Environment Agency

NEC4 Professional Service Contract (PSC)

Scope

Project / contract information

Project name	Pulteney Gate - Appraisal
Project SOP code	ENV0002913C
Contract number	33806
Date	September 2021

Assurance

Author	[redacted] (EA PM)	Date: November 2021
Consulted	[redacted] (Atkins) [redacted] (Atkins)	Date: November 2021
Reviewed	[redacted] (EA PE) [redacted] (Defra DgC)	Date: November 2021
Checked prior to issue	[redacted] (EA Commercial Services Manager)	Date: February 2022

Revision History

Revision date	Summary of changes	Version number
February 2022	Final	2

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
412_13_SD01	**Minimum Technical Requirements**	11	May 2021

1 Overview

1.1 Background

1.1.1 The City of Bath is designated as a UNESCO World Heritage Site (WHS), largely due to the local Georgian architecture, landscape and heritage. Pulteney Weir and Pulteney Bridge, along with neighbouring high-profile locations are synonymous with the idyllic and postcard-esque representation of Bath, drawing large numbers of tourists and photographers. Pulteney Gate, the degrading asset at the centre of this study, is situated immediately next to Pulteney Weir and is considered to link highly with the aspirations of Bath and North East Somerset Council and Bath Rugby in relation to their long term public realm ambitions.

1.1.2 The existing horseshoe weir (Pulteney Weir) and the radial floodgate (Pulteney Gate) were built as components of the Bath Flood Protection Scheme. They have been used for controlling water levels and regulating the river flow since 1972.

1.1.3 Pulteney Gate consists of a single steel radial gate approximately 15m wide within a concrete channel. It acts to maintain water levels upstream of the weir and operates automatically based on water levels. It is operated by the Environment Agency. The land on which the gate sits is owned by Bath and North East Somerset Council.

1.1.4 Pulteney Gate is proposed to be removed and replaced by a weir. The new weir would be a passive structure with minimal operation and maintenance requirements. New fish and eel passages are also proposed.

1.1.5 Arup was commissioned in 2019 by Arena 1865 Ltd to undertake the design of the new weir as part of a wider redevelopment of the area, which includes a new stadium.

1.1.6 The CFD modelling carried out by Arup concluded that the proposed three-step weir solution would increase the upstream water levels by 50-100mm for the 10 year flood. This range of increase in flood risk was said to be unacceptable.

1.1.7 The conclusions of the CFD modelling were validated by JBA in 2019 and by Atkins in 2021. Some minor comments were made on the CFD modelling that did not significantly affect the outcome.

1.1.8 Alternative weir arrangement solutions were also outlined by Arup (2019) but have not been modelled. These options shall be considered against the project objectives to inform which options are suitable to be taken forward for assessment within the appraisal (this study).

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
Arena 1865 Ltd; Stadium for Bath; Radial Gate Replacement CFD Study Methodology. Arup	March 2019	PDF report	Methodology of the CFD analysis of the proposed 3-stepped fixed crest weir to replace radial gate.
Arena 1865 Ltd; Stadium for Bath; Radial Gate Replacement - Fish Pass Design Statement; Arup	March 2019	PDF report	A new Larinier pass fish pass was proposed at Pulteney Weir. Eel passage proposed alongside the new fish pass
Presentation Pulteney Weir Radial Gate Replacement Stakeholder Design Workshop	April 2019	PDF presentation	Presentation of the proposed 3-stepped fixed crest weir to replace radial gate
Arena 1865 Ltd; Stadium for Bath; Radial Gate Replacement – WFD Compliance Assessment; Arup.	June 2019	PDF report	Scheme will not cause deterioration to the status of any WFD water body provided the mitigation measures and recommendations are followed.
Arena 1865 Ltd; Stadium for Bath; Radial Gate Replacement – Eel Pass Concept Design; Arup.	June 2019	PDF report	Gravity-fed lift out eel tile down the existing side wall was proposed
Arena 1865 Ltd; Stadium for Bath; Radial Gate Replacement - Fixed Weir Concept Design and Preliminary CFD Analysis Summary; Arup;	September 2019	PDF report	The CFD analysis showed an increase in the u/s water levels by 50-100mm for the 10 year flood. This range of increase would be unacceptable by all parties. Alternative weir arrangement solutions were also outlined within this report
Technical Review Certificate of Pulteney openFOAM CFD model; JBA	October 2019	MS Word report	The review concluded that the technical output was sound.
Stadium for Bath - Replacement of the radial gate. Option sifting; Discussion of acceptable options; Arup	October 2019	PDF Meeting minutes and Options Summary	Long list of 9 options reviewed. 2 options retained for further analysis (Option 6 and 7)
File Note; Stadium for Bath; Notes on 1D-2D modelling of weir options; Arup	October 2019	PDF report	Notes on the options to be tested.
Pulteney Gate CFD Modelling Review; Atkins	March 2021	MS Word report	Some minor comments were made on the CFD modelling. Conclusions of the work are sound.

