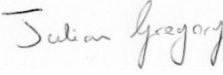


2024

**Carmarthen Swing Bridge
– Fender Removal
Water Framework Directive (WFD)
Assessment**





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CONTENTS

1.	Introduction.....	4
1.2	Project Background.....	4
2.	Introduction to the water framework directive.....	5
2.1	The Water Framework Directive	5
2.2	Scope of this assessment	5
2.3	Determination of Good Status.....	6
3.	Assessment Methodology.....	7
3.1	Methodology.....	7
4.	Description of The Proposed Activities.....	8
4.1	Method Overview – Masonary Wall Repairs	8
4.2	Fender Removal Works.....	9
5.	Baseline conditions.....	12
5.1	WDF Status of Waterbodies	12
6.	Water Framework Directive assessment: scoping for activities in estuarine and coastal waters.....	16
6.1	Section 1: Hydromorphology.....	16
6.2	Section 2: Biology, Habitat & Fish	17
6.3	Designated Sites within the influence of the Afon Tywi.....	24
6.4	Economic Activities – Fisheries	25
6.5	Section 3: Water quality.....	27
6.6	Section 4: WFD protected areas.....	30
6.7	Section 5: Invasive non-native species (INNS).....	31
6.8	Summary of WFD Pre-Assessment findings	32
7.	Proposed Project Mitigation	34
7.1	Construction Phase Mitigation	34
8.	WFD Conclusion	37



FIGURES

Figure 1: Project Location.	4
Figure 4: Access ramp to pathway and location for mobile and small welfare units.	8
Figure 5: Ramp to be used at Carmarthen rowing club for support boat.	8
Figure 6: Indicative route of Bullo Marine Vessel, chartered by Kaymac.	9
Figure 7: Example of one of the downstream fenders (all fenders are to be removed in sequence).	10
Figure 7: TYWI & TAF & GWENDRAETH - THREE RIVERS ESTUARY WFD Habitat Lower Sensitivity (www.magic.gov.uk)	17
Figure 8: TYWI & TAF & GWENDRAETH - THREE RIVERS ESTUARY WFD Habitat Higher Sensitivity (www.magic.gov.uk)	18
Figure 9: Carmarthen Bay WFD Habitat Lower Sensitivity (www.magic.gov.uk)	20
Figure 10: Carmarthen Bay WFD Habitat Higher Sensitivity (www.magic.gov.uk)	21
Figure 11: Designated Site Map in relation to the project area	24
Figure 12: Location of Fisheries and Fishing Activity in proximity to works.	25

TABLES

Table 1: Summary of the WFD status of the water bodies with potential to be influenced by the proposed works	13
Table 2: Summary table to find out the hydromorphology status of the water body, if it is classed as heavily modified and for what use.	16
Table 3: Water body summary table and Magic maps, or other sources of information if available, to find the location and size of these habitats.	19
Table 4: Carmarthen Bay Water body summary table and Magic maps, or other sources of information if available, to find the location and size of these habitats.	22
Table 5: Biology.....	23
Table 6: Potential fish species at risk from your activity, but only if your activity is in an estuary or could affect fish in or entering an estuary.	26
Table 7: Water body summary table to find information on phytoplankton status and harmful algae.	27
Table 8: Assessing whether water quality is at risk from your activity through the use, release or disturbance of chemicals.	29
Table 9: Assessing whether project falls within mixing zone.	29
Table 10: Location of protected areas in your water body (and adjacent water bodies) within 2km of your activity.	30
Table 11: Risk from INNS.	31
Table 12: Summary of Pre-Assessment Stage Findings.....	32
Table 13: Water Framework Directive (WFD) Assessment for the Carmarthen Carboniferous Coal Measures groundwater waterbody	33
Table 14: Proposed Mitigation Matrix.....	34



1. INTRODUCTION

- 1.1.1 EcoVigour was instructed by Dyer & Butler – Rail Division to undertake a Water Framework Directive Assessment (WFD) for proposed removal of defunct timber fencers from Carmarthen Swing Bridge on behalf of Network Rail (NR).
- 1.1.2 The purpose of this assessment is to assess the potential impacts of the works associated with the Proposed Scheme and whether these could prevent the Afon Tywi and associated surface and groundwater bodies, achieving their WFD Targets. This assessment includes a summary of the current local conditions and, where appropriate, identifies mitigation measures for any likely significant effects (LSE) that may arise as part of the construction and operation of the Proposed Scheme.
- 1.1.3 This WFD Assessment is required to demonstrate that the proposed works will not result in deterioration in the water body status of the Afon Tywi and adjoining water bodies or prevent them from meeting their Water Framework Directive objectives.
- 1.1.4 The Afon Tywi discharges into Carmarthen Bay, which becomes part of the Bristol Channel Outer North and associated Bathing Waters.

1.2 PROJECT BACKGROUND

- 1.2.1 Known as the White Railway Bridge, the rail structure is a standard metallic pier support rail bridge in combination with a Bascule component situated on the western shore of the Tywi. Up and down stream of the structure are now redundant timber constructed fenders. Once important as an additional defence and navigation aide during periods of high vessel traffic along the Tywi.
- 1.2.2 These fenders are no longer required and present a navigational hazard and potential constriction point for debris flowing from upstream sections of the Tywi. Dyer & Butler Rail Division, working with Kaymac have been commissioned by Network Rail to remove the fenders at the earliest opportunity.

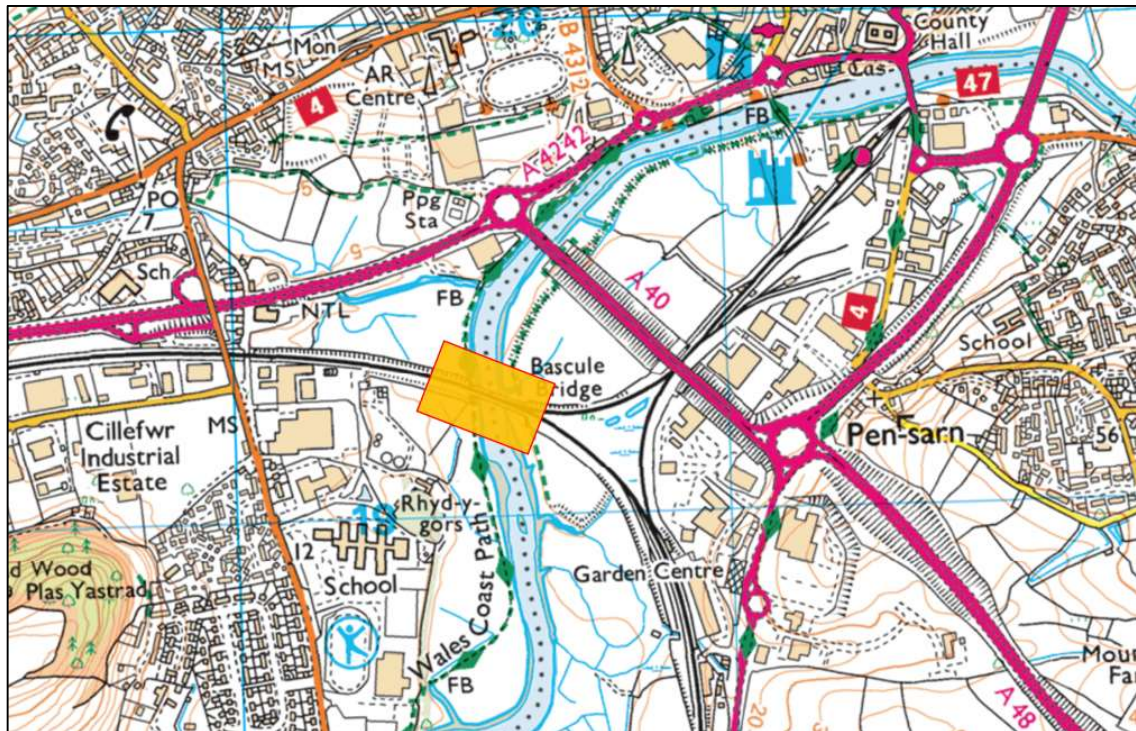


Figure 1: Project Location.



2. INTRODUCTION TO THE WATER FRAMEWORK DIRECTIVE

2.1 THE WATER FRAMEWORK DIRECTIVE

- 2.1.1 The Water Framework Directive (WFD) (Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000) is a European Union Directive which committed member states to achieve good qualitative and quantitative status of all water bodies by 2015. Under the Directive water bodies are defined as all ground and surface waters, including rivers, lakes, transitional waters and coastal waters (up to one nautical mile from shore).
- 2.1.2 It was not possible to achieve good status of all water bodies by 2015; therefore, outstanding water bodies had objectives set for 2021 or 2027. Interim assessments were undertaken in 2018.
- 2.1.3 The WFD is transposed into law in England and Wales by The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (the 2017 Regulations). These revoke and replace The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (subject to transitional provisions in article 38 of the 2017 Regulations).

