

Natural Resources Wales

Cardigan Tidal Flood Risk Management Scheme

Environmental Action Plan

Details of document preparation and issue:

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Area	Cardigan, Ceredigion, West of Wales
Date	05/10/2026
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Author	Myles Harding / David Johnson

Revision history

Revision date	Summary of changes	Author	Version number
26/03/26	Updated following client comments.	David Johnson	P02
22/09/26	Updated following pre-application comments.	David Johnson	P03
05/10/26	Updated following client comments.	David Johnson	P04

EAP Approvals

Name	Signature	Title	Date	Version

Distribution

Name	Title	Date	Version

Purpose

This Environmental Action Plan (EAP) summarises the actions required to implement the environmental mitigation for **Cardigan Tidal Flood Risk Management Scheme**. It sets out specific objectives and actions defining the way in which environmental risks should be minimised. It also details roles and responsibilities of those involved in the proposal.

These actions form part of the contract documentation and must be adhered to.

Roles

Each action in the table below has **one** named person who is responsible for ensuring that the action is implemented. It is ultimately the contractor's responsibility for ensuring the EAP commitments, which may include planning conditions, are delivered.

The Environmental Assessment Team (EAT) are responsible for agreeing any changes to the EAP and for signing off or agreeing to the signing off of the actions.

The contractor and Project Manager are responsible for advising EAT on any changes to method statements or the planned construction work as these may result in changes to the EAP or additional consultation with statutory consultees. EAT will assess the significance of these changes and determine the appropriate course of action.

The contractor is also responsible for implementing good environmental practice on site, in line with their own EMS. Typical issues include:

- any working hour restrictions
- dust suppression measures
- traffic management
- site waste management
- materials management
- vehicle maintenance and management
- pollution prevention and control (including storage, refuelling and incident response)
- response procedures e.g. services strike, contaminated land
- hazardous materials handling and storage
- noise management
- securing and delineation of working areas including signage

Environmental Audits

It is anticipated that audits will be undertaken during the working period.

Environmental Incident Reporting system

Procedure

1. STOP
Before you report the incident, stop the work
2. CONTAIN
Where safe to do so, carry out any local site pollution prevention or emergency incident measures
3. NOTIFY

Report the incident to the (24 hour) NRW incident hotline 0300 065 3000, stating that it is an NRW caused incident and giving full details of the incident, including location and contact details. Also request, and note, the incident number.

4. REPORT

Report the incident (including the incident number) to: the EMS team
(EMS.team@cyfoethnaturiolcymru.gov.uk)

All environmental incidents must be reported at the earliest opportunity to the ECC Project Manager, Site Supervisor, NRW Project Manager and NRW Environmental Project Manager. In addition, near misses must be reported via the hotline where there was/is the potential for a significant impact and where lessons can be learned.

Initial reports for such incidents and near misses must be followed by a written report using the contractor's in-house forms. This must include the following information:

- project/location
- date
- contractor
- details of what happened
- cause of incident
- lessons learned

This final and comprehensive investigation report is to be provided by the contractor to the ECC Project Manager, NRW Project Manager and Safety, Health and Environment Manager within 14 days.

Summary Scope of Works

The Scheme would comprise a continuous flood defence structure designed to fit within the various constraints along the Afon Teifi frontage between Cardigan Bridge (Castle Street) and Gloster Row car park. The Scheme covers an approximate distance of 327m length of the right bank on the Afon Teifi with the central point of the Scheme at SN 17932 45940. The Scheme alignment is shown in the Environmental Constraints and Opportunities Plan (ECOP) in Appendix A. The flood defences need to achieve a consistent level of 4.95mAOD to provide the scheme design standard of 1 in 200 years annual exceedance probability (AEP) with allowance for climate change, which would make the structures up to approximately 2m tall above general ground level (though lower in some sections). The Scheme would have a design life of 100 years.