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

1.3.1 AD: The objective of this commission is completion of an Options Report to appraise solutions to meet the following criteria:

- Protect the safety of the public;

- Appraise the suitability of replacing the existing radial gate which is reaching the end of its serviceable life with a passive structure, thus reducing operation requirements during a flood or low flow event and to minimise future maintenance;
- The proposed solution shall not increase flood risk elsewhere during floods compared to the status quo for equivalent event Annual Exceedance Probability (AEP);
- Where possible, enhance the heritage, landscape and amenity value of the area;
- Improve fish and eel passages (in particular, in accordance with the Eel Regulations 2009 and Salmon and Freshwater Fisheries Act 1975 (SAFFA));
- Promote the minimising of whole life carbon cost of the Pulteney gate replacement through the OBC process; and,
- Hand over preferred solution through associated deliverables to allow BaNES to take forward once OBC is finalised.

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 economic, technical, social and environmental/sustainability/carbon outcomes, supported by evidence that will enable the *Client* to produce 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 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 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.

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 local planning authority.

2.1.13 AD: The *Consultant* shall appraise options and identification of a leading option to replace the existing radial gate, inclusive of outline design, which meets the criteria set out in Section 1.3 (Objectives) and works within the constraints identified in Section 2.2. The rationale for this is that BaNES are developing the river line from Batheaston to Newbridge, and this development will include the removal of the existing Pulteney Gate structure. Providing a feasible option as part of the OBC for a passive asset is the EA contribution to BaNES.

2.2 Constraints

2.2.1 The passive structure shall be designed such that it removes the current access requirements over land occupied by Bath Rugby's stadium once fully constructed.

2.2.2 The scheme shall not cause deterioration to the status of any WFD water body or prevent a water body from achieving either Good Ecological Status or Potential.

2.2.3 Recommendations and mitigation measures from WFD Compliance Assessment shall be considered for the development and assessment of the various options to replace the gated structure.

2.2.4 Interface with existing structures. Ideally the new structure shall be built within the concrete channel where currently the gate is installed.

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 progress meetings and prepare record minutes within a week for the *Client* to issue.
- 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 10 h day of each month, or otherwise agreed at the project start up meeting.
- 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.
- Attend project board meetings as required.
- 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 EA PM to include in the scheme lessons learnt log to be appended to the OBC.

2.3.3 The contract will be administered using FastDraft.

2.4 Outputs and Deliverables

2.4.1 The *Consultant* shall provide input to product descriptions for key outputs and deliverables that the *Consultant* shall produce during the appraisal stage. Agree the list of products with the *Client* and submit the product description for the *Client's* approval before commencing work on the product.

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

- Modelling report.
- Economics report.
- Options appraisal report.
- Documentation of the environmental process and considerations including risks and opportunities (e.g. Scoping Report).
- Outline Design(s).
- 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.
- OBC.

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 Example text - 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 A topographical survey is required to supplement that previously undertaken to support the recent hydraulic modelling. 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.
- The *Consultant* shall undertake the topographic survey necessary to be able to assess the shortlist of options and complete an outline design. The procurement of the topographic survey will be subject to a Compensation Event.