2.2 SCOPE OF THIS ASSESSMENT

- 2.2.1 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 of 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.
- 2.2.2 This WFD Assessment considers all activities that will take place as part of the proposed scheme, during both construction and operation, and identifies the potential risks associated with these activities and the WFD receptors that are at risk.
- 2.2.3 The NRW guidance includes detailed screening criteria that can be used to determine whether a proposed activity is not likely to cause a deterioration in the status of a waterbody. This includes a list of activities that in general will not cause a deterioration, such as 'temporary' works that do not normally last more than six months and are not likely to have a residual impact on a waterbody. The guidance also lists other physical works and defines screening thresholds for each; these thresholds help to determine whether any activity presents a risk to a waterbody and any requirements for further assessment. However, these thresholds are for guidance only and expert judgement is required to determine if a proposed activity may have an impact on a waterbody.
- 2.2.4 Published guidance also states that the assessment must consider the potential for impacts on the following:
- ◆ Protected Areas – these are defined under Article 6 of the Directive.
 - ◆ Priority Habitats – these are 'habitats of principal importance for conservation and biodiversity', which are defined under Section 41 of a Natural Environment and Rural Communities (NERC) Act 2006 in England and Section 7 of the Environment (Wales) Act 2016 in Wales.
 - ◆ Invasive non-native species (INNS) – assessment of INNS is required if a development could cause the introduction or spread of INNS to a waterbody.



- 2.2.5 A detailed Compliance Assessment would be required if it cannot be concluded that the scheme 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 Article 4.7 test to seek approval for progression of the scheme if after the full WFD

2.3 DETERMINATION OF GOOD STATUS

- 2.3.1 Good status is determined from the ecological and chemical status of surface waters. These statuses are assessed according to the following criteria:
- ◆ Biological quality (fish, benthic invertebrates, aquatic flora);
 - ◆ Hydromorphological quality (e.g. riverbank structure, river continuity and substrate of the riverbed); and
 - ◆ Physical-chemical quality (e.g. temperature, oxygenation and nutrient conditions).
- 2.3.2 The chemical quality refers to environmental quality standards for river basin specific pollutants. These standards specify maximum concentrations for specific water pollutants. The WFD works on a 'one out, all out' basis, so if one such concentration is exceeded, then the water body will not be classed as having a good status. The chemical status of surface waters is therefore classified as good or fail.
- 2.3.3 The ecological status of surface waters is classified as being high, good, moderate, poor or bad, whilst water bodies that have been modified (e.g. canals or contain significant flood defences) are classed as 'Heavily Modified Water bodies' (HMWB) and have to reach at least good potential by their objective year.



3. ASSESSMENT METHODOLOGY

3.1 METHODOLOGY

3.1.1 This WFD Assessment was completed using the following methodology:

- ◆ The collection of baseline data to identify the current status, as well as future baseline and ability of the water bodies within and in close proximity to the proposed works to meet the WFD objectives;
- ◆ A consultation with relevant authorities;
- ◆ The review of the proposed works and the potential impacts to the identified surface and groundwater bodies; this involves identifying the impacts that could reduce the WFD status and affect the ability of the water bodies to meet the objectives of the WFD;
- ◆ The consideration of mitigation that can be included in the design, and
- ◆ The provision of an assessment of residual risks.



4. DESCRIPTION OF THE PROPOSED ACTIVITIES

Please note, this section mirrors that of the Habitat Regulations Assessment within this Band 2 License.

4.1 METHOD OVERVIEW – MASONARY WALL REPAIRS

- 4.1.1 This subsection details the equipment, general condition of the fenders, mean of access, and broad method of works outlined within the formal method statement. Please see Appendix C for fall Dyer & Butler Kaymac method statement.

Access to Site:

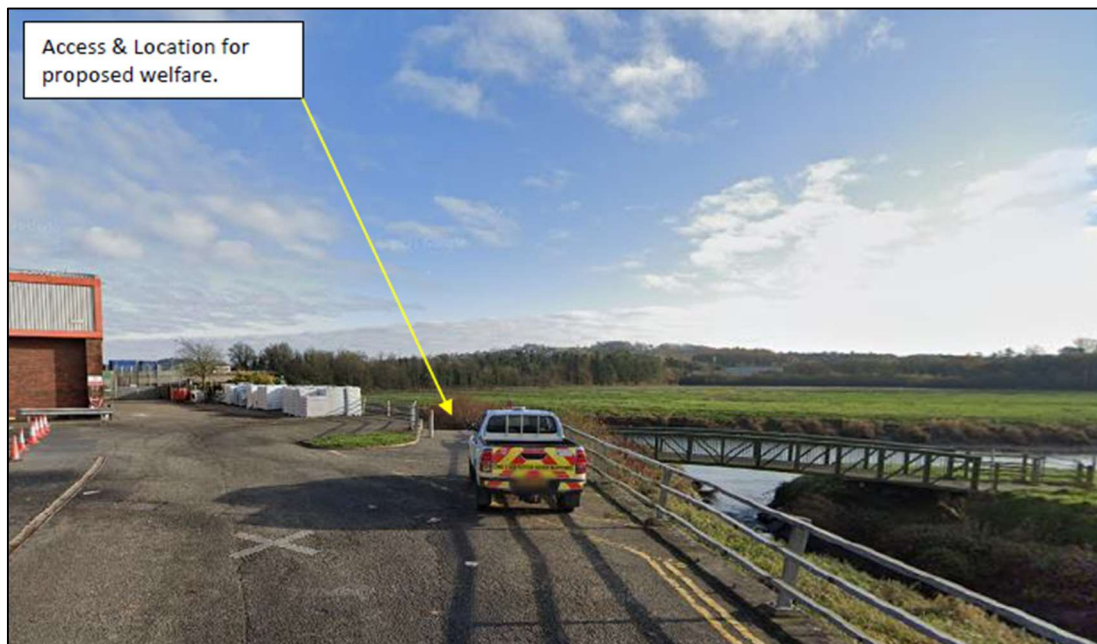


Figure 2: Access ramp to pathway and location for mobile and small welfare units.



Figure 3: Ramp to be used at Carmarthen rowing club for support boat.



Figure 4: Indicative route of Bullo Marine Vessel, chartered by Kaymac.

4.2 FENDER REMOVAL WORKS

- 4.2.1 Upon receipt of marine license and confirmation from Network Rail to proceed. Weather dependant Bullo Marine Ltd. Will mobilise from Bullo Pill, Newham (GL14 1ED) on the, with the view of arriving at Carmarthen Swing Bridge two days later.
- 4.2.2 The Kaymac team will also mobilise to site on the morning of the likely arrival date and liaise with the skipper and deck hand. The scope and methodology will be discussed and agreed prior to the commencement of the debris removal.
- 4.2.3 Before commencing any work, the Kaymac Site Supervisor will contact the Dyer & Butler's responsible persons. The Kaymac Site Supervisor will carry out a safety briefing informing the site team of everyone's roles and responsibilities, emergency procedures in the event of an on-site incident, and the hazards and control measures relevant to the tasks required. All personnel in attendance will be required to sign the Briefing Attendance Record in section 9.0 of the method statement (see attachments)
- 4.2.4 If they haven't done so already, Bullo Marine Ltd. will orientate their working platform so that the works can commence. Bullo Marine Ltd. are to instruct Kaymac on the appropriate location of the working platform. Both Kaymac and Bullo Marine Ltd. are then to jointly confirm that the working platform is a sufficient distance from the fender and Carmarthen Bridge.



