

Black Pool Mill Wall Repair -

Water Framework Directive Assessment

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Abbreviations

AONB	Area of Outstanding Natural Beauty
BAP	Biodiversity Action Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CRoW	Countryside and Rights of Way Act
EPS	European Protected Species
HPI	Habitats of Principal Importance
HRA	Habitat Regulations Assessment
INNS	Invasive Non-native Species
JNCC	Joint Nature Conservation Committee
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserve
MAGIC	Multi-Agency Geographic Information for the Countryside
NERC	Natural Environment and Rural Communities
NNR	National Nature Reserve

NRW	Natural Resources Wales
PEA	Preliminary Ecological Appraisal
PPW	Planning Policy Wales
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SINC	Site of Importance for Nature Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WCA	Wildlife and Countryside Act

1 Introduction

1.1 Project Background

JBA Consulting was commissioned by Bluestone Resorts Ltd. to undertake a Water Framework Directive (WFD) Assessment in relation to emergency works on the riverbank downstream of Blackpool Mill, Narberth. The report has been prepared following a range of guidance for WFD assessment:

- Water Framework Directive assessment: estuarine and coastal waters – How to assess the impact of your activity in estuarine (transitional) and coastal waters for the Water Framework Directive (WFD), 9 October 2023, Environment Agency. Available at: <https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters>
- Local Authority services and the water environment: Advice note on the Water Framework Directive, Natural Resources Wales. Available at: <https://naturalresources.wales/media/2627/wfd-docs-eng.pdf>

It includes key elements of the Scoping Template provided within the Environment Agency Guidance (2023), which clearly sets out all potential risks to the WFD receptors associated with the proposed development. The Scoping Template has been modified to enable consideration of WFD groundwater waterbodies in addition to surface waterbodies. Data on the status of WFD waterbodies has been obtained from the Water Watch Wales website¹ and the Multi-Agency Geographic Information for the Countryside (MAGIC) website².

1.2 Project description

1.2.1 Project overview

A WFD Assessment is required to consider the impact of the emergency works on the riverbank and wall downstream of Blackpool Mill, at National Grid Reference (NGR) SN 05979 14485. The site sits within the administrative boundary of the Pembrokeshire Coast National Park Authority (PCNPA). The study area encompasses transitional waters, river and groundwater bodies. The site location is shown in Figure 1-1.

1 NRW (2022) Water Watch Wales. Available at: <https://waterwatchwales.naturalresourceswales.gov.uk/en/> (Accessed: 3 October 2024)

