REGULATORY CONDITIONS

21. No surface water and/or land drainage shall be allowed to connect directly or indirectly with the public sewerage network.

Reason: To maintain and improve the amenity and environmental value of the area, and to monitor compliance in accordance with Local Development Plan Policy KP16 (Green Infrastructure).

22. Any newly planted trees, plants or hedgerows, which within a period of 5 years from the completion of the development die, are removed, become seriously damaged or diseased, or in the opinion of the Local Planning Authority (LPA) are otherwise defective, shall be replaced. Replacement planting shall take place during the first available planting season, to the same specification approved in discharge of condition 13, unless the Local Planning Authority gives written consent to any variation.

Reason: To maintain and improve the amenity and environmental value of the area, and to monitor compliance in accordance with Local Development Plan Policy KP16 (Green Infrastructure).

INFORMATIVE NOTES

1. HOURS OF CONSTRUCTION

To protect the amenities of occupiers of other premises in the vicinity attention is drawn to the provisions of Section 60 of the Control of Pollution Act 1974 in relation to the control of noise from demolition and construction activities. Further to this the applicant is advised that no noise audible outside the site boundary adjacent to the curtilage of any residential property shall be created by construction activities in respect of the implementation of this consent outside the hours of 0800-1800 hours Mondays to Fridays and 0800 - 1300 hours on Saturdays or at any time on Sunday or public holidays. Permission for works outside of these hours must first be sought under Section 61 of the Control of Pollution Act 1974.

2. PUBLIC HIGHWAY WORKS

This permission does not authorise works on or in the public highway. A Highway

Agreement under Section 278 or S38 of the Highways Act 1980, or other permission or license in respect of minor or temporary works, must first be agreed with the Highway Authority. Any such agreement, license or permission is subject to technical approval, inspection and the payment of such fees as required by the agreement

3. PUBLIC SEWER CONNECTION

The applicant may need to apply to Dwr Cymru / Welsh Water for any connection to the public sewer under S106 of the Water Industry Act 1991. If the connection to the public sewer network is either via a lateral drain (i.e. a drain which extends beyond the connecting property boundary) or via a new sewer (i.e. serves more than one property), it is now a mandatory requirement to first enter into a Section 104 Adoption Agreement (Water Industry Act 1991). The design of the sewers and lateral drains must also conform to the Welsh Ministers Standards for Gravity Foul Sewers and Lateral Drains, and conform with the publication "Sewers for Adoption"- 7th Edition. Further information can be obtained via the Developer Services pages of www.dwrcymru.com.

The applicant is also advised that some public sewers and lateral drains may not be recorded on our maps of public sewers because they were originally privately owned and were transferred into public ownership by nature of the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. Under the Water Industry Act 1991 Dwr Cymru Welsh Water has rights of access to its apparatus at all times.

4. ARCHAEOLOGY STANDARDS

The archaeological work must be undertaken to the appropriate Standard and Guidance set by Chartered Institute for Archaeologists (CIfA), (www.archaeologists.net/codes/ifa) and it is recommended that it is carried out either by a CIfA Registered Organisation (www.archaeologists.net/ro) or an accredited Member.

5. CONTAMINATION AND UNSTABLE LAND ADVISORY NOTICE

The contamination assessments and the effects of unstable land are considered on the basis of the best information available to the Planning Authority and are not necessarily exhaustive. The Authority takes due diligence when assessing these impacts, however you are minded that the responsibility for:

- (i) determining the extent and effects of such constraints;
- (ii) ensuring that any imported materials (including, topsoils, subsoils, aggregates and recycled or manufactured aggregates/ soils) are chemically suitable for the proposed end use. Under no circumstances should controlled waste be imported. It is an offence under Section 33 of the Environmental Protection Act 1990 to deposit controlled waste on a site which does not benefit from an appropriate waste management license. The following must not be imported to a development site;
 - Unprocessed / unsorted demolition wastes.
 - Any materials originating from a site confirmed as being contaminated or potentially contaminated by chemical or radioactive substances.

- Japanese Knotweed stems, leaves and rhizome infested soils. In addition to section 33 above, it is also an offence under the Wildlife and Countryside Act 1981 to spread this invasive weed; and
- (iii) the safe development and secure occupancy of the site rests with the developer.

Proposals for areas of possible land instability should take due account of the physical and chemical constraints and may include action on land reclamation or other remedial action to enable beneficial use of unstable land.

The Local Planning Authority has determined the application on the basis of the information available to it, but this does not mean that the land can be considered free from contamination.

6. LAMBY WAY INFRASTRUCTURE

That the developer be advised to contact the Lamby Way Depot and Infrastructure Manager prior to commencing any works on or adjacent to the landfill site to ensure for the protection of sealed leachate outfalls and monitoring locations during the construction.

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CARDIFF CITY COUNCIL			
Habitat Regulations Assessment Record			
Name of Relevant CCC Officer:	Tim Walter	Date:	27/07/22
1.INTRODUCTION			
This is a record of the Habitats Regulations Assessment of the proposal outlined below, undertaken by Cardiff City Council as the Competent Authority. This assessment is required by Regulations 63 of Conservation of Habitats and Species Regulations 2017 (as amended) to be undertaken before the Council as the 'Competent Authority' under the Regulations can give consent for the proposal.			
2.INFORMATION ABOUT THE PROJECT			
2.1 Type of activity:	Improvement of existing coastal defences		
2.2 National Grid Reference:	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).		
2.3 Site Reference:	CARDIFF COASTAL FLOOD DEFENCES. THE SEVERN ESTUARY COASTLINE AND EAST AND WEST BANKS FO THE RIVER RHYMNEY		
2.4 Brief description of the project:	THE CONSTRUCTION OF A SERIES OF FLUVIAL AND COASTAL FLOOD DEFENCES ALONG THE SEVERN ESTUARY COASTLINE AND EAST AND WEST BANKS OF THE RIVER RHYMNEY, TO INCLUDE ROCK ARMOUR REVETMENTS, CONCRETE EROSION PROTECTION MATS, EARTH BUNDS, A DOUBLE FLOOD GATE (AT THE RHYMNEY RIVER MOTOR BOAT SAIL & ANGLING CLUB) AND SHEET PILING		
3.INFORMATION ABOUT THE NATIONAL NETWORKS SITES			
3.1. European site name(s) and status:	<p>Site(s) to be taken forward:</p> <ol style="list-style-type: none"> 1. Severn Estuary SAC. 2. Severn Estuary SPA. 3. Severn Estuary Ramsar. 4. River Usk SAC. 5. River Wye SAC. <p>Reason(s): Due to being located within the boundary of the European site, located within 1000m of the boundary of a European site and located on land or any area of watercourse in hydrological connectivity (tributaries, ground water etc.) with a European site.</p> <p>Site(s) to be ruled out: Cardiff Beech Woods SAC</p> <p>Reason(s): Due to distance and the nature of development.</p>		

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3.2 Site description <i>(reasons for designation, key ecological characteristics, information available on general ecological trends and current issues or sensitivities)</i>	
Severn Estuary SAC	<p>Key characteristics:</p> <p>The Severn Estuary is the largest example of a coastal plain estuary in the United Kingdom and one of the largest estuaries in Europe. Human activity has increasingly influenced the character of the marginal wetland mudflats and marshes, with extensive land claim occurring during and since the Roman period. Sediment flows and fluxes affecting the estuary are of particular importance for estuarine processes and ecology and the morphology of the estuary is constantly changing due to the complex hydrodynamics. Sediment deposits provide essential material to maintain the mudflats, sandflats and saltmarsh.</p> <p>The Severn Estuary is important for its immense tidal range, which affects both the physical environment and the diversity and productivity of the biological communities. The tidal range is the second largest in the world, reaching in excess of 13m at Avonmouth. This macrotidal environment is partly due to the estuary's funnel shape which concentrates the tidal wave as it moves up the Bristol Channel.</p> <p>Qualifying Features:</p> <p>SAC Habitat Features</p> <ul style="list-style-type: none">• Estuaries;• Mudflats and sandflats not covered by seawater at low tide;• Atlantic salt meadow (<i>Glauco-Puccinellietalia maritimae</i>);• Sandbanks which are slightly covered by sea water all the time; and• Reefs. <p>SAC Species Features</p> <ul style="list-style-type: none">• Sea lamprey <i>Petromyzon marinus</i>;• River lamprey <i>Lampetra fluviatilis</i>; and• Twaite shad <i>Alosa fallax</i>. <p>Vulnerability: Physical loss (Removal/substratum loss and smothering); Physical damage (Changes in suspended sediment, desiccation and changes in emergence regime, changes in water flow rate, changes in wave exposure, abrasion/physical disturbance (of habitats), changes in grazing management); Non-physical disturbance (Noise and visual presence); Toxic contamination (Introduction of synthetic compounds, introduction of non-synthetic compounds, introduction of</p>

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	<p>radionuclides); Non-toxic contamination (Changes in nutrient loading, changes in thermal regime, changes in turbidity (light penetration), changes in salinity, changes in oxygenation); Biological disturbance (Introduction of microbial pathogens, introduction of non-native species, selective extraction of species.</p>
<p>Severn Estuary SPA</p>	<p>Key characteristics: The Severn Estuary SPA supports internationally important assemblages of wildfowl and waders during the winter months and migratory periods.</p> <p>Qualifying Features:</p> <ul style="list-style-type: none"> • Internationally important populations of the Annex 1 species Bewick’s swan. • Internationally important populations of regularly occurring migratory species (gadwall, shelduck, redshank, dunlin and European white-fronted Goose). <p>The site also qualifies as an SPA since it regularly supports in excess of 60,000 waterfowl during the winter. The species listed on the SPA citation as forming part of the assemblage include wigeon, teal, pintail, pochard, tufted duck, ringed plover, grey plover, curlew, whimbrel and spotted redshank. Mallard, lapwing and shoveler have also been added as a result of the 1995 SPA review.</p> <p>Vulnerability: Physical loss (Removal/substratum loss and smothering); Physical damage (Changes in suspended sediment, desiccation and changes in emergence regime, changes in water flow rate, changes in wave exposure, abrasion/physical disturbance (of habitats), changes in grazing management); Non-physical disturbance (Noise and visual presence); Toxic contamination (Introduction of synthetic compounds, introduction of non-synthetic compounds, introduction of radionuclides); Non-toxic contamination (Changes in nutrient loading, changes in thermal regime, changes in turbidity (light penetration), changes in salinity, changes in oxygenation); Biological disturbance (Introduction of microbial pathogens, introduction of non-native species, selective extraction of species.</p>
<p>Severn Estuary Ramsar</p>	<p>Key characteristics:</p> <p>Qualifying Features:</p> <ul style="list-style-type: none"> • Estuaries • Assemblage of migratory fish species

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	<ul style="list-style-type: none"> • Bewick’s swan • European white-fronted goose • Dunlin • Redshank • Shelduck • Gadwall • Assemblage of waterfowl <p>Vulnerability: Physical loss (Removal/substratum loss and smothering); Physical damage (Changes in suspended sediment, desiccation and changes in emergence regime, changes in water flow rate, changes in wave exposure, abrasion/physical disturbance (of habitats), changes in grazing management); Non-physical disturbance (Noise and visual presence); Toxic contamination (Introduction of synthetic compounds, introduction of non-synthetic compounds, introduction of radionuclides); Non-toxic contamination (Changes in nutrient loading, changes in thermal regime, changes in turbidity (light penetration), changes in salinity, changes in oxygenation); Biological disturbance (Introduction of microbial pathogens, introduction of non-native species, selective extraction of species).</p>
<p>River Usk SAC</p>	<p>Key Characteristics:</p> <p>Qualifying Features:</p> <p>SAC Habitat Features</p> <ul style="list-style-type: none"> • Watercourses of plain to montane levels with <i>Ranunculion fluitantis</i> and <i>Callitricho-batrachion</i> vegetation <p>SAC Species Features</p> <ul style="list-style-type: none"> • Allis shad <i>Alosa alosa</i>; • Twaite shad <i>Alosa fallax</i>; • Bullhead <i>Cottus gobio</i>; • River lamprey <i>Lampetra fluviatilis</i>; • Brook lamprey <i>Lampetra planeri</i>; • Otter <i>Lutra lutra</i>; • Sea lamprey <i>Petromyzon marinus</i>; and • Atlantic salmon <i>Salmo salar</i>

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	<p>Vulnerability: Invasive non-native species, grazing, forestry activities, pollution to surface waters (Limnic and terrestrial, marine and brackish), soil pollution and solid waste (excluding discharges), human induced changes in hydraulic conditions, forest and plantation management and use, other ecosystem modifications.</p>
<p>River Wye SAC</p>	<p>Key Characteristics: The SAC has a geologically mixed catchment, including shales and sandstones, and there is a clear transition between the upland reaches, with characteristic bryophyte-dominated vegetation, and the lower reaches, with extensive Ranunculus beds. This is a cross Welsh/English border SAC with 9 SSSIs included. The Lower Wye SSSI is the nearest to the project site . The nearest management unit of the SAC is unit 1c, Lower Wye, Wyastone to Redbrook</p> <p>Qualifying Features: Annex I habitats and Annex II species that are primary reasons for selection of the site include water course of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation (Status: unfavourable: unclassified)*KH, sea lamprey*Ks (Status: favourable: unclassified), brook lamprey* (Status: unfavourable: unclassified), river lamprey* (Status: unfavourable: unclassified), twaite shad*Ks(Status: unfavourable: unclassified), Allis Shad* (Status: unfavourable: unclassified) Atlantic salmon* (Status: unfavourable: unclassified), bullhead (Status: unfavourable: unclassified), European otter*Ks (Status: unfavourable)).</p> <p>*Present in this Management Unit. Ks Key Species for this Management Unit. KH Key Habitat for this Management Unit.</p> <p>Vulnerability: Water quality impacts arising from changing agricultural land-use within the catchment are having direct and indirect effects on the SAC interests through effects of diffuse pollution such as nutrient run-off and increased siltation. Water quality is also affected by synthetic pyrethroid sheep-dips and by point-source discharges within the catchment. Loss of riparian habitat is occurring as a result of changes in agricultural land-use practices and other factors, including riverside development and the loss of alder tree-cover through disease. Fishing activities are implicated in the decline of the salmon. There is increasing demand for abstraction from the river for agriculture and potable water. Demand for increased recreational activities is a source of potential concern for the future.</p>
<p>3.3 Reference documents that provide further details on the site, and have been used to inform the assessment:</p>	<p>21_02138_MJR-SITE_LOCATION_AND_RED_LINE_BOUNDARY_PLAN-2522064 SC2103_CCD-JBAU-00-00-RP-EN-0001-A1-C01-EIA_SCREENING_AND_SCOPING_OPINION-2439757 SC2103_CONSULTATION_LETTER_SCREENING_AND_SCOPING-2439755 21_02138_MJR-PAC_REPORT-2522062 21_02138_MJR-PAC_APP_2_NRW_COMMENTS_TRACKER_SEPTEMBER_2021_FINAL-2527462 21_02138_MJR-ENVIRONMENTAL_STATEMENT__INCLUDING_APPENDICES_C_AND_D_-2522287</p>