4.2.5 It is assumed that the working platform will be in the location denoted in the images below:

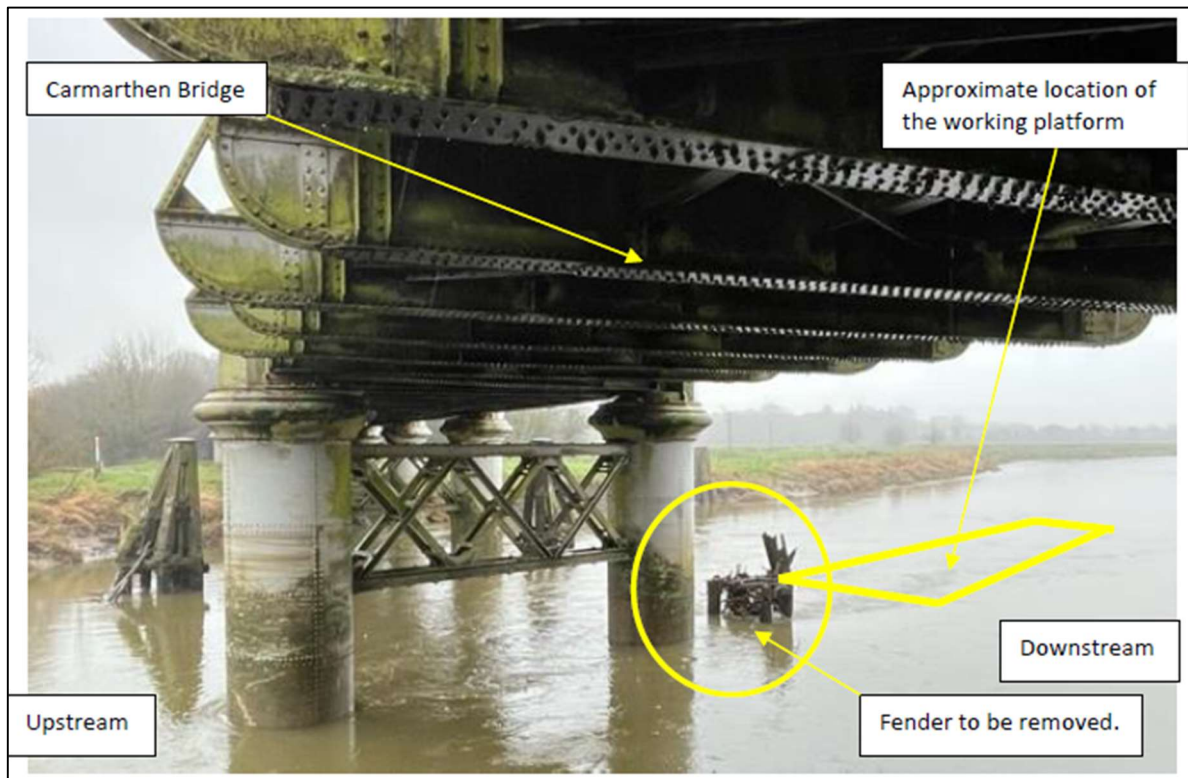


Figure 5: Example of one of the downstream fenders (all fenders are to be removed in sequence).

- 4.2.6 While the platform is being prepared for the demolition works, Kaymac operatives will make their way to Carmarthen Rowing Club and launch the safety boat. The safety boat along with 2 No. boat operatives will then make their way to Carmarthen Bridge. Prior agreement to use the rowing club as a means of access for the safety boat will be undertaken by Dyer & Butler. Kaymac operatives utilising the safety boat will ensure that they don all the relevant PPE before launching. The safety boat will then make its way downstream to Carmarthen Bridge.
- 4.2.7 Before the demolition work commence, the safety boat team are to inspect and subsequently photograph the condition of the Carmarthen Bridge pier. With the working platform now prepared to conduct its demolition works, the safety boat will position itself a sufficient distance outside the slue radius of the platforms onboard excavator and away from any perceived demolition risks.
- 4.2.8 Bullo Marine Ltd. and Kaymac are to agree on the location of the safety boat, when considering the slue radius of the excavator, risks associated with demolition and river conditions. Bullo Marine Ltd. are to be always made aware of the safety boat. Two-way radios are to be used to communicate any required movements.
- 4.2.9 It is worth noting that the safety boat will also carry out a watching brief throughout the work. Ensuring that the Network Rail asset (Carmarthen Swing Bridge) is not in any way damaged.
- 4.2.10 Utilising the hydraulic saw on the excavator, Bullo Marine will then begin its demolition of the fender, ensuring that the fender is cut incrementally, and that all debris is pulled downstream of Carmarthen Bridge. The above water elements will be cut first, followed by the lower elements. To cut the lower elements, Bullo Marine Ltd. will use a falling tide.



- 4.2.11 The safety boat is to continue its inspection of the Carmarthen Bridge's downstream pier throughout the demolition works. As noted above photographs of the pier will be taken at regular intervals.
- 4.2.12 All sections of the fender along with any debris trapped within the fender will as far as reasonably practicable will be retrieved and placed within the working platform for offsite removal.
- 4.2.13 As noted above, the safety boat personnel will provide a watching brief throughout the demolition work ensuing that Carmarthen Bridge is not damaged.
- 4.2.14 The above will be repeated until the upper elements of the fender are removed. The safety boat is to make its way back to Carmarthen Rowing Club at the end of each working shift where it will either be moored overnight or removed from the water all together. Conversely, the safety boat will be launched at the start of each working shift. The safety boat must be in position before any demolition works at Carmarthen Bridge can commence.
- 4.2.15 When considering the lower fender elements i.e. sections interfacing closely with the river invert, Bullo Marine Ltd. will as far as reasonably practicable cut them as closely to the invert as possible.
- 4.2.16 Dyer & Butler are to confirm their acceptance of the level of the fender elements in relation to the invert before demobilising from site. Furthermore, and following the regular inspections carried out by the safety boat team, Dyer & Butler are also to confirm that the bridge has not in any way been adversely affected by the demolition work. The above must be confirmed before demobilising.
- 4.2.17 If possible, and at low tide the safety boat team may be required to confirm the extents of the remaining piles within the watercourse. This will be carried out from within the safety boat only.
- 4.2.18 On completion of the works, the safety boat operatives will make their way back to Carmarthen Rowing Club and continue demobilising. Kaymac are to notify Dyer & Butlers Responsible Persons that the works are complete.
- 4.2.19 Simultaneously, and given adequate tides, Bullo Marine Ltd. will also demobilise from site. Furthermore, remaining onsite elements such as the welfare will also be demobilised. Kaymac are to ensure that site is left clean and tidy.



5. BASELINE CONDITIONS

5.1 WDF STATUS OF WATERBODIES

- 5.1.1 Data on the location and status of WFD waterbodies and WFD Protected Areas has been obtained from the Water Watch Wales website (Waterwatchwales.naturalresourceswales.gov.uk) and the Multi-Agency Geographic Information for the Countryside (MAGIC) website (magic.defra.gov.uk/MagicMap.aspx)
- 5.1.2 The following WFD surface waterbodies are in proximity of the proposed scheme:
- ◆ TYWI & TAF & GWENDRAETH - THREE RIVERS ESTUARY - (GB531006013400)
 - ◆ Carmarthen Bay - (GB611008590002)
- 5.1.3 Table 1 (below) presents summary information on the current WFD status of each of the constituent quality elements of the waterbodies downstream of the works. This information has been obtained from the Water Watch Wales website. Each of the quality elements will be assessed to determine whether the proposed scheme has the potential to adversely affect their status.
- 5.1.4 Only one groundwater waterbody, the Tywi, Taf and Gwendraeths (GB41002G200500) is located within the project area. It has a Quantitative Status of Moderate. Potential for the proposed scheme to impact groundwater is considered in Section 15.



Table 1: Summary of the WFD status of the water bodies with potential to be influenced by the proposed works

Waterbody name, ID, Type, Management Catchment, River Basin District.	Hydro-morphological designation	Current overall status & objectives	Biological elements	Physico-chemical elements	Water body Protected Area Links
TYWI & TAF & GWENDRAETH - THREE RIVERS ESTUARY (GB531006013400) Type: Transitional (Estuary) Man Catchment: Carmarthen Bay and the Gower TraC Area Name: South West Wales;Marine	Designated as Natural Morphology = Not High Hydrological Regime = Not High Mit Assessment = NA	Current overall status = Moderate;	Fish = Not assessed Invertebrates = Good Infaunal Quality Index (IQI) = Good Phytoplankton = Moderate Angiosperm = High Salt Marsh = High Sea Grass = NA Macroalgae = High Opportunistic Macroalgae = High	Dissolved Inorganic Nitrogen (DIN) = Moderate Dissolved oxygen = High Annex 8 Chemicals = High Arsenic = High Copper = High Iron = High Toluene = High UI_NH3 (Un-ionised ammonia) = High Zinc = High Chem_PHZ = High Cadmium = High Hex_chl_cx = High Nonylphenol = High Benzene = High Dichlo_1_2 = High Dichlometh = High Lead = High Nickel = High Tri_chl_mh = High Carb_tetra = High DDT_total = High Drins = High Pa_pa_DDT = High Tet_chl_ee = High Tri_chl_ee = High	Protected Area = No Bathing Waters = No Special Protection Area = Yes Drinking Water Protected Area = No Special Area of Conservation = Yes Nitrate Vulnerable Zone = No Shellfish Water = Yes



Waterbody name, ID, Type, Management Catchment, River Basin District.	Hydro-morphological designation	Current overall status & objectives	Biological elements	Physico-chemical elements	Water body Protected Area Links
Name: Carmarthen Bay ID: GB611008590002 Type: Coastal Man Catchment: Carmarthen Bay and the Gower TraC RBD: Western Wales Area Name: Marine; South West Wales	Designated as Natural	Current overall status = Moderate;	Driving_Element = Mercury;BDPE Calc;Phytoplank Fish = Not assessed Invertebrates = Good Infauanal Quality Index (IQI) = Good Imposex = Good Phytoplankton = Moderate Angiosperm = No Data Salt Marsh = No Data Sea Grass = No Data Macroalgae = Good Opportunistic Macroalgae = No Data RSMac_Sub = Good	Dissolved Inorganic Nitrogen (DIN) = Good Dissolved oxygen = High Annex 8 Chemicals = High Arsenic = High Copper = High Iron = High Permethrin = High Toluene = High UI_NH3 (Un-ionised ammonia) = High Zinc = High Chem_PHZ = Moderate Anthracene = High BDPE_Calc = Moderate Cadmium = High Dioxins = High Endosulfan = High HBCDD = High Hex_chl_bz = High Hex_chl_cx = High Mercury = Moderate Nonylphenol = High PAH = High Pen_chl_bz = High PerfluSulp = High TBT_annx10 = High Chem_PR = High Benzene = High Cypermeth = High Dichlo_1_2 = High Dichlometh = High Dichlorvos = High Flourthene = High Lead = High Napthalene = High Nickel = High Octylphen = High Tri_chl_bz = High	Protected Area = Yes Bathing Waters = Yes Special Protection Area = Yes Drinking Water Protected Area = No Special Area of Conservation = Yes Nitrate Vulnerable Zone = No Shellfish Water = No