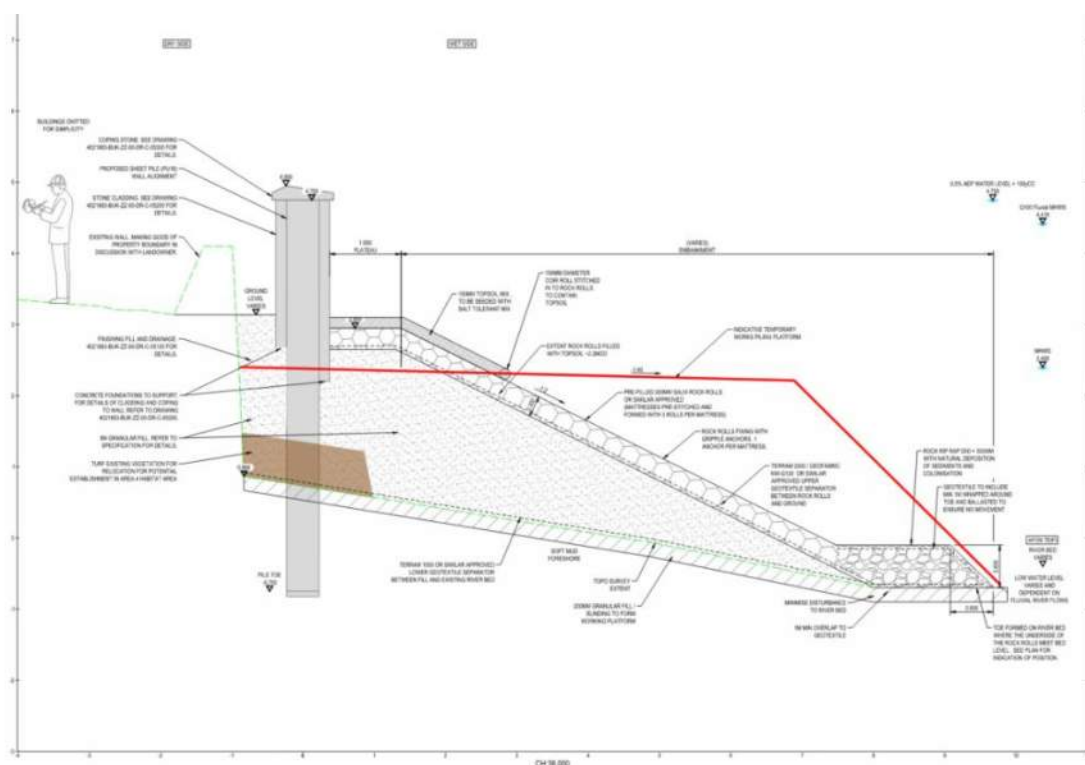
Two temporary construction compound areas are proposed to be used for plant/material storage and housing welfare units during construction works.

The proposed northern compound would be located on the northern side of the Afon Teifi, just to the north of the Pont-y-Cleifion Road (SN 18239 46106). This compound area would be used as the main compound and laydown area for the works. The proposed southern compound would be located on the southern side of the Afon Teifi (SN 17973 45829).

The proposed flood defence would be composed of sheet piles, with a reinforced concrete wall for a section in Area 1. The sheet piles would be supported on the riverside by an engineered riverbank. Within the central area there is a proposed boat ramp to enable canoe/kayak access to the water for the Sea Scouts and other permitted organisations. The existing slipway/river access points at (SN179459) and Gloster Row car park would be removed. Towards Cardigan Bridge (Castle Street) there would be further improvements to the street scene.

The Scheme has been split into Areas 1, 2, 3 and 4. The construction of the flood defence wall in Areas 1-3 would lead to the permanent loss of approximately 489m² of intertidal habitat. This would be mitigated through the setting back of flood defences in Area 4 to create an equal area for the establishment of estuarine habitats. The construction of the engineered riverbank would lead to an adaptation of approximately 1,347m² of existing habitats.

Construction would follow a sequential process, starting with the construction of an engineered granular fill (comprising Class 6I and 6G inert material, in accordance with Specification for Highways works) haul route on the river side of the existing walls for the full length of the Scheme. This would provide a construction working area and access and would subsequently be used to form the engineered riverbank. The granular material would be placed in compacted layers by a 13–20 t tracked excavator, beginning in Area 1 and progressing upstream to Area 4. Compaction will be subject to vibration monitoring. The working width of the platform would generally be 7 m wide to accommodate piling rigs and material transport vehicles and the full width of the platform would be around 9-10m wide, shown in red on the below typical cross section.



Typical cross section of the engineered riverbank with red line showing the indicative extent of the proposed temporary piling platform

Where the existing river walls in Areas 1-2 conflict with the new pile line these will be removed. The lower wall in Area 1 will be retained. The existing wall would be removed using excavators with hydraulic breakers from the granular fill platform. These proposed works would occur immediately ahead of piling in small sections to maintain stability. Fill and retained ground behind the walls would be trimmed back or battered locally to enable access to the pile face and subsequent cladding. Removed materials would be either stockpiled for reuse (if suitable) or loaded directly into wagons for off-site disposal.

To undertake piling within the Scheme area, proof digging and pre-augering may need to take place in accordance with an Obstruction Management Strategy. Piling would be

undertaken starting within Area 4, working back towards Area 1 to retain access. A combination of a Movax side-grip rig and leader rig would be utilised depending on the ground conditions encountered on site. To avoid impacts on migratory fish species, in-water augering or piling activities cannot be undertaken between 1 March and 31 December (inclusive), except where such activities are undertaken from a dry working platform in dry conditions, such that no augering or piling plant or equipment operates within the water column. For the avoidance of doubt, incidental contact between installed piles and groundwater or tidal water within the substrate shall not constitute in-water working. Between 1 January and 28 February (inclusive), when these seasonal restrictions do not apply, any in-water augering or piling activities shall be limited to daylight hours (defined as the period between sunrise and sunset minus any specific working time restrictions as specified within the project Environmental Action Plan).