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<p>21_02138_MJR-ES_-_APPENDICES_E_F_G_H_AND_J-2522288 21_02138_MJR-ES_-_APPENDIX_A_-_NRW_EIA_SCREENING_OPINION-2522289 21_02138_MJR-ES_-_APPENDIX_B_-_CARDIFF_COUNCIL_EIA_SCREENING_AND_SCOPING_OPINION-2522290 21_02138_MJR-HABITATS_REGULATIONS_ASSESSMENT-2521992 21_02138_MJR-LANDSCAPE_MITIGATION_PLAN-2521993 21_02138_MJR-OVERVIEW_PLAN_OF_SCHEME_LOCATIONS-2522300 21_02138_MJR-PLANNING_DESIGN_ACCESS_STATEMENT-2522063 21_02138_MJR-TEMPORARY_LAND_REQUIREMENTS_AND_WORKING_AREA_PLAN-2522066 21_02138_MJR-WATER_FRAMEWORK_DIRECTIVE_ASSESSMENT-2522067 21_02138_MJR-CARDIFF_COASTAL_IMPACT_ASSESSMENT_JBA_2021A-2527461 21_02138_MJR-COASTAL_SQUEEZE_METHODODOLOGY_AND_CALCS_V2-2535815 CCD-JBAU-XX-XX-TN-EN-0001-S3-P01-Botany_Survey NVC Map Rover Way Coastal Squeeze and HRA NRW_April2021 CCD-JBAU-00-00-TN-EN-0002-S3-P01-PEA_Update CCD-JBAU-00-00-TN-EN-0001-S0-P01-CS_numbers_clarification FINAL 10.12.21 CCD-JBAU-00-00-MP-EN-S3-P01-Intertidal_Phase_1_Habitats CCD-JBAU-00-00-MP-EN-S3-P01-Protected_Sites 21.02138.MJR Cardiff Coastal Flood Defences (Major) v1 Cardiff Coastal Defences Environmental Statement Addendum – Response to Planning Comments v2 14.06.22 2019s0183 Cardiff Outline CEMP v1.0 28.01.2022 2019s0183 Cardiff Outline SMP v2.1 28.01.2022 Proposed Sediment Sample Plan 1.0 28.01.2022 CML2147 Marine licence issued CML2147 EIA Consent Decision CML2147 Form 1 HRA CML2147 WFD Tyldesley, D. (2011) Assessing Projects under the Habitats Directive: guidance for competent authorities. Report to Countryside Council for Wales, Bangor. Natural England & CCW (2009) <i>The Severn Estuary / Môr Hafren European Marine Site comprising: The Severn Estuary / Môr Hafren Special Area of Conservation (SAC), The Severn Estuary Special Protection Area (SPA), The Severn Estuary / Môr Hafren Ramsar Site. Natural England & the Countryside Council for Wales' advice given under Regulation 33(2)(a) of the Conservation (Natural Habitats, &c.) Regulations 1994, as amended.</i> June 2009.</p>

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NRW's consultation response dated 29/03/22.	
4.TEST OF LIKELY SIGNIFICANT EFFECT	
4.1 Is the proposal directly connected or necessary to the management of the site for nature conservation?	No
<p>4.2 Severn Estuary SAC / SPA / Ramsar The Interest Features which could be affected are: The interest features which could be affected are:</p> <ol style="list-style-type: none"> 1. SAC and Ramsar habitats; 2. SPA and Ramsar bird features; 3. Migratory and non-migratory fish. <p>The following potential hazards are taken forward for the Test of Likely Significant Effect below:</p> <ol style="list-style-type: none"> 1. Physical loss (Removal/substratum loss and smothering). 2. Physical damage (Changes in suspended sediment, desiccation and changes in emergence regime, changes in water flow rate, changes in wave exposure, abrasion/physical disturbance (of habitats), changes in grazing management); 3. Non-physical disturbance (Noise and visual presence); 4. Biological disturbance (introduction of non-native species). 5. Toxic contamination (Introduction of synthetic compounds, introduction of non-synthetic compounds, introduction of radionuclides). 6. Non-toxic contamination (Changes in nutrient loading, changes in thermal regime, changes in turbidity (light penetration)). <p>The possible effects may occur:</p> <ol style="list-style-type: none"> 1. During Construction 2. During Operation <p>The following potential hazards are screened out due to the scale and nature of the proposed development and distance from the protected site: Biological disturbance (Introduction of microbial pathogens, selective extraction of species).</p> <p>4.3 River Usk SAC The interest features which could be affected are:</p>	

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1. Twaite.
2. Allis Shad.
3. Migratory Fish

The following potential hazards are taken forward for the Test of Likely Significant Effect below:

1. Toxic contamination (Introduction of synthetic compounds, introduction of non-synthetic compounds, introduction of radionuclides).
2. Non-toxic contamination (Changes in nutrient loading, changes in thermal regime, changes in turbidity (light penetration)).

The possible effects may occur:

1. During Construction

The following potential hazards are screened out due to the scale and nature of the proposed development and distance from the protected site: Physical loss (Removal/substratum loss and smothering). Physical damage (Changes in suspended sediment, desiccation and changes in emergence regime, changes in water flow rate, changes in wave exposure, abrasion/physical disturbance (of habitats), changes in grazing management); Non-physical disturbance (Noise and visual presence); Biological disturbance (Introduction of microbial pathogens, introduction of non-native species, selective extraction of species).

4.4 River Wye SAC

The interest features which could be affected are:

1. Twaite.
2. Allis shad.
3. Migratory Fish.

The following potential hazards are taken forward for the Test of Likely Significant Effect below:

3. Toxic contamination (Introduction of synthetic compounds, introduction of non-synthetic compounds, introduction of radionuclides).
4. Non-toxic contamination (Changes in nutrient loading, changes in thermal regime, changes in turbidity (light penetration)).

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<p>The possible effects may occur: 2. During Construction</p> <p>The following potential hazards are screened out due to the scale and nature of the proposed development and distance from the protected site: Physical loss (Removal/substratum loss and smothering). Physical damage (Changes in suspended sediment, desiccation and changes in emergence regime, changes in water flow rate, changes in wave exposure, abrasion/physical disturbance (of habitats), changes in grazing management); Non-physical disturbance (Noise and visual presence); Biological disturbance (Introduction of microbial pathogens, introduction of non-native species, selective extraction of species).</p>					
<p>4.3 Severn Estuary SAC / SPA / Ramsar – Test of Likely Significance</p>					
Hazard	Interest Features	Possible Effect	Magnitude in the absence of mitigation	Design of the scheme which reduces impacts on Interest Features (in light of the CJEU ruling (People over Wind and Sweetman v Coillte Teoranta (C-323/17))	Conclusion
<p>Physical loss (Removal/substratum loss and smothering)</p> <p>Physical damage (Changes in suspended sediment, desiccation and changes in emergence regime, changes in water flow rate, changes in wave exposure,</p>	<ul style="list-style-type: none"> • Estuaries. • Mudflats and sandflats not covered by seawater at low tide. • Atlantic salt meadow (<i>Glauco-</i> 	<p>Table 4.3 in the HRA (Sept 2021) sets out the areas of intertidal habitats affected permanently and temporarily during the flood defence scheme works. The scheme will directly impact these habitat features. The project will have an effect as the total extent of these habitats will not be maintained and the project may</p>	<p>Permanent and Temporary – at least minor</p>	<p>N/A</p>	<p>Likely significant effect.</p>

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<p>Damage and loss of coastal habitats during construction affecting roosting and foraging behaviour.</p>	<ul style="list-style-type: none"> • Bewick’s swan and European white-fronted goose • Dunlin, redshank, shelduck, gadwall and the waterfowl assemblage 	<p>As set out in Table 5.1 of the HRA prepared by JBA Consulting (Sept 2021), data obtained from the British Trust for Ornithology (BTO) Wetland Birds Surveys (WeBS) Bewick’s swan and European white-fronted goose using 5-year peak mean individual counts (taken between 2014 and 2019) show that no Bewick’s swans and a single individual of European white fronted goose were present within the project area and hence it is concluded that no likely significant effect will occur upon these species.</p> <p>Damage to coastal habitats could affect these bird features by affecting their foraging and roosting behaviour. Table 4.3 in the HRA (Sept 2021) sets out the areas of intertidal habitats affected permanently and temporarily during the flood defence scheme works. Plant movement in the intertidal area has the potential to negatively impact intertidal habitats through compaction of the foreshore.</p>	<p>Negligible</p> <p>Permanent and Temporary – at least minor</p>	<p>As set out in the HRA (Sept 2021), the scheme has sought to minimise intertidal habitats directly impacted by the scheme by identifying only the most at risk sections of the Rhymney. These sections comprise steep sections of</p>	<p>No likely significant effect.</p> <p>No likely significant effect.</p>
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				the riverbank on the outside of the bends and it is not considered that these areas provide foraging or roost potential for bird species associated with the Severn Estuary EMS. The permanent works within the SPA boundary will be limited to the replacement of existing imported rock with similar artificial rock.	
Damage and loss of coastal habitats during construction on fish features.	<ul style="list-style-type: none"> • Fish assemblage. • Migratory fish. • Fish features. 	Direct habitat loss as set out in Table 4.3 of the shadow HRA. Construction activities will also affect the extent, variety, spatial distribution, and community composition of hard substrate habitats and the abundance of notable estuarine species.	Permanent and Temporary - At least minor.	N/A	Likely significant effect.
Damage and loss of coastal habitats post-construction due to coastal squeeze.	<ul style="list-style-type: none"> • Estuaries; • Mudflats and sandflats not covered by 	Coastal squeeze will cause a loss of coastal habitat due to sea level rise. This will have an effect as the 'total extent of the estuary' will not be maintained and may also	Permanent - At least minor.	N/A	Likely significant effect.

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	<p>seawater at low tide;</p> <ul style="list-style-type: none"> • Atlantic salt meadow (<i>Glauco-Puccinellietalia maritimae</i>); • Bird features 	<p>affect the characteristic physical form and flow of the estuary. Coastal squeeze will also affect the extent, variety, spatial distribution, and community composition of hard substrate habitats and the abundance of notable estuarine species. In addition, coastal squeeze may also affect 'the topography of the intertidal flats and the morphology' of the area. In addition, coastal squeeze may also result in the loss of 'relative abundance of the typical species of the Atlantic salt meadow', 'abundance of notable species', 'structural variation of the salt marsh sward', and 'any areas of <i>Spartina anglica</i> salt marsh capable of developing naturally into other saltmarsh communities'.</p> <p>Damage to and loss of coastal habitats (saltmarsh and mudflat) in the future as a result of coastal squeeze due to sea level rise, which could affect dunlin, redshank, shelduck, gadwall and waterfowl assemblage foraging and roosting behaviour, and could lead to reduced feeding opportunities. This will have an</p>			
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		effect on ‘the extent of saltmarsh, mudflats and sandflats’ which may in turn affect the ‘5 year peak mean population size for the these species.’			
Disturbance to birds during construction works.	<ul style="list-style-type: none"> Bewick’s swan and European white-fronted goose 	As set out in Table 5.1 of the HRA prepared by JBA Consulting (Sept 2021), data obtained from the British Trust for Ornithology (BTO) Wetland Birds Surveys (WeBS) Bewick’s swan and European white-fronted goose using 5-year peak mean individual counts (taken between 2014 and 2019) show that no Bewick’s swans and a single individual of European white fronted goose were present within the project area and hence it is concluded that no likely significant effect will occur upon these species.	Negligible	N/A	No likely significant effect.
	<ul style="list-style-type: none"> Dunlin, redshank, shelduck, gadwall and waterfowl assemblage 	There is potential for construction activities to cause visual and noise disturbance these bird features. Sensitive areas adjacent to the Rhymney and Severn Estuaries have been identified in locations 11, 21 and	Temporary - At least minor	N/A	Likely significant effect.

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		<p>22. In these locations, the initial excavations, placement of rock within the intertidal zone, plant movements through the intertidal zone and contractors wandering away from the work zone, could disturb wetland birds while they are roosting or foraging on the wider foreshore habitats. As a general rule, a distance of 200m between the receptor (i.e. the birds) and the activity (i.e. construction) is taken as the maximum distance over which the activity can affect the receptor. The entirety of the proposed project is within 200m of mean high water, and therefore potentially all construction works at this site may cause disturbance to wetland birds on the foreshore.</p> <p>During construction the Wales Coast Path will be diverted or closed. Communications with the case officer confirmed that the WCP will not be diverted onto the foreshore during construction therefore no impacts will occur.</p>	Negligible	N/A	No likely significant effect.
Disturbance to birds during operation	<ul style="list-style-type: none"> Bird features 	Increased use of the Wales Coast Path.	Permanent – at least minor	N/A	Likely significant effect.

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<p>Disturbance to fish assemblage during construction works.</p>	<ul style="list-style-type: none"> • Fish assemblage. • Migratory fish assemblage. • Fish features. 	<p>Paragraph 5.5.20 of the ES states that <i>“Whilst no piling will take place below Highest Astronomical Tide (HAT) there is the potential risk of disturbance to migratory fish from working practices that will cause vibrations within the water column e.g. percussive piling.”</i> Table 2.7 of the ES listing machinery and plant to be used during construction includes a Sheet pile Leada rig as an alternative which may be employed to install the longer 15m sheet piles along the roadside. The table states that this will be subject to ground investigation which will inform the driving conditions and therefore there is uncertainty over which method will be used. The use of percussive piling in close proximity of the river during construction could cause disturbance to fish. Lampreys are not particularly sensitive to noise and vibration, however shad are considered particularly sensitive to noise and vibration (NRW HRA, 2022).</p>	<p>Temporary – at least minor.</p>	<p>N/A</p>	<p>Likely significant effect.</p>
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<p>Blocking migration routes for fish.</p>	<ul style="list-style-type: none"> • Migratory Fish Assemblage 	<p>The works will not block migration routes or destroy foraging or nursery grounds.</p>	<p>Negligible</p>	<p>N/A</p>	<p>No likely significant effect.</p>
<p>Mobilisation/introduction of synthetic and non-synthetic compounds during construction.</p>	<ul style="list-style-type: none"> • Estuaries; • Mudflats and sandflats not covered by seawater at low tide; • Atlantic salt meadow (<i>Glauco-Puccinellietalia maritimae</i>); • Sandbanks which are slightly covered by sea water all the time; and • Reefs. • Qualifying Fish features; and • Qualifying Bird features. 	<p>The intertidal mudflats and sandflats and the saltmarsh which are also habitats used by qualifying fish features are currently highly vulnerable to the introduction of synthetic and non-synthetic compounds. Habitat and fish features could be adversely affected during construction through the following three mechanisms:</p> <ul style="list-style-type: none"> • Potentially contaminating construction materials (i.e., fuel, oils, concrete constituents, soils, etc) are mobilised, washing chemical pollutants into surface waters and affecting coastal habitats. • Construction activities cause the mobilisation of soils and silt, which are washed into the river. • Construction activities create new pathways linking ground contamination with underlying groundwater, which in turn migrates to 	<p>At least minor - dependent on nature of pollution event.</p>	<p>N/A</p>	<p>Likely significant effect.</p>

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		<p>surface waters and affects coastal habitats and species.</p> <p>Waterfowl are subject to the accumulation of toxins through the food chain or through direct contact with toxic substances when roosting or feeding. Their ability to feed can also be affected by the abundance or change in palatability of their prey caused by toxic contamination. At the moment there is no evidence to show that this is the case on the Severn Estuary, but the estuary is vulnerable to oil spills and there is a continuous discharge of toxins into the estuary, some of which bind to the sediments. This is an area that requires further assessment.</p>			
Introduction of non-native species	<ul style="list-style-type: none"> • Estuaries. 	<p>The ES and HRA (Table 5.2) recognise that imported rock material may provide a distinct pathway for the introduction of marine INNS which could affect the estuary habitats. The material is planned to be transported to the site by road thereby reducing the risk of marine INNS. However, it is identified that an INNS</p>	At least minor	N/A	Likely significant effect.