				Tri_chl_mh = High DDT_total = High Drins = High Tet_chl_ee = High	
--	--	--	--	--	--

Waterbody name, ID, Type, Management Catchment, River Basin District.	Hydro-morphological designation	Current overall status & objectives	Biological elements	Physico-chemical elements	Water body Protected Area Links
Name: Tywi, Taf and Gwendraeths ID: GB41002G200500 Type: Groundwater RBD: Western Wales Area Name: South West Wales	Not Designated A/HMWB	Current overall status = Poor;	Driving_Element: GWSW_chem	GWQn = Good GWDTE_abs = Good GWSW_abs = Good SI_abs = Good WB_abs = Good GWCh = Poor DrWPA = Good GCT = Good GWDTE_chem = Good GWSW_chem = Poor SI_chem = Good Trend_GW = High	Protected Area = Yes Special Protection Area = No Drinking Water Protected Area = Special Area of Conservation = No Nitrate Vulnerable Zone = No



6. WATER FRAMEWORK DIRECTIVE ASSESSMENT: SCOPING FOR ACTIVITIES IN ESTUARINE, RIVER AND COASTAL WATERS

Consider the potential risks of your activity to each of these receptors: hydromorphology, biology (habitats and fish), water quality and protected areas. Also consider invasive non-native species (INNS).

6.1 SECTION 1: HYDROMORPHOLOGY

6.1.1 The first stage is to consider if there is hydromorphology at risk from your activity.

Table 2: Summary table to find out the hydromorphology status of the water body, if it is classed as heavily modified and for what use.

Consider if your activity:	Hydromorphology risk issue(s)
Could impact on the hydromorphology (for example morphology or tidal patterns) of a water body at high status	The Afon Tywi does not have high hydromorphological status. The river is classed as being heavily natural, however the section in which the works are being undertaken is part of a modified western shore where flood defences are present close to Carmarthen centre upstream of the rail structure. There will be a reduction in the overall manmade footprint within this section of the watercourse. This impact has been assessed as negligible / slight beneficial.
Could significantly impact the hydromorphology of any water body	Please see above - No impacts on any other water bodies.



6.2 SECTION 2: BIOLOGY, HABITAT & FISH

6.2.1 The second stage is to consider if habitats, Biology and Fish Species are at risk from your activity. The figures and tables below illustrate and discuss the features present within the relevant units.

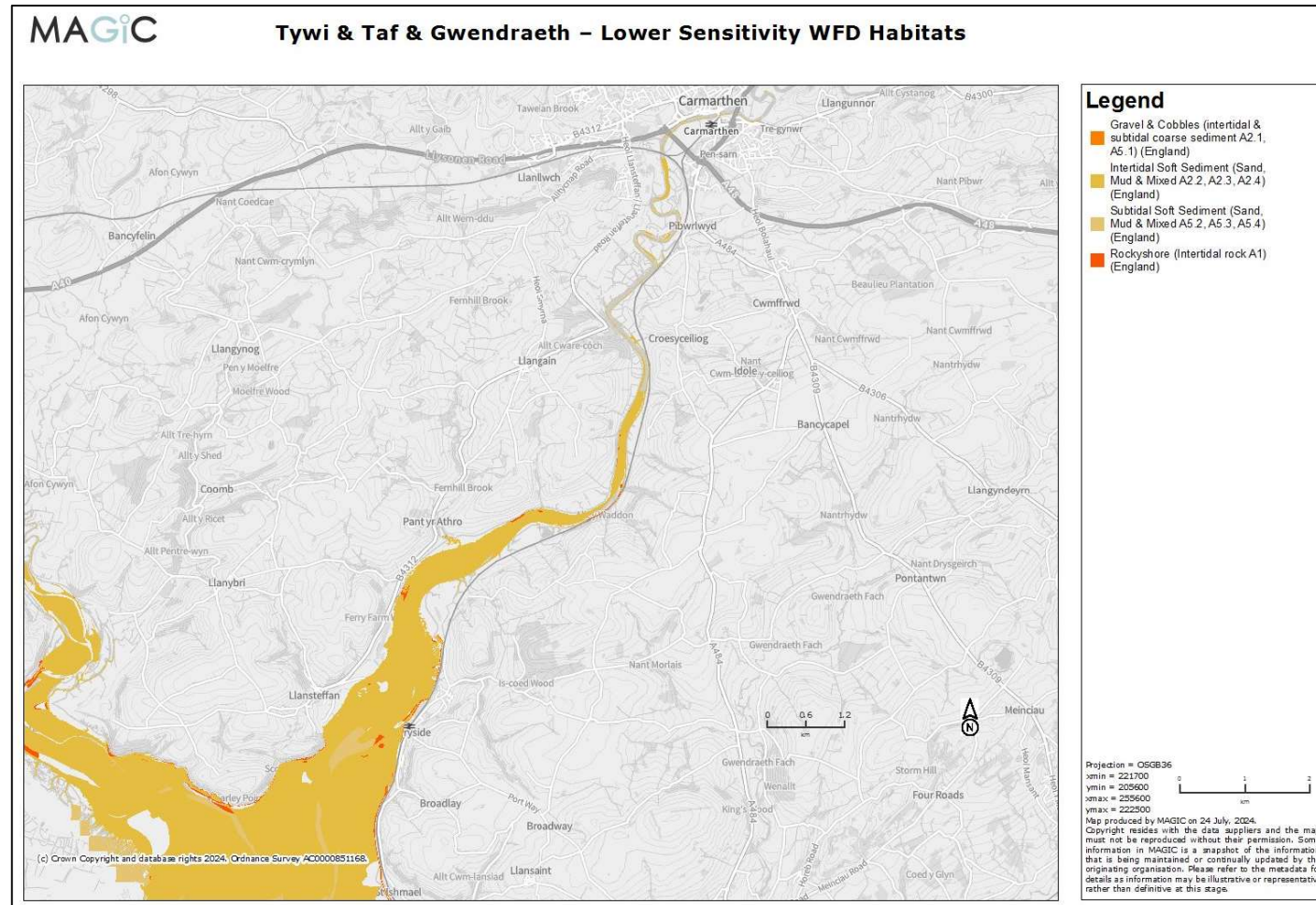


Figure 6: TYWI & TAF & GWENDRAETH - THREE RIVERS ESTUARY WFD Habitat Lower Sensitivity (www.magic.gov.uk)