Following installation of the sheet piles and prior to cladding works, a reinforced concrete toe would be cast at the base of the new wall. The toe would form the foundation for the stone cladding. The concrete toe would be pumped in sequential sections, typically 6–8 m in length, to suit tidal working windows and formwork logistics. Localised excavation would be required at the toe of the pile wall, particularly where the toe would be recessed into the foreshore or behind the removed river wall (e.g. in Areas 1 and 3).

The cladding would be installed following completion of the concrete toe. Each cladding panel or unit would be fixed to the pile face using brackets, ties, or adhesive systems.

Coping stones would form the uppermost element of the wall, capping the new sheet piles. These will be pre-cast concrete, installed with mechanical dowels or fixings and bedded on mortar or high-strength adhesive. The installation would be carried out from the temporary foreshore haul route rather than the landside, due to access constraints.

Coping works would progress in sections following cladding completion and full cure of the concrete toe. Interface with hard landscaping or fencing would be completed afterward from the landside, where access permits.

The piling platform and haul road will be re-profiled to form the base of the engineered riverbank (see typical cross section above). Excess granular fill will be removed and recycled or re-used elsewhere within the Scheme.

A permeable geotextile membrane will be placed onto the graded granular fill. Rip rap will be placed at the toe of the engineered riverbank slope. Rock rolls will be placed on the slope and crest of the new riverbank. Imported soil will be placed on the upper third of the slope and crest of the new riverbank and the seed mix for an estuarine/salt-tolerant environment would be sown. To hold the soil in a place on the upper slope a single line of coir rolls will be installed, this coir roll will not be planted.

At Area 4, the upper row of gabion baskets will be removed and the ground, including a portion of the car park, reprofiled to create an area for tidal inundation. The lower gabions will be retained as they contain saltmarsh species. Stripping of topsoil would occur first, followed by excavation to formation level using an excavator working from the land side. Rock rolls will be placed to form a mattress across the area which will then be covered by approximately 0.5m of clean and suitable imported soil. Localised changes in topography across the area will be created to facilitate the establishment of estuarine/riverine habitat. Selected materials may be reused as fill in other areas or spread on site subject to environmental approval.

Upon completion of construction, reinstatement, landscaping works for Area 1 and the redesign of Gloster Row car park will take place. Reinstatement of temporary works areas will return the site to the same or better condition than before construction and will be completed in accordance with landowner agreement.

Relevant Contact Details

Project Sponsor	
Project Executive	Paul Isaac
NRW Project Manager	Bethan Hill
NRW Environmental Advisor	Heilyn Williams
Engineering and Construction Contract Project Manager	TBC
NRW Environmental Clerk of Works (EnCoW)	TBC
Contractor Site Manager	TBC
Contractor Environmental Lead	TBC
Other Specialists	Consultant Environmental Lead – David Johnson (Binnies)

Environmental Action Plan

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
Pre-construction (before any works commence on site)						
A1	Approvals – Attain prior consent for construction noise levels, under Control of Pollution Act 1974	Attain Section 61 Consent from Ceredigion County Council prior to any works starting.	<i>Contractor</i>			
A2	Risk Reduction – Prepare a Construction Environmental Management Plan (CEMP)	Prepare a Construction Environmental Management Plan (CEMP) which is inclusive of the following information and Management Plans. The CEMP is to be reviewed by the Contractor's Environmental Lead and accepted by the NRW Project Manager prior to commencement of works. The CEMP and Management Plans shall include all mitigation measures specified	<i>Contractor</i>	Cardigan Tidal FRMS Environmental Statement (ES) (BUKL, 2026) Appendix B: IAQM Dust Management Mitigation Measures		

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		within the Environmental Statement (ES) / Environmental Action Plan (EAP). - Noise and Vibration Management Plan (NVMP). To include consideration of interactions with the redevelopment of the former Cardigan and District Hospital. - Dust Management Plan (DMP) including all mitigation listed within Appendix B of this EAP. - Construction Traffic Management Plan (CTMP) based on the outline CTMP (oCTMP). To include requirement for access to be maintained to properties adjoining Gloster Row car park and consideration of interactions with the		oCTMP (SCP Transport Planning, 2026) WFD Compliance Assessment (BUKL, 2025) ES 11.10 (BUKL, 2026) Arboricultural Method Statement (ADAS, 2026) ECOP (Appendix A)		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
		redevelopment of the former Cardigan and District Hospital. • Pollution Prevention Plan (PPP) including mitigation listed within the WFD Compliance Assessment and ES Chapter 11. • Lighting Plan (LP). • Biosecurity Management Plan (BMP). • Fish Rescue Plan (FRP). • Invasive Species Management Plan, to include measures to manage Japanese knotweed observed at entrance to Northern Compound. • Arboricultural Method Statement incl. Tree Protection Plan. • Materials Management Plan. • Soil Management Plan.				