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		management plan will need to be developed. This would constitute mitigation and an adverse effect cannot be ruled out at this stage.			
4.4 River Usk SAC – Test of Likely Significance					
Hazard	Interest Features	Possible Effect	Magnitude in the absence of mitigation	Design of the scheme which reduces impacts on Interest Features (in light of the CJEU ruling (People over Wind and Sweetman v Coillte Teoranta (C-323/17))	Conclusion
Mobilisation of synthetic and non-synthetic compounds during construction.	<ul style="list-style-type: none"> • Twaite • Allis Shad • Migratory Fish 	<p>As stated in the HRA (JBA, 2021), water quality in the Severn Estuary could be adversely affected during construction through the following three mechanisms:</p> <ul style="list-style-type: none"> • Potentially contaminating construction materials (i.e., fuel, oils, concrete constituents, soils, etc) are mobilised, washing chemical pollutants into surface waters and affecting coastal habitats. 	Dependent on nature of pollution event.	N/A	Likely significant effect.

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		<ul style="list-style-type: none"> • Construction activities cause the mobilisation of soils and silt, which are washed into the river. • Construction activities create new pathways linking ground contamination with underlying groundwater, which in turn migrates to surface waters and affects coastal habitats and species. 			
Blocking migration routes for fish.	<ul style="list-style-type: none"> • Migratory Fish 	The works will not block migration routes or destroy foraging or nursery grounds in the River Usk.	Negligible	N/A	No likely significant effect.
Disturbance to fish during construction works.	<ul style="list-style-type: none"> • Migratory Fish 	Paragraph 5.5.20 of the ES states that <i>“Whilst no piling will take place below Highest Astronomical Tide (HAT) there is the potential risk of disturbance to migratory fish from working practices that will cause vibrations within the water column e.g. percussive piling.”</i> Table 2.7 of the ES listing machinery and plant to be used during construction includes a Sheet pile Leada rig as an alternative which may be employed to install the longer	Temporary – at least minor.	N/A	Likely significant effect

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		<p>15m sheet piles along the roadside. The table states that this will be subject to ground investigation which will inform the driving conditions and therefore there is uncertainty over which method will be used. The use of percussive piling in close proximity of the river during construction could cause disturbance to fish.</p> <p>Lampreys and salmonids are not particularly sensitive to noise and vibration, however shad are considered particularly sensitive to noise and vibration (NRW HRA, 2022).</p>			
<p>4.5 River Wye SAC – Test of Likely Significance</p>					
<p>Hazard</p>	<p>Interest Features</p>	<p>Possible Effect</p>	<p>Magnitude in the absence of mitigation</p>	<p>Design of the scheme which reduces impacts on Interest Features (in light of the CJEU ruling (People over Wind and Sweetman v Coillte Teoranta (C-323/17))</p>	<p>Conclusion</p>

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<p>Mobilisation of synthetic and non-synthetic compounds during construction.</p>	<ul style="list-style-type: none"> • Twaite • Allis Shad • Migratory Fish 	<p>As stated in the HRA (JBA, 2021), water quality in the Severn Estuary could be adversely affected during construction through the following three mechanisms:</p> <ul style="list-style-type: none"> • Potentially contaminating construction materials (i.e., fuel, oils, concrete constituents, soils, etc) are mobilised, washing chemical pollutants into surface waters and affecting coastal habitats. • Construction activities cause the mobilisation of soils and silt, which are washed into the river. • Construction activities create new pathways linking ground contamination with underlying groundwater, which in turn migrates to surface waters and affects coastal habitats and species. 	<p>Dependent on nature of pollution event.</p>	<p>N/A</p>	<p>Likely significant effect.</p>
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		The works will not block migration routes or destroy foraging or nursery grounds.			
Blocking migration routes for fish.	<ul style="list-style-type: none"> • Migratory Fish 	The works will not block migration routes or destroy foraging or nursery grounds in the River Wye.	Negligible	N/A	No likely significant effect.
Disturbance to fish during construction works.	<ul style="list-style-type: none"> • Migratory Fish 	Paragraph 5.5.20 of the ES states that <i>“Whilst no piling will take place below Highest Astronomical Tide (HAT) there is the potential risk of disturbance to migratory fish from working practices that will cause vibrations within the water column e.g. percussive piling.”</i> Table 2.7 of the ES listing machinery and plant to be used during construction includes a Sheet pile Leada rig as an alternative which may be employed to install the longer 15m sheet piles along the roadside. The table states that this will be subject to ground investigation which will inform the driving conditions and therefore there is uncertainty over which method will be used.	Temporary – at least minor.	N/A	Likely significant effect

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		<p>The use of percussive piling in close proximity of the river during construction could cause disturbance to fish.</p> <p>Lampreys and salmonids are not particularly sensitive to noise and vibration, however shad are considered particularly sensitive to noise and vibration (NRW HRA, 2022).</p>				
4.4. Based on the Test of Likely Significant Effect, is the project likely to have a Significant Effect on the Severn Estuary SAC/SPA/Ramsar alone?	Yes.					
4.5 Conclusion of the Test of Likely Significant Effect: Will a full Appropriate Assessment be required?	Yes – Likely significant effects have been identified via the pathways stated above and therefore a full Appropriate Assessment is required.					
5. APPROPRIATE ASSESSMENT						
5.1 Appropriate Assessment – Severn Estuary SAC/SPA/Ramsar						
Interest Features	Element of the Project	Mitigation Measure Required ((Is mitigation required?, type & method of securing)				
<ul style="list-style-type: none"> • Estuaries; • Mudflats and sandflats not covered by seawater at low tide; • Atlantic salt meadow (<i>Glauco-</i> 	Construction Phase	<p><u>Damage and loss of coastal habitats</u></p> <p>Annex 1 habitats will be permanently and temporarily lost as a result of the scheme as set out in the table below.</p>				
		<p>Table 5.1 – Permanent and Temporary Losses of Annex 1 Habitat</p>				
			Total	Annex 1 habitat – mudflats and sandflats not	Annex 1 habitat – Atlantic Salt Meadows (ha)	Total Annex 1 – mudflats and sandflats not covered by

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<i>Puccinellietalia maritimae</i>);			covered by seawater all the time (ha)		seawater all the time and Atlantic Salt Meadow (ha)	
	Permanent works (outside SAC)	4.59	1.26	1.51	2.77	1.82
	Permanent Works (within SAC)	3.37	1.09	0.08	1.17	2.20
	Temporary Works (outside SAC)	31.11	6.20	3.38	9.58	21.52
	Temporary Works (inside SAC)	5.67	1.50	0.49	1.99	3.68
<p>Only permanent losses (1.17ha) of the above-mentioned habitats are considered to require compensation.</p> <p>This loss will require off-site compensation and therefore the integrity test for this factor is failed and the HRA must proceed to Stage 3: Derogation.</p> <p>The following mitigation measures will minimise the scale of this loss:</p> <p>Along the coastline, the rock armour will be kept as close to the original footprint as possible to reduce damage to coastal habitats.</p> <p>Plant movement in the intertidal area also has the potential to negatively impact intertidal habitats through compaction of the foreshore. To minimise disturbance and habitat degradation plant will be kept to agreed haul routes and not stray outside of these areas. It is considered that in this case the haul routes will rapidly recover following the completion of the works.</p>						

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		<p>The redline boundary has been amended to avoid impacts to saltmarsh through plant movement. All saltmarsh not directly impacted by the scheme will be avoided.</p> <p>An outline saltmarsh habitat management plan which sets out the mitigation and enhancement measures to be carried out during construction, and post-construction, to benefit this habitat and associated species has been prepared.</p> <p>A detailed saltmarsh management plan will be prepared prior to commencement of the development and conditioned (see section 5.4).</p> <p><u>Mobilisation/introduction of contaminants of synthetic and non-synthetic compounds during construction.</u></p> <p>The following pollution prevention measures will be implemented during the works:</p> <ul style="list-style-type: none">• All works will be carried out in accordance with the Pollution Prevention And Control Act 1999.• Plant nappies will be in place at all times during the works.• A spill response contractor on call at all times throughout the works.• Any chemicals will be stored on impermeable surfaces within secure storage containers.• All plant will be equipped with biodegradable hydraulic oil.• Drip trays will be kept underneath standing machinery to prevent pollution events by oil/fuel leaks, with any refuelling of vehicles or machinery carried out on an impermeable surface well away from the river or any other drainage channels.• Spill kits will be available on site at all times and staff trained in their use.• Vehicles and machinery will be checked on a daily basis for any leakages, with any found reported immediately and the equipment removed from site.
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		<p>The above measures will be included within a Construction Environmental Management Plan (CEMP) which will be conditioned (see section 5.4).</p> <p>JBA also submitted a proposed sediment sample plan 1.0 . JBA confirmed that they will undertake contamination sampling as requested by NRW Advisory as set out in the plan. To confirm the presence (or not) and levels of any contamination, JBA proposed sampling which will be undertaken where works are taking place below MHWS. The sample analysis will be assessed by NRW pre-construction. If sediment to be excavated is deemed contaminated as per Cefas action levels, it will be disposed to landfill. The sediment sample plan will be conditioned (see section 5.4).</p> <p>Notwithstanding the above, other conditions (conditions 8 – 11 as recommended by NRW in their consultation response dated 12.11.2021) will be attached to any approval of the development to counteract other adverse effects upon the integrity of the Severn Estuary from the mobilisation of soil and silt.</p> <p><u>Introduction of Non-native Species</u></p> <p>Construction materials will be transported to the site via roads thus reducing the risk of the introduction of non-native species affecting the estuarine habitat. However, as this risk from imported rock material cannot be ruled out fully mitigation is required.</p> <p>A Biodiversity Risk Assessment will be developed and implemented during construction. The risk assessment shall include measures to control, remove or for the long-term management of invasive non-native species both during construction and operation. The Biosecurity Risk Assessment will be conditioned (see section 5.4). Details will be incorporated into a CEMP for the scheme which will be conditioned (see section 5.4).</p>
<ul style="list-style-type: none"> • Dunlin, redshank, shelduck, gadwall 	<p>Construction Phase</p>	<p><u>Habitat Loss</u></p> <p>A total of 7.96ha of intertidal habitats will be permanently lost to facilitate the construction of the coastal sea defences, both within the SAC/SPA/Ramsar and outside the boundary of the</p>

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<p>and the waterfowl assemblage.</p>		<p>designations. 36.78ha of intertidal habitats will be temporarily lost to facilitate the construction of the coastal sea defences, both within the SAC/SPA/Ramsar and outside the boundary of the designations.</p> <p>This loss will require off-site compensation and therefore the integrity test for this factor is failed and the HRA must proceed to Stage 3: Derogation.</p> <p>To minimise the scale of the loss the following mitigation measures will be undertaken. Along the coastline, the rock armour will be kept as close to the original footprint as possible to reduce damage to coastal habitats. To further mitigate the hard engineering approach, soft engineering will be used on the upper banks of the River Rhymney sections. This will involve replacing mud and using brushwood to keep it in place. Sensitive habitats such as saltmarsh and reedbeds have been identified during the design process and removed from the red line boundary that would allow construction plant to enter these areas.</p> <p>An outline saltmarsh habitat management plan which sets out the mitigation and enhancement measures to be carried out during construction, and post-construction, to benefit this habitat and associated species has been prepared.</p> <p>A detailed saltmarsh management plan will be prepared prior to the development commencing and conditioned (see section 5.4).</p> <p><u>Disturbance</u></p> <p>There is potential for construction activities to cause visual and noise disturbance to overwintering and migratory wetland birds which are features of the SPA. For example, use of cranes, or personnel working at height on scaffolding etc, together with noisy activities such as drilling, piling and operation of machinery, could disturb bird features while they are roosting or foraging on nearby foreshore habitats. Overwintering birds are disturbed by sudden movements and sudden noises. This can displace the birds from their feeding grounds. Disturbance can prevent the birds from feeding and in response they either a) decrease their energy intake at their present (disturbed) feeding site through displacement activity, or b) move to an alternative less favoured feeding site. Such a response affects energy budgets and thus survival. At present NE and NRW assess that the</p>
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		<p>Annex 1 species are moderately sensitive to noise and visual disturbance on the intertidal mudflats and sandflats and are highly sensitive to this category of operation on the saltmarsh.</p> <p>The ES and HRA acknowledges that there is the potential to disturb dunlin, redshank, shelduck, gadwall and the waterfowl assemblage if the works are carried out in the wintering period. Higher risk areas have been identified as works locations 11, 21 and 22 where there is a significant construction phase risk of disturbance to birds using the saltmarsh that have been identified as high tide roosts.</p> <p>In principle, it is possible to avoid disturbance to birds during construction. For example, overwintering and migratory bird species are at their greatest concentration in the Severn Estuary between October and March inclusive. Therefore, construction during the April to September period (inclusive) would not cause significant disturbance. However, it is recognised that it may not be feasible to restrict works to this period.</p> <p>During the overwintering / migratory period, it is possible to avoid disturbance to birds on the foreshore by avoiding works activity during the period between two hours before high tide and two hours after high tide. It is during this four hour window that SPA-feature birds are most likely to occur within 200m of the construction activity. This is the distance within which we typically consider disturbance effects to be significant and thereby any birds using the identified high tide roosts near Locations 11, 21 and 22 would be disturbed by construction activities within 200m of these roosts.</p> <p>The mitigation measures are therefore as follows: Works in vicinity of high tide bird roost areas should be avoided over winter wherever possible. Any works identified as having the potential to cause disturbance adjacent to identified high tide roosts will be restricted during a 2 hour window either side of high tide.</p> <p>An Ecological Clerk of Works must be appointed to oversee these measures.</p> <p>The CEMP will provide details on the measures required to minimise disturbance impacts on bird features and will be conditioned (see section 5.4).</p>
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		<p><u>Mobilisation/introduction of contaminants of synthetic and non-synthetic compounds during construction.</u></p> <p>The following pollution prevention measures will be employed on the site:</p> <ul style="list-style-type: none">• All works will be carried out in accordance with the Pollution Prevention And Control Act 1999.• Plant nappies will be in place at all times during the works.• A spill response contractor on call at all times throughout the works.• Any chemicals will be stored on impermeable surfaces within secure storage containers.• All plant will be equipped with biodegradable hydraulic oil.• Drip trays will be kept underneath standing machinery to prevent pollution events by oil/fuel leaks, with any refuelling of vehicles or machinery carried out on an impermeable surface well away from the river or any other drainage channels.• Spill kits will be available on site at all times and staff trained in their use.• Vehicles and machinery will be checked on a daily basis for any leakages, with any found reported immediately and the equipment removed from site. <p>A CEMP will provide details on the pollution prevention measures required to minimise disturbance impacts on the intertidal habitats during construction (see section 5.4).</p> <p>JBA also submitted a proposed sediment sample plan 1.0 . JBA confirmed that they will undertake contamination sampling as requested by NRW Advisory as set out in the plan. To confirm the presence (or not) and levels of any contamination, JBA proposed sampling which will be undertaken where works are taking place below MHWS. The sample analysis will be assessed by NRW pre-construction. If sediment to be excavated is deemed contaminated as per Cefas action levels, it will be disposed to landfill. The sediment sample plan will be conditioned (see section 5.4).</p> <p>Notwithstanding the above, other conditions (conditions 8 – 11 as recommended by NRW in their consultation response dated 12.11.2021) will be attached to any approval of the development to</p>
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		<p>counteract other adverse effects upon the integrity of the Severn Estuary from the mobilisation of soil and silt.</p>
<ul style="list-style-type: none"> • Fish assemblage • Migratory fish • Fish features 	<p>Construction Phase</p>	<p><u>Disturbance of fish species through vibration of the water column during construction</u> Adverse effects as a result of piling on shad and migratory fish assemblage were predicted. Shad are particularly sensitive to noise and vibration.</p> <p>The following mitigation measures will be undertaken to minimise effects on these species:</p> <p>No piling will take place below highest astronomical tide (HAT).</p> <p>Vibration piling will be the preferred methodology and percussive piling will only be used when this fails to break through ground.</p> <p>In line with the applicant’s outline CEMP submitted “2019s0183 Cardiff Outline CEMP” the following is proposed is also proposed: If percussive piling is required, percussive piling within 30m above HAT conducted between October-March (inclusive) can occur without tidal restrictions; percussive piling within 30m above HAT conducted between June-September (inclusive) can only occur on the ebb tide to protect upstream migrating Atlantic salmon and sea trout; and no percussive piling within 30m above HAT is to be conducted during April and May.</p> <p>NRW considered these mitigation measure can be agreed as part of the final CEMP and adherence will be secured within conditions. Should percussive piling be required during the migration period outside of this timing, it will be necessary to agree mitigation measures with NRW prior to any such works taking place.</p> <p>A CEMP will provide details on the piling measures required to minimise disturbance impacts on shad and the migratory fish assemblage which will be conditioned (see section 5.4).</p> <p><u>Mobilisation/introduction of contaminants of synthetic and non-synthetic compounds during construction.</u></p> <p>The following pollution prevention measures will be employed on the site:</p>