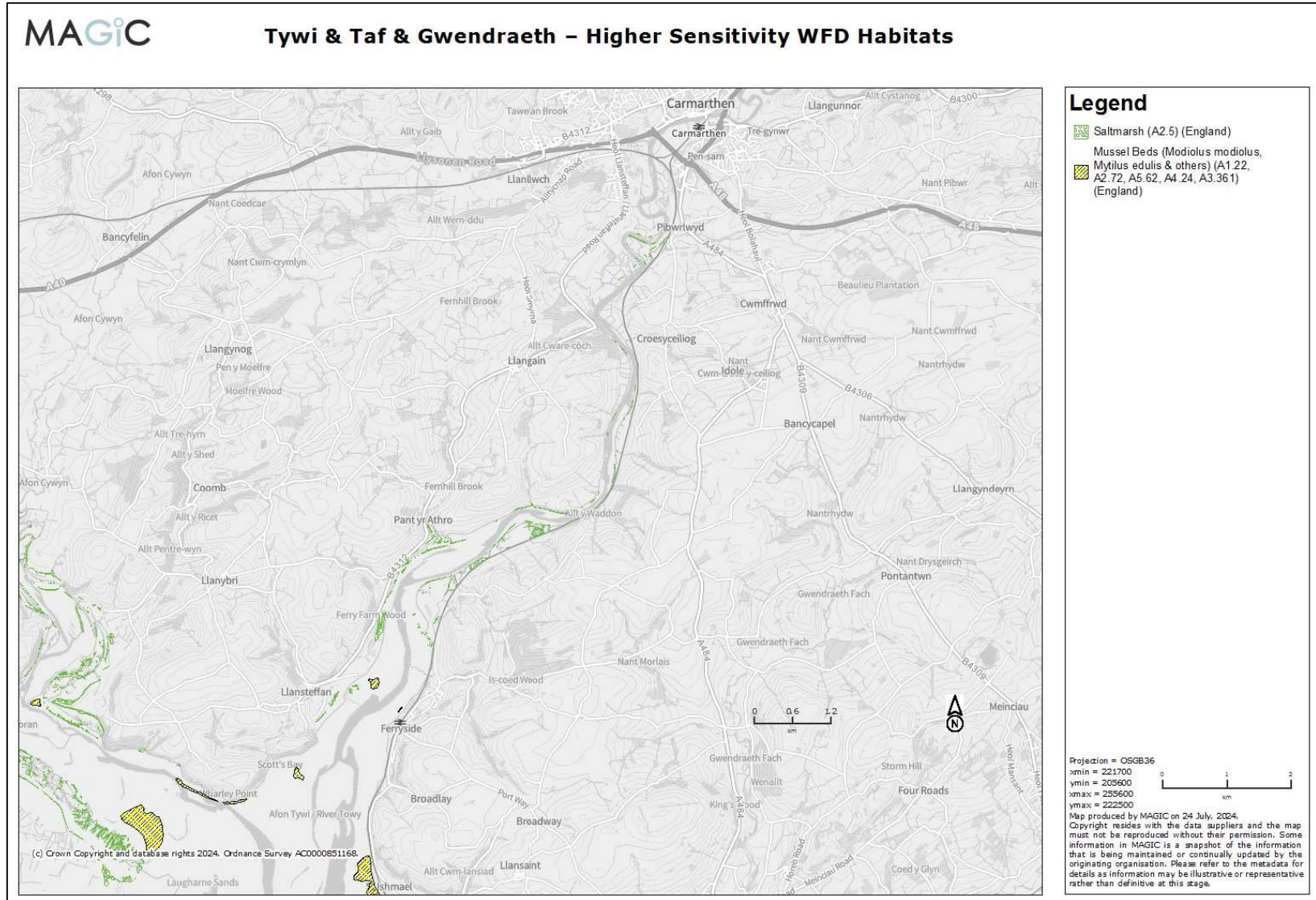


Figure 7: TYWI & TAF & GWENDRAETH - THREE RIVERS ESTUARY WFD Habitat Higher Sensitivity (www.magic.gov.uk)



6.2.2 The following tables below outlined the features and potential impact vectors. Note: Higher sensitivity habitats have a low resistance to, and recovery rate, from human pressures. Lower sensitivity habitats have a medium to high resistance to, and recovery rate from, human pressures.

Table 3: Water body summary table and Magic maps, or other sources of information if available, to find the location and size of these habitats.

Area Name & ID		TYWI & TAF & GWENDRAETH - THREE RIVERS ESTUARY (GB531006013400)	
Higher sensitivity habitats		Lower sensitivity habitats	
Potential Impacts	Habitat Type	Potential Impacts	Potential Impacts
Saltmarsh (A2.5)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.	Gravel & Cobbles (intertidal & subtidal coarse sediment A2.1, A5.1)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.
Mussel Beds (Modiolus modiolus, Mytilus edulis & others) (A1.22, A2.72, A5.62, A4.24, A3.361)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.	Intertidal Soft Sediment (Sand, Mud & Mixed A2.2, A2.3, A2.4)	Direct impact in the form of vehicle movement over this harder substrate to access the structure Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.
		Subtidal Soft Sediment (Sand, Mud & Mixed A5.2, A5.3, A5.4)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.
		Rockyshore (Intertidal rock A1)	Direct impact in the form of vehicle movement over this harder substrate to access the structure Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.

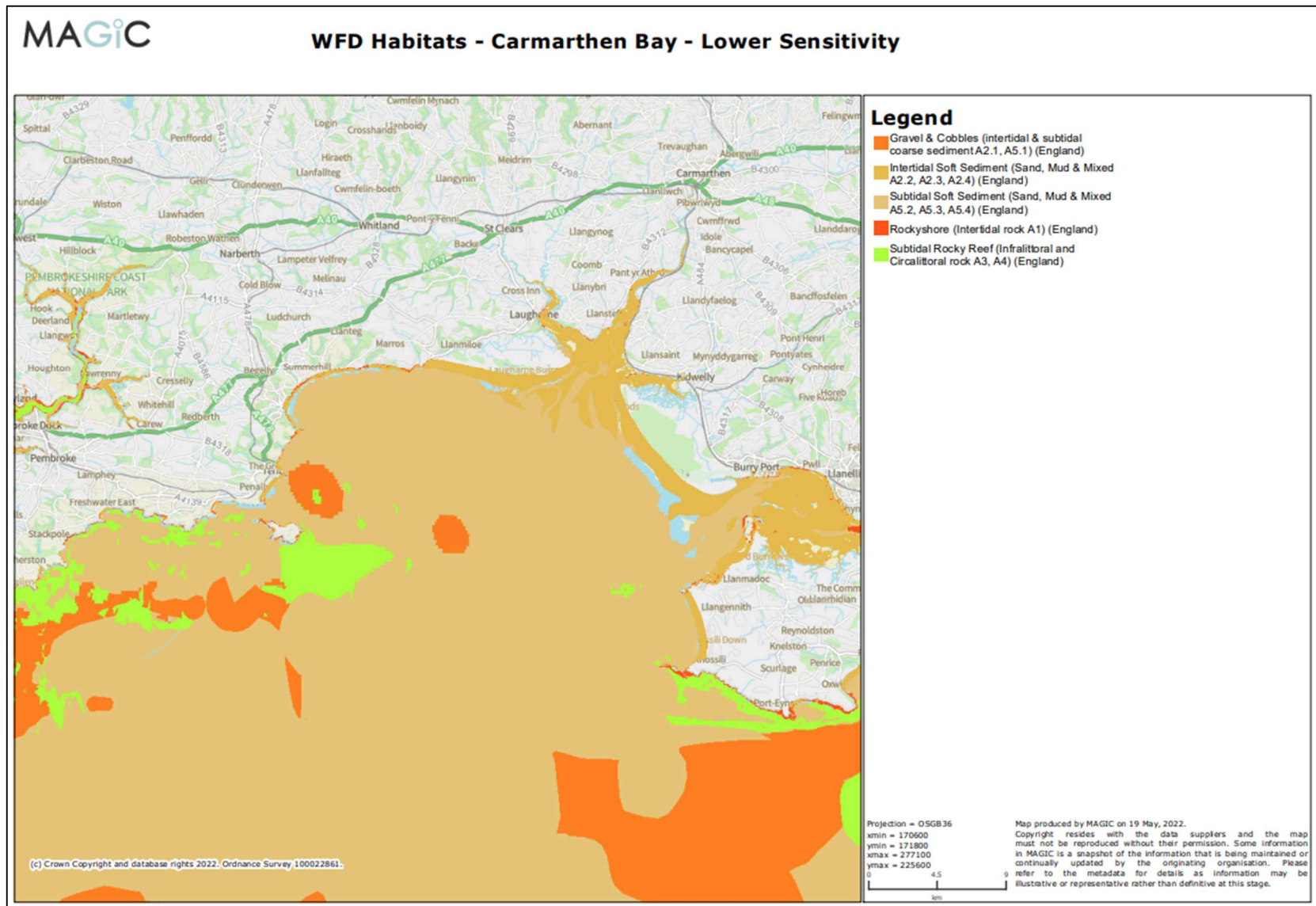


Figure 8: Carmarthen Bay WFD Habitat Lower Sensitivity (www.magic.gov.uk)