2 Natural England (2024) MAGIC. Available at: <https://magic.defra.gov.uk/MagicMap.aspx> (Accessed 3 October 2024)

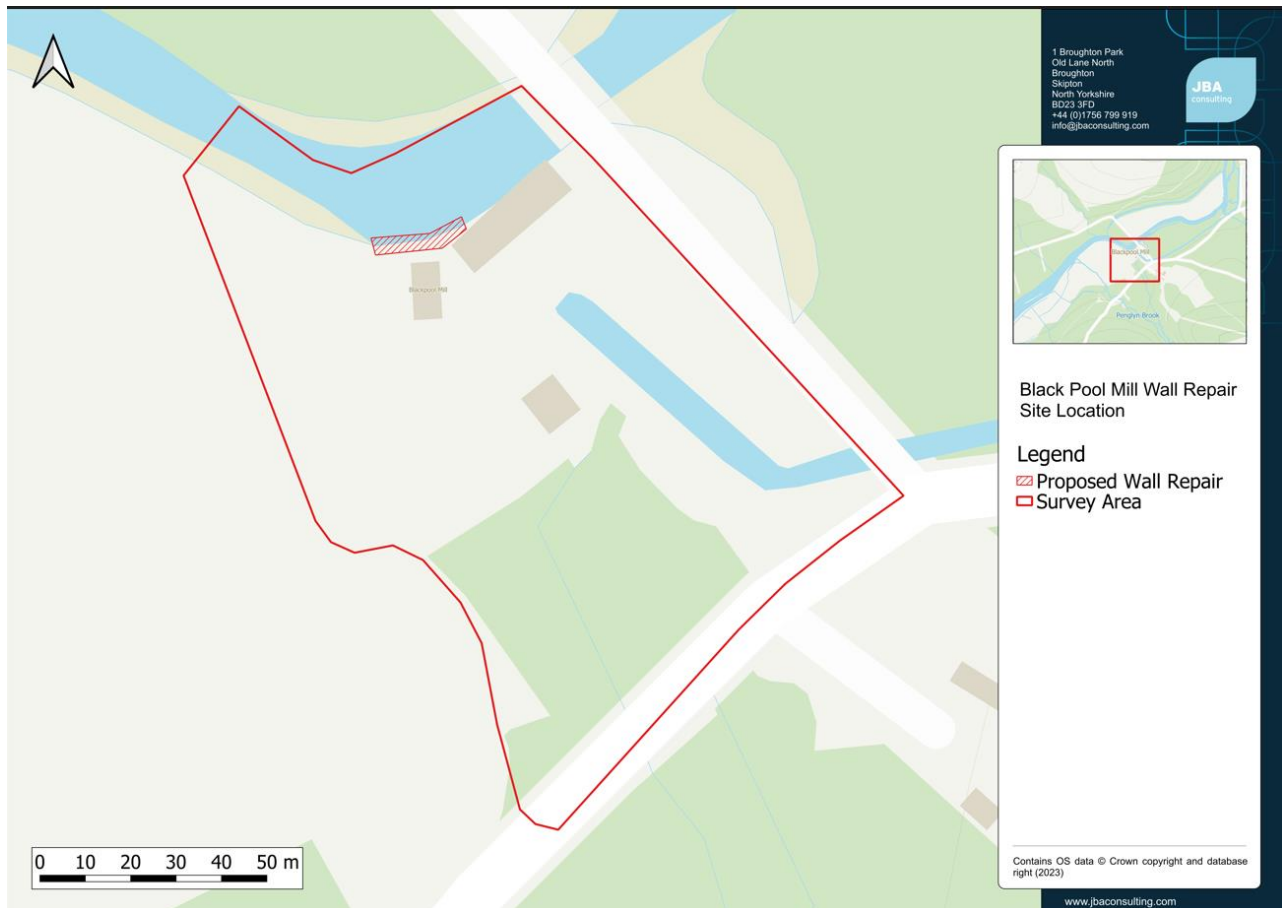


Figure 1-1. Site Location

1.2.2 Proposed Works

The proposed works consists of temporary and emergency works to the wall failure along the section of riverbank adjacent to Blackpool Mill. The temporary works will involve the placement of 48 2T Salix AquaRock bags along the section of wall that has failed.

The emergency works to repair the wall damaged by flooding is to construct a Redi-Rock gravity retaining wall. This uses pre-cast modular concrete blocks with a textured face to give the appearance of natural stone. A metal pedestrian guard railing will also be installed.

It is currently understood at this stage that for all options access will need to be gained via the main entrance to Black Pool Mill, with the section of wall failure needing repair accessed through the space between the main Black Pool Mill building and the storage building.

1.3 Purpose of the report

1.3.1 Scope of the WFD Assessment

The WFD (2000/60/EC) is implemented in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, which revoke and replace the Water Environment (Water Framework Directive) (England and Wales)

Regulations 2003. The framework for delivering requirements of the WFD is through the River Basin Management Plan (RBMP).

The Regulations require that Environmental Objectives are set for all surface (including river, lake, coastal and transitional waters and groundwaters in England and Wales to enable them to achieve a 'Good' status by a defined date. These Environmental Objectives are listed below:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters.
- Aim to achieve at least good status/potential for all water bodies by 2021. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status/potential by 2027.
- Meet the requirements of Water Framework Directive Protected Areas.
- Promote sustainable use of water as a natural resource.
- Conserve habitats and species that depend directly on water.
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment.
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants.
- Contribute to mitigating the effects of floods and droughts.

Surface waterbody status is made up of its ecological status and its chemical status. Ecological status is defined by a series of biological 'quality elements' and physico-chemical, hydromorphological, and chemical 'supporting elements' (which support the biological elements). Chemical status comprises a series of priority substances and other pollutants listed in the Environmental Quality Standards Directive (EQSD). These quality elements are taken from Annex V of the EQSD.

The status of all relevant quality elements is classified according to five categories: 'High', 'Good', 'Moderate', 'Poor' and 'Bad'. The overall status of a waterbody is determined by the lowest elements status e.g., if all biological quality elements and supporting elements are at 'Good' status, except for one, which is at 'Moderate' status, then the ecological status is 'Moderate' and the overall status is 'Moderate'. Published guidance requires that all quality elements need to be considered as part of a WFD assessment.

Groundwater waterbody status is defined by its 'quantitative status' and its 'chemical status'. Two classes are attributed to both quantitative and chemical status: 'Good' and 'Poor'. Both elements need to be at good status before the waterbody can be classified as 'Good'.

Under the WFD, Heavily Modified Waterbodies (HMWB) are bodies of water that are substantially changed in character due to physical alterations by human activity and cannot meet 'Good Ecological Status' (GES). Therefore, mitigation measures are set for the waterbody so that it achieves 'Good Ecological Potential' (GEP). This assessment therefore must consider whether the proposed scheme will conflict with the measures in place now or

planned for the future, and whether this could affect the status of the hydromorphological quality elements (and ultimately the status of the waterbody).

1.3.2 Small non-reportable waterbodies

All waterbodies are protected under WFD. This includes stretches of water considered too small to be a formal WFD waterbody, such as ditches, small streams, and brackish lagoons. As such, deterioration of such water should be prevented. In the absence of any classification data relating to these waterbodies, it should be assumed that they are at 'Good' status. Therefore, any proposed development that could affect such a waterbody should be assessed to determine whether it could cause deterioration from good status. Pen Glyn Brook is within the study area, running from south to north.