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		<ul style="list-style-type: none">• All works will be carried out in accordance with the Pollution Prevention And Control Act 1999.• Plant nappies will be in place at all times during the works.• A spill response contractor on call at all times throughout the works.• Any chemicals will be stored on impermeable surfaces within secure storage containers.• All plant will be equipped with biodegradable hydraulic oil.• Drip trays will be kept underneath standing machinery to prevent pollution events by oil/fuel leaks, with any refuelling of vehicles or machinery carried out on an impermeable surface well away from the river or any other drainage channels.• Spill kits will be available on site at all times and staff trained in their use.• Vehicles and machinery will be checked on a daily basis for any leakages, with any found reported immediately and the equipment removed from site.• Regular checks will be made of all on-site equipment/machinery, with any faulty equipment removed from site/taken out of use immediately. <p>A CEMP will provide details on the pollution prevention measures required to minimise disturbance impacts on shad and the migratory fish assemblage which will be conditioned (see section 5.4).</p> <p>JBA also submitted a proposed sediment sample plan 1.0 . JBA confirmed that they will undertake contamination sampling as requested by NRW Advisory as set out in the plan. To confirm the presence (or not) and levels of any contamination, JBA proposed sampling which will be undertaken where works are taking place below MHWS. The sample analysis will be assessed by NRW pre-construction. If sediment to be excavated is deemed contaminated as per Cefas action levels, it will be disposed to landfill. The sediment sample plan will be conditioned (see section 5.4).</p> <p>Notwithstanding the above, other conditions (conditions 8 – 11 as recommended by NRW in their consultation response dated 12.11.2021) will be attached to any approval of the development to counteract other adverse effects upon the integrity of the Severn Estuary from the mobilisation of soil and silt.</p>
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<ul style="list-style-type: none"> • Estuaries; • Mudflats and sandflats not covered by seawater at low tide; • Atlantic salt meadow (<i>Glauco-Puccinellietalia maritimae</i>); 	Operational Phase	<p>The amount of intertidal habitat losses predicted by both JBA and NRW varied. However, as stated in the Coastal Squeeze Numbers Clarification technical note prepared by JBA dated 10.12.21, it has been agreed that on a precautionary basis that the higher value of 24.59ha predicted for future intertidal habitat losses will be used (as obtained using the NRW modelling approach).</p> <p>This loss will require off-site compensation and therefore the integrity test for this factor is failed and this factor must proceed to Stage 3: Derogation.</p> <p>The total compensation required for both direct and indirect losses at the construction and operational phases will therefore be 25.76ha.</p>
<ul style="list-style-type: none"> • Dunlin, redshank, shelduck, gadwall and the waterfowl assemblage. 	Operational Phase	<p><u>Habitat Loss</u></p> <p>The amount of intertidal habitat losses predicted by both JBA and NRW varied. However, as stated in the Coastal Squeeze Numbers Clarification technical note prepared by JBA dated 10.12.21, it has been agreed that on a precautionary basis that the higher value of 24.59ha predicted for future intertidal habitat losses will be used (as obtained using the NRW modelling approach).</p> <p>This loss will require off-site compensation and therefore the integrity test for this factor is failed and this factor must proceed to Stage 3: Derogation.</p> <p><u>Disturbance</u></p> <p>No change to the route of the WCP is proposed and after completion of the scheme, the WCP will be along the toe of the embankment which will reduce the disturbance to birds from breaking the skyline.</p>
5.2 - Appropriate Assessment - River Usk SAC and River Wye SAC		
Interest Features	Element of the Project	Mitigation Measure Required ((Is mitigation required?, type & method of securing)
<ul style="list-style-type: none"> • Twait Shad • Allis shad • Migratory Fish 	Construction Phase	<p>These species could be affected by disturbance through vibration of the water column during construction.</p> <p>Adverse effects as a result of piling on shad and migratory fish assemblage were predicted. Shad are particularly sensitive to noise and vibration.</p>

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		<p>No piling will take place below highest astronomical tide (HAT).</p> <p>Vibration piling is the preferred methodology and percussive piling will only be used when this fails to break through ground.</p> <p>In line with the applicant outline CEMP submitted "2019s0183 Cardiff Outline CEMP" the following mitigation is proposed: That if percussive piling is required, percussive piling within 30m above HAT conducted between October-March (inclusive) can occur without tidal restrictions; percussive piling within 30m above HAT conducted between June-September (inclusive) can only occur on the ebb tide to protect upstream migrating Atlantic salmon and sea trout; and no percussive piling within 30m above HAT is to be conducted during April and May.</p> <p>NRW considered these mitigation measure can be agreed as part of the final CEMP and adherence will be secured within conditions. Should percussive piling be required during the migration period outside of this timing, it will be necessary to agree mitigation measures with NRW prior to any such works taking place.</p> <p>A CEMP will provide details on the piling measures required to minimise disturbance impacts on shad and the migratory fish assemblage (see section 5.4).</p> <p><u>Mobilisation/introduction of contaminants of synthetic and non-synthetic compounds during construction.</u></p> <p>The following pollution prevention measures will be implemented during the works:</p> <ul style="list-style-type: none">• All works will be carried out in accordance with the Pollution Prevention And Control Act 1999.• Plant nappies will be in place at all times during the works.• A spill response contractor on call at all times throughout the works.• Any chemicals will be stored on impermeable surfaces within secure storage containers.• All plant will be equipped with biodegradable hydraulic oil.
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		<ul style="list-style-type: none"> • Drip trays will be kept underneath standing machinery to prevent pollution events by oil/fuel leaks, with any refuelling of vehicles or machinery carried out on an impermeable surface well away from the river or any other drainage channels. • Spill kits will be available on site at all times and staff trained in their use. • Vehicles and machinery will be checked on a daily basis for any leakages, with any found reported immediately and the equipment removed from site. <p>The above measures will be included within a Construction Environmental Management Plan (CEMP) which will be conditioned (see section 5.4).</p> <p>JBA also submitted a proposed sediment sample plan 1.0 . JBA confirmed that they will undertake contamination sampling as requested by NRW Advisory as set out in the plan. To confirm the presence (or not) and levels of any contamination, JBA proposed sampling which will be undertaken where works are taking place below MHWS. The sample analysis will be assessed by NRW pre-construction. If sediment to be excavated is deemed contaminated as per Cefas action levels, it will be disposed to landfill. The sediment sample plan will be conditioned (see section 5.4).</p> <p>Notwithstanding the above, other conditions (conditions 8 – 11 as recommended by NRW in their consultation response dated 12.11.2021) will be attached to any approval of the development to counteract other adverse effects upon the integrity of the Severn Estuary from the mobilisation of soil and silt.</p>
<p>5.3 In combination test: Are there any in combination effects with other plans and projects considering Additional Mitigation Measures.</p>	<p>Current or approved planning applications that may contribute to potential adverse effects on the Severn Estuary SAC/SPA/RAMSAR. These are:</p> <ul style="list-style-type: none"> • Land at Rover Way (21/02182/MJR) <p>Land at Rover Way</p>	<p>This development was for the removal of fill material and the construction of up to 50,000 sqm of industrial accommodation (B8 Use Class), new access roads and associated landscaping works. LSE from the proposed development were identified relating to disturbance to bird features arising from construction activities and from operation of the development, site drainage and release of any existing land contamination causing pollution of the Severn Estuary during construction, dust</p>

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	<p>arising from construction causing contamination and smothering of Severn Estuary habitats and increased disturbance to birds caused by permanent changes to the WCP.</p> <p>An appropriate assessment was undertaken of these factors and mitigation proposed which was secured by planning conditions to ensure no effects on the Severn Estuary designations. Permission was granted.</p>
<p>Case Law, Planning advice & relevant studies considerations</p>	<p>None required.</p>
<p>5.4 Conclusion of the Appropriate Assessment: Integrity Test – Severn Estuary SAC/SPA/Ramsar</p>	<p>The integrity test has been failed for the following: Damage and loss of coastal habitats during construction (both permanent and temporary) and due to future coastal squeeze as these effects cannot be fully mitigated for.</p> <p>The Habitats Regulations Assessment should therefore proceed to Stage 3: Derogation for these factors and adequate compensation provided. It is proposed to compensate for direct and indirect losses through the Welsh Government’s National Habitat Creation Programme.</p> <p>The integrity test is considered to be passed for the remaining factors with the imposition of the following conditions:</p> <p>Saltmarsh Management Plan No development or phase of development including site clearance shall be carried out until a detailed Saltmarsh Habitat Management Plan, has been submitted to and approved in writing by the Local Planning Authority. The Saltmarsh Habitat Management Plan shall be implemented in accordance with the approved details.</p> <p>Reason : To ensure the Annex 1 habitat Atlantic saltmarsh and other valuable saltmarsh habitats are protected, reinstated where necessary and enhanced to benefit this habitat and associated species.</p> <p>Detailed Sediment Sample Plan Condition X: No development or phase of development, including site clearance, shall commence until a detailed sediment sampling plan based on the “<i>Proposed Sediment Sample Plan 1.0 28.01.2022</i>” has been submitted to and approved in writing by the Local Planning Authority. Sampling must be undertaken in accordance with the sampling plan and analysed at an NRW approved laboratory. Written results of the sediment sampling should be submitted for approval by the Local Planning Authority prior to construction of the coastal defences along the coastline and along the riverbank of the River Rhydney. This must include an outline of an assessment of alternative uses for the sediment that is to be disposed.</p>

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Reason: To ensure the risks associated with contamination at the site have been fully considered prior to commencement of development as controlled waters are of high environmental sensitivity.

Biodiversity Risk Assessment

No development or phase of development, including site clearance, with the potential to impact on invasive non-native species, shall commence until a site wide or phase Biosecurity Risk Assessment has been submitted to and approved in writing by the Local Planning Authority. The risk assessment shall include measures to control, remove or for the long-term management of invasive non-native species both during construction and operation. The Biosecurity Risk Assessment shall be carried out in accordance with the approved details.

Reason : To ensure that an approved Biosecurity Risk Assessment is implemented to secure measures to control the spread and effective management of any invasive non-native species at the site.

Construction Environmental Management Plan

Condition X: No development, including site clearance, shall commence until a site wide Construction Environmental Management Plan (CEMP) has been submitted to and approved in writing by the Local Planning Authority. The CEMP should include:

- Construction methods: details of materials, sediment management measures (including if contaminated sediment present); how waste generated will be managed; linked to Construction Method Statement and Contaminated Sediment Plan or Strategy (subject to separate conditions)
- The following must be demonstrated:
 - a) That all piling works will be undertaken above HAT;
 - b) That vibration piling is the preferred method of piling and that percussive piling
 - will only be undertaken where it is evidenced that vibration piling is not possible
 - due to e.g. ground conditions;
 - c) That if percussive piling is required, percussive piling within 30m above HAT conducted between October-March (inclusive) can occur without tidal restrictions; percussive piling within 30m above HAT conducted between June-September (inclusive) can only occur on the ebb tide to protect upstream migrating Atlantic salmon and sea trout; and no percussive piling within 30m above HAT is to be conducted during April and May to protect upstream migrating shad from disturbance, and that this will also protect upstream migrating European eel glass eels, as well as downstream migrating Atlantic salmon and sea trout smolts.

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- General Site Management: details of the construction programme including timetable, details of site clearance; details of site construction drainage, containments areas, appropriately sized buffer zones between storage areas (of spoil, oils, fuels, concrete mixing and washing areas) and any watercourse or surface drain, piling type and timings; vehicle access routes over sensitive habitats e.g. saltmarsh and associated protection measures; contaminated sediment plan and strategy
- Biodiversity Management: details of saltmarsh habitat protection; measures to avoid disturbance to overwintering and ground nesting birds; invasive species management including link to biosecurity risk assessment and management plan; measures to protect otter and badger during construction and avoidance measures for foraging and commuting bats; Precautionary Working Method Statement for amphibians and reptiles; other species and habitats protection, avoidance and mitigation measures (to include breeding birds, bats, dormouse, water vole and invertebrates). To be informed by update and pre-construction surveys as necessary.
- Soil and Sediment Management: details of topsoil strip, sediment removal, storage and amelioration for re-use. Link to contaminated sediment plan and strategy.
- Measures to ensure new bunds will can naturally regenerate or if seeded, the use of locally sourced seeds;
- CEMP Masterplan: details of the extent and phasing of development;
- Control of Nuisances: details of restrictions to be applied during construction including timing, duration and frequency of works; details of measures to minimise noise and vibration from piling activities, for example acoustic barriers; details of dust control measures; measures to control light spill and the conservation of dark skies.
- Resource Management: details of fuel and chemical storage and containment; details of waste generation and its management; details of sediment management; details of water consumption, wastewater and energy use
- Traffic Management: details of site deliveries, plant on site, wheel wash facilities; dedicated vehicle access routes and habitat protection measures;
- Pollution Prevention: demonstrate how relevant Guidelines for Pollution Prevention and best practice will be implemented, including details of emergency spill procedures and incident response plan; details of how contaminated sediments will be dealt with.
- Details of the persons and bodies responsible for activities associated with the CEMP and emergency contact details
- Landscape/ecological clerk of works to ensure construction compliance with approved plans and environmental regulations;
- NVC maps to inform construction access routes and compound locations so to avoid sensitive places.