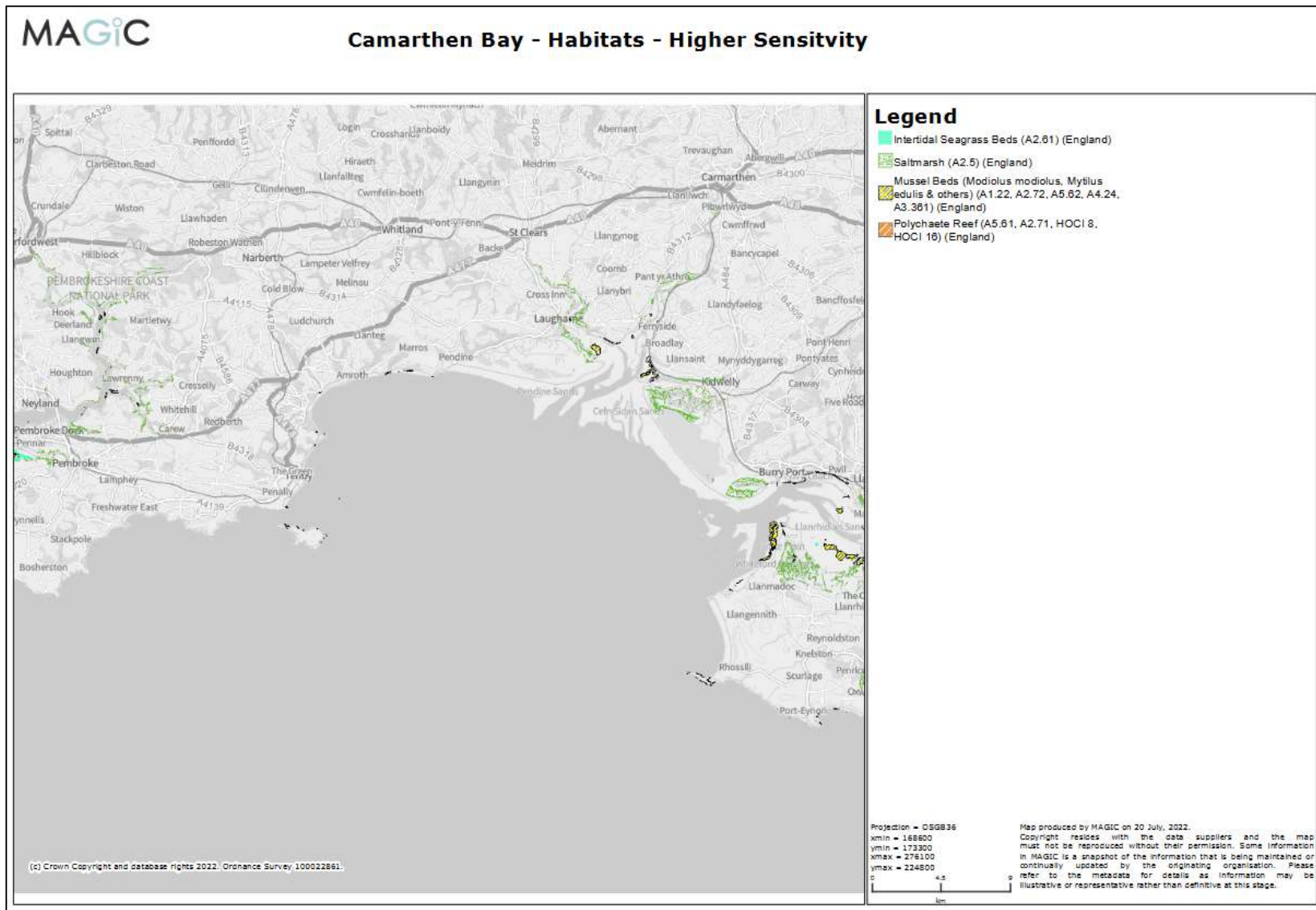


Figure 9: Camarthen Bay WFD Habitat Higher Sensitivity (www.magic.gov.uk)



Table 4: Carmarthen Bay Water body summary table and Magic maps, or other sources of information if available, to find the location and size of these habitats.

Area Name & ID		Carmarthen Bay (GB611008590002)	
Higher sensitivity habitats		Lower sensitivity habitats	
Potential Impacts	Habitat Type	Potential Impacts	Potential Impacts
Intertidal Seagrass Beds (A2.61)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.	Gravel & Cobbles (intertidal & subtidal coarse sediment A2.1, A5.1)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.
Saltmarsh (A2.5)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.	Intertidal Soft Sediment (Sand, Mud & Mixed A2.2, A2.3, A2.4)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.
Mussel Beds (Modiolus modiolus, Mytilus edulis & others) (A1.22, A2.72, A5.62, A4.24, A3.361)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.	Subtidal Soft Sediment (Sand, Mud & Mixed A5.2, A5.3, A5.4)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.
		Subtidal Rocky Reef (Infralittoral and Circalittoral rock A3, A4)	Potential for indirect impacts due to chemical and hydrocarbon emissions from the works, if sufficient controls are not put in place.



Table 5: Biology.

Consider if the footprint ⁴ of your activity is:	Biology habitats risk issue(s)
0.5km ² or larger	The working footprint of the 3454m ² or 0.34ha
1% or more of the water body's area	The Afon Tywi SAC section of the Tywi alone covers an area of approximately 375ha. The footprint of the works is therefore significantly less than 1% of the rivers area.
Within 500m of any higher sensitivity habitat	Works will be undertaken within 500m of the following designated sites: ◆ Afon Tywi - Special Area of Conservation (SAC) ◆ Afon Tywi – Site of Special Scientific Interest (SSSI) In terms of Higher Sensitivity habitats, the works are located beyond 500m upstream of the closest mapped saltmarsh habitats.
1% or more of any lower sensitivity habitat	The works footprint, including temporary works areas is substantially less than 1% of lower sensitivity habitats.

⁴ Note that a footprint may also be a temperature or sediment plume. For dredging activity, a footprint is 1.5 times the dredge area.



6.3 DESIGNATED SITES WITHIN THE INFLUENCE OF THE AFON TYWI

6.3.1 There are 3 statutory designated sites within 3km of the project boundary which are linked downstream of the Afon Tywi:

- ◆ Afon Tywi - Special Area of Conservation (SAC)
- ◆ Carmarthen Bay and Estuaries - Special Area of Conservation (SAC)
- ◆ Afon Tywi – Site of Special Scientific Interest (SSSI)

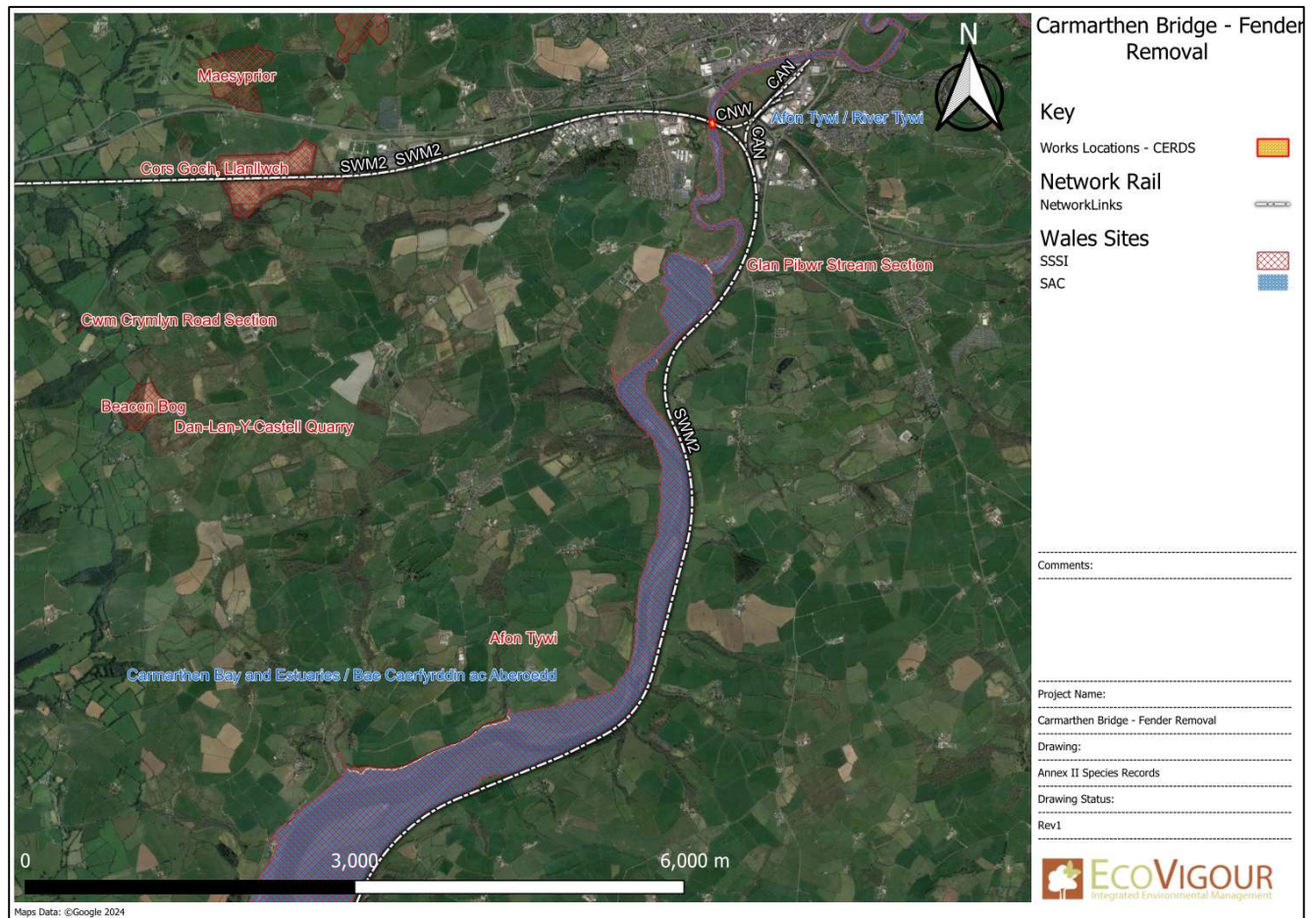


Figure 10: Designated Site Map in relation to the project area

6.3.2 There are additional terrestrial Statutory and Non-statutory sites within proximity to the project, however these are unlikely to be influenced by the projects small footprint and are omitted from this assessment.