1.3.3 Protected areas, priority habitats and invasive non-native species

Published guidance states that the WFD assessment must also consider the potential impacts on the following:

- Protected areas – these are defined under Article 6 of the Directive and include the following:
 - Areas designated for the abstraction of water for human consumption (Drinking Water Protected Areas);
 - Areas designated for the protection of economically significant aquatic species (Freshwater Fish and Shellfish);
 - Bodies of water designated as recreational waters, including areas designated as Bathing Waters;
 - Nutrient-sensitive areas, including areas identified as Nitrate Vulnerable Zones under the Nitrates Directive or areas designated as sensitive under Urban Waste Water Treatment Directive (UWWTD); and
 - Areas designated for the protection of water-dependent habitats or species, including relevant Natura 2000 sites.
- Priority Habitats – these are “habitats of principal importance for the conservation of biodiversity”, which are defined under Section 7 of the Environment (Wales) Act 2016 in Wales. Detailed assessment is required if a proposed development would significantly impact on a priority habitat that is critical to the ecological health of a waterbody i.e., directly impacts habitats that are critical to the individual biological quality elements.
- Invasive non-native species (INNS) – assessment of INNS is required if a development could cause the introduction or spread of INNS into a waterbody.

1.3.4 Approach to WFD Assessment

All new activities in the water environment need to take account of the requirements of the WFD. For a project or activity to be compliant with the WFD, it should demonstrate that:

- There is no risk of it causing a deterioration in the status of any element; in addition for groundwater, it will limit or prevent the input of pollutants;
- There is no risk of it preventing WFD protected areas from achieving their objectives;
- It will not jeopardise any waterbody from achieving good status/potential; and
- It will contribute to the protection, enhancement, and restoration of waterbodies.

Therefore, this WFD assessment aims to determine whether the proposed development would have the potential to cause or contribute to the deterioration in status of a WFD waterbody or inhibit a waterbody from achieving its status objective. It also assesses the potential for the development to contribute to the objectives of the WFD.

The assessment identifies all activities that will take place as part of the proposed development, during both construction and operation, and where risks of an impact on the WFD quality elements might arise due to these activities.

This assessment follows published good practice guidance and has been undertaken following a staged approach (summarised in Figure 1-2):

- Stage 1: screening – to determine whether any activities associated with the proposed development do not require further consideration i.e., do not need to go through the scoping or impact assessment stages because there is no more than a low risk of a potential impact on a waterbody;
- Stage 2: scoping – identifies the potential risks associated with the proposed activities and the WFD receptors that are at risk i.e., those risks that need impact assessment; and
- Stage 3: impact assessment – a detailed assessment of the potential impacts of each activity, including consideration of ways to avoid or minimise impacts, and possible enhancement opportunities, to determine whether an activity may cause deterioration or jeopardise the waterbody from achieving good status.

A more detailed WFD assessment would be required if it cannot be concluded that the proposed development would not cause deterioration or inhibit the objective status of a waterbody. Further to this and in line with WFD requirements, there would be a need to apply the WFD Article 4.7 test to seek approval for progression of the development if, after the full WFD assessment (including the implementation of mitigation measures), it cannot be determined that the development would not cause deterioration to a waterbody or prevent it from achieving its status objectives.