The CEMP shall be implemented as approved during the site preparation and construction phases of the development.

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Reason: A CEMP should be submitted to ensure necessary management measures are agreed prior to commencement of development and implemented for the protection of the environment during construction.

NRW Conditions:

Condition 8: CONTAMINATION RISK SCHEME

No development shall commence until the following components of a scheme to deal with the risks associated with contamination at the site, has been submitted to and approved in writing by the Local Planning Authority.

1. A preliminary risk assessment which has identified:

- all previous uses
- potential contaminants associated with those uses
- a conceptual model of the site indicating sources, pathways and receptors
- potentially unacceptable risks arising from contamination at the site

2. A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

3. The results of the site investigation and the detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken

4. A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

The remediation strategy and its relevant components shall be carried out in accordance with the approved details.

Reason: To ensure the risks associated with contamination at the site have been fully considered prior to commencement of development as controlled waters are of high environmental sensitivity; and where necessary remediation measures and long-term monitoring are implemented to prevent unacceptable risks from contamination.

Condition 9: VERIFICATION REPORT

Prior to the occupation of the development a verification report demonstrating completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved in writing by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include a long-term monitoring

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and maintenance plan for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan. The long-term monitoring and maintenance plan shall be carried out in accordance with the approved details.

Reason: To ensure the methods identified in the verification plan have been implemented and completed and the risk associated with the contamination at the site has been remediated prior to occupation or operation, to prevent both future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.

Condition 10: UNSUSPECTED CONTAMINATION

If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until a remediation strategy detailing how this unsuspected contamination shall be dealt with has been submitted to and approved in writing by the Local Planning Authority. The remediation strategy shall be carried out as approved.

Reason: To ensure the risks associated with previously unsuspected contamination at the site are dealt with through a remediation strategy, to minimise the risk to both future users of the land and neighbouring land, and to ensure that the development can be carried out safely without unacceptable risks. A site investigation may not uncover all instances of contamination and this condition ensures that contamination encountered during the development phase is dealt with appropriately.

Condition 11: PILING DETAILS

No development shall commence until details of piling or any other foundation designs using penetrative methods sufficient to demonstrate that there is no unacceptable risk to groundwater have been submitted to and approved in writing by the Local Planning Authority. The piling/foundation designs shall be implemented in accordance with the approved details.

Reason: Piling/foundation details should be submitted to ensure there is no unacceptable risk to groundwater during construction and methods/design are agreed prior to the commencement of development or phase of development.

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6. CONSULTATION

NRW have been consulted on the planning application and responded as follows on 12/11/21:

BWRIAD / PROPOSAL: THE CONSTRUCTION OF A SERIES OF FLUVIAL AND COASTAL FLOOD DEFENCES ALONG THE SEVERN ESTUARY COASTLINE AND EAST AND WEST BANKS OF THE RIVER RHYMNEY, TO INCLUDE ROCK ARMOUR REVETMENTS, CONCRETE EROSION PROTECTION MATS, EARTH BUNDS, A DOUBLE FLOOD GATE (AT THE RHYMNEY RIVER MOTOR BOAT SAIL & ANGLING CLUB) AND SHEET PILING

LLEOLIAD / LOCATION: CARDIFF COASTAL FLOOD DEFENCES. THE SEVERN ESTUARY COASTLINE AND EAST AND WEST BANKS OF THE RIVER RHYMNEY

Thank you for consulting Cyfoeth Naturiol Cymru / Natural Resources Wales about the above, which we received on 10/09/2021.

We have concerns with the application as submitted because inadequate information has been provided in support of the proposal. To overcome these concerns, you should seek further information from the applicant regarding the Marine Environment, Protected Sites and Protected Species. If this information is not provided, we would object to this planning application. Further details are provided below.

We also advise that based on the information submitted to date, conditions regarding the Marine Environment, the Terrestrial Water Environment and Land Contamination should be attached to any planning permission granted. Without the inclusion of these conditions we would object to this planning application.

Our advice is that overall, there is still insufficient information presented to demonstrate that the proposed scheme will be compliant with the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations). Further information on this can be found in Appendix 1 following this letter.

We also advise inadequate ecological baseline data has been provided as part of the Application and Environmental Statement (ES). This baseline data and assessments are important as they will also form the basis of the habitat compensation sought as part of the National Habitat Creation Programme (NHCP); as well as providing the necessary information for the Habitats Regulations Assessment (HRA) process (including Imperative Reasons of Over-riding Public Interest (IROPI) stage).

In summary, we consider the following issues need to be addressed prior to determination:

- • HRA to be undertaken by Cardiff Council, as Competent Authority (further information can be found in Appendix 1 to this letter); we have concerns over the applicant's Report to Inform HRA;
- • Clarification and justification of the coastal squeeze methodology followed, including submission of maps;
- • Details of phase 1 intertidal habitat survey methodology and maps;
- • Further information to demonstrate there is an acceptable solution to manage likely contaminated sediment resulting from the development;
- • Submission of National Vegetation Classification (NVC) survey data to understand habitat loss and inform mitigation and compensation measures;

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- • Assessment and clarification of impacts on SSSI features;
- • Further information on the impacts to European Protected Species (Bats and Dormice)

The Marine Environment

We have reviewed the following documents:

- • JBA Consulting (September 2021) Cardiff Coastal Defences: Environmental Statement Final Report
- • JBA Consulting (September 2021) Cardiff Coastal Defences: Report to Inform Habitats Regulations Assessment
- • JBA Consulting (August 2021) Cardiff Coastal Defence Scheme: Water Framework Directive (WFD) Assessment
- • JBA Consulting (May 2021) Technical Note: Coastal Processes Impact Statement
- • Coastal Squeeze Methodology and Calcs V2
- • PAC APP 2 NRW COMMENTS TRACKER SEPTEMBER 2021 FINAL (referred to as 'PAC comments' from here on)

Coastal Physical Processes

- • Further information: clarification and justification on coastal squeeze methodology

We require further clarification on the coastal squeeze methodology presented, in particular the assumptions made in terms of future potential habitat extent. There's a range of methodologies that can be applied to calculate potential coastal squeeze, as set out in the 'What is coastal squeeze?' report (as discussed with the applicant). Given our previous advice and discussions with the applicant showing a coastal squeeze loss around 25ha, we believe the figure of 1.75ha is optimistic rather than precautionary. We note that the applicant has disregarded our previous advice on the most relevant and consistent approach to the impact assessment, that accounts for the scientific assessment and evidence associated with the Severn Estuary Flood Risk Management Strategy Imperative Reasons of Over-riding Public Interest IROPI (based on this section of the Severn Estuary).

The coastal squeeze methodology is not fully explained, and no maps are presented to show how the calculations have been made. We require further evidence to demonstrate that the predicted impacts are both realistic and suitably precautionary, given the inherent uncertainties in calculating coastal squeeze. It may be more appropriate to put forward a range of figures reflecting the different approaches to the calculations, and acknowledging that it is likely that erosion would occur in the absence of a defence, and therefore coastal squeeze would be higher than the 1.75ha put forward in the most recent assessment. The assessment seems to have disregarded the scale of low-lying land that is discontinuous when applying projected Mean High Water Springs (MHWS) levels but is continuous and extensive when considering Highest Astronomical Tidal (HAT) levels that represent the full extent of potential Annex 1 Intertidal features. This is relevant for the western section of the proposed Flood Risk Management assets.

Marine Benthic Ecology

- Further information: Details of Phase 1 intertidal habitat survey.

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- Condition: Submission and approval of a Biosecurity Risk Assessment & Management Plan for marine invasive non-native species (INNS).

ES Section 5.3 Ecology Baseline

As per our previous comments on the Draft ES (dated 6th August 2021), Appendix C indicates the phase 1 habitat survey area, but no reference has been included that outlines the results of the intertidal phase 1 habitat survey. We therefore assume that a discrete intertidal Phase 1 habitat survey has not been undertaken as part of the current application.

Therefore, the applicant should provide the methodology and maps relating to broad walkover phase 1 surveys, including the amount of intertidal mudflat and sandflat calculated. This should help inform the habitat type and extent of Annex 1 intertidal habitat being lost. Failure to do so will undermine the confidence in the information presented in the ES and Report to Inform the HRA, This information is required to determine figures for the loss of Annex 1 intertidal habitat features, as well as those being used to inform the coastal squeeze assessment calculations. The results of which will form the basis of the habitat compensation sought as part of the NHCP; as well as providing the necessary information for inclusion as part of the IROPI process.

It is our opinion that direct footprint losses for saltmarsh and intertidal mudflat and sandflat Annex 1 feature should be used to create the compensation habitat as part of the NHCP.

ES Section 5.3.46 Species – Invasive non-native species (INNS)

We welcome reference to several species of INNS known to be present in Cardiff Bay in the ES, however, the section has still failed to include information in relation to the risks potentially posed by spread of marine INNS and link to the Construction Environmental Management Plan (CEMP), including any reference to the intent to undertake a biosecurity risk assessment and management plan. Therefore, we request that a suitably worded pre-commencement condition is included on any permission you are minded to grant, which secures the submission and approval of a Biosecurity Risk Assessment & Management Plan for marine invasive non-native species (INNS). We have provided a suggested condition in Appendix 1.

We acknowledge information contained in the ES relating to the method of rock delivery and confirmation that this will be via road transport. As such, this significantly reduces the risk of introducing marine INNS to the area. However, and as stated in the previous 'Draft ES response', the highly invasive Chinese mitten crab *Eriocheir sinensis* (EU IAS Regulation species of concern/W&CA Schedule 9 Species/Marine Invasive Non-native Species Priority Monitoring and Surveillance List for Wales - High Risk) is known to be present in the Severn Estuary and it is highly plausible that individuals of various life history stages are present in the Rhymney River and associated intertidal mud habitats. The species has life stages that can survive in both fully marine and freshwater environments and is able to survive out of water for extended periods of time. Extreme diligence should be exercised around all aspects of plant, vehicle, vessel, and personnel movement on and off site with strict biosecurity measures in place to ensure that this species is not spread to other areas. Evidence of how the risks of spread are to be minimised/mitigated should be included in the biosecurity risk assessment and management plan. This should include how information on minimising the risk of spread of INNS will be disseminated to all relevant site personnel.

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Marine Water and Sediment Quality

- Further information: to demonstrate there is an acceptable solution to manage likely contaminated sediment resulting from the development

We advise further information is needed to demonstrate how contamination from sediment will be managed. We previously provided comments which outlined our concerns of the potential for chemical release into the water environment from contaminated land. It is still not clear how contaminated sediment will be managed.

We note that contaminants will be tested in the sediment removed (bullet point 2 of section 3.2.1 page 11), before it is placed back in the works. There is no mention of what the reason for contaminant testing is or what will happen if contaminant concentrations are found to be high. We note also that the PAC comments state that further contaminant testing will take place as part of ground investigation works, but no detail is given in the WFD assessment. In general, more information is needed to ensure there is a viable contaminant strategy for this programme of works available to the applicant.

In reference to the comment in the PAC comments “contamination”, we note that the applicant points us towards the Contaminated Land review (Appendix L) for the release of chemicals to surface waters. We note that the Environmental Quality Standards used in this document (Table 5-2, page 21) are those for freshwater, not marine waters as stated, and request comparisons are done with marine waters.

We agree the scheme is likely to reduce contamination in the long run by preventing deterioration of the land near Lamby Way Landfill. However, it is unclear whether there is erosion of the landfill site at present as several sections of the documentation suggest it could start deteriorating in the next 20 years (e.g. section 1.2.7, page V of the ES). As a result, if the landfill is not already eroding and contaminants already entering the system, then disturbing contaminated sediment in the intertidal would be an added burden on present levels of contaminants which must be considered.

We agree that sediment loading in the Severn is already very high and a relatively small amount of additional loading will not have much impact on water clarity and thus phytoplankton or on dissolved oxygen.

In summary, our advice is that the applicant provides further information (i.e. high-level strategy) which demonstrates how sediment will be managed. If acceptable, we consider the detail can be secured through a sediment plan which can be conditioned (Condition 2 in Appendix 1). This is likely to include full measures for sediment management and monitoring of the project post construction, and any adaptive management measures in place.

Further Advice to the Applicant

Due to the proximity of the site to watercourses, all works at the site must be carried out in accordance with GPP5 and PPG6: ‘Works in, near or over watercourses’ and ‘Working at construction and demolition sites’ which are available on the following website:

<http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/>

Saltmarsh

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- • Condition: Submission and approval of a saltmarsh habitat management plan to detail the mitigation and enhancement measures to be carried out during construction and post-construction.

Given the uncertainties with the habitat loss figures provided in the ES and Report to Inform HRA, we require a more robust evidence base detailing areas of saltmarsh to be affected during construction (both temporary and permanent losses).

As previously suggested, we would recommend that the Applicant produces a saltmarsh habitat management plan which sets out the mitigation and enhancement measures to be carried out during construction, and post-construction, to benefit this habitat and associated species.

Therefore, we request that a suitably worded condition is included on any permission you are minded to grant, for submission and approval of a saltmarsh habitat management plan to detail the mitigation and enhancement measures to be carried out during construction, and post-construction. We have provided a suggested condition (3) in Appendix 1.

Marine and Diadromous Fish

- • Condition: Compliance of percussive piling timing restrictions. Restricting all piling works to the dry above HAT. Seasonal and temporal piling restrictions should percussive piling be required, to avoid disturbance to migrating fish.

Following our comments made at the statutory pre-application stage, we welcome the text in Table 5-8 (was 5-6) of the ES which now states:

'All Piling works will be undertaken in the dry above HAT.

Vibration piling (using a variable moment vibrator and a 'soft start' approach) should be used wherever possible. It is proposed that this will be the preferred method of piling and percussive piling will only be used where this method has failed.

Percussive piling works within 30m of the HAT during the migration period will only be undertaken during the falling tide of the river (high tide plus one hour and low tide minus one hour). Should percussive piling be required during the migration period outside the time constraint identified, it will be necessary to agree mitigation measures with NRW prior to any such works taking place.'

We welcome the confirmation that all works will be above HAT and that vibration piling is the preferred method of piling.

