Environment Agency

NEC4 Professional Service Contract (PSC)

Scope

Project / contract information

Project name	Greyfriars Community Flood Risk Management Scheme
Project SOP code	ENV0004019C
Contract number	
Date	29/04/2022

Assurance

Author	[redacted]	Date: 20/01/2022
Consulted		Date: 20/01/2022
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Revision History

Revision date	Summary of changes	Version number
October 2021	Working draft for comment	D1
February 2022	Updated following meeting with Arup 11/2/2022.	F1
April 2022	Simplified following scope reduction meeting 1/4/2022	F2
28 April 2022	Finalised following PAS review	F3
29 April 2022	Finalised following PAS review	F4

This Scope shall be read in conjunction with the version of the Minimum Technical Requirements current at the Contract Date In the event of conflict, this Scope shall prevail The *service* is to be compliant with the following version of the Minimum Technical Requirements:

Document	Document Title	Version No	Issue date
LIT 13258	Minimum Technical Requirements	11	04/05/2021

1 Overview

1.1 Background

Greyfriars Community is situated on the left bank of the River Wye near the heart of Hereford, Herefordshire. The community of concern comprises Greyfriars Avenue, Wye Terrace, Bridge Street, Gwynne Street and Palace Yard The community is mainly residential with some commercial properties A large open low-lying field lies to the west of Greyfriars Avenue. Currently there are no existing Environment Agency operated flood defence assets in Greyfriars although there is a flood warning service.

The Greyfriars Community has been impacted by a series of historical flood events. The Greyfriars Community experienced significant flooding over the winter of 2019/2020 During this period significant consecutive storm events were experienced, which led to some of highest levels recorded along the River Wye In October 2019, the River Wye reached its highest levels in 20years, with residents requiring evacuation. In February 2020, as a result of consecutive storm events, storm Ciara and storm Dennis, the River Wye over topped its banks and inundated the Greyfriars Community The River Wye gauge at the Wye Bridge recorded a peak level of 6.11m on 17 February 2020, this being the highest on record with 45 properties reported to be internally flooded Observed water levels exceeded the 100year modelled event by 0.2m. Residents experienced further flooding in January 2021 where 61 properties were reported to have been impacted internally

1.2 Previous Studies

1.2.1 **In undertaking the *service* the *Consultant* shall take account of the previous studies detailed in the table below and produce a short technical summary explaining how best use will be made of historical data**

Report	Date	Format	Outcomes of study
NRD Data	08/04/2020		
EA - Model files & report[P7]			
EA_NationalReceptorDataset2014			
GIS data modelled extents			
Communities @ Risk (from CBG)			
16 03 14 Hereford Hereford 344 IA Report v3	12/02/2016		
Hereford_IA_2018			
ModelReview_Wye_Hereford_v5			
EA FW Greyfriars Culverts			
River Wye Product 7 zip			
partial utilities information from HCC Barton Road CSO.Zip Greyfriars zip Westernculvert.zip photos and accompanying email description			

1.2.2 The previous studies have been undertaken by or for the *Client* using reasonable skill and care and have been accepted The *Consultant* shall review the information provided and notify the *Client* of any deficiencies in its adequacy. Following this review, and completion of any work required to rectify the deficiencies identified, the *Consultant* shall take the risk of any deficiencies in existing data quality and quantity which have not been notified to the *Client*.

1.3 Objective

The objective of this contract is for the *Consultant* to:

Developed a preferred option that is technically, socially, environmentally and economically viable

- The preferred option is to be developed ready to be progressed into detailed design and construction
- Undertake reasonable surveys that will provide the *Client* delivery confidence

Secure community support for the preferred option by supporting the client with public engagement

2 The service

2.1 Outcome Specification

The *Consultant* shall deliver the *service* such that it meets the outcomes listed in this section

2.1.1 The *Consultant* shall demonstrate sustainability leadership through fully considering and contributing to achieving the *Client's* environment and sustainability ambitions and targets These are set out in the EA2025 Action Plan, e:Mission 2030 Strategy, the Defra 25 Year Environment Plan and are in line with the principles of sustainability as described by the United Nation's Sustainable Development Goals

2.1.2 The *Consultant* shall design the scheme taking into account the environmental sensitivities and opportunities of the sites and involving key environmental specialists as appropriate within the *Consultant* and the *Client's* organisation.

2.1.3 The *Consultant* shall ensure the optioneering process fully considers and addresses sustainability including carbon reduction as strategic outcomes The EA business case template further requires separate option appraisals of sustainability benefits and whole-life carbon to compare with the economic appraisal and promotes a preference for the most sustainable option.