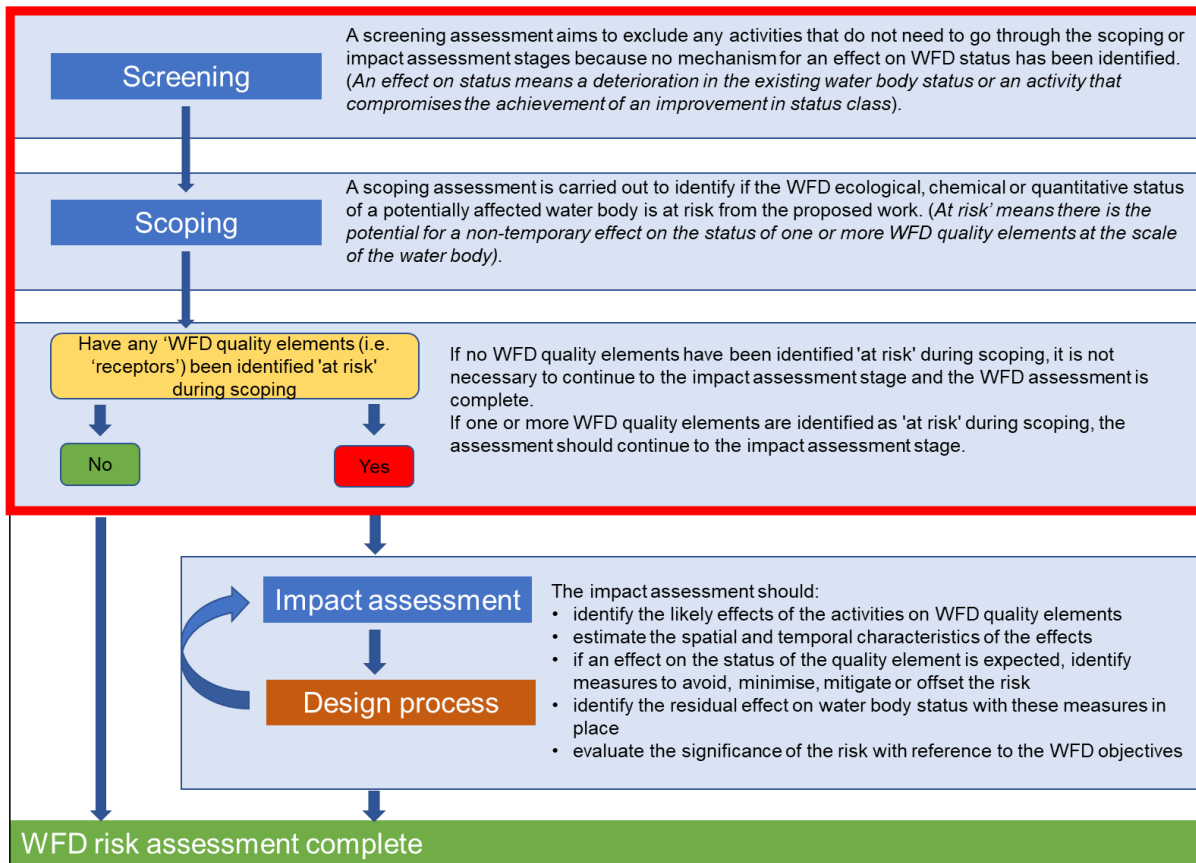


Figure 1-2: WFD assessment process flow chart

1.3.5 Cumulative and in-combination effects

Good practice requires that the proposed scheme is assessed for potential cumulative and in-combination effects. Cumulative impacts are multiple impacts on the same waterbody quality element that arise from the proposed development together with those from all developments that have been built and are operational.

In-combination impacts are those impacts that may arise from the proposed development in-combination with other plans and projects proposed/consented but not yet built and operational i.e., those developments that are separate from the baseline. These include:

- Activities started but not yet completed;
- Activities consented but not started;
- Ongoing activities subject to repeated authorisations (e.g., annual licenses);
- Application submitted but not yet determined; and
- Activities not requiring consent, but which have been approved by the relevant competent authority.

As the proposed scheme is limited in scale, it is not considered to have any cumulative or in-combination effects with other developments.

2 Baseline conditions

2.1 Relevant WFD waterbodies

The Water Watch Wales website indicates that the proposed works lie within the Milford Haven Inner Transitional waterbody (WFD ref: GB531006114100). The Eastern Cleddau - confluence with Syfynwy to tidal limit river waterbody is approximately 750 m upstream. Just over 1 km upstream from the proposed works is the Narberth Brook - headwaters to confluence with Eastern Cleddau river waterbody. The proposed works is underlain by the Cleddau and Pembrokeshire groundwater body. The waterbodies are summarised in Table 2-1.

Table 2-1: WFD waterbodies summary

Waterbody type	Name	WFD Reference	Hydromorphological designation	Status (2021)
Transitional	Milford Haven Inner	GB531006114100	Natural	Moderate
River	Eastern Cleddau - confluence with Syfynwy to tidal limit	GB110061030670	Natural	Moderate
River	Narberth Brook - headwaters to confluence with Eastern Cleddau	GB110061030660	Natural	Moderate
Groundwater (drinking water protected area)	Cleddau and Pembrokeshire	GB41002G200400	n/a	At risk
Groundwater (chemical)	Cleddau and Pembrokeshire	GB41002G200400	Natural	Poor

2.2 Screening outcome: Waterbodies

The following table indicates which waterbodies have been screen in or out of the assessment and the reasons for this decision.

Table 2-2: Waterbody screening outcome

Waterbody	Screening Outcome	Reason
Milford Haven Inne	IN	The proposed works are to be conducted within the waterbody. The impacts of the works are to be further assessed relative to their ability to impact on WFD quality elements.
Eastern Cleddau - confluence with Syfynwy to tidal limit	OUT	This waterbody is located upstream, above the tidal limit and influence of the proposed works location. Therefore, the proposed works will not affect the WFD status of this waterbody.
Narberth Brook - headwaters to confluence with Eastern Cleddau	OUT	This waterbody is located upstream, above the tidal limit and influence of the proposed works location. Therefore, the proposed works will not affect the WFD status of this waterbody.
Cleddau and Pembrokeshire (drinking water protected area)	IN	Works will be taking place within this waterbody and therefore has the potential to impact its WFD status and objectives.
Cleddau and Pembrokeshire (chemical)	OUT	Works will be taking place within this groundwater waterbody, however, the proposed works will be taking place at surface level and are not predicted to impact subsurface assets. Therefore, the impacts of the construction and operational phases of the works are not expected to present a significant impact to the WFD quality elements.

2.3 Milford Haven Inner transitional waterbody

The Milford Haven Inner transitional waterbody is in the Western Wales river basin district and connects the Milford Haven Outer coastal waterbody with the East Cleddau and other waterbodies within Pembrokeshire. The waterbody is designated as 'Natural' and currently assessed as having an overall status of 'Moderate', with 'Moderate' ecological potential, whilst its chemical status is currently 'Moderate'. The driving elements for this are Brominated diphenylether (BDPE) Calc; polyaromatic hydrocarbons (PAH); Macroalgae; dissolved inorganic nitrogen (DIN). Table 2-3 provides a summary of the previous RBMP Cycle 2 (2015) and RBMP Cycle 3 (2021) status of the WFD quality elements for the waterbody.