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		CEMP shall include measures to monitor for potential flood events and flooding contingency measures for the main site and compounds.				
A3	Human Population – To notify local users of the works and minimise disruption	Develop a community liaison strategy which will be implemented during construction to be submitted for approval to the NRW Project Manager. Strategy to include methods of communication, frequency, list of stakeholders to be engaged with and complaints handling procedures. Communicate information about the works, including temporary pedestrian access arrangements to users of the local area, public transport access changes, car park closures and temporary road closures / restrictions, advising when disruption is	<i>Contractor</i>			

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		likely to occur. Signage is to be erected in advance of the works.				
A4	Human Population – To promote the safety of river users	Establish exclusion zone within the River Teifi for the safety of users during construction. This zone will include the northernmost arch of Cardigan Bridge to prevent canoes and kayaks from entering the exclusion zone. Extent of the exclusion zone is to be agreed in advance of works with Afon Teifi Fairways Limited (ATFL) who have operational responsibility for the estuary and will issue notice to mariners.	<i>Contractor</i>	ES (BUKL, 2026) Navigational Risk Assessment (NRA) (BUKL, 2026)		
A5	Human Population – To promote the safety of river users	Community liaison strategy to include liaison with Afon Teifi Fairways Limited (ATFL) and users of the existing slipways in the Scheme Area including Sea Scouts.	<i>Contractor</i>	Clause A3		
A6	Flora and Fauna – To prevent	Fencing to be erected to prevent unauthorised access	<i>Contractor</i>	ECOP (Appendix A),		

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	accidental damage or disturbance to ecologically sensitive areas	to ecologically sensitive areas, e.g. terrestrial and intertidal habitats within the SSSI and SAC adjacent to the works area and access routes. Placement to be advised by a Suitably Qualified Ecologist (SQE) and accepted by NRW Project Manager.		shows location of SSSI and SAC designations		
A7	Flora and Fauna – To avoid harm or disturbance to protected species though adherence to best practice working methods.	Develop a Precautionary Working Method Statement (PWMS) to be followed during construction, which will detail appropriate working methods and mitigation designed to minimise the risk of disturbance (see Clause A8 and A9 for details) to the following protected habitats and species: • Amphibians and Reptiles • Bats • Nesting birds • European Otter	<i>Contractor</i>	ES 6.9 (BUKL, 2026) Preliminary Ecological Appraisal (BUKL, 2025) Otter Survey Report (The Otter Consultancy, 2025) Clause A8 and A9		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
		West European Hedgehog. The PWMS is to be developed by a SQE and reviewed by the Contractor's Environmental Lead and accepted by <i>Project Manager</i>.				
A8	Flora and Fauna – To complete pre-works checks to minimise the risk of harm or disturbance to protected species	Pre-works checks to be undertaken by an SQE for the following species: - Amphibians and reptiles – hand searches of any areas of tall vegetation or refugia (logs or stone) which will be affected by the works, e.g. in areas used for access or construction, as advised by the SQE. Remove refugia from working areas. - Invasive Non-Native Species (to be undertaken within March - October). Must be undertaken in nearest active growth	Contractor			

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
		season prior to works. - European otter – to be undertaken prior to any works which could affect potential resting places, as advised by the SQE. - Potential Roosting Feature for Bats: trees (T3 and T4) to be checked by a SQE prior to any working area establishment or construction works on site within 10m of potential roost features. If evidence of bats is found, further mitigation shall be advised by the SQE. Works must be undertaken within 48hrs of pre-works checks to remain valid, after which repeat checks will be required. This does not apply to INNS pre-works checks which are valid for 12 months.		ES Appendix 6.5 Otter Survey Report T3 and T4 locations: ECOP (Appendix A)		

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A9	Flora and Fauna – To minimise the risk of disturbance or harm to nesting birds	Plan to undertake vegetation clearance and the blocking/removal of crevices outside of the breeding bird season (March to September, inclusive). If clearance is required during this period, nesting bird checks should be undertaken by a SQE 24-48 hours prior to clearance. If there is a delay between survey and clearance works exceeding 48 hours then the nesting bird check should be repeated. Should an active nest be identified, suitable mitigation must be established as directed by the SQE and works in the vicinity to be delayed until the young have fledged.	<i>Contractor</i>	Bird nesting season – March – September inclusive)		
A10	Landscape and Visual - To ensure	Undertake a photographic and condition assessment record	<i>Contractor</i>			

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	adequate reinstatement of working areas following completion	of all temporary working areas and access routes prior to work starting to document the condition of the working area and inform reinstatement requirements. Locations, coverage and details to be recorded are to be agreed in advance with NRW <i>Project Manager</i> . Record to be provided to and agreed by NRW <i>Project Manager</i> before any mobilisation works start.				
A11	Historic Environment – To update Archaeological Written Scheme of Investigation	Update the Archaeological Witten Scheme of Investigation for the implementation of archaeological monitoring and recording and obtain approval from Cadw prior to any works starting. Archaeological monitoring and recording is required for all ground-disturbing works within the Scheme Area which could include, but is not limited to,	<i>Contractor</i>	ES 7.10 (BUKL, 2026)		