2 1 4 The *Consultant* shall ensure the optioneering process fully considers environmental mitigation and opportunities to further conserve and enhance as per our legal and policy obligations but to also contribute to the Environment Agency's ambitions. This includes delivery against OM4, to achieve biodiversity net gain but must also consider wider sustainability opportunities The Consultant shall ensure the optioneering process avoids where possible, minimises and compensates or offsets any adverse environmental effects

2 1 5 The *Consultant* shall produce an outline design which seeks to provide the optimum flood risk management scheme for Greyfriars Community FRMS This should provide the optimum economic, technical, social and environmental/sustainability/carbon outcomes, supported by evidence that will enable the *Client* to submit an Outline Business Case.

2 1 6 The *Consultant* shall produce an appraisal report and outline design that enables the *Client* to achieve efficiency targets set for this commission and future stages of the project using the Combined Efficiency Reporting Tool (CERT).

2 1 7 The *Consultant* shall ensure that the options and final solution take into consideration all relevant guidance and legislation and will seek to minimise long-term asset/land management and maintenance costs and carbon

2 1 8 The options will also demonstrate that the *Consultant* has learnt from best practice and demonstrate how optimum flood risk reduction, natural processes, carbon reduction, recreation, good ecological water quality and visual amenity can be combined.

2.1.9 This commission must consider planning permission and all other necessary permissions/licences being obtained at detailed design stage The outline design shall feasibly be able to obtain planning permission.

2 1 10 AD: The *Consultant* shall demonstrate that consideration has been given to a long list of potential options, identified an appropriate shortlist, appraised these to identify a preferred option and developed this option, its impacts, planning and Environmental Impact Assessment (EIA) requirements scoped to a level that it can be priced The *Consultant* shall develop a series of options to meet the above objectives. The term 'options' shall be defined as the approaches agreed to deliver the alignment selected as the leading option at SOC, this does not include re assessment of further design of 'options' excluded at SOC stage.

2 1 11 The *Consultant* shall assume that the options shortlisted in the OBC will be aligned with the strategy identified in the SOC However, the *Consultant* shall not assume that the preferred option will necessarily be the same as that identified at the SOC stage.

2 1 12 The *Consultant* shall compile the supporting technical documentation required for the *Client* to obtain a screening opinion from the Planning Authority.

2.2 Constraints

2 2 1 AD: All reports shall be written to be shared in public

2 2 2 ~~AD: The Consultant shall produce a plan of any additional site investigations that are not already included within the current contracted scope. The Consultant shall identify their delivery timescales on the programme. These investigations shall confirm the design as viable and shall help quantify any residual risks that need to be managed post OBC. The results of these investigations shall be captured in the Project Risk Register accordingly. Site investigations could include but are not limited to ground investigation, utility searches, environmental surveys, archaeology trial investigations. Survey delivery costs shall be managed as a compensation event. Large scale intrusive site investigations such as ground investigations or utility checks shall be delivered using Jackson Civil Engineer, delivery costs will be managed through the contract between the Client and Jackson Civil Engineering.~~

2.2.3 AD: The *Consultant* shall ensure that the resulting designed asset is as passive as possible given local site constraints and the constraints set by the Planning Authority and other statuary bodies

2.3 *Consultant* Project Management

2.3.1 In managing the *service* the *Consultant* shall follow all the requirements as set out in the Collaborative Delivery Framework schedules and the relevant content of the Minimum Technical Requirements.

2 3 2 In managing the *service* the *Consultant* shall:

- ~~Contribute monthly to the updates to the project risk register~~
- Provide input to project efficiency CERT Form
- Attend meetings, ~~and prepare record minutes within a week for the *Client* to issue.~~ including:
    - Participating in bi-weekly progress meeting teleconferences to progress any issues
    - Participating in bi-weekly commercial & programme teleconferences to progress any issues
    - To attend once every three months and present key project options and decisions at the Project Board meetings If more often attendance is required by the project, it will be treated as a Compensation Event. Meetings will be run virtually.
- Produce monthly financial updates and forecasts meeting the *Client's* project reporting timetable together with progress reports Monthly financial updates and forecasts to meet EA deadlines provided by no later than the 5th day of each month.
- Deliver a monthly progress report in the *Client's* standard template (Link) giving progress against programme, deliverables received and expected and financial and carbon summary against programme
- Ensure quarterly input into framework performance assessment/environmental Performance Measures
- Ensure the *Consultant's* environmental lead provides monthly progress and risk reviews to the *Client* and attends progress meetings, ~~as invited~~

- Maintain and show how accurate and up to date information on the whole-life cost and carbon of options is driving optimum solutions at all stages of design development.

