



BRIEF: DESIGN OF WETLAND / SUSTAINABLE DRAINAGE SOLUTIONS TO REDUCE NUTRIENT AND SEDIMENT RUNOFF

LIFE WADER (LIFE20 NAT/UK/000277)

Introduction

Natural England is the government's advisor on the natural environment. We provide practical advice, grounded in science, on how best to safeguard England's natural wealth for the benefit of everyone.

We wish to appoint advisers to design suitable wetland systems, on 3 farms within the Northumberland/ Tweed catchment, that will help to reduce excess nutrient and sediment load (Nitrate, Phosphate and fine sediment) from entering the River Tweed and Northumbrian coastal waters. The work is funded through the Life WADER Project.

For the purposes of this brief, wetland system includes all measures deemed necessary to reduce the Nitrate, & Phosphate and fine sediment loads from the source pathways. More information is given in table 1.

LIFE WADER Background

EU LIFE funded WADER project spans 70,242 hectares along the Northumberland Coast to the South-East Scottish borders across the Tweed catchment. Wader takes a 'source to sea' approach across the UK's often overlooked freshwater- coastal- marine transitional environments. The project area covers six European designated sites (SACs and SPAs) which are of international importance due to their bird assemblages, river fauna and rare habits including dune systems, rocky shores, fresh water and mudflats. WADER seeks to tackle the key issues that are impacting the condition of these sites including diffuse water pollution, recreational disturbance, invasive species and climate change, by building an understanding of the inter-dependence of species and habitats across the wider coastal ecosystem.

Many river systems in Northumberland have been impacted by increased rates of Nitrate, Phosphate and sediment. It is thought that these raised nutrient levels are contributing to macroalgae growth along the Northumbrian Coast which are negatively impacting the target species and habitats with the protected sites.

Overall, the LIFE WADER project will involve design and implementation of wetland systems at up to a maximum of 15 sites across the project area. This initial pilot stage of this work is the focus of this brief, to create **3x Wetland design plans** as detailed below.

Start and End Date

The project will run from July 2023 until May 2024.

Budget

The indicative budget for the design works is in the range of £10,000 to £25,000.

Output and deliverables

Summary	Location
3x Wetland Design Reports (details below)	Northumberland and Tweed Catchment

The awardee will provide guidance on the suitable placement, design, construction plan, management and cost of a specific farm wetland or sustainable drainage feature(s) across three farms in the Northumberland/Tweed catchment. These farms are likely to be based adjacent to **Budle Bay** and near **Wooler**. The main options we are focusing on are described in the table below (balancing cost/complexity against ecological value). The chosen wetland feature(s) could be associated with field, track and yard run off and/or movement of pollutants via water channel(s) on farm.

It is anticipated that the appointed contractor will fulfil the role of Principal Designer throughout both the design and construction phase.

The outcome will be a report containing advice on the chosen wetland options, the production of detailed designs, and costings for construction.

The awardee is to produce/provide the following outputs/deliverables:

This is not an exhaustive list and other outputs may be required to meet the aim of the brief (e.g., survey needs may differ between sites). Exact details will be discussed and confirmed for each site at the inception meeting.

Feasibility

- Site visits by soil/water specialist will assess and review the proposed location of the intervention and provide a topographic survey, hydrological survey, flood risk assessment, environmental feasibility assessment for each site.
- Desk based assessment to consider LiDAR and water pathway modelling to identify run-off/pollution pathways and consider potential locations and options available to provide most benefits for reducing water pollution.
- Identify required services and constraints.
- Identify required permissions and consents.
- Discuss specific options to treat the pollution with the WADER Project Officers and the farmer/landowner. Include in discussions advantages and disadvantages of the options; likely cost; any farm subsidy and loss of productive land related issues; the maintenance requirement of options. Agree upon the final options for the design. If suitable, several options can be incorporated into the design so that it is comprehensive and can be implemented in different stages (e.g. a sediment trap may feed into a wetland system but could be built as a cheaper stand-alone option if required).