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		ground clearance, landscaping, levelling, foundation excavations and augering works.				
A12	Land use and Soils – To understand the risk posed by asbestos within soils	Undertake an asbestos in soils construction risk assessment in accordance with relevant guidance (including the Control of Asbestos Regulations 2012) to ensure risks from asbestos exposure are adequately assessed and control measures are implemented as necessary during the works, including removal of surface Asbestos Containing Material (ACM) fragments identified along the foreshore prior to construction. Recommendations and actions identified are to be set out in a plan and approved by NRW Project Manager.	<i>Contractor</i>	ES 7.10 (BUKL, 2026)		
A13	Land use and Soils – To	Undertake a remediation options appraisal to inform the	<i>Contractor</i>			

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	undertake a remediation options appraisal and develop a remediation strategy for landscaped areas	final remediation strategy for landscaped areas. The remediation strategy is to be approved by the NRW Project Manager. The options appraisal will identify the best options for reducing risks associated with contaminated made ground soils. Remediation strategy to include: • measures to reduce or remediate impacts of compaction on existing soft landscape areas. • procedures for unexpected contamination being found during construction. • requirements for monitoring of soils and groundwater for contamination during the works, including thresholds. A long-term monitoring plan for land contamination is also				

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		required. Requiring formal monitoring, sampling and reporting during and following construction to ensure contamination risks to controlled waters are monitored throughout. Intervals and trigger levels for this will need to be included in a monitoring plan/ strategy and agreed with the local planning authority.				
A14	Land use and Soils – To establish baseline groundwater and surface water quality	Develop a water quality monitoring strategy and protocol for construction to be approved by NRW Statutory Functions via the NRW Project Manager. This will include the establishment of baseline groundwater and surface water quality on and around the Scheme Area, and upstream and downstream of the Scheme in the Afon Teifi by controlled water sampling and laboratory testing.	<i>Contractor</i>	ES 10.12 and 11.10 (BUKL, 2026)		

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		The water quality monitoring strategy will determine locations of surface water quality monitoring upstream and downstream of the works, how far in advance of construction baseline sampling will be collected, number of samples to be collected to have a baseline data set to compare to during and post construction, intervals for water quality monitoring, associated trigger levels and a formal exceedance and recovery procedure.				
A15	Land use and Soils – Minimise risk of pollution and contamination through best practice working methods	Produce a Pollution Prevention Plan (PPP) for approval from the NRW Project Manager. The plan will include but not be limited to the following mitigation measures as identified in the Environmental Statement:	<i>Contractor</i>	ES 11.10 (BUKL, 2026)		

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		- Intervention methods such as bubble or silt curtains (correctly installed to manufacturer's recommendations) will be used to minimise sediments entering Teifi Estuary. - Trenches excavated in Made Ground will be backfilled with suitable clean fill and excavated material will be removed and disposed of appropriately off-site. - Include list of standard best practice measures to be used in line with current guidance. - Detail standard practice which will be used to protect existing soil and land quality at the Northern and Southern Compounds. - Outline a contingency plan for excavations in the				

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		intertidal zone to be covered/protected if they cannot be backfilled within a single low tide event (before the next high tide inundation). Appropriate PPE and good hygiene practice to be utilised by all site personnel to reduce the risk from contaminated soil and water.				
During construction						
B1	Human Population – Minimise impacts to the general public and recreational users	Adhere to the community liaison strategy and continue liaison with Afon Teifi Fairways Limited (ATFL) throughout the construction phase.	<i>Contractor</i>	See Clauses A3 and A5		
B2	Human Population – Minimise impacts to residents and the	Adhere to construction working hours: Weekdays - 0730 and 1800		ES 3.3 and 3.5 (BUKL, 2026)		

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	general public	- Saturdays - 0730 and 1300. No working Sunday and bank holidays - Working hours along the riverside to comply with the requirements of Clause B4. - No piling to take place outside of normal working hours. - Out of hours works, if required, would be agreed in advance with the Local Authority Environmental Health Officer. - Working hours to comply with Section 61 requirements (see Clause A1).		See Clause A1 and B4		
B3	Flora and Fauna – To provide toolbox talks for all site personnel.	Toolbox talk to be delivered by a SQE for all contractors and new personnel prior to entering the site to make them	<i>Contractor</i>	Clause A7 - Precautionary Working Method Statement		

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		aware of ecologically sensitive areas of the site, Precautionary Working Method Statement, and of all stop procedures should certain sensitive species be found during the works. An up-to-date list of all personnel having completed toolbox talk should be available on site.				
B4	Flora and Fauna – To avoid harm or disturbance to protected species though adherence to best practice working methods.	Daytime working hours are adopted for riverside construction works, to commence no sooner than one hour after sunrise and finish no later than one hour before dusk. At night, a quiet dark corridor will be retained along the watercourse and its bankside vegetation. Any excavations due to be left open overnight shall be covered or left with a means of egress for wildlife to prevent entrapment.	<i>Contractor</i>			