6.4 ECONOMIC ACTIVITIES – FISHERIES

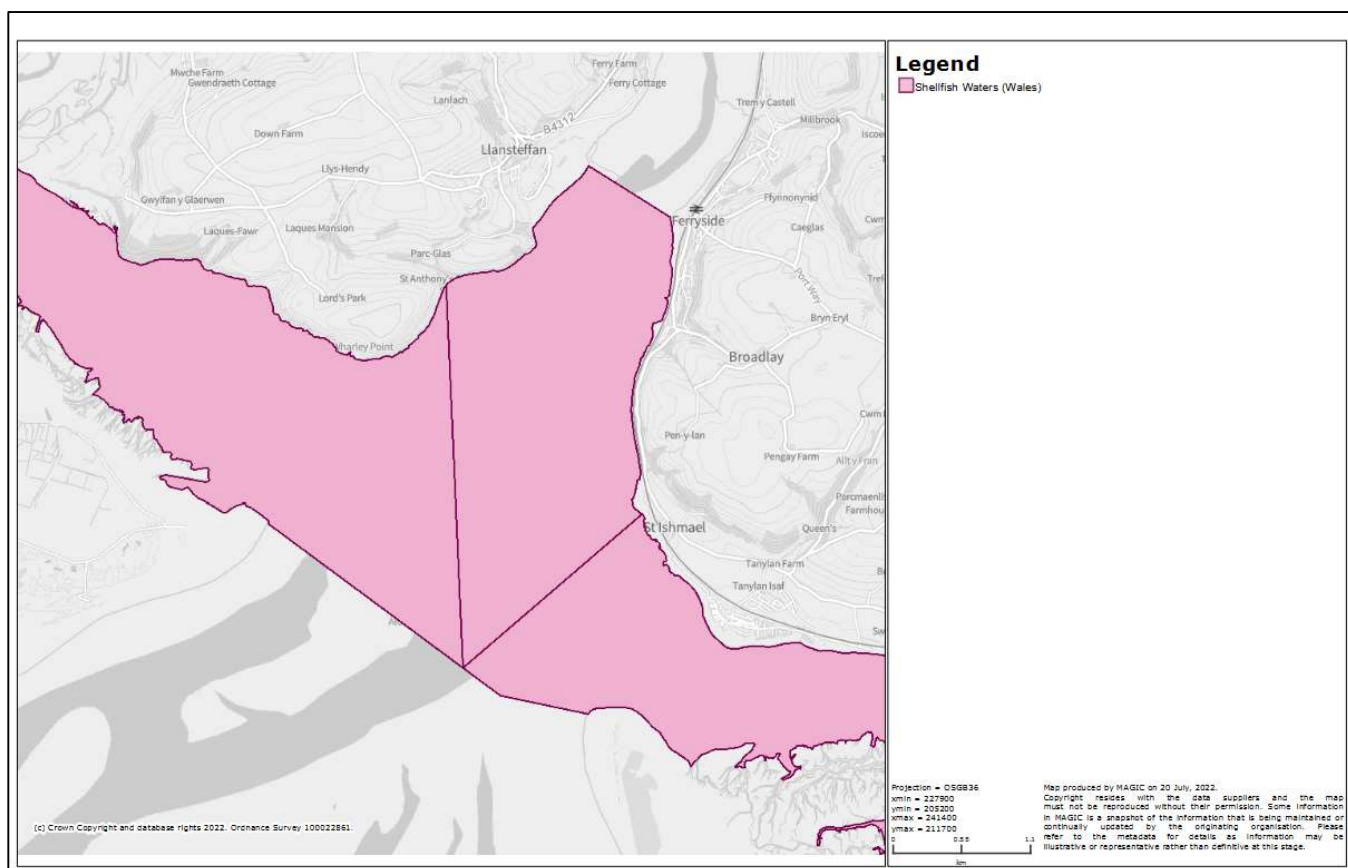


Figure 11: Location of Fisheries and Fishing Activity in proximity to works.



Table 6: Potential fish species at risk from your activity, but only if your activity is in an estuary or could affect fish in or entering an estuary.

Consider if your activity:	Biology fish risk issue(s)
Is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary	Works will be restricted to the area around the structure and along the bank close to the rowing club when moored, with no physical impediment to fish passage along the river. Works will be limited to daytime hours.
Could impact on normal fish behaviour like movement, migration or spawning (for example creating a physical barrier, noise, chemical change or a change in depth or flow)	Please refer to information above. The proposed works which will be unlikely to disturb significant volumes of sediment during the fender dismantling. However, any mobilised sediment is expected to reach equilibrium in short duration.
Could cause entrainment or impingement of fish	No identified impact



6.5 SECTION 3: WATER QUALITY

6.5.1 The third stage is to consider if water quality is at risk from your activity.

Table 7: Water body summary table to find information on phytoplankton status and harmful algae.

Consider if your activity:	Water quality risk issue(s)
Could affect water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)	The works will include the use of excavator mounted to a self powered spid barge during low tide, access to the fenders will be via the Afon Tywi itself for the barge. While a supporting safety vessel will be launched from the Carmarthen Rowing Club, upstream of the structure. Sediment Release: No direct excavation will occur as part of the methodology design. However, there is potential for a small amount of sediment release from the rising tide as a result of disturbed material during the fender cutting process closer to the river vertical. Use of Hydrocarbons: ◆ All works related movement will occur within the confines of the license footprint (excluding the vessels journey to the license area). ◆ Fuelled equipment will be checked for defects and leaks prior to the start of each shift. ◆ A refuelling procedure will be implemented, and refuelling will only be undertaken by designated, trained individuals using equipment specifically designed for that purpose. Impact Assessment – To assess the potential impacts of these activities, the following should be considered: The vessel will be used within the watercourse and hence there is a heightened risk of hydrocarbon release due to leaks of fuels and oils. The contractor will refer to guidance from: ◆ GPP 5 - Works and maintenance in or near water, ◆ GPP 7 - Safe storage – The safe operation of refuelling facilities, ◆ GPP 21 - Pollution incident response planning, ◆ GPP 22 - Dealing with spills, ◆ GPP26 - Safe storage – drums and intermediate bulk containers. This includes controls for the operation of plant using biodegradable hydraulic oil (where this is within the manufacturers permitted specification), the re-fuelling of plant and equipment, inspection and maintenance routines for plant to identify defects which could result in the release of liquids, biosecurity protocols, silt mitigation procedures, waste management procedures. The ESMP also includes details on incident response and reporting, including hydrocarbon spills, remediation and reporting to NRW.



Consider if your activity:	Water quality risk issue(s)
	Conclusion: Provided detailed mitigation plans are developed as part of the Task Specific Method Statements, in line with the broad guidance above, risks to water clarity, temperature, salinity, oxygen levels, nutrients or microbial patterns have therefore been assessed as low.
Is in a water body with a phytoplankton status of moderate, poor or bad	Phytoplankton within all discussed areas has been reported as Moderate.
Is in a water body with a history of harmful algae	No



Table 8: Assessing whether water quality is at risk from your activity through the use, release or disturbance of chemicals.

If your activity uses or releases chemicals (for example through sediment disturbance or building works) consider if:	Water quality risk issue(s)
The chemicals are on the Environmental Quality Standards Directive (EQSD) list	Impact Assessment: Chemicals which will be taken into the river and estuary as part of the works will be: Hydrocarbons and coolants within vessels and equipment. Conclusion: Provided the project complies with the measures set out within the ESMP, which in turn contains guidance from the relevant GPPs, the risk of release of hydrocarbons and cementitious materials is low.
It disturbs sediment with contaminants above Cefas Action Level 1	A sampling regime has not been undertaken, however given the highly limited volume of material which is naturally formed around the base of the timber fenders that requires removal, it is unlikely that contaminants would be in such concentrations to be above Cefas Action Level 1.

Table 9: Assessing whether project falls within mixing zone.

If your activity has a mixing zone (like a discharge pipeline or outfall) consider if:	Water quality risk issue(s) / Assessment of Risk / Mitigation Proposals.
The chemicals released are on the Environmental Quality Standards Directive (EQSD) list	The works are removing redundant manmade components from the watercourse.

⁵ Carry out your impact assessment using the Environment Agency's surface water pollution risk assessment guidance, part of Environmental Permitting Regulations guidance.



6.6 SECTION 4: WFD PROTECTED AREAS

6.6.1 The forth stage is to consider if WFD protected areas are at risk from your activity. These include:

- ◆ Special Areas Of Conservation (SAC)
- ◆ Special Protection Areas (SPA)
- ◆ Shellfish Waters
- ◆ Bathing Waters
- ◆ Nutrient Sensitive Areas

Table 10: Location of protected areas in your water body (and adjacent water bodies) within 2km of your activity.

Consider if your activity is: Within 2km of any WFD protected area ⁶	Protected areas risk issue(s)
Carmarthen Bay and Estuaries Special Area of Conservation (SAC) Afon Tywi - Special Area of Conservation (SAC)	The project is within the Afon Tywi - Special Area of Conservation (SAC) itself and within 2km of the Carmarthen Bay and Estuaries Special Area of Conservation (SAC), however due to the very localised working footprint to the sea walls and not the wider estuary, impacts are unlikely.
Bathing Waters – Pendine & Pembrey	Impacts are unlikely due to the scale and relatively low impact of the proposed works. Mitigation will be implemented as described above.