We advise that there has been some misunderstanding of our previous comments in relation to the seasonal restrictions for percussive piling. We advise the following:

- percussive piling works within 30m of HAT are conducted between October-March (inclusive).
- percussive piling works within 30m of HAT required between April-September will need further restrictions to protect migrating fish from disturbance. This includes piling only on the ebb tide between June-September inclusive to protect upstream migrating Atlantic salmon and sea trout.
- no percussive piling is conducted during April and May to protect upstream migrating shad from disturbance, and that this will also protect upstream migrating European eel glass eels, as well as downstream migrating Atlantic salmon and sea trout smolts

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We would request that the above points are secured through a suitably worded condition on any permission you are minded to grant. We have provided a suggested condition (4) in Appendix 1.

WFD Assessment

Reiterating our previous advice, we do not agree with Table 6-1 for fish, where it is stated that the migratory season is “between October and February inclusive”. Different diadromous species will be migrating through the Rhymney Estuary at various times of the year, and not just during October to February inclusive. We advise that the text of this table is amended.

Marine Mammals

Following our comments made at the statutory pre-application stage, we welcome the text in Table 5-8 (was 5-6) which now states: All Piling works will be undertaken in the dry above HAT. Therefore, it can be considered there is no pathway of direct impact to marine mammals from construction activities from underwater noise or vibration. Should any construction activities need to take place in water, then this pathway would need to be considered.

However, section 7.1.1 says all piling works will occur above HAT but Table 6.1 - fish - only states all piling works will be undertaken in the dry.

Appendix 1 drawings suggest some piling will occur below MHW, but Section 2.5 of ES suggests that this may have changed. We therefore advise that consistency is needed between the ES and WFD Table 6-1 and Section 7.1.1.

Advice to the LPA on Water Framework Directive (WFD) Assessment

The WFD assessment acknowledges that the assessment cannot yet be finalised because the scheme design has not yet been finalised. For example, details of construction methods and mitigation are awaited. Section 1.2 states ‘A further WFD assessment of the scheme may be required once the detailed design and construction methodologies are finalised’.

It is our opinion that there are significant uncertainties remaining around the detail of the works, the mitigation measures and the compensatory measures. For example, some of the proposed mitigation such as coir matting or promoting sediment accretion is poorly described and it is unclear whether such mitigation will be effective. We are satisfied, however, details can be a) provided through the request for further information above; b) provided post determination through conditions; or c) through the HRA process.

We will then review the information and any further WFD assessment and advise you at that time. For information, we provide further advice for you and the applicant on sections of the WFD assessment below.

The WFD assessment also references compensatory measures under the Welsh Government Habitat Creation Scheme (NHCP). It is unclear from the WFD assessment what these measures might be and whether the requirements of Habitats Regulations have been complied with. This will be addressed through the HRA process.

Section 3 – Project Description

We previously commented that a clearer description of the proposed works is needed to inform the assessment. However, the design remains unclear, particularly because some aspects of design are yet to be finalised. Elsewhere in the revised ES and Report to Inform HRA, it is now stated that “*All Piling works will be undertaken in the dry above HAT.*” However, figures in Appendix A appear to show proposed piling in intertidal areas.

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Section 6 – WFD Impact Assessment

Sections 6 and 7 notes that the assessment will need to be revisited once the design is finalised. As advised previously, further detail on the proposed habitat enhancement features associated with the revetments should be provided and the potential to mitigate/offset adverse effects should be assessed when further information is provided through planning conditions.

We previously commented that Table 6-3 in Section 6.4 (page 30) provides an assessment of whether the proposed works comply with the overarching objectives of the WFD. However, similarly to the information provided in Table 6-1, overall, there is a lack of evidence to reach the conclusion that the proposed works do not compromise the WFD objectives. Furthermore, these conclusions are subject to a condition that 'mitigation measures and compensation measures are adhered to'. It is unclear what measures will be adopted as part of the proposed scheme. Further evidence should be presented through planning conditions to inform the impact assessment.

Table 6-3 references both potential mitigation and compensation measures. Further clarity should have been provided concerning these measures to provide confidence that they will be effective. However, we are satisfied that the effectiveness of mitigation measures is controlled through planning condition and compensatory measures will be dealt with through the HRA process.

As commented on previously, the impact assessment notes that direct loss of habitat will occur beneath the footprint of the proposed scheme. There is also potential for loss of habitat in the future operation of the scheme as a result of rises in sea level and coastal squeeze. This should be considered in the impact assessment.

The text in Section 7.1.5 does not follow the requirements of the Habitats Regulations. If compensatory measures are proposed, this means the project has been deemed to have an adverse effect on site integrity. Once the compensatory measures are in place and effective, it may be possible to conclude that the coherence of the site network has been maintained, and that features within the affected sites are at favourable conservation status. We are content that risks to other Protected Areas have been scoped out.

Summary

As acknowledged by the Applicant in Section 7.3 (page 32), the assessment needs to be reviewed at a stage where the design of the scheme (or worst-case design) and mitigation measures that need to be considered to make the works compliant with the WFD are known.

Further detail on scheme design, mitigation and compensation measures are needed. These details can be provided through the further information requests, planning condition requests and, for compensatory measures, through the HRA process. We consider the assessment to be incomplete at this stage, however we will advise on the proposed scheme's compliance with WFD when those further details are provided.

Ornithology

We are satisfied that the Applicant has addressed previously recommended measures to reduce disturbance to overwintering birds during the construction phase.

Conditions for Marine Environment

1. Biosecurity Risk Assessment & Management Plan for marine invasive non-native species (INNS)
2. Submission and approval of a sediment plan/strategy
3. saltmarsh habitat management plan

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4. Piling
5. Construction Environment Management Plan
6. Construction Method Statement

Please find suggested wording for conditions in Appendix 2 of this letter

Protected Sites (Special Area of Conservation and Sites of Special Scientific Interest)

- • Further information: submission of National Vegetation Classification (NVC) report to understand whether the survey data is appropriate to inform impacts upon SAC habitat and losses of SAC habitat
- • Further information: assessment on impacts to SSSI (features not covered by SAC/EMS designations)

National Vegetation Classification (NVC) survey data

In the first instance, we require the full NVC report (including maps) to be submitted to understand the robustness and appropriateness of the survey which has informed the application, for example whether it identifies sensitive areas which should be avoided. This should include a full species list. We acknowledge the response in the PAC comments that states this list will be included with the planning application, however this has not yet been received.

Section 5.2.4 of the ES notes that an NVC survey was carried out in October 2019. We consider this is not the optimum time to carry out an NVC survey as the flowering annuals will have senesced, meaning the full botanical interest of the site is unlikely to have been captured. Subject to the review of the full NVC report, it may be necessary to carry out further NVC surveying.

We also previously required a map to be submitted showing the location of the works, access routes, site compounds and relevant NVC information in order to assess the direct loss, where damage to important features will occur and what NVC communities are likely to be impacted. With this information, potential for mitigation to protect more sensitive areas of the site can be considered, for example, directing access routes across less sensitive areas. We note comments in the PAC comments state that this will be submitted as part of the NVC report and will include saltmarsh communities. Again, this has not yet been received.

Areas determined to be Annex I priority and designated feature habitats within the Severn Estuary SSSI and along the Rhymney River should be clearly mapped and the area of predicted habitat losses at the construction and operational stages should be clearly stated. We note that table 5-6 has been included to show '*Total intertidal habitats impacted including construction impacts*' but advise that the table does not match the figures given in the text. We would also ask that explanation is provided for how the figure stated in 5.5.38 has been arrived at as it is unclear given the numbers in table 5-6. This clarification would also help us to clarify direct habitat loss during the construction phase, which we raised as a concern in our previous response.

Impacts to SSSI features

In our previous response, we raised concerns that certain features of the Severn Estuary Site of Special Scientific Interest (SSSI), which are not covered under the Severn Estuary SAC, SPA and Ramsar designations need full consideration in the assessment. For

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example, damage/loss of notable plant species, such as the nationally scarce Bulbous Foxtail *Alopecurus bulbosus* and Slender Hare's-ear *Bupleurum tenuissimum*.

Table 2-9 of the ES still does not show the SSSI designations, namely the Severn Estuary SSSI and the Gwent levels - Rumney and Peterstone SSSI. Impacts from this on the SSSI have not been discussed. It is necessary to provide the NVC map with the location of the flood defence works, access routes and site compounds mapped, to fully show which SSSI habitats will be impacted; to what extent; and specify whether these habitats are likely to support plant or invertebrate interest. Appropriate mitigation for impacts on this site should be included.

We note in point 5.5.7 of the ES that, '*Section 11 of the proposed flood defence extends into the Rumney and Peterstone SSSI*'. This must be clarified. We note the PAC comments that the potential impacts of the works *adjacent* to the SSSI are limited to construction phase impacts through bad construction practices.

If work will take place within the SSSI this should be clearly stated, and the potential impacts assessed in the ES. This should include proposed mitigation, for example track mats along specified access routes to prevent damage to the grassland. If the applicant demonstrates work will not take place in the SSSI, we advise that where works/access routes/site compounds are adjacent to the SSSI the buffer zone should be specified. We advise at least a 10m buffer between the works footprint and ancillary structures and the SSSI boundary delineated with heras temporary fencing or similar temporary barrier.

Condition - CEMP

We expect the CEMP to fully consider the SSSIs features and provide detail of the buffer zones during construction as described above. We advise that no vehicles, machinery or plant should track through the buffer zones and there should be no works within the buffer zone, including earthworks, and no materials should be stored within the buffer zone, temporarily or permanently. This is not an exhaustive list of activities and the Potentially Damaging Operations list for the Gwent levels – Rumney and Peterstone SSSI should be referred to when preparing the CEMP. If any works need to take place within the buffer zone or the SSSI this should be clearly stated, justified and mitigation proposed.

In summary, we request the full NVC report is provided to ensure its appropriateness and that further assessment or clarifications are made regarding the impacts on SSSI features.

Protected Species

We note that no further information has been submitted in relation to European Protected Species since we provided a response at Statutory Pre-Application stage. Therefore, our comments still stand. These have been included again for your convenience.

We consider there are some areas where further information is needed to underpin the conclusions provided.

Bats

The draft ES states: '*No buildings suitable for roosting bats were identified within the scheme area. Broadleaved woodland located adjacent to the scheme area was predominantly of a young age and is therefore unlikely to provide potential roosting features, such as cracks, knot holes, or lifted bark. However, given the large size of the study area, no specific surveys of trees for bat roost potential were carried out.*'

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Due to the transient nature of bat roosts in trees, we request that any trees requiring felling or management works to facilitate the development, or woodland management proposals, should be preceded by an assessment for their potential to support roosting bats. For any trees categorised as having moderate to high potential for supporting bats, further surveys (climbing inspections and/or activity surveys) will be required in accordance with best practice guidelines. The results of the surveys should be reported in full and a detailed plan included with the submission which outlines which trees require felling and pruning, and their potential to support roosting bats. Should bat roosts be confirmed, we advise that an assessment of the impacts of the scheme on these roost sites and proposals to mitigate or compensate for them is included with the submission.

Dormice

The draft ES concludes habitats within the scheme area provide limited potential for Dormice: *Suitable habitat within the scheme area is limited to patches of bramble located along Lamby Way which provide some potential for hibernating Dormice. However, it is*

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considered that this habitat is isolated and not connected to areas suitable for foraging dormice. It is therefore considered that Dormice will not be present within the scheme areas.

Given the proximity of dormouse records, we request further information is provided in the ES to support the conclusion to scope dormouse out of the impact assessment. We advise that photographs of the relevant habitats and appropriate drawings showing the location of relevant habitats, their connectivity to the wider area and to the proposal are included.

Otters – CEMP Condition

The draft ES concludes otter habitat will not be affected by the proposals. We recommend a condition be attached to any planning permission which ensures measures to protect otter during construction are delivered, e.g. restricting working to between one hour before dusk and an hour after sunrise, covering or ensuring means of escape from trenches, appropriate fencing of compounds etc.

This information can be included in the CEMP.

Further Advice

We consider it would be helpful if Phase 1 Maps of the proposed areas are included, overlaid by maps of the proposal. These will give context to the observations in the draft ES regarding habitats and species.

The Terrestrial Water Environment

We note that no further information has been submitted in relation to the Terrestrial Water Environment since we provided a response at Statutory Pre-Application stage. Therefore, our comments still stand. These have been included again for your convenience.

Water Quality – CEMP and Construction Method Statement Conditions

We advise that despite the existing sediment budget in the estuary, prevention of plumes from suspended solids is key in pollution prevention and minimisation of impacts to fish and invertebrate populations. Similarly, considerations should include avoiding scouring of this sensitive habitat and careful storage of chemicals in line with pollution prevention guidance available on the NetRegs website.

We would expect these to be highlighted in the CEMP as such.

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We would also expect clarity to be provided on the exact nature of works, including planned excavations and site operation once up and running in respect of the above. We would expect this to be provided in the Construction Method Statement.

Fisheries – Condition 7 (Time restrictions)

We consider the construction work has the potential to disturb migrating fish in the River Rhymney. Salmonid fish (i.e. Atlantic salmon and sea trout) migrate through the lower River Rhymney in an upstream direction during May to September (inclusive) and in a downstream direction in April to June (inclusive). Therefore, in order not to disturb migrating salmonid fish, we would recommend a condition be attached to any planning permission ensuring construction takes place within the banks of the River Rhymney (i.e. the proposed work sections 21, 31 and 32) only from October to March (inclusive). Work outside this period can only take place with the written permission from us. For example, consideration would be given to in-channel work from July to September (inclusive) during the falling tide only.

We have provided a suggested condition (7) below under Appendix 2.

Land Contamination

We have reviewed the following newly submitted information:

- 'Cardiff Coastal Defence Scheme- Contaminated Land Review' Prepared by JBA Consulting April 2021. REF: CCD-JBAU-ZZ-00-RP-GT-0002-S0-P01-Contaminated_Land_Review

However, as additional ground investigation and testing is proposed at the start of the project, we would advise that conditions are included in any permission your authority is minded to grant. We have provided a list of suggested conditions below under Appendix 2 (conditions 8 – 11).

SuDS and groundwater impacts

We also wish to highlight that no infiltration of surface water drainage into the ground should be allowed unless it has been demonstrated that there will be no resultant unacceptable risk to controlled waters. Any new surface water drainage which employs infiltration methods could mobilise contaminants and has the potential to contribute to water pollution.

Further Advice to the Applicant

Reference is made to the CL:AIRE Definition of Waste:Code of Practice (DoWCoP) under Section 6.2.2 'Waste/Re-use of site won material'. It should be noted that the DoWCoP relates to soil/made ground only and does not extend to cover other historically deposited materials or wastes. The following informative is advised:

The treatment and disposal of contaminated soils and groundwater is regulated by waste legislation and requires an environmental permit.

Excavated materials that are recovered via a treatment operation can be re-used on-site under the [CL:AIRE Definition of Waste: Development Industry Code of Practice](#). This voluntary Code of Practice provides a framework for determining whether or not excavated material arising from site during remediation and/or land development works are waste.