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 outline 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 *Consultant* shall use existing 1D-2D hydraulic model as identified in Section 1.2 to assess and determine the leading short-listed option.

4.1.7. AD: The *Consultant* shall update the existing CFD model to account for changes in Climate Change guidance. Following the update, the *Consultant* shall run the model to determine the revised baseline.

4.1.8. AD: The *Consultant* shall model each structural option using all future climate change scenarios up to and including 2115 in accordance with the most recent government guidance.

4.1.9. AD: The *Consultant* shall undertake a comparison of the 1D-2D and CFD model results and present this information to the EA Project Team. Further use of the CFD model beyond this point is subject to a change in scope and potential compensation event.

4.1.10. AD: The *Consultant* shall determine the preferred option for the appraisal study which meets the objectives, criteria as part of the OBC assessment and also against the constraints of this study, backed up by results within the 1D-2D model.

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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. Costs can be devised in the most efficient but accurate manner and Early Supplier Engagement (ESE) input is required. The *Client* will provide support and costs where possible to complete this estimate.

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.

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 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 section 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. As a minimum this will include, but not be limited to:

- 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 and sustainability benefits., carbon reduction
- FCERM-AG spreadsheets and PF calculator.

6 Environmental Assessment

6.1.1 The *Consultant* shall confirm in the activity schedule the expected environmental outputs agreed through engagement with NEAS. The activities identified shall take into account proportionality whilst supporting the achievement of the *Client*'s wider aspirations.

6.1.2 The *Consultant* shall give due consideration of the environment and sustainability risks and opportunities throughout the design evolution of the project to maximise the delivery of *Client* and project objectives.

6.1.3 The *Consultant* shall ensure that the project level assessment sits within the context of any previous strategic environmental assessment and supporting information for the area and brings forward all relevant information and conclusions.

6.1.4 The *Consultant* shall establish and understand the baseline and the legal and policy context to identify the key environmental/sustainability risks and opportunities. This shall support the options appraisal and justify the need for any future environmental assessment activity.

6.1.5 AD: The *Consultant* shall report the findings of the environmental screening and scoping exercise (Preliminary Environmental Information Report) as required which will form an Appendix to the OBC with relevant summary details incorporated into the relevant section(s) of the OBC main text.

6.1.6 AD: Below elements are included within the NGSA carbon cost curves however, please note that the following are to provide clarity on what will form part of this project.

The following deliverables shall be required:

- A Preliminary Environmental Information Report (PEIR) will be undertaken of the selected Option to be taken forward during OBC. The following deliverables will be undertaken which will form appendices to the PEIR.
    - Preliminary WFD Assessment;
    - Preliminary Ecology Appraisal;
    - Heritage Desk Based Assessment;
    - Environmental Site Appraisal Plan;
    - Landscape and Visual Appraisal;
    - Indicative Landscape Plan;

6.1.7 AD: The *Consultant* shall prepare and submit an EIA Screening and Scoping request to BANES.

6.1.8 AD: The *Consultant* shall attend a CEEQUAL scoping workshop (half-day) with the *Client.* This will identify with NEAS the CEEQUAL issues and scope that is applicable to this stage of work. The *Consultant* will then review and respond to the scope issued by NEAS, to reach agreement on the scope. The subsequent completion of the CEEQUAL scope will be subject to a Compensation Event.

7 Option Development

7.1.1 The *Consultant* shall undertake an options appraisal, which will include a review of the previous work, to prepare a long list of options. The long list shall not be constrained by previous work and will be agreed with the *Client* at an options meeting, where the *Client* will invite representation from (add or delete as necessary) area FCRM, the ESE contractor's representative, NEAS, MEICA, Field Services and the Principal Designer. The *Consultant* shall screen and assess this long list of options for technical, environmental, sustainability, carbon and economic suitability, as considered appropriate.