⁶ Note that a regulator can extend the 2km boundary if your activity has an especially high environmental risk.



6.7 SECTION 5: INVASIVE NON-NATIVE SPECIES (INNS)

6.7.1 The fifth is to consider if there is a risk your activity could introduce or spread INNS.

6.7.2 Risks of introducing or spreading INNS include:

- ◆ Materials or equipment that have come from, had use in or travelled through other water bodies.
- ◆ Activities that help spread existing INNS, either within the immediate water body or other water bodies.

Table 11: Risk from INNS.

Consider if your activity could:	INNS risk issue(s)
Introduce or spread INNS	The risk of introducing INNS into the estuary and river environment will be controlled through Biosecurity Best Practice - Vessels and equipment to be used within and adjacent to the estuary/river will be subject to the Check, Clean, Dry process and will be treated with an aquatic safe disinfectant such as Virkon S. A Biosecurity Management Plan has been prepared for the project, which assesses the risk from INNS and proposes mitigation for this. Please refer to Appendix A.



6.8 SUMMARY OF WFD PRE-ASSESSMENT FINDINGS

Table 12: Summary of Pre-Assessment Stage Findings.

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment
Hydromorphology	The Afon Tywi does not have high hydromorphological status. The river is classed as being natural, the section in which the works are being undertaken is semi natural. Demolition of the redundant fenders removes historic manmade features from the watercourse.	Mitigation to be out in place to minimise impacts – Please refer to section 8.
Biology: habitats	No long term identified impacts on habitats, provided adequate pollution control measures are put in place.	Mitigation to be out in place to minimise impacts – Please refer to section 8.
Biology: fish	No identified impact. There will be no physical blocks to fish migrating through the estuary/river. Key impacts on fish will therefore be noise and vibration from works and the use of a plant machine near channel. Works will be limited to daytime hours and avoiding dawn and dusk periods were possible.	Mitigation to be out in place to minimise impacts – Please refer to section 8.
Water quality	No risk to water quality providing adherence to GPP and best practice is maintained.	Mitigation to be out in place to minimise impacts – Please refer to section 8.
Protected areas	Works will be within the SAC and SSSI.	Mitigation to be out in place to minimise impacts – Please refer to section 8.
Invasive non-native species	A Biosecurity Management Plan has been developed for the project, which includes INNS. Please refer to Appendix A.	Please refer to Biosecurity Plan – Appendix A

6.8.1 The WFD guidance stipulates if a pre-assessment has not identified any receptors at risk during scoping, you don't need to continue to the impact assessment stage and your WFD assessment is complete.



6.8.2 However, if the pre-assessment identifies one or more receptors at risk during scoping, you should continue to the impact assessment stage.

Table 13: Water Framework Directive (WFD) Assessment for the **Carmarthen Carboniferous Coal Measures** groundwater waterbody

WFD elements	Assessment
Chemical status	<u>Temporary impacts during construction</u> No identified impacts <u>Permanent effects during operation</u> No predicted impacts. <u>Assessment outcome</u> No adverse effects on the chemical status of the groundwater body have been identified and therefore this is scoped out of further assessment.
Quantitative status	<u>Temporary impacts during construction</u> No anticipated interaction with groundwater during maintenance works. <u>Permanent effects during operation</u> No predicted impacts from the operation. <u>Assessment outcome</u> Effects to the quantitative status of the groundwater body have been scoped out of further assessment.



7. PROPOSED PROJECT MITIGATION

7.1 PROJECT MITIGATION

7.1.1 In Table 14 below, measures have been set out detailing mitigation to be implemented to minimise the potential project impacts.

Table 14: Proposed Mitigation Matrix

Potential Hazard	Mitigating Circumstances / Mitigation Measures	Likelihood of Impact with Mitigation
River habitat - Loss of habitat from project activities.	During the project, all welfare, storage, parking and general works will occur within hard standing areas. No habitat removal is required. Movement of the vessel will occur during high tides with mooring restricted to less sensitive habitats.	Negligible Likelihood of significant for Impacts.
Salt marshes (also part of estuarine habitat)	There is no saltmarsh present within the works area, with the only area identified on Magic.gov, being the section up stream or a significant distance downstream.	Negligible likelihood of impacts.
Mudflats and sandflats not covered by seawater at low tide – muddy gullies in the Estuary - Loss of habitat from project activities.	No works are proposed within the main bed of the estuary downstream of the structure.	Negligible likelihood of impacts.
Release of contaminative chemicals from sediments within the estuary.	Any loose material will be relocated outside of the normal tidal reach or removed off site to landfill if requested. Some mobilisation of sediment during cutting close to river vertical. However, it is unlikely that the sediment mobilised during this release of pressure would be of a significant volume to release contaminants into the estuary.	Negligible likelihood of impacts with mitigation in place.
Contamination of the estuary from spillage of hydrocarbons during refuelling of plant and equipment or due to equipment failure.	Vessels and Equipment will be checked for defects and leaks prior to the start of each shift. The Contractor will develop and implement an Emergency Awareness and Response Plan. This will describe how spills will be contained and cleaned up. The emergency plan will appoint an Incident Coordinator, define roles and responsibilities during an incident, detail response procedures and contain an inventory of response equipment to be maintained on site. All machinery on site will undergo regular checks. If oil leaks or damage to hydraulic hoses is noted, plant and machinery will be removed from the site and isolated within the site compound with containment measures beneath the leak, until it has been repaired and signed off by a competent fitter. Equipment will be available to syphon the fuel from the disabled equipment in order to reduce the potential release of hydrocarbons into the estuary.	Negligible likelihood of impacts with mitigation in place.



Potential Hazard	Mitigating Circumstances / Mitigation Measures	Likelihood of Impact with Mitigation
Contamination of the estuary from release of chemicals.	Please see above.	Negligible likelihood of impacts with mitigation in place.
Otter - Noise disturbance / Visual Disturbance / Habitat Destruction.	Toolbox Talks will inform site personnel on identifying the Annex II Species. No otter holts, resting up area or evidence (e.g. spraint) have been identified within proximity to the structure to date. The project will not represent a hard boundary preventing access to the wider estuary by this species. Otter would be able to move along the river channel and along the tops of the banks at all times during the works. Habitat impact is limited, however there may be a temporary impact to prey species disturbed by ongoing works. It is not anticipated that these works will have an impact on the population. No Night works is permitted as part of the work remit.	Impact Not Likely to be Significant, with appropriate mitigation
Fish Assemblage – Pollution and water quality impacts.	Pollution control and Biosecurity measures implemented as described in above will minimise water quality impacts on fish species.	Impact Not Likely to be Significant, with appropriate mitigation
Fish Assemblage - Noise disturbance / Visual Disturbance / Habitat Destruction.	There will be no physical blocks to fish migrating through the estuary and river. Key impacts on fish will therefore be potential noise and vibration from works, however works will be limited to daytime hours only and will not feature continuous working. Works within the river are programmed to be undertaken between September 2024 and October/early November 2024. However, the licensed period is extended to account for project delays.	Works have potential to cause a Minor Significant impact.
Fish Assemblage - Contamination of the estuary from spillage	See comments under estuarine habitat	Impact Not Likely to be Significant
Biosecurity	A detailed Biosecurity Plan has been prepared for the project. This includes the following: - All site personnel and site visitors will be informed if any INNS are known to be present on site and that they are jointly responsible for preventing their spread/impacts. They will be made aware of what these species look like so they can avoid it where possible and take appropriate actions. - All site personnel and visitors will be inducted in good biosecurity practices. This will include adoption of the CHECK-CLEAN-DRY campaign (NNSS, 2015). - The CHECK-CLEAN-DRY poster will be displayed in the site office as a reminder of good biosecurity practices: http://www.nonnativespecies.org/checkcleandry/	Impact Not Likely to be Significant



Potential Hazard	Mitigating Circumstances / Mitigation Measures	Likelihood of Impact with Mitigation
	- All equipment, tools, vehicles and personal protective equipment (PPE) used on site will be checked for seeds originating from any identified INNS before leaving the area. If seeds from identified invasive species are identified, the items will be cleaned and removed seeds will be destroyed. - The spread of waterborne diseases will be limited through the adoption of the CHECK-CLEAN-DRY campaign. This would entail the use of a suitable disinfectant e.g. Virkon® S Aquatic to decontaminate all machinery and PPE prior to it entering site and upon leaving site. Following application of a suitable disinfectant, machinery and PPE will be allowed to fully dry for at least 72 hours before being used on another aquatic site. The Biodiversity Management Plan can be found in Appendix A.	



8. WFD CONCLUSION

- 8.1.1 Due to the nature and scale of the works to be undertaken and providing the mitigation outlined within this document and the supporting Habitat Regulations Assessment (HRA) is implemented, this project will not prevent any of the water bodies associated with the project from meeting their Water Framework Directive objectives.