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		Any open piping should be capped to prevent entry. Construction materials must be stored well away from the riverbank to ensure that otters do not use voids etc. All tools, food, litter and construction materials and packaging that may constitute a hazard to otters will be removed daily from the site.				
B5	Flora and Fauna – To complete works under the supervision of a Suitably Qualified Ecologist to minimise the risk of harm or disturbance to protected species and habitats	SQE to provide supervision during all works within ecologically sensitive areas. This includes: Felling of tree T4 and any pruning of tree T3 which contain potential roosting features for bats - SQE will provide a toolbox talk for contractors and directly supervise all works to T3 and T4.	Contractor	ECOP (Appendix A) Clause A7, A8 and A9		

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		- Removing the existing river wall and gabion baskets - SQE will provide a toolbox talk for contractors and directly supervise dismantling of features likely to support Otter and nesting birds. - Initial setting out and establishment of the piling platform within the SAC and SSSI and the river channel - SQE will provide a toolbox talk for contractors and inspect the intertidal area due to be covered, moving any wildlife present. This inspection would be repeated after each tidal inundation. - Earthworks in Area 4 to create the area for tidal inundation - SQE will				

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		provide a toolbox talk for contractors and remain on call should protected wildlife be encountered during the works. SQE will advise on profiling of the intertidal area and provide a final sign-off visit following the completion of the works. Initial works to create the engineered riverbank - SQE will provide a toolbox talk for contractors and remain on call should protected wildlife be encountered during the works. SQE will advise on profiling of the intertidal area and provide a final sign off visit following the completion of the works.				
B6	Flora and Fauna – To minimise the impact of	No in-water augering or piling activities shall be undertaken between 1 March and 31	<i>Contractor</i>	Clause B4		

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	augering/piling upon sensitive ecological receptors	December (inclusive), except where such activities are undertaken from a dry working platform in dry conditions, such that no augering or piling plant or equipment operates within the water column. For the avoidance of doubt, incidental contact between installed piles and groundwater or tidal water within the substrate shall not constitute in-water working. Between 1 January and 28 February (inclusive), when these seasonal restrictions do not apply, any in-water augering or piling activities shall be limited to daylight hours (defined as the period between sunrise and sunset while also complying with the timing restrictions detailed in Clause B4).				

