Environment Agency
NEC4 professional services contract (PSC)
Scope

Project / contract information

Project name	Cockermouth Asset Reconditioning Project
Project SOP reference	[redacted]
Contract reference	
Date	20 October 2022
Version number	5.0
Author	[redacted]

Revision history

Revision date	Summary of changes	Version number
July 2022	First draft to Lot 1 Supplier for discussion	1.0
Aug 2022	Supplier comments return	2.0
31 Aug 2022	Revised draft for comment	3.0
21 Sep 2022	Update following internal review	4.0
20 Oct 2022	Amendments following supplier comments	5.0

This Scope should 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 *services* are to be compliant with the Minimum Technical Requirements.

Document	Document Title	Version No	Issue date
LIT 13258	Minimum Technical Requirements	12	30-12-2021

1 Overview

The Scope sets out the requirement for the *Consultant* to develop technical outputs to support a Strategic Outline Business Case (SOC) for the Cockermouth Asset Reconditioning project. The SOC will require a flood risk management appraisal for a Sustain Standard of Service (SoS) project, in line with Flood and Coastal Erosion Risk Management – Appraisal Guidance (FCERM-AG). This will require a detailed appraisal to identify the least cost option which meets the project objectives using a Cost Effectiveness Analysis. The project objectives will be redefined through development of SOC, to ensure that the assets forming the Cockermouth FAS (2012-13) can achieve the original 100 year design life.

The objective of this contract is to produce the identified deliverables for a SOC to confirm the project need and to progress to a successful delivery of the least-cost, sustainable option. This option shall also consider proportionate contribution to environmental regeneration and potential for future adaptations, in line with FCERM-AG.

This Scope is the *services* to be provided by the *Consultant* unless specifically excluded.

1.1. Background

Cockermouth is located downstream of Bassenthwaite Lake and is situated on the border of the Lake District National Park, within Allerdale District of Cumbria. Cockermouth is located at the confluence of the River Derwent and the River Cocker and has a long history of flooding. Both rivers are designated within the River Derwent and Bassenthwaite Lake Special Area of Conservation (SAC) and the River Derwent and Tributaries Site of Special Scientific Interest (SSSI).

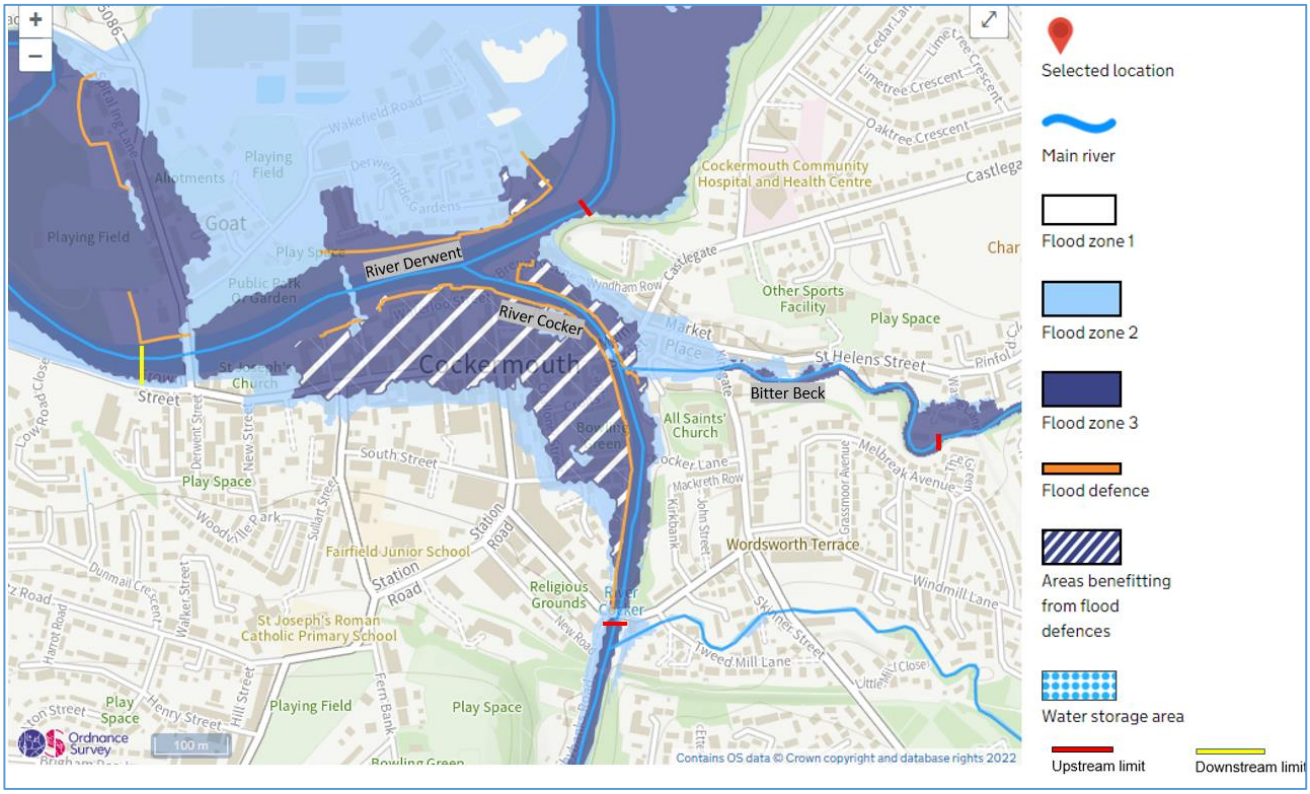


Figure 1: Cockermouth Location Plan

In 2013 the Environment Agency completed the construction of the Cockermouth FRM Scheme. The £4.4 million scheme complimented existing flood defences on the River Derwent and the River Cocker, built in 1999. To make the scheme economically viable, £1.1m external funding contribution was secured and significant value engineering applied to reduce the overall construction cost, enabling an Adjusted PF score of 100% to be achieved.

An appraisal was carried out following extensive flooding across Cumbria caused by Storm Desmond in December 2015. In Cockermouth, 466 residential properties and businesses were affected by flooding predominantly from extreme river levels causing the FRMS to overtop at several locations. The appraisal focussed on reducing uncertainty in the baseline (as defined by hydrological and hydraulic modelling) to evaluate an economic case for an improved FRMS. Whilst the appraisal identified a leading economic option of an enhanced 1.33% AEP linear defence scheme, a significant sum of external funding contribution was required therefore no further action taken to progress into a business case for design and construction works.

The most recent flood event in Cockermouth occurred on the 27th October 2021. The high flows experienced on the River Cocker caused significant erosion to the riverbank and structural damage to several of the riverside structures and flood defence assets which protect Cockermouth Town Centre. Emergency erosion protection works, and temporary flood defence works (secondary line of defence) were carried out by Volker Stevin on behalf of the Environment Agency in December 2021 works to reduce the risk of failure of the flood defence assets.

Upstream of the failing flood defence assets, a private property is also heavily undermined and was classified as a 'dangerous structure' by Allerdale Borough Council until temporary remedial works were completed by the landowner. This property (the Old Court House) forms the defence alignment, with Property Flood Resilience (PFR) installed in early 2011, prior to the construction of the Cockermouth FRMS. The installation and ongoing maintenance of this PFR is supported by a legal agreement and the building's ability to withstand additional hydrostatic pressure was verified by an independent structural engineer in 2010.

Other assets forming part of this project are also at risk of becoming undermined, with an expected reduction in design life impacting the functionality of the FRMS.

1.2. Document location on Asite

Existing information detailed within the Scope will be shared with the *Consultant.* This information will be available via Asite after Contract Award in line with the projects BIM Execution Plan.

[redacted]

1.3. Outputs and deliverables

1.31 Objective

A project mandate was received by Programme & Contract Management (PCM) in June 2022, with the following objectives identified:

- To achieve the National Targets for Environment Agency Key Performance Indicators: FCRM 1.3 (KPI962 – number of assets at required condition in high/medium/low systems) and possible future targets for FCRM 2.5 (KPI965 – management of assets below required condition).

- To repair/refurbish the failing assets back to Grade 3 – 'fair condition' (or better) as detailed in the Condition Asset Assessment Manual.