Table 2-3: WFD quality elements and status for Milford Haven Inner transitional waterbody

Waterbody criteria		RBMP Cycle 2 (2015)	RBMP Cycle 3 (2021)
Biological/ecological quality elements			
Ecology		Moderate	Moderate
Angiosperms		High	Good
Fish		Good	Good
Invertebrates		Good	Good
Macroalgae		Moderate	Moderate
Imposex		Not assessed	Not assessed
Phytoplankton		High	High
Infaunal Quality Index		Good	Good
Hydromorphological quality element			
Hydrological Regime		Not assessed	Not high
Morphology		Not high	Not high
Physico-chemical supporting elements			
Flow		Not assessed	Not assessed
Dissolved Oxygen (DO)		High	High
Dissolved Inorganic Nitrogen (DIN)		Moderate	Moderate
Annex 8 Chemicals		High	
Chemical quality elements			
Arsenic		High	High
Copper		High	High
Iron		High	High
Zinc		High	High
Annex 10 Chemicals	Benzo(a)pyrene	High	High
	Cadmium	High	High
	Fluoranthene	High	High
	Hexachlorobenzene	High	High
	Hexachlorobutadiene	High	High
	Lead and its compounds	High	High
	Mercury and its compounds	Moderate	High
	Nickel and its compounds	High	High

2.4 Protected areas, priority habitats and invasive non-native species

The area is one of high biodiversity value based on the ecological designations. The DataMapWales³ website identifies that there are several WFD Protected Areas within 2 km of the proposed scheme. These comprise:

Within scheme area

- Pembrokeshire Marine/Sir Benfro Forol Special Area of Conservation (SAC)
- Cleddau and Pembrokeshire Drinking Water Protected Area

Within 500m of the scheme area

- Afonydd Cleddau/Cleddau Rivers SAC

Within 5km of the scheme area

- Yrbeston Tops SAC
- Pembrokeshire Bat Sites and Bosherton Lakes SAC

No invasive non-native species (INNS) were identified during the preliminary ecological appraisal.

2.5 Summary

To conclude the screening assessment, the following quality elements need to be considered further within the Scoping Assessment for the Milford Haven Inner:

- Biological/ecological quality elements
- Physico-chemical supporting elements
- Chemical quality elements

The Cleddau and Pembrokeshire drinking water protected area will also be considered further.

³ Welsh Government (2024) DataMapWales Available at: <https://datamap.gov.wales/> (Accessed 22 October 2024).

3 WFD Scoping Assessment

3.1 Overview

This scoping assessment identifies whether the waterbody's receptors, identified during the screening assessment, are at risk from the proposed works discussed in Chapter 1.2.2. The proposed works are being appraised in terms of their impact on WFD status and objectives. If any Quality Elements are found to be at risk of detrimental impact, further assessment and/ or mitigation may be required in the next chapter (as demonstrated by the final column).

Some WFD Quality Elements have not been formally assessed as part of the classification for this water body. However, due to the scale and nature of the proposed works, all WFD Quality Elements have been included in the previous screening and any identified impacts have been considered in relation to the ecological status of the water body and the status objectives.

Article 4.7 of the Directive defends deterioration in status or failure to meet WFD objectives resulting from new modifications or sustainable human development activities (if all conditions set out under this Article are met). If the assessment procedure predicts that an activity will cause deterioration in water body status or prevent a water body from meeting its ecological objectives, then an assessment is also required against the conditions listed in Article 4.7 of the WFD. If all the assessment conditions are met, there will not be a breach of the WFD and compliance will be attained.

3.2 Scoping Assessment

3.2.1 Biological quality assessment

Table 3-1 presents an assessment of the proposed works against the biological quality elements of the Milford Haven Inner waterbody (GB531006114100).

Table 3-1: Assessment of the Proposed Works against the biological quality elements

WFD Biological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Fish	Good	The ecology elements of the transitional water body have the potential to be affected by the proposed works. There is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the water body. Operations during the construction phase could cause noise and visual disturbance to species associated with the of the transitional water body.	Yes
Invertebrates	Good		Yes
Macroalgae	Moderate		Yes
Phytoplankton	High		Yes

3.2.2 Hydromorphological quality elements

Table 3-2 presents an assessment of the proposed works against the hydromorphological quality elements of the Milford Haven Inner waterbody.

Table 3-2: Assessment of the Proposed Works against the hydromorphological quality elements

WFD Hydromorphological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Hydrology: Quantity and Dynamics of flow	Not assessed	The proposed works will not change the quantity of flows received by the waterbody at this location. The proposed works will not impact the dynamics of flow in the waterbody as the proposed works are repairing wall. Overall, no permanent negative impacts on this WFD receptor are predicted resulting from the works for the Milford Haven Inner waterbody.	No further assessment required
Hydrology: Connection to ground water bodies	Not assessed	The proposed works are taking place on the bank of the waterbody. Therefore, there will be no impact to groundwater connectivity to the Milford Haven Inner waterbody as a result of the proposed works. Pollution prevention measures will mitigate against the potential for pollutants to be drawn down into the Cleddau and Pembrokeshire groundwater body. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required

WFD Hydromorphological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
River Continuity	Not assessed	The proposed works are taking place on the bank of the waterbody. Therefore, there will be no impact to river continuity as a result of the proposed works. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required
Morphology: River width and depth	Not high	The proposed works are taking place on the bank of the waterbody. Therefore, there will be no change to the width and depth of the waterbody as a result of the proposed works. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required
Morphology: Structure and substrate of the river bed	Not high	The proposed works are taking place on the bank of the waterbody. Therefore, there will be no change to the structure of the river bed as a result of the proposed works. The proposed works involve the emergency repairs of the wall that was previously in place. No works will take place on the channel bed. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required