7.1.2 Following this screening, the *Consultant* shall prepare a short list of viable options for the *Client's* approval, giving reasons for including or excluding each of the long list options. The most sustainable option shall be included in the short list. On the agreement of the *Client*, the *Consultant* shall assess in detail these options for technical, environmental and economic suitability, as discussed in the relevant sections of this brief, utilising the evidence and data collated as part of this commission.

7.1.3 Options appraisal shall include engagement with the ESE contractor on pricing, buildability and maintainability and the *Client* including Field Services and Area FCRM.

7.1.4 The *Consultant* shall analyse and appraise the carbon footprint of options as outlined in Section 11.

7.1.5 The *Consultant* shall seek options that support the e:Mission 2030 sustainability targets.

7.1.6 The *Consultant* shall use these outputs to select a preferred option. The *Consultant* shall facilitate design workshops, attend/ facilitate (decision required who shall facilitate) risk workshops to produce a risk register (plus if facilitating) with analysis in accordance with LIT 14847 Risk Guidance for Capital Flood Risk Management Projects.

7.1.7 The *Consultant* shall develop the business case for the preferred option and the outline design including provision of specification, drawings and documentation required for Early Supplier Engagement.

7.1.8 ~~The *Client* shall draft the scope for the next stage of the project (OBC FBC) and the *Consultant* shall support the *Client* to produce the scope.~~

8 Stakeholder Engagement

8.1.1 The *Consultant* shall prepare / review and update and maintain a stakeholder engagement plan in accordance with the EA guidance “Working with Others” including agreement of key stakeholders with discussion with the *Client*. The *Consultant* shall ensure that the results from the stakeholder engagement informs the appraisal.

8.1.2 Monthly circulation of updated communications record at progress meetings.

8.1.3 The *Consultant* shall provide technical support, prepare information for and attend a key stakeholder meeting as well as preparing information and reviewing external communications prepared by Others (e.g. quarterly newsletters).

8.1.4 ~~The *Client* will arrange and advertise XX no. public meeting/workshops. The *Consultant* shall provide technical support, prepare information for input into the consultation documents and prepare site plans and typical outline design drawings for public display. Attendance at these meetings shall include the *Consultant* project manager, environmental lead and other roles as necessary.~~

8.1.5 The *Consultant* shall provide technical support and attend meetings with key external organisations/individuals impacting upon option selection process as required which are proportionate to the completion of the OBC. Key stakeholders which have been consulted to date are Bath and North East Somerset Council and Bath Rugby, however given the nature and sensitivity of the site and surrounding area, further stakeholder engagement will be required.

8.1.6 The *Consultant* shall consider the following and document how they are addressed on this contract:

- Public diversity in engagement and perception of the project team.
- Accessibility.
- How inclusive environments are created for the project team.

9 Health and Safety

9.1.1 Health, Safety and Wellbeing (HSW) is the number one priority of the *Client*. The *Consultant* shall promote and adopt safe working methods and shall strive to deliver design solutions that provide optimum HSW to all.

9.1.2 The *Consultant* shall follow and comply with the requirements outlined in the Safety, health environment and wellbeing (SHEW) Code of Practice (LIT 16559).

9.1.3 The *Consultant* shall supply designer risk assessments, drawings and any other data required to fulfil their duties under CDM.

9.1.4 The works on site included in the geotechnical section will be subject to notification to the HSE. Appraisal work to outline design shall be treated as if it was notifiable.

9.1.5 AD: The *Consultant* shall fulfil the Principal Designer (PD) role and discharge the duties in accordance with the requirements of regulations 8, 9, 11 and 12 of the Construction Design Management Regulations 2015.

9.1.6 AD: The PD must be a lead or active designer and can either demonstrate relevant Skills, Knowledge and Experience to undertake the role or have access to relevant support to discharge their duties.

9.1.7 AD: The PD will demonstrate their compliance with their CDM duties by preparing and updating the Pre-Construction Management Tool on a monthly basis (or more frequently for start of construction activities) and liaising with the CSF Resident Principal Designer.

9.1.8 AD: The PD will identify and track significant risks, scrutinise the quality of treatment of risks with regards to the principals of prevention, co-ordinate other designers' mitigation and handover designs which can be constructed safely.