Wetland type	Star rating (complexity & cost)	Typical use for sources from	Indication of capital cost *	Permit required	Ecological value and water treatment
Swale	★☆☆	Tracks and fields	£10-15/m2	No	Lower ecological value, poorer water quality treatment.
In-ditch field wetland	★★★	Fields	£895 in LEAF case study	Consult	Lower ecological value, poorer water quality treatment.
Sediment traps or ponds	★★★★	Fields and tracks in conjunction with swales	£5-100/m2 **	Consult	Moderate ecological value, moderate water quality treatment.
Constructed wetlands (low to moderate strength effluent)	★★★★★	Lightly contaminated yards	£4/m2 - £25/m2	Possibly	Potential for high ecological value, high water quality treatment

Table 1 from: [1429707026_WWTConstructedFarmWetlands150422.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/429707/WWTConstructedFarmWetlands150422.pdf)

Design

- Design the proposals considering the environmental sensitivities of the sites, and involving key environmental specialists, including Environment Agency specialists, where required.
- A detailed plan specifying the details of the created ecological features' requirements, water depth and retention time. The report should also show existing and proposed levels at each site, identifying land forming and water penning / water management structures. Where appropriate, include planting plans, planting schedules, tree and vegetation protection plans within landscape drawings.
- Consider and inform of any consenting and planning issues/requirements.
- The Construction Design and Management (CDM) regulations 2015 must be followed.
- Produce final report compiling all the **advice given**, explaining the reason for the chosen **wetland options**, and the **detailed design** including drawings and specifications for construction of works, and **detailed costings** (sufficient for a contractor to set out and construct the works).
- Costings should include a section that points to any relevant grants available for maintenance payments e.g. Countryside Stewardship.

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The final report should include but is not limited to:

1. Advice given during site visits and the justification for the chosen wetland options
 2. Specifications and drawings for chosen Wetland options
 3. Design report, including asset schedule & buildability statement and list all required consents and permits
 4. Environmental Outcomes
 5. Designer's Risk Assessments to include details on how H&S will be managed in accordance with The Construction (Design & Management) Regulations 2015 (CDM, 2015)
 6. Public Safety Risk Assessments
 7. Project plan to illustrate the timetabling of works including all major project milestones
 8. Future maintenance needs to maintaining functionality of wetland system
 9. Detailed installation costs of the design options including signposting to any grants available (e.g. Countryside Stewardship).
- Designs must show that works will not impact flood risk or comprise highways, PROW or agricultural land adjacent to the project area.
 - The contract awardee shall obtain services data from utility companies when ground works are required.

Specific skills/ knowledge requirements for all deliverers:

- Experience in the design and construction of water holding features and wetland systems for reducing diffuse water pollution.
- Knowledge of hydrology and experience of managing surface water run-off from fields and yards using practical actions to slow or divert water movement to capture pollutants.
- BASIS Soil & Water or equivalent soil related qualification e.g. diploma, NVQ, HND or degree in soils or with soils as a significant part of the course.
- Working knowledge of all required legal permit processes including Habitats Regulations
- Knowledge of government schemes (e.g. Countryside Stewardship, particularly options relevant to Water Holding Structures is desired but not essential)
- Experience in principle designer role under CDM regulations 2015.

Tender Content

Tenders should contain the following information:

1. **Methodology and Project Management** (1 page overview of the approach the contractor will undertake on this brief) including:
 - **Method Overview**
What steps/approach will be used to determine the most effective wetland options and inform the final design plans.
Examples of previous similar work.
 - **Communication**

Identify within your organisation who will be the main individuals involved in the management of this contract to ensure effective delivery.

- **Quality**

How will you ensure that the required quality of activities, as described in the request for quotation template and specifications, is delivered?

- **Risk Assessment & Health and Safety**

Provide an overview of the potential risks you have identified associated with the delivery of this work, and how you will manage these risks throughout to ensure that milestones are met, and delivery is completed to the required standard in a safe manner.

Health & Safety Management to include details on how H&S will be managed in accordance with The Construction (Design & Management) Regulations 2015 (CDM, 2015)

- **Sustainable Practice**

Highlight how your environmental policies/accreditation will ensure that sustainability is pursued in your operations and work delivery.

2. **Staff Experience Profiles** (250 words)

- Please highlight the key personnel who will be directly involved with this contract and what they will be responsible for delivering (quantity of visits etc.).
- Submit a maximum of 250 words for each proposed staff member providing evidence for the 'Specific skills/ knowledge requirements for all staff detailed in the specification requirements above.
- Submit relevant work history and qualifications for each staff member (staff must show a minimum of 2 years' experience delivering similar projects).