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B7	Flora and Fauna – To minimise the impact of augering/piling upon sensitive ecological receptors	All piling activities are to utilise a soft start procedure to minimise disturbance to ecologically sensitive areas. The soft start procedure would meet JNCC (2010) piling protocol requirements to minimise the risk of injury to marine mammals and fish, as well as alert any birds to the presence of an abnormal (noisier) activity and allow them to become habituated to the piling activity.	<i>Contractor</i>	Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise JNCC, August 2010		
B8	Flora and Fauna – To minimise impact of construction working area on intertidal soft sediment	Ensure all construction works within the river channel are constrained to the footprint of the permanent works, i.e. the piling platform must be set out to be no wider than the final engineered riverbank footprint.	<i>Contractor</i>	ECOP (Appendix A) ES 3.5 (BUKL, 2026)		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
B9	Flora and Fauna – To minimise impact to trees in the construction working area	Trees T2 and T4 to be felled, all other trees to be protected in accordance with the Tree Protection Plan.	<i>Contractor</i>	Clause A2 Arboricultural Method Statement (ADAS, 2026) ECOP (Appendix A)		
B10	Flora and Fauna – To deliver required landscape mitigation planting	In accordance with the Soft Landscape Specification, all planting stock must be free of pests and pathogens. All plants and seed mixes to be UK sourced and grown, and peat free. Use NRW assurance pro forma as part of procurement process. Retain all Plant Passport information for client inspection. Regularly inspect plants for signs or symptoms of pests and disease. Report to NRW	<i>Contractor</i>	Soft Landscape Specification (BUKL, 2026) NRW assurance pro-forma for procuring plants and seed mixes. UK and Ireland Sourced and Grown Assurance Scheme (UKISG): voluntary		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
		Plant Health Team and APHA (Animal and Plant Health Agency) immediately if suspicious.		biosecurity initiative for tree nurseries.		
B11	Flora and Fauna – To reduce risk of introducing or spreading invasive non-native species in the marine environment	Comply with Marine Invasive Non-native Species Biosecurity Risk Assessment and Management Plan throughout works. Including the need to wash, rinse and dry all immersible equipment immediately prior to departing the port of origin to undertake the licensed activity and immediately prior to leaving the licensed activity area on completion of the licensed activity.	<i>Contractor</i>	Marine Invasive Non-native Species Biosecurity Risk Assessment and Management Plan		
B12	Historic Environment – Prevent accidental damage to unknown buried heritage features	In accordance with the updated Written Scheme of Investigation, all ground disturbing works within the Scheme Area are to be supervised by a Suitably	<i>Contractor</i>	ES 7.10 (BUKL, 2026) Archaeological Written Scheme of Investigation (Heneb, 2024)		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
		Qualified Archaeologist (SQA), accredited by the Chartered Institute for Archaeologists (CIfA), who will be responsible for the monitoring and recording of ground works. This will be carried out during ground-disturbing excavations which could include, but is not limited to, ground clearance, landscaping, levelling, foundation excavations and augering works.		Clause A11		
B13	Historic Environment – Prevent accidental damage to known heritage features	Construction works to maintain a minimum of 1m distance from Cardigan Bridge and historic foundry wall at all times.	<i>Contractor</i>	ES 7.10 (BUKL, 2026) Archaeological Written Scheme of Investigation (Heneb, 2024) ECOP (Appendix A)		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
B14	Water Environment – Monitor surface and ground water quality	Surface and ground water quality will be monitored throughout construction and compared to baseline in accordance with the water quality monitoring strategy (Clause A14). Surface water quality will be monitored both upstream and downstream of the works to indicate whether construction activities are having a negative impact on surface water quality. If limits are exceeded, then works in the river will be suspended until conditions recover. Acceptable limits are to be outlined within the Pollution Prevention Plan (PPP). All incidents must be reported to NRW Incident Communication Centre (ICC).	<i>Contractor</i>	See Clause A14 Flood Risk Activity Permit (FRAP):		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
B15	Land use and Soils – Minimise risk of contamination to ground and soils	Any visual or olfactory evidence of contamination encountered during construction works will be investigated in accordance with the remediation strategy to determine spatial extents and concentrations. Sampling and laboratory testing will be utilised where necessary. Work will need to stop during any investigation into unexpected contamination to prevent further spread of contamination. All incidents must be reported to NRW Incident Communication Centre (ICC).	<i>Contractor</i>	Clause A13		
B16	Land use and Soils – Minimise risk from asbestos and other contaminants	Based upon the outcome of the asbestos in soils construction risk assessment (Clause A12) and understanding of contaminants within soils,	<i>Contractor</i>	See clause A12		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
		implement appropriate management strategies to deal with any contaminated soils encountered during construction. Management strategies should include measures to ensure the safety of construction workers, to prevent further contamination of the environment, and an appropriate storage, testing and disposal strategy if contaminated soils are to be removed from the Scheme Area.				
B17	Land use and Soils – Minimise risk of pollution and contamination through best practice working methods	Implement Pollution Prevention Plan (PPP) including all measures recorded in clause A15.	<i>Contractor</i>	Clause A15		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
B18	Land use and Soils – To monitor made ground, natural soils and groundwater	Formal monitoring of Made Ground and natural soils, and groundwater for potential contamination to be undertaken during works in accordance with the Remediation strategy. Monitoring will include the use of Rapid Screening Methods using field test kits or portable instruments (e.g. Photo-Ionisation Detector (PID) for volatile organic compounds and X-Ray Fluorescence (XRF) for heavy metals), and formal sampling of soils and groundwater for laboratory testing, should indications of contamination be observed or detected.	<i>Contractor</i>	Clause A13		
B19	Environmental compliance – To ensure environmental	NRW Policy Statement, Environmental Incident Procedures; Environmental Constraints Plan; and	<i>Contractor</i>			

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
	requirements are communicated	Environmental Masterplan to be visible on notice board within site compound.				
Post-construction						
C1	Human Population – Minimise impacts to the general public and recreational users	Notify local residents and businesses of the end of the works in accordance with the community liaison strategy.		Clause A3		
C2	Flora and Fauna – To ensure establishment of landscape planting	Report to <i>Project Manager</i> to report to NRW Plant Health Team and APHA immediately if signs or symptoms of disease is observed. Comply fully and swiftly with any advice or Statutory Plant Health Notices that may be issued.	<i>Contractor</i>			
C3	Flora and Fauna – To remove any temporary covers	If any crevices or pipes have been temporarily capped or	<i>Contractor</i>	See Clause A9 and B4		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
		otherwise blocked, temporary covers are to be removed upon the completion of the works in accordance with the PWMS and approval of a SQE.				
C4	Landscape and Visual - To ensure adequate reinstatement of working areas following completion	Undertake a photographic and condition assessment record, in accordance with that recorded pre-construction (see Clause A10), of all temporary working areas and access routes etc. upon completion of works to document that reinstatement has been undertaken to the same or better standard as agreed with the relevant landowner in advance.		Clause A10		
C5	Land use and Soils – To implement a suitable remediation strategy for	Implement the remediation strategy, approved by the NRW Project Manager, for landscaped areas where site end-users may come into contact with contaminated	<i>Contractor</i>	See Clause A13		