9.1.9 AD: The PD shall ensure there is effective liaison and coordination between phases with the Principal Contractor.

10 Business Case Submission

10.1.1 The *Consultant* shall aggregate all of the work undertaken from this commission into a business case document – the Outline Business Case. The format of this document and guidance on the contents is detailed in Write a Business Case LIT 55124 (Link) and the Business Case templates.

10.1.2 The *Consultant* shall be responsible for dealing with responses to queries during the approval process and any resubmission required.

10.1.3 The OBC Delivery is to be in accordance with the *Client's* submission programme for either the National Project Assurance Service (NPAS) or the Large Projects Review Group (LPRG) for projects costing over £10m. The *Client* shall be kept up to date of progress and submission dates in order that the delivery of this to the review team can be programmed and a place booked at the appropriate review meeting.

10.1.4 This section of the study shall conclude with the final approval of OBC using latest EA Guidance including all appendices and FSoD approval following submission to NPAS or LPRG.

11 Carbon

11.1.1 Carbon emissions shall be identified and assessed on a strategic whole life basis (cost and benefit) in the economic appraisal of options and also as a specific operational target (carbon budget) of the *Client*.

11.1.2 The *Consultant* shall demonstrate how they have met the corporate requirement for carbon reduction using the Carbon Tool, 'ERIC' and:

- Identifying carbon differentials between alternative solution options at appraisal stage.
- Ongoing updates to the carbon calculator and use of the carbon calculator to inform design and construction methodology decisions.
- Completion and submission of the carbon calculator at the pre-defined stages.
- Inclusion of a whole-life carbon appraisal to ensure optimisation of lowest carbon in short-listed and preferred options in OBC.

11.1.3 AD: *The Consultant shall* demonstrate and document the carbon savings available to the various options assessed. No prior target has been set. This element shall be detailed and discussed throughout the OBC (Carbon Optimisation Report) as the project progresses.

12 General

12.1.1 Section not used.

13 Relevant guidance

The *Consultant* shall deliver the *service* using the following guidance:

Ref	Report Name	Where used
LIT 16559	Safety, health environment and wellbeing (SHEW) Code of Practice	Throughout
183_05	Data management for FCRM projects	Mapping and modelling
379_05	Computational Modelling to assess flood and coastal risk	Modelling
LIT 14847	Risk Guidance for Capital Flood Risk Management Projects	Option development
OI 120_16	Whole-life Carbon Planning Tool	Option development
LIT 14284	Whole Life (Construction) Carbon Planning Tool User Guide	Option development
	Access for All Design Guide	Option development
	Project Cost Tool	Costs
LIT 12982	Working with Others: A guide for staff	Consultation & Engagement
Gov.uk	Appraisal Guidance Manual	OBC
672_15_SD03	Business case template – 5 case Model	OBC
672_15_SD02	Short Form Business case template	OBC
LIT 4909	Flood and Coastal Erosion Risk Management appraisal guidance (FCERM-AG)	OBC
	Flood and Coastal Erosion Risk Management: A Manual for Economic Appraisal (the 'Multi Coloured Manual')	OBC
OI 1334_16	Benefits management Framework	OBC
Gov.uk	Partnership Funding Calculator Guidance	OBC
LIT 15030	The Investment Journey	OBC
LIT 55124	Write a Business Case	OBC

Ref	Report Name	Where used
LIT 14953	FCRM Efficiency Reporting – capital and Revenue	OBC
LIT 12280	Lessons Log template	OBC
LIT 55096	Integrated Assurance & Approval Strategy	Approvals

14 Requirements of the Programme

14.1.1 The *Consultant* shall provide a detailed programme in Microsoft Project format version 2016 meeting all requirements of Cl.31 of the Conditions of Contract.

14.1.2 The *Consultant* shall provide a baseline programme for the project start up meeting and shall update the programme monthly for progress meetings with actual and forecast progress against the baseline. The programme shall also include alignment and submission of the BIM Execution Plan (BEP) and Master Information Delivery Plan (MIDP).