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Developers should ensure that all contaminated materials are adequately characterized both chemically and physically, and that the permitting status of any proposed on site operations are clear. If in doubt, Natural Resources Wales should be contacted for advice at an early stage to avoid any delays.

Flood Risk

Model Review

We have verified the hydraulic model that the FCA is based upon. The model submitted in support of the FCA represents an update to an earlier model used to inform the earlier stages of the project. The updates are considered acceptable to inform the FCA. There are several areas within the model that could be considered to give conservative results.

FCA Review

The planning application proposes flood defences and management infrastructure which is in Zone 3 of the Flood Map for Planning, as referred to in TAN 15 (Technical Advice Note 15: Development, Flooding and Coastal Erosion, December 2021). This type of development is defined as water compatible under Figure 3 of TAN15. We refer you to paragraph 10.3 in TAN15 which states water compatible development is acceptable, from a flooding perspective, in all flood zones. Our comments below consider the impact of the development on flood risk elsewhere.

We have reviewed the FCA submitted in support of this application, prepared by JBA Consulting, dated: July 2021, ref: CCD-JBAU-XX-XX-RP-HM-0001-S3-P01-FCA_UPDATED.

The proposed scheme comprises repairs and improvements to existing structures alongside the construction of new defences and scour protection measures to provide increased standards of protection over a 100-year lifetime. The scheme has been designed to manage flood risk to 2,326 residential and 204 non-residential properties as well as protecting other areas of historic landfill, key infrastructure, and a traveller's site from coastal erosion.

Section 5.3 and Table 5.3 outline the post-development scenario with the scheme in place. This demonstrates the predicted significant reduction in the number of properties affected by flooding during the 0.5% (1 in 200 year) and 0.1% (1 in 100 year) tidal events in both 2019 and 2119 if the scheme is constructed. Whilst there is still predicted to be flooding within the scheme development site, particularly within the channel of the Rhymney River and existing flood plain on Llanrumney sports fields and Parc Tredelerch, other areas are predicted to benefit from reduced risk over the lifetime of the scheme.

Flood Risk in the 0.5% plus Climate Change event

In the predicted 0.5% (1 in 200 year) tidal event in the year 2119 the scheme is shown to provide significant benefits in terms of the numbers of properties at risk of flooding and depths of flooding over a wide area. It is also demonstrated that no properties experience detriment in terms of increased flooding.

In the predicted present day 0.5% (1 in 200 year) event the FCA states that flood depths inside the application site boundary increase but this is largely within the channel of the Rhymney River and therefore the FCA considers this to be acceptable. Outside of the site boundary some other areas of existing flood plain on public open space and greenfield land experience increased flood depths, predicted to increase by between 6mm to 9mm.

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Table 5-5 outlines the significant overall reduction in numbers of properties at risk of flooding in each scenario as a result of the scheme. It is stated that in the 2119 0.5% (1 in 200 year) event flood risk will be mitigated for approximately 2326 residential and 204 commercial properties.

Flood Risk in the 0.1% plus Climate Change event

In the predicted 0.1% (1 in 1000 year) tidal event in 2119 the scheme is shown to provide significant benefits in terms of the numbers of properties at risk of flooding and depths of flooding over a wide area. It is also demonstrated that no properties experience detriment in terms of increased flooding.

In the present day 0.1% (1 in 1000 year) event the FCA confirms that whilst the overall flood extent is reduced in many areas there is again an increase in flood depths inside the site boundary which the FCA considers to be acceptable. There is also a larger increase in depths in the open spaces outside the site boundary of up to 62mm. It is however also stated that in the present day 0.1% (1 in 1000 year) event a number of existing residential and commercial properties will experience increased flood depths of up to 53mm.

Table 5-6 confirms that in the present 0.1% (1 in 1000 year) event whilst there is an overall reduction in the number of properties at risk, 121 properties will experience detriment in terms of increased flooding

Flooding elsewhere and Detriment

Of the 121 properties experiencing detriment the FCA states that 4 of these did not previously flood but that the depth of flooding predicted means that only the curtilages will flood, floodwater is not anticipated to enter the buildings. The other 117 properties are already predicted to flood but will experience increased flood depths.

The FCA accepts that the construction of flood defences can result in some negative impacts due to disruption of flow paths and displacement which can increase flooding to some areas. It is also accepted that building flood defences in an urbanised area can make it very difficult to avoid all negative impacts and detriment to existing property in all scenarios. Increasing flooding elsewhere is not in line with TAN15 requirements, meaning that any scheme that results in such detriment cannot fully comply. However, the FCA argues that a risk-based approach should be adopted in such instances and that the overall betterment provided by the scheme, over its lifetime, outweighs any detriment. We can therefore advise that the FCA has considered and assessed the relevant requirements of TAN15 and provides sufficient information to inform a decision.

Summary

It is recognised that the scheme does cause detriment but there is also an overall betterment regarding the wider scheme. In particular, it was put forward as the best compromise on the basis that the significant benefits in the more frequent events outweighed the detriment in the extreme event.

Our advice is that the scheme cannot fully comply with the requirements of TAN15 with regards to its effect on flooding elsewhere. We have no objection to the proposals on flood risk grounds given the overall betterment. However, as it is for your Authority to determine the application, you should take into consideration the above advice.

Further Advice for Applicant

As previously discussed at the pre-application meeting, elements of the scheme will fall under the Marine Licensing regime.

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A Flood Risk Activity Permit may be needed for the proposed works landward of the mean high-water tide (for example, locations 42 and 52). Further advice and guidance can be found on our [website](#). You can also contact Development and Flood Risk Advisor Carl Llewellyn for further advice: Carl.Llewellyn@cyfoethnaturiolcymru.gov.uk

It is also essential that the previous commitment in the pre-application meeting to ensure that our access to maintain and/or improve our own defences in the area is upheld and this will need to be controlled through either the permitting or planning regimes.

We advise the eastern part of the proposed development is within the Caldicot and Wentlooge Levels Internal Drainage District (IDD), with Blanchmoor Reen to the north and Barcroft Reen further east. We advise the applicant we require continued access to undertake our annual works maintenance. Our IDD Team request to be kept up to date with the proposal to identify whether any adjustments are required in our annual works programme to assist in the planned works. If requested, our IDD Team can also assist in an advisory capacity with regards to water level management within the locality of the IDD boundary. You can contact IDD Engineer David Penny for further advice: David.Penny@cyfoethnaturiolcymru.gov.uk.

Furthermore, we advise the applicant that no watercourse/drainage alterations or run-off is to enter the IDD system without a Land Drainage Consent from us. Further advice and guidance is available on our [website](#).

Other Matters

Our comments above only relate specifically to matters included on our checklist, *Development Planning Advisory Service: Consultation Topics* (September 2018), which is published on our [website](#). We have not considered potential effects on other matters and do not rule out the potential for the proposed development to affect other interests.

We advise the applicant that, in addition to planning permission, it is their responsibility to ensure they secure all other permits/consents/licences relevant to their development. Please refer to our [website](#) for further details.

Advice for the Developer

Wales Coast Path

With regard to the interests of users of the Wales Coast Path (WCP) we advise it is important to maintain the current route (and proposed route over Lamby Way landfill site) of the Public Right of Way (PROW) over which the WCP route runs along, in regard to any of the intervening works. It is also important to ensure future path users have a good experience with views that are currently enjoyed.

We understand the PROW/WCP route on the west side of the Rhymney River will be temporarily diverted inland (using a Temporary Traffic Regulation Order) in order to accommodate the construction of the flood defence works, as advised by Jenn Griffiths (PROW Office) to Lowri Hughson-Smith (Planning) in Cardiff Council.

The PROW/WCP route continues past the DCWW site. We understand DCWW intend to install their own flood defence scheme at this location. We consider it is in the interests of path users to ensure there is continuity of the route, so would expect the proposed works to interlink with the DCWW works on the ground. Similarly, the proposed Biomass site (referred to as Rover Way) should be considered in connection with any flood defence works as they also include provision for the WCP route within the site boundaries.

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Furthermore, it is important to note that there are extremely prolific and persistent areas of Japanese Knotweed (INNS) in this area. For information, a WCP grant has previously supported weed treatment along these sections on and adjacent to the WCP route. Also, fly tipping is prolific in this area, often around or near the Travellers site, on the saltmarsh and foreshore. We advise the contractor/s must have specific regard to these matters as they will be encountered on site when work is undertaken.

Waste on Site

The treatment and disposal of contaminated soils and groundwater is regulated by waste legislation and requires an environmental permit.

Excavated materials that are recovered via a treatment operation can be re-used on-site under the [CL:AIRE Definition of Waste: Development Industry Code of Practice](#). This voluntary Code of Practice provides a framework for determining whether or not excavated material arising from site during remediation and/or land development works are waste.

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on site operations are clear. If in doubt, we should be contacted for advice at an early stage to avoid any delays.

Waste Produced During Construction

Any waste removed from site will be subject to waste management controls. Waste must be dealt with appropriately and be in line with all relevant waste legislation including Duty of Care Regulations and Hazardous Waste Regulations. Should waste be removed from site it must be taken to an appropriate facility authorised to accept this waste. As part of your waste duty of care you must classify the waste produced:

- before it is collected, disposed of or recovered
- to identify the controls that apply to the movement of the waste
- • to complete waste documents and records
- • identify suitably authorised waste management options
- • to prevent harm to people and the environment

Further information on Duty of Care Regulations can be found on our [website](#).

Further information on how to classify waste is available on our [website](#).

Further information on how to register as a waste carrier is on our [website](#).

Further information on how to register as a hazardous waste producer is on our [website](#).

If you have any queries on the above, please do not hesitate to contact us.

Appendix 1: NRW consultation response on application reference 21/02138/MJR

Advice on Habitats Regulations Assessment for the Competent Authority

The advice in this response is offered to assist Cardiff Council, as the Competent Authority, in reaching a view on the possible significant effect of these proposals in the context of Regulation 63(1) of the Conservation of Habitats and Species Regulations 2017 for the Severn Estuary SAC and SPA. We agree that likely significant effect on the Severn Estuary SAC and SPA cannot be ruled out

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and we therefore recommend an ‘appropriate assessment’ of the proposal in accordance with Regulation 63(1) of the Conservation of Habitats and Species Regulations 2017.

If the appropriate assessment cannot establish that the plan or project will not adversely affect the integrity of any protected site, then it may only proceed if there are no alternative solutions and it satisfies the Imperative Reasons of Overriding Public Interest test (IROPI). If a project is to proceed on the basis of IROPI any compensatory habitat needed must be provided to secure the coherence of the new national site network. These are referred to as the ‘derogation provisions’ contained in Regulations 64 and 68 of Conservation of Habitats and Species Regulations 2017. Please note, as currently presented in the ES (e.g. paragraph 1.6.14) and the Report to Inform the HRA (e.g. table 7-1), there is confusion between mitigation and compensation measures. It is incorrect to state that the impacts will be ‘mitigated’ by compensation (i.e. off-site replacement compensatory habitat).

It cannot be stated that a permanent ‘moderate’ effect constituting loss of SAC designated habitat can be reduced to ‘slight’ by providing compensation. The HRA guidance states that loss of habitat will affect the integrity of a site, which would be a national or international scale impact.

We advise that Table 3-1: The HRA Process ‘*Stage 3: Assessment where no alternatives and adverse impacts remain*’ (page 12) should be referred to as Derogation as in [Habitats regulations assessments: protecting a European site - GOV.UK \(www.gov.uk\)](http://www.gov.uk).

The Welsh Government will need to provide an Imperative Reasons for Overriding Public Interest (IROPI) assessment opinion for this project and then compensation is the next stage.

We advise that Table 7-1: *Appropriate Assessment of hazards and mitigation on site integrity* is incorrect. Compensation is separate to mitigation and therefore should not be considered at this stage. There is direct and indirect loss of habitat through this scheme. The [UK Government advice on appropriate assessment](#) states that:

‘The integrity of the site will be adversely affected if a proposal could, for example:

- Destroy, damage, or significantly change all or part of a designated site
- *Significantly disturb the population of a designated species, for example, its breeding birds...*’

The Report to Inform HRA concludes ‘With the implementation of the mitigation proposed no adverse impacts on the integrity of the Severn Estuary EMS’. Given that with mitigation it is expected there will be both direct and indirect habitat loss because of this project, it is not appropriate to state that adverse effects on the site integrity can be ruled out. Therefore, we would not agree with this conclusion and advised your HRA proceeds to the stage 3 (derogation phase) and IROPI assessment.

Further Advice to Competent Authority on HRA preparation

We agree with the assessment of LSE in Table 5-2: Assessment of likely significant effects of hazards on interest features. We welcome the inclusion of INNS as a potential impact pathway and acknowledge the intention to undertake a management plan for INNS.

Table 7-1: Appropriate Assessment of hazards and mitigation on site integrity. Severn Estuary SAC – Construction activity SAC interest feature 3: Mudflats and sandflats not covered by seawater at low tide (mudflats and sandflats). We note that area figures have now been included in the table for loss of Annex 1 intertidal habitats as a result of construction activities. However, as noted in the previous comments, these may need to

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be revised based on further information regarding intertidal habitat survey, so as to accurately assess the level of compensation delivered as part of the NHCP. See also physical processes comments in relation to calculation of the coastal squeeze assessments as the current intertidal habitat area figures may influence the calculations.

Coastal Squeeze

We refer you to Welsh Government policy clarification note: [Use of the National Habitat Creation Programme in delivering Flood and Coastal Erosion Risk Management projects \(gov.wales\)](#)

We have advised further clarification on the compensatory habitat calculations for coastal squeeze. At present we cannot agree to the conclusions of the HRA.

Table 7-1: Appropriate Assessment of hazards and mitigation on site integrity To mitigate the hard engineering approach, soft engineering will be used on the upper banks of the River Rhymney sections. This will involve replacing mud and using brushwood to keep it in place. We recommend the success of the proposed mitigation is monitored, as suggested in the ES, and adaptive management implemented if needed. No adaptive management is currently presented.

Apart from the permanent footprint offset requirements and coastal squeeze impacts we support the mitigation measures outlined, particularly regarding sediment management and monitoring of the project post construction. We question if there are any adaptive management measures in place, in the case the monitoring shows effects outwith that predicted, as described in the ES.

Marine Water and Sediment Quality

In the HRA, construction activities which cause “mobilisation of soil and silt” (e.g. page 25) may also include release of contaminated sediment. This pathway has been missed off the HRA for several receptors and should be updated.

Marine and Diadromous Fish

We previously advised that the impact pathways upon notable estuarine species assemblages need to be considered in the case of fish, as the fish assemblage is a sub-feature of the Estuaries feature of the Severn Estuary SAC. We note that this has not been addressed in the Report to Inform HRA. It appears that the migratory fish assemblage has been considered but not the whole fish assemblage which is the subject of the conservation objective for the SAC in the 2009 Regulation 33 advice for the Severn Estuary. We previously advised that the impact pathway from noise and vibration upon twaite shad is assessed in the HRA. We note that this comment has been only partially addressed. The River Usk SAC and River Wye SAC assessments do not consider the impact pathway from noise and vibration during construction.