WFD Hydromorphological Quality Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Morphology: Structure of the riparian zone	Not high	The proposed works are taking place on the bank of the waterbody. Therefore, there will be no change to the structure of the riparian zone of the waterbody as a result of the proposed works. No permanent negative impacts on the WFD receptor are predicted resulting from the works.	No further assessment required

3.2.3 Physico-chemical quality assessment

Table 3-3 presents an assessment of the proposed works against the Physico-chemical quality elements of the Gele Water Body.

Table 3-3: Assessment of the Proposed Works against the Physico-Chemical Quality Elements

WFD Physico-Chemical Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Dissolved Inorganic Nitrogen (DIN)	Moderate	The proposed works are not expected to result in increased concentrations of DIN or a change to the WFD status that may lead to nutrient enrichment of the water body.	No

WFD Physico-Chemical Element	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Dissolved Oxygen (DO)	High	Although the extent of the works are small when considering the scale of the waterbody there is potential for short term, localised alteration in DO levels via the transfer of construction materials, namely concrete, to the waterbody. Furthermore, there is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the waterbody.	Yes

3.2.4 Chemical substances status

Table 3-4 presents an assessment of the proposed works against the Chemical substances status of the Milford Haven Inner waterbody.

Table 3-4: Assessment of the Proposed Works against the Chemical substances status

WFD Chemical Substances	Current Status	Potential Impact	Further Assessment and/or Mitigation Required?
Priority hazardous substances	Not Assessed	The extent of the works are small when considering the scale of the waterbody and are not expected to result in significant direct or indirect impacts on chemical substances status within the water body.	No further assessment required
Specific Pollutants	Not Assessed		

3.3 Impacts of the proposed works on Protected Sites

Table 3-5 presents an assessment of the proposed works against any protected sites identified in the Cleddau and Pembrokeshire Groundwater Drinking Water Protected Area GB41002G200400.

Table 3-5: Assessment of the Proposed Works on Protected Sites

Protected Site	Potential Impact	Further Assessment and/or Mitigation Required?
Cleddau and Pembrokeshire Groundwater Drinking Water Protected Area	Low	No
Pembrokeshire Marine/Sir Benfro SAC	Moderate	Yes
Afonydd Cleddau/Cleddau Rivers SAC	Moderate	Yes

4 WFD Impact Assessment

4.1 Overview

The Scoping Assessment presented in Section 3 identified some receptors may potentially be at risk from the proposed works. An impact assessment is therefore required to describe how these identified impacts will be mitigated.

The impact assessment needs to consider if there is a pathway linking the pressure to the receptor. If there is no pathway there can be no impact on the receptor and there is no need for any further assessment of that receptor to be carried out. If there is a potential pathway the assessment should consider if the activity, and the pressure it creates, may cause deterioration of the receptor.

In order to effectively assess the potential impacts of the proposed works and decide upon suitable mitigation measures, a good understanding of the proposed scheme and design is required. Should any revisions be made to the proposed works that could impact any of the WFD Quality Elements, this section should be revised.

4.2 Impact assessment

Table 4-1 discusses the receptors identified as being potentially at risk in the scoping assessment. Mitigation measures are recommended to eliminate/reduce the effects of the proposed works. As the only impacts identified are indirect and appropriate to all waterbodies the proposed mitigation has only been presented once.

Table 4-1: Impacts and Mitigation Measures - All waterbodies

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Ecology	Indirect	Temporary impact: The ecology elements of the transitional waterbody have the potential to be affected by the proposed works. There is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the waterbody. Mitigation: Standard construction industry practices and associated measures for the management of pollution prevention are required throughout the duration of the proposed works.

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
Fish	Direct	Impacts: Direct Mortality to fish Mitigation: The works will require only a small coffer dam and will not hinder the ability for fish to migrate through the area. No percussive techniques are proposed. The need for a potential fish rescue has been included in a CEMP that will be approved by NRW fisheries officer before works take place. The works will take place in the period July to end of September (inclusive) when migratory species are unlikely to be encountered. Best practice guidance on pollution prevention and in-channel sediment control measures should be followed during temporary and permanent works construction.
Fish	Indirect	Temporary impact: Fish, Invertebrates, Macroalgae and Phytoplankton associated with the transitional waterbody have the potential to be affected by the proposed scheme. There is the potential for indirect temporary impacts via accidental pollution spillages from plant machinery operating in the vicinity of the waterbody. Mitigation: Standard construction industry practices and associated measures for the management of pollution prevention are required throughout the duration of the proposed works.
Invertebrates		
Macroalgae		
Phytoplankton		
Physico-chemical - Dissolved Oxygen	Direct & Indirect	Temporary Direct Impact: the proposed works may present a direct impact to DO concentrations within the waterbody via the potential for construction materials, namely concrete to enter, or come into contact with the waterbody. Temporary Indirect Impact: the proposed works present an indirect impact to DO concentrations within the waterbody via the potential for accidental pollution spillages from plant machinery during the construction phase of the works which could lead to chemicals entering the water body resulting in a temporary change and/or deterioration in concentrations of DO. Mitigation: Standard construction industry practices and associated measures for the management of pollution prevention are required throughout the duration of the proposed works. These measures are to include the following:

WFD Quality Element	Pathway (Direct/Indirect)	Potential Impact / Mitigation Measures
		- Reduced interaction between the waterbody and concrete; all pumped concrete should be injected into void spaces when the tide is receding, opposed to incoming. - Plant machinery should avoid movement on the riverbank, particularly when using concrete, when the tide is in. Work should be conducted during dry conditions. - Pollution prevention measures including daily machinery checks to be completed and recorded. - Any concrete and fuel left on-site is to be located in the works compound away from the waterbody. Fuel should be stored in bunded fuel bowers. - The works compound will be fenced off and padlocked for security. - Spill kits will be available on site in the event of any fuel/chemical spillage.

4.3 WFD assessment objectives

Following consideration of the appraised mitigation measures for the water body, Table 4-2 assesses whether the proposed works comply with the overarching objectives of the WFD.

Table 4-2: Assessment of the Proposed Works against the WFD Objectives

WFD Assessment Objective	Assessment of the Proposed Works
Objective 1: The proposed works do not cause deterioration in the Status of the Ecological Elements of the waterbody	The proposed repair works will not cause the deterioration of the status of the ecological elements in the waterbody, providing that all industry standards for pollution prevention are followed.
Objective 2: The proposed works do not compromise the ability of the waterbody to achieve its WFD status objectives	The proposed works will not compromise the ability of the scoped in water bodies to achieve the WFD objectives, providing that all industry standards for pollution prevention are followed.
Objective 3: The proposed works do not cause a permanent exclusion or compromised achievement of the WFD objectives in other bodies of water within the same RBD	The impact of the proposed works will be direct and localised. The project will not impact on areas elsewhere in the catchment and will not impact other WFD waterbodies within the RBMP.
Objective 4: The proposed works contribute to the delivery of the WFD objectives	The proposed works will contribute to the delivery of the WFD objectives by ensuring no overall detrimental impact to the Milford Haven Inner and Cleddau and Pembrokeshire waterbodies, providing that all industry standards for pollution prevention are followed.

5 Discussion and conclusions

5.1 Assessment summary

The proposed works at Blackpool Mill, Pembrokeshire have been assessed for compliance with the WFD objectives of the Milford Haven Inner transitional and Cleddau and Pembrokeshire ground waterbodies. This assessment has been undertaken with the current design provided. Should the design or scope of the work alter significantly, this report would need to be revised to ensure the recommendations outlined in this report have been considered and to determine whether the final scheme is WFD-compliant.

5.1.1 Biological assessment

The proposed works have the potential to lead to direct and indirect localised impacts to a number of ecological receptors during the construction works. These include impacts to fish, invertebrates, macroalgae and phytoplankton through potential pollution events as well as impacts to species associated with the water bodies screened in this assessment.

The works will require only a small coffer dam and will not hinder the ability for fish to migrate through the area. No percussive techniques are proposed.

The need for a potential fish rescue has been included in a CEMP that will be approved by NRW fisheries officer before works take place.

The works will take place in the period July to end of September (inclusive) when migratory species are unlikely to be encountered.

Best practice guidance on pollution prevention and in-channel sediment control measures should be followed during temporary and permanent works construction.

However, the proposed works are not anticipated to pose a significant threat to the biological quality elements of the waterbodies, providing recommended mitigation measures are followed. These include:

- Pollution prevention: appropriate pollution prevention measures will need to be implemented during the construction phase and within the final design in line with relevant guidance and best practice. This should include appropriate sediment control procedures, reducing interaction between the waterbody and the use of drip tray and emergency spill kits.

5.1.2 Hydromorphological assessment

The proposed repair of the riverbank wall at Blackpool Mill, Pembrokeshire will have no negative impacts upon the hydromorphological quality elements in the Milford Haven Inner transitional and Cleddau and Pembrokeshire ground waterbodies.

5.1.3 Physico-chemical assessment

Provided the proposed mitigation measures detailed herein are adhered to there is no expectation that the works will lead to a deterioration in the physico-chemical and chemical quality elements of either WFD water body during either the construction or operational phases of the proposed work.

5.2 Scheme recommendations/key considerations

The impact assessment determines whether the proposed works have the potential to significantly impact any of the quality elements screened into the assessment. Any mitigation measures that need to be considered to make the works compliant with the WFD are presented in Table 4-1; however, the critical ones are listed below:

- Standard industry practices and associated measures for the management of pollution prevention are required throughout the duration of the proposed works.
- Use of plant machinery and use of cement on the riverbank should be limited to dry periods when the tide is receding.

5.3 Conclusions

The proposed works are expected to be compliant with WFD objectives if the appropriate mitigation measures described in relation to each potential impact are incorporated into the works design. The proposed works are not expected to have a significant impact on any WFD receptors and no significant short-term, or long-term impacts are predicted during the operational phases of the works.

Collectively the proposed works are not expected to contribute towards the failure or deterioration of the water bodies that have been assessed. The expectation is that the water bodies will maintain "Good" status during and following the proposed repair works.