14.1.3 The programme shall cover all the activities and deliverables in the project, and include all major project milestones from commencement to the end of the reporting, consultation and approvals stage.

14.1.4 The programme shall include review and consultation periods for drafts, scoping letters, statutory consultation etc.

14.1.5 The programme shall identify time risk allowance on the activities and float.

14.1.6 The *Consultant* shall produce a Programme such that the following milestone dates are achieved (examples below, delete if not required):

Date	Event
XX/XX/XXXX	Submission of deliverable for EA Approval
XX/XX/XXXX	Submission of OBC to NPAS

14.1.7 The following are absolute requirements for Completion to be certified:

- Population of the *Client's* latest version of the Project Cost and Carbon Tool, or its successor
- Transfer to the *Client* of BIM data
- Clause 11.2(2) work to be done by the Completion Date

15 Services and other things provided by the *Client*

15.1.1 Access to Environment Agency systems and resources including:

- Asite.
- FastDraft.
- Collaborative Delivery Community SharePoint access.

15.1.2 Letter of Appointment of Principal Designer.

15.1.3 Site access authorisation letter(s).

15.1.4 Previous studies listed in Section 1.2.1. The *Client* will provide the previous studies within two weeks of contract award.

16 Data

16.1.1 Requirements for the handling of project data are covered by the framework schedules.

16.1.2 All of the data listed as being supplied to the ***Consultant*** as part of this study remains the IP of the *Client*.

16.1.3 The data custodian for project deliverables from this commission will be the PSO team.

16.1.4 Licences for LiDAR Data, Ordnance Survey mapping, model, survey, hydrometric and historical data will be provided to the *Consultant* upon award of this commission.

16.1.5 The *Client* populates a metadata database called the information asset register (IAR). It is a requirement that all information produced by modelling work is appropriately tagged with metadata. The *Client* will supply an IAR spreadsheet (and any supplementary local metadata requirements if appropriate) where all relevant metadata can be recorded and handed over on project completion.

16.1.6 All model and survey information will be provided to the *Consultant* in an encrypted format (using WinZip 128 bit encryption) according to *Client* data security policy. Once the commission is completed, all the original data sent to the *Consultant*, which is classed as commercially sensitive, is returned in an encrypted format using WinZip 128 bit encryption.

16.1.7 Project deliverables such as model files, survey data or anything of a personal nature such as questionnaires or address data must also be returned in an encrypted format using WinZip 128 bit encryption.

16.1.8 Further details regarding security measures will be discussed at the start-up meeting for this commission.

16.1.9 AD. Provision of data to the *Client* upon completion of the Scope, to reflect the adoption of EiR2.5 as of 1/4/21.

17 *Client's* Advisors

17.1.1 The *Client* for the Contract is represented by the Programme & Contract Management (PCM) team, primarily the EA Project Manager, acting as the *Service Manager*, and in their absence the Project Executive. Instructions may only be given by these staff.

17.1.2 The *Client* has a number of advisory departments. Instructions will only be deemed enacted from them when they are confirmed by an Instruction from the *Client*. These departments include Asset Performance, Partnership & Strategic Overview, NEAS, etc.

17.1.3 The *Client's* organisation has a regulatory function. Communications from the Environment Agency in its capacity as a regulator are not to be confused with communications as the *Client*.

18 *Client* Documents the *Consultant* Contributes to

18.1.1 The *Client* maintains several project documents, the *Consultant* is required to contribute to these *Client* owned documents:

- Project Risk Register.
- Project Efficiency CERT Form.
- Scheme Lessons Learnt Log.
- Cost and Carbon Tool (CCT).

Appendices

Appendix 1 – BIM Protocol

The *Consultant* shall adhere to the Environment Agency's Employers Information Requirements (EIR) framework level minimum technical requirements.
All *Client* issued information referenced within the Information Delivery Plan (IDP) requires verifying by the *Consultant* unless it is referenced elsewhere within the Scope.
https://www.asite.com/login-home
The *Consultant* shall register for an Asite Account and request access to the project workspace to view the IDP.