We previously advised that impact pathways upon Ramsar Criterion 8 species should be considered. We note that this has not been addressed in the Report to Inform HRA and the table appears incomplete.

Appendix 2: NRW consultation response on application reference 21/02138/MJR

Suggested Planning Conditions

Condition 1: No development or phase of development, including site clearance, with the potential to impact on invasive non-native species, shall commence until a site wide or phase Biosecurity Risk Assessment has been submitted to and approved in writing by the Local Planning Authority. The risk assessment shall include measures to control, remove or for the long-term management of invasive

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non-native species both during construction and operation. The Biosecurity Risk Assessment shall be carried out in accordance with the approved details.

Justification: To ensure that an approved Biosecurity Risk Assessment is implemented to secure measures to control the spread and effective management of any invasive non-native species at the site.

Condition 2:

If acceptable information is submitted demonstrating there is an acceptable solution to manage likely contaminated sediment resulting from the development, then we would expect a detailed Plan to be conditioned as part of any permission granted.

Condition 3: No development or phase of development including site clearance shall be carried out until a Saltmarsh Habitat Management Plan, has been submitted to and approved in writing by the Local Planning Authority. The Saltmarsh Habitat Management Plan shall be implemented in accordance with the approved details.

Condition 4: Piling must be carried out as described in Table 5-8 of the Environmental Statement (referenced xxx)

Condition 5: No development, including site clearance, shall commence until a site wide Construction Environmental Management Plan (CEMP) has been submitted to and approved in writing by the Local Planning Authority. The CEMP should include:

- Construction methods: details of materials, sediment management measures (including if contaminated sediment present); how waste generated will be managed; linked to Construction Method Statement and Contaminated Sediment Plan or Strategy (subject to separate conditions)
- General Site Management: details of the construction programme including timetable, details of site clearance; details of site construction drainage, containments areas, appropriately sized buffer zones between storage areas (of spoil, oils, fuels, concrete mixing and washing areas) and any watercourse or surface drain, piling type and timings; vehicle access routes over sensitive habitats e.g. saltmarsh and associated protection measures; contaminated sediment plan and strategy
- Biodiversity Management: details of saltmarsh habitat protection; measures to avoid disturbance to overwintering birds; invasive species management including link to
 - biosecurity risk assessment and management plan; other species and habitats protection, avoidance and mitigation measures.
- Soil and Sediment Management: details of topsoil strip, sediment removal, storage and amelioration for re-use. Link to contaminated sediment plan and strategy.
- Measures to ensure new bunds will naturally regenerate or if seeded, the use of locally sourced seeds
- CEMP Masterplan: details of the extent and phasing of development;
- Control of Nuisances: details of restrictions to be applied during construction including timing, duration and frequency of works; details of measures to minimise noise and vibration from piling activities, for example acoustic barriers; details of dust control measures; measures to control light spill and the conservation of dark skies.

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- Resource Management: details of fuel and chemical storage and containment; details of waste generation and its management; details of sediment management; details of water consumption, wastewater and energy use
- Traffic Management: details of site deliveries, plant on site, wheel wash facilities; dedicated vehicle access routes and habitat protection measures;
- Pollution Prevention: demonstrate how relevant Guidelines for Pollution Prevention and best practice will be implemented, including details of emergency spill procedures and incident response plan; details of how contaminated sediments will be dealt with.
- Details of the persons and bodies responsible for activities associated with the CEMP and emergency contact details
- Landscape/ecological clerk of works to ensure construction compliance with approved plans and environmental regulations.
- NVC maps to inform construction access routes and compound locations so to avoid sensitive places
- Measures to protect otter during construction

The CEMP shall be implemented as approved during the site preparation and construction phases of the development.

Justification: A CEMP should be submitted to ensure necessary management measures are agreed prior to commencement of development and implemented for the protection of the environment during construction.

Condition 6: No development, including site clearance, shall commence until a Construction Method Statement has been submitted to, and approved in writing by, the local planning authority. The approved statement shall be adhered to throughout the construction period. The statement should provide all details construction and/or engineering methods.

Note: the requested CEMP and Construction Method Statement could be presented/submitted as one document. The objective of the CEMP is to set out avoidance and mitigation measures to protect the environment, whereas the objective of the Method Statement is to explain how construction/engineering will take place.

Condition 7: No development, or phase of development shall be carried out on the banks of the River Rhymney, including proposed work sections 21,31 and 32 between the months of April and September to protect migrating salmonid fish. Any works during this period shall only take place with the written permission of the planning authority.

Justification: To avoid the potential for disturbance of Salmonid fish where this cannot be controlled through a licence or assent.

Condition 8: No development shall commence until the following components of a scheme to deal with the risks associated with contamination at the site, has been submitted to and approved in writing by the Local Planning Authority.

1. A preliminary risk assessment which has identified:
 - all previous uses
 - potential contaminants associated with those uses
 - a conceptual model of the site indicating sources, pathways and receptors
 - potentially unacceptable risks arising from contamination at the site

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2. A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

3. The results of the site investigation and the detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken

4. A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

The remediation strategy and its relevant components shall be carried out in accordance with the approved details.

Justification: To ensure the risks associated with contamination at the site have been fully considered prior to commencement of development as controlled waters are of high environmental sensitivity; and where necessary remediation measures and long-term monitoring are implemented to prevent unacceptable risks from contamination.

Condition 9: Prior to the occupation of the development a verification report demonstrating completion of works set out in the approved remediation strategy and the effectiveness of the remediation shall be submitted to and approved in writing by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include a long-term monitoring and maintenance plan for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan. The long-term monitoring and maintenance plan shall be carried out in accordance with the approved details.

Justification: To ensure the methods identified in the verification plan have been implemented and completed and the risk associated with the contamination at the site has been remediated prior to occupation or operation, to prevent both future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors.

Condition 10: If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until a remediation strategy detailing how this unsuspected contamination shall be dealt with has been submitted to and approved in writing by the Local Planning Authority. The remediation strategy shall be carried out as approved.

Justification: To ensure the risks associated with previously unsuspected contamination at the site are dealt with through a remediation strategy, to minimise the risk to both future users of the land and neighbouring land, and to ensure that the development can be carried out safely without unacceptable risks. A site investigation may not uncover all instances of contamination and this condition ensures that contamination encountered during the development phase is dealt with appropriately.

Condition 11: No development shall commence until details of piling or any other foundation designs using penetrative methods sufficient to demonstrate that there is no unacceptable risk to groundwater have been submitted to and approved in writing by the Local Planning Authority. The piling/foundation designs shall be implemented in accordance with the approved details.

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Justification: Piling/foundation details should be submitted to ensure there is no unacceptable risk to groundwater during construction and methods/design are agreed prior to the commencement of development or phase of development.

APPENDIX 1: European Site Conservation Objectives for Severn Estuary SAC/SPA/Ramsar:

Severn Estuary SAC/SPA/Ramsar

The Conservation Objectives of the Relevant Designated Sites are taken as set out in the following document: Natural England & CCW (2009) *The Severn Estuary / Môr Hafren European Marine Site comprising: The Severn Estuary / Môr Hafren Special Area of Conservation (SAC), The Severn Estuary Special Protection Area (SPA), The Severn Estuary / Môr Hafren Ramsar Site. Natural England & the Countryside Council for Wales' advice given under Regulation 33(2)(a) of the Conservation (Natural Habitats, &c.) Regulations 1994, as amended June 2009. These Conservation Objectives have not changed since the 2017 application, therefore the advice provided by NRW (then as CCW) under Regulation 33(2)(a), now known as Regulation 37(3)(a), has not changed.*

The Conservation Objectives of the Severn Estuary SAC are:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Further information on the Severn Estuary SAC can be found at: <http://www.jncc.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0013030>

The Conservation Objectives Severn Estuary SPA are:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features;
- The structure and function of the habitats of the qualifying features;

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- The supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and
- The distribution of the qualifying features within the site.

Further information on the Severn Estuary SPA and Ramsar Site can be found at: <http://www.jncc.gov.uk/default.aspx?page=2066>.

The Conservation Objectives for the features of the Ramsar site are the same as those for the homologous features of the SAC and SPA.

Further information on the Severn Estuary Ramsar Site can be found at <http://www.jncc.gov.uk/pdf/RIS/UK11081.pdf>.

River Usk SAC

The Conservation Objectives of the Relevant Designated Sites are taken as set out in the following document: CCW (2008) *Core Management Plan Including Conservation Objectives for River Usk Special Area of Conservation (SAC)*.

The Conservation Objectives of the River Usk SAC are:

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species;
- The structure and function (including typical species) of qualifying natural habitats;
- The structure and function of the habitats of qualifying species;
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;
- The populations of qualifying species; and
- The distribution of qualifying species within the site.

Further information on the River Usk SAC can be found at:

<https://sac.jncc.gov.uk/site/UK0013007>

River Wye SAC

4.1 Conservation Objective for the watercourse

The ecological status of the watercourse is a major determinant of FCS for all features. The required conservation objective for the watercourse is defined below.

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- 4.1.1 The capacity of the habitats in the SAC to support each feature at near-natural population levels, as determined by predominantly unmodified ecological and hydromorphological processes and characteristics, should be maintained as far as possible, or restored where necessary.
- 4.1.2 The ecological status of the water environment should be sufficient to maintain a stable or increasing population of each feature. This will include elements of water quantity and quality, physical habitat and community composition and structure. It is anticipated that these limits will concur with the relevant standards included in Appendixes 1 and 2.
- 4.1.3 Flow regime, water quality and physical habitat should be maintained in, or restored as far as possible to, a near-natural state, in order to support the coherence of ecosystem structure and function across the whole area of the SAC.
- 4.1.4 All known breeding, spawning and nursery sites of species features should be maintained as suitable habitat as far as possible, except where natural processes cause them to change.
- 4.1.5 Flows, water quality, substrate quality and quantity at fish spawning sites and nursery areas will not be depleted by abstraction, discharges, engineering or gravel extraction activities or other impacts to the extent that these sites are damaged or destroyed.
- 4.1.6 The river planform and profile should be predominantly unmodified. Physical modifications having an adverse effect on the integrity of the SAC, including, but not limited to, revetments on active alluvial river banks using stone, concrete or waste materials, unsustainable extraction of gravel, addition or release of excessive quantities of fine sediment, will be avoided.
- 4.1.7 River habitat SSSI features should be in favourable condition. Where the SAC habitat is not underpinned by a river habitat SSSI feature, the target is to maintain the characteristic physical features of the river channel, banks and riparian zone.
- 4.1.8 Artificial factors impacting on the capability of each species feature to occupy the full extent of its natural range should be modified where necessary to allow passage, eg. weirs, bridge sills, acoustic barriers.
- 4.1.9 Natural factors such as waterfalls, which may limit, wholly or partially, the natural range of a species feature or dispersal between naturally isolated populations, should not be modified.
- 4.1.10 Flows during the normal migration periods of each migratory fish species feature will not be depleted by abstraction to the extent that passage upstream to spawning sites is hindered.
- 4.1.11 Flow objectives for assessment points in the Wye Catchment Abstraction Management Strategy will be agreed between EA and CCW as necessary. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Appendix 2 of this document.
- 4.1.12 Water Quality targets follow those in the revised Common Standards Monitoring Guidance for Rivers (JNCC 2016). These are detailed in Appendix 1 with targets for organic pollution (DO, BOD and ammonia), phosphate¹, trophic diatom index and acidification.
- 4.1.13 Potential sources of pollution not addressed in the Review of Consents, such as contaminated land, will be considered in assessing plans and projects.
- 4.1.14 Levels of suspended solids will be agreed between EA and CCW for each Water Framework Directive water body in the Wye SAC. Measures including, but not limited to, the control of suspended sediment generated by agriculture, forestry and engineering works, will be taken to maintain suspended solids below these levels.
- 4.2 Conservation Objective for Features 1-5:

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- Sea lamprey *Petromyzon marinus* (EU Species Code: 1095) ; - Brook lamprey *Lampetra planeri* (EU Species Code : 1096) ; - River lamprey *Lampetra fluviatilis* (EU Species Code : 1099) ; - Twait shad *Alosa fallax* (EU Species Code : 1103) ; - Allis shad *Alosa alosa* (EU Species Code : 1102) ; - Atlantic salmon *Salmo salar* (EU Species Code : 1106) ; - Bullhead *Cottus gobio* (EU Species Code : 1163)

4.2.1 The conservation objective for the water course as defined in 4.1 above must be met

4.2.2 The population of the feature in the SAC is stable or increasing over the long term.

4.2.3 The natural range of the feature in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches where predominantly suitable habitat for each life stage exists over the long term. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms eg. suitable flows to allow upstream migration, depth of water and substrate type at spawning sites, and ecosystem structure and functions eg. food supply (as described in sections 2.2 and 5). Suitable habitat need not be present throughout the SAC but where present must be secured for the foreseeable future. Natural factors such as waterfalls may limit the natural range of individual species. Existing artificial influences on natural range that cause an adverse effect on site integrity, such as physical barriers to migration, will be assessed in view of 4.2.4

4.2.4 There is, and will probably continue to be, a sufficiently large habitat to maintain the feature's population in the SAC on a long-term basis.

4.3 Conservation Objective for Feature 6: - European otter *Lutra lutra* (EU Species Code: 1355) 4.3.1 The population of otters in the SAC is stable or increasing over the long term and reflects the natural carrying capacity of the habitat within the SAC, as determined by natural levels of prey abundance and associated territorial behaviour.

4.3.2 The natural range of otters in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches that are potentially suitable to form part of a breeding territory and/or provide routes between breeding territories. The whole area of the Wye SAC is considered to form potentially suitable breeding habitat for otters. The size of breeding territories may vary depending on prey abundance. The population size should not be limited by the availability of suitable undisturbed breeding sites. Where these are insufficient they should be created through habitat enhancement and where necessary the provision of artificial holts. No otter breeding site should be subject to a level of disturbance that could have an adverse effect on breeding success. Where necessary, potentially harmful levels of disturbance must be managed.

4.3.3 The safe movement and dispersal of individuals around the SAC is facilitated by the provision, where necessary, of suitable riparian habitat, and underpasses, ledges, fencing etc at road bridges and other artificial barriers.

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4.4 Conservation Objective for Feature 7: - Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation (EU Habitat Code: 3260)

4.4.1 The conservation objective for the water course as defined in 4.1 above must be met

4.4.2 The natural range of the plant communities represented within this feature should be stable or increasing in the SAC. The natural range is taken to mean those reaches where predominantly suitable habitat exists over the long term. Suitable habitat and associated plant communities may vary from reach to reach. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms eg. depth and stability of flow, stability of bed substrate, and ecosystem structure and functions eg. nutrient levels, shade (as described in section 2.2). Suitable habitat for the feature need not be present throughout the SAC but where present must be secured for the foreseeable future, except where natural processes cause it to decline in extent.

4.4.3 The area covered by the feature within its natural range in the SAC should be stable or increasing.

4.4.4 The conservation status of the feature's typical species should be favourable. The typical species are defined with reference to the species composition of the appropriate JNCC river vegetation type for the particular river reach, unless differing from this type due to natural variability when other typical species may be defined as appropriate.