3. **Professional Details and Quote:**

- The cost of undertaking these works detailing your fee and any travel expenses
- Details of professional indemnity insurance
- Total price plus VAT (broken down to show fee for each survey and design costs)

Inception Meeting Format

Once the contract has been awarded an inception meeting will be arranged (either in a mutually agreeable location or as an online Microsoft Teams meeting). At this meeting the final details for delivery will be agreed upon and the specific locations of the farms will be provided. This meeting will confirm details such as:

- More detail on the chosen sites and a discussion to clarify which surveys may or may not be needed to feed into the design.
- Proposed dates for visits to take place
- Communications schedule and method to track project progress (the frequency and method of contact between the supplier and Natural England Project Team). As this is a pilot scheme, WADER project officers may request to accompany design visits.
- Dates for review meetings and project milestones

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- Style and format of reports
- Where reports and survey results will be sent/uploaded.
- Quality control process
- Invoicing schedule

Other Considerations:

Sustainability Considerations

As a delivery partner, the successful contractor is expected to pursue sustainability in their operations, thereby ensuring Natural England is not contracting with a supplier whose operational outputs run contrary to Natural England's objectives. The successful contractor will need to approach the project with a focus on the entire life cycle of the project. The successful contractor is likely to be able to provide a copy of their environmental policy and any environmental accreditation schemes.

Health and Safety

Health and Safety is the number one priority. The contract awardee will be responsible for making sure all required health and safety aspects including risk assessments are undertaken and required management measures are in place to protect worker exposure. This includes management of all partners, consortium members and subcontractors.

Biosecurity

Invasive Non-native Species (INNS) can have a devastating impact on our local plants, animals and ecosystems. They can displace native wildlife, spread disease and block waterways.

The contract awardee will assume all responsibility for biosecurity precautions. The contract awardee will assess the Biosecurity risks at the site(s) prior to any work. The contract awardee will take the necessary level of Biosecurity action according to the risks and sensitivities associated with the site and the type of project activities being carried out, applying the basic principles of CHECK, CLEAN, DRY of footwear, PPE, equipment and vehicles as appropriate to the Project.

The contract awardee will assume biosecurity responsibility to include ensuring that all contractors have the relevant biosecurity requirements in place during all works.

Additional Information

Copyright and confidentiality

Unless otherwise indicated, the copyright in all of the documentation belongs to Natural England. The contents of the documentation provided by Natural England must be held in confidence by you and not disclosed to any third party other than is strictly necessary for the purposes of submitting your quote. You must also ensure that a similar obligation of confidentiality is placed upon any third party to whom you may need to disclose any of the documentation for the purposes of the tender.

Accuracy of documentation

You should check all documentation; should any part be found to be missing or unclear you should immediately contact us at the address given in the covering letter. No liability will be

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accepted by the Natural England for any omission or errors in the documentation which could have been identified by you.

Amendments to documentation

Prior to the date for return of tenders, we may clarify, amend or add to the documentation. A copy of each instruction will be issued to every Tenderer and shall form part of the documentation. No amendment shall be made to the documentation unless it is the subject of an instruction. The Tenderer shall promptly acknowledge receipt of such instructions.

Continuity of personnel

The contract awardee shall employ sufficient staff to ensure that the services are provided at all times. It shall be the duty of the contract awardee to ensure that a sufficient reserve of staff is available to ensure project delivery in the event of staff holidays, sickness or voluntary absence.

At all times, the contract awardee shall only employ in the execution and superintendence of the contract persons who are suitable and appropriately skilled and experienced.

Intellectual property rights

All results, including material and tools produced, developed, or paid for under this contract shall be the property of Natural England.

References

Natural England may request recent and relevant references prior to the award of the project.

Tender Evaluation

The tender will be evaluated on a cost 50% and quality 50% basis, where quality is scored between 0 and 100 based on the opinion of the evaluating officers.

Contract award

This Request for Quote is issued in good faith, but we reserve the right not to award any or all of this work.

Tenders should be sent to Robert Brown of Natural England by 5pm 23-06-2023 by email

Robert.brown@naturalengland.org.uk

Further information

Please contact **Rob Brown on 07826 905 180** or **Liz Humphreys on Mob: 07741 616 226** for any further information.

Further reading

[1429707026_WWTConstructedFarmWetlands150422.pdf](#)

[Rural SuDS Design and Build Guide December 2016.pdf \(crew.ac.uk\)](#)