Appendices

A Relevant Policy and Legislation

The legislation discussed below is intended as a guide only and does not replace formal legal advice.

A.1 Planning Policy

A.1.1 Planning Policy Wales (Edition 9, July 2016)

Planning Policy Wales (PPW) sets out the broad principles for the operation of the planning system in Wales. The document contains general commitments to sustainable development, the protection of biodiversity and protection of the environment as a whole. It is supplemented by a series of Technical Advice Notes (TAN) and Circulars. Together these documents comprise national planning policy in Wales, which should be taken into account by local planning authorities in the preparation of development plans and assessment of planning applications.

A.2 Legislation

A.2.1 Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 are the means by which the EC Habitats Directive (92/43/EC) is transposed in England and Wales and updates and consolidates previous legislation. This has been updated by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. These Regulations provide protection for European Protected Species (EPS) (animals and plants listed in Annexe IV Habitats Directive which are resident in the wild in Great Britain) including bats, Dormice *Muscardinus avellanarius*, Great Crested Newts *Triturus cristatus* and Otters *Lutra lutra*. The Conservation of Habitats and Species (Amendment) Regulations 2012 placed new duties on public bodies to help “preserve, maintain and re-establish habitat for wild birds”. The designation and protection of national site network sites e.g. Special Protection Areas (SPA) and Special Areas of Conservation (SAC) also falls within these Regulations. Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in carrying out their duties i.e. when determining a planning application.

A.2.2 Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part 1 of the Act deals with the protection of wildlife. KKH-JBAU-XX-XX-RP-EN-0001-Castlemartin_Corse_Preliminary_Ecological_Appraisal A-2 Most European Protected Species are now covered under the Conservation of Habitats and Species Regulations (see

above) but some activities are still covered by the WCA such as obstructing access to a bat roost. All British birds, their nests and eggs are protected in law. It is an offence to deliberately take, kill or injure any wild bird or to take, damage, or destroy any nest or egg of any wild bird under Section 1 of the Act. In addition, certain species such as the Barn Owl *Tyto alba* are included in Schedule 1 of the Act and are protected against disturbance while nesting and when they have dependent young. Offences against birds listed on Schedule 1 are subject to special penalties.

A.2.3 Natural Environment and Rural Communities Act 2006 (NERC)

The Natural Environment and Rural Communities Act (NERC) requires all public authorities, including planning authorities to have regard to the purpose of conserving biodiversity whilst carrying out their normal functions. The NERC Act includes lists of Habitats and Species of Principal Importance (HPIs and SPIs) to the conservation of biodiversity (Section 42) which should be considered in the implementation of duties under the NERC Act. In line with government circular 06/2005 (ODPM, 2005) which provides supplementary guidance, the presence of a Priority species may be a material consideration when a planning authority is considering a development proposal. The HPI and SPI listed under the NERC Act are largely also UK BAP Priority habitats and species. The UK Post-2010 Biodiversity Framework succeeds the UK BAP partnership; though its list of Priority species and habitats agreed under the UK BAP still form the basis of much biodiversity work in the UK. Although the UK BAP has been succeeded, Species Action Plans (SAPs) developed under the UK BAP still remain important and valuable reference sources for background information on Priority species under the UK Post-2020 Biodiversity Framework.

A.2.4 Biodiversity Strategies

Habitats and Species of Principal Importance (HPI and SPI) listed under the NERC Act are largely also UK BAP Priority habitats and species. The UK Post-2010 Biodiversity Framework succeeds the UK BAP partnership; though its list of Priority species and habitats agreed under the UK BAP still form the basis of much biodiversity work in the UK. The Welsh Biodiversity Strategy, 'Environment Strategy for Wales' was published in 2006 and explains how Wales will tackle the challenge it faces over the next 20 years. The Environment (Wales) Bill was introduced in May 2015 and creates legislation needed to plan and manage Wales' natural resources in a more sustainable and joined-up way. Following on from the introduction of the Bill 'A Snapshot of the State of Wales' Natural Resources' was produced. This report was prepared to inform the passage of the Environment Bill through the National Assembly. Although the UK BAP has been succeeded, Species Action Plans (SAPs) developed under the UK BAP still remain important and valuable reference sources for background information on Priority species under the UK Post-2010 Biodiversity Framework.

A.2.5 Invasive Non-Native Species

Certain non-native invasive plant species are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to plant them in the wild or otherwise cause them to grow in the wild. The Wildlife and Countryside Act 1981 (Variation of Schedule 9) (England and Wales) Order 2010 added a number of plant species to the list including Himalayan Balsam *Impatiens glandulifera*, Montbretia *Crocasmia x crocosmiiflora*, Rhododendron *Rhododendron ponticum* and Wall Cotoneaster *Cotoneaster horizontalis*. The Environmental Protection Act 1990 has limited provisions for non-native invasive species but is included here due to the classification of soil and other waste containing viable propagules of invasive non-native plant species as controlled waste. This has been applied to Japanese Knotweed *Fallopia japonica* and Giant Hogweed *Heracleum mantegazzianum* with the result that waste containing these species must be disposed of in accordance with the duty of care set out in section 34 of the Act.

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