Ref no	Objective	Action (only allocate one action to each "Ref no")	Responsibility (action must only be allocated to one project role/person)	Reference to further information	Progress and Further Action	Sign off and date
	landscaped areas	Made Ground soils. Remediation (followed by verification) should be undertaken to eliminate the source-pathway-receptor linkage, thereby reducing the risk to an acceptable level as defined in the remediation strategy. Works to also include remediation of compacted soft landscape areas.				
C6	Land use and Soils – To implement a long-term monitoring plan	Implement the long-term monitoring plan in accordance with Clause A13 and informed by sampling and reporting recorded during construction.	<i>Contractor</i>	See Clause A13		

Appendix A: Environmental Constraints and Opportunities Plan



Opportunities

1. Enhanced public realm within Area 1, including widening of pavements and provision of tree planting
2. Use of rock rolls for the scour protection for the new riverbank which would include a seeded growing medium on the upper third of the new riverbank allowing for the adaptation of intertidal habitats
3. Use of suitable stone cladding for the finish of the flood defence wall
4. Inclusion of a new boat ramp within Area 3 to enable canoe/kayak access to the water for the Sea Scouts and other permitted organisations
5. Setting back the flood defence wall in Area 4 and lowering existing ground levels to create an area for the establishment of intertidal habitats

Northern Compound: use limited to existing hard standing area

Narrow streets on construction access route

Gloster Row / St Mary's Street Slipway

Gloster Row Car Park

Scout Hut

Old Forge Crafts

Bathroom Centre

Cardigan Castle

Old Foundry Site

Cardigan Bay Active

Sea Scouts Slipway

DCWW Outfall

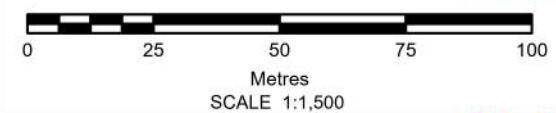
Southern Compound

River Teifi / Afon Teifi

A487 Priory Bridge



Central grid reference: SN 17932 45940



Note: The limits, including the height and depths of the Works, shown in this drawing are not to be taken as limiting the obligations of the contractor under Contract.

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Legend

SCHEME AREA

- SCHEME AREA
- AREA EXTENT INDICATORS

PROPOSED SCHEME

- FLOOD DEFENCE WALL
- ENGINEERED RIVERBANK
- BOAT RAMP
- SOFT LANDSCAPING
- NEW INTERTIDAL HABITAT
- SALT-TOLERANT ESTUARINE VEGETATION

TEMPORARY PUBLIC ACCESS RESTRICTIONS

- TEMPORARY BUS STOP AND ROAD CLOSURE
- TEMPORARY PARKING RESTRICTION

CONSTRAINTS

- AFON TEIFI/RIVER TEIFI SPECIAL AREA OF CONSERVATION (SAC)
- AFON TEIFI SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- SCHEDULED MONUMENT
- CONSERVATION AREA
- INTERTIDAL - MUD/SAND
- SALTMARSH - DENSE/CONTINUOUS
- RETAINED TREE
- REMOVED TREE
- FOUNDRY WALL
- JAPANESE KNOTWEED
- PROPERTIES ACCESSED VIA GLOSTER ROW CAR PARK

BAT ROOST POTENTIAL BUILDINGS AND TREES

- PRF-1

NATIONAL ROUTES

- WALES COAST PATH
- NATIONAL CYCLE NETWORK ROUTE 82

SAFETY HEALTH AND ENVIRONMENT INFORMATION						
IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER						
CONSTRUCTION						
MAINTENANCE / CLEARING / OPERATION						
DECOMMISSIONING / DEMOLITION						

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
P02	MA	DJ	AB	AH	27/03/2026	FOR INFORMATION
P01	MA	DJ	AB	AH	06/03/2026	FOR INFORMATION

Designed by: MA Date: MARCH 2026

Status:

Client: Cyfoeth Naturiol Cymru / Natural Resources Wales

Client Drawing No. Revision

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Project: CARDIGAN TIDAL FLOOD RISK MANAGEMENT SCHEME

Drawing title:

ENVIRONMENTAL CONSTRAINTS AND OPPORTUNITIES PLAN (ECOP)

Drawing scale: 1:1,500 Sheet size: A3

Drawing no. 4021883-BUK-ZZ-00-DR-EN-00020 Revision P02

Appendix B: IAQM Dust Management Mitigation Measures

Mitigation: Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information.
- Develop and implement a Dust Management Plan (DMP)

Site management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the logbook.

Monitoring

- Undertake regular on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary.
- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Agree need for dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

Preparing and maintaining the site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover to prevent dispersion.
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating vehicle/machinery and sustainable travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel.

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Mitigation: Measures specific to demolition

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
- Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Bag and remove any biological debris or damp down such material before demolition.

Mitigation: Measures specific to earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.

Mitigation: Measures specific to construction

- Avoid scabbling (roughening of concrete surfaces) where possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

Mitigation: Measures specific to track-out

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site logbook.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10 m from receptors where possible.