- ~~Capture lessons learnt relevant to scheme delivery for the Client's Project Manager to include in the scheme lessons learnt log on Projects Online (POL) and to be appended to the OBC.~~

2.3.3 The contract will be administered using FastDraft.

2 3 4 AD: The *Consultant's* Environmental Lead shall have a bi weekly progress review meeting with the *Client's* NEAS representative. The *Consultant's* Environmental Lead shall attend all progress meetings and issues telecons (the later will be treated as a Compensation Event) ~~and Project Board meetings~~

2.3.5 AD: The *Consultant* shall use POL for document sharing, capturing lessons learnt and recording of risks

2.4 Outputs and Deliverables

2.4.1 The *Consultant* shall provide a list of products and deliverables for the *Client's* approval. The list of products should be agreed, and the product description submitted for approval before commencing work.

2 4 2 The *Consultant* shall produce the following key documents for this commission:

- ~~Modelling interpretive report capturing any modelling work undertaken~~

- Economics report.

- Options appraisal report.

- Documentation of the environmental process and considerations including risks and opportunities, including all heritage and listed structure work (e g Scoping Report)

- Outline Design(s) to provide the *Client* delivery confidence and to a level of detail to ensure no major changes post OBC stage and to allow a robust cost exercise to be undertaken to inform the economics and affordability of the project.

- Carbon Optimisation Report

- Programme showing milestones to construction completion for the preferred option including funding and environmental constraints and opportunities. The Programme shall take account of the timeframe required for all approvals necessary for mitigation and enabling works to be carried out in advance of main construction

- Buildability workshops x 2

- Value Engineering sessions x 1

2.4.3 AD: Outline Business Case (OBC). The *Consultant* shall write all chapters of the OBC, with the *Client* providing input to the management, commercial and financial chapters

2.4.4 AD: As part of the options appraisal, the *Consultant* shall use Appraisal Summary Tables (AST) to present the impacts of the options, both positive and negative, this including the carbon impacts of the options.

3 Site Investigation

3.1 Topographic Survey

3 1 1 ~~The *Consultant* will review previous topographic survey to identify gaps in existing data. The Consultant will use this to inform the scope of supplementary topographic survey required.~~

3.1.2 ~~The *Consultant* shall work with NEAS to ensure that environmental and sustainability constraints within the likely scheme footprint are identified and included in the survey and to determine if efficiencies can be made by joint working.~~

3.1.3 ~~Example text – A cross sectional survey of the main river is being undertaken by Others and will be provided for the *Consultant* to use in constructing the hydraulic model. The *Consultant* shall liaise with the survey team on the requirements of the survey and the format of output.~~

3 1 4 ~~the *Consultant* shall undertake cross sectional survey of the main river and spatial survey of the flood plain sufficient to allow for in bank and floodplain modelling and determination of depths of flooding of properties within the flood plain. Spacing of the survey shall be determined to suit the hydraulic model and shall include a survey of all restrictions, bridges, culverts and structures.~~

3 1 5 ~~Example text – A topographical survey is required to provide further details of the existing piles so that the alignment of new piles may be optimised relative to this. A survey is also required to supplement that previously undertaken by in order to identify the location of key features on the quay so that we may clearly define working areas and accesses in the ECC scope. Specific requirements are:~~

- ~~Preparation of a brief and procurement of the survey in accordance with the current version of the Environment Agency's National Standard Technical Specifications for Surveying Services, to enable the above.~~
- ~~Review and agree surveyors' site risk assessment.~~
- ~~Supervision and management of topographic survey company.~~
- ~~Review data / checking deliverables.~~
- ~~AD: The *Consultant* shall undertake the topographic survey necessary to be able to assess the shortlist of options and complete an outline design.~~

3 1 6 The *Consultant* shall use the outputs from the topographic survey in their modelling and option appraisal.

3.2 Ground Investigation

3.2.1 The *Consultant* shall scope the Ground Investigation required to be able to undertake an options appraisal and detailed design and agree the scope with the *Client*

3.2.2 The *Consultant* shall ensure that the environmental risks and opportunities associated with the Ground Investigation, including the collection of environmental evidence to support Appraisal and Assessment, are identified and addressed.

3 2 3 In scoping the Ground Investigation works the *Consultant* shall include the necessary works to facilitate efficient and sustainable materials management planning and re-use within the project

3.2.4 The *Consultant* shall identify any contaminated land within the area of the project and specify testing within the Ground Investigation scope such that it can be classified properly for disposal

3.2.5 The *Consultant* shall clearly communicate the scope of the Ground Investigation to the Lot 2 contractor for the Lot 2 contractor to undertake

3.2.6 The *Consultant* shall supervise the Ground Investigation undertaken by the Lot 2 contractor. The supervision will be subject to a Compensation Event.

3 2 7 The *Consultant* shall produce a summary of key interpretative decisions for the Ground Investigation undertaken by the Lot 2 contractor.

3.3 Services Search

3.3.1 ~~The *Consultant* shall obtain services data from utility companies and shall ensure services data is requested from relevant landowners. This shall include direct costs of obtaining data. This shall be incorporated into the appraisal, including preparation of plans.~~

3.3.2 The *Client* will arrange for a non-intrusive survey to detect key utilities (e.g. GPR etc.) to inform SI and or options appraisal The *Consultant* shall determine the extent of the survey and produce a specification for the survey in accordance with EA Guidance and Principal Designer discussion; defining type and purpose of survey including extents and available information

3 3 3 ~~The *Consultant* shall also provide a site supervisor to manage the survey supplier.~~

3.3.4 The outputs from this survey shall be included in the appraisal, including revising the plans.

4 Hydrology and Hydraulics

4.1 General

4.1.1. The existing modelling is identified in the table in section 1.2. The extents of the modelling and assumptions made are within the model report.

4.1.2. ~~The *Consultant* shall verify the model with quality and extent checks.~~

4.1.3. ~~The *Consultant* shall provide the *service* in accordance with the Modelling Technical Scope, included in Appendix 2.~~

4.1.4. ~~Additional runs shall be allowed for the final design case to give a sensitivity analysis on key parameters.~~

4.1.5. ~~The output shall be designed to interface with the economic analysis to allow for depths and durations of flooding to be determined.~~

4 1 6 AD: The Client instructs the Consultant to utilise the existing model including hydrology

4 1 7 AD: The *Consultant* shall use the existing River Wye hydraulic model provided by the *Client* for the initial economic assessment If required, a 2D model with updated hydrology may be commissioned as Compensation Event.

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5 Economics Appraisal

5.1.1 The *Consultant* shall undertake an economic appraisal in line with FCERM – Appraisal Guidance (FCERM AG), Supplementary guidance and the HM Treasury 'Green Book' This will include a valuation of all the key benefits, both economic and environmental, carbon assessment and whole life costs in order to produce a cost benefit analysis that will be used to determine the selection of a preferred option

5.1.2 Costs will be the whole life expenditure including, design, investigation, construction, operation and maintenance and end of life emissions The values will be calculated from the carbon tool (OI 120_16) to help optimise all options through all stages of design and business case development The calculation of carbon emissions and completion of the carbon tool will be carried out by the *Client*, the *Consultant* is required to provide the information needed to complete this.

5 1 3 Carbon will be whole-life emissions of an asset including embodied (construction), operation, maintenance and end of life emissions. The values will be calculated from the carbon tool (OI 120 16) to help optimise all options through all stages of design and business case development. The calculation of carbon emissions and completion of the carbon tool will be carried out by the *Client*, the *Consultant* is required to provide the information needed to complete this

5.1.4 Risk and Optimism Bias allowances shall be calculated in accordance with Risk Guidance for Capital Flood Risk Management Projects The *Consultant* shall attend 1 No risk workshops facilitated by others ~~/ the *Consultant*~~ to deliver the Scope.

5.1.5 Selection of the preferred option shall be undertaken in accordance with the FCERM-AG decision rules including consideration of the most sustainable and lowest carbon options following the EA business case template and guidance.

5 1 6 The assessment shall include for sensitivity tests to look at the effects of any changes to key parameters / beneficiaries and to demonstrate the robustness of any key assumptions made.

5 1 7 The *Consultant* shall produce, and maintain through the project, the FCRM Partnership Funding Calculator for Flood and Coastal Erosion Risk Management Grant in Aid (The PF calculator) The PF calculator shall be updated at the request of the *Client* or when evidence obtained during the project suggests a significant change is likely The *Consultant* shall inform the *Client* of any expected significant change in scheme choice or affordability at the earliest opportunity as the project develops

5 1 8 The *Consultant* shall use this data to assist the *Client* in identifying suitable sources of external funding.

Economic, Sustainability and Carbon Appraisal Deliverables

5 1 9 The *Consultant* shall provide the results of this section of the study in an economics report which shall feed into the economics appendix of the OBC. This will provide a clear view of the process in order that the economic lead for the review team can review the process This should include the below deliverables, and anything additional beyond this will be managed through a Compensation Event

- Overview of methodology adopted
- Parameters quantified and standards used (e g Multi-Coloured Manual)
- Parameters considered and not used together with reasons.
- Key receptors/ major beneficiaries.
- Wider benefits.
- Assumptions made.
- How the decision rules have been applied.
- What sensitivity tests have been applied and why
- Treatment of climate change, carbon reduction and sustainability benefits
- FCERM-AG spreadsheets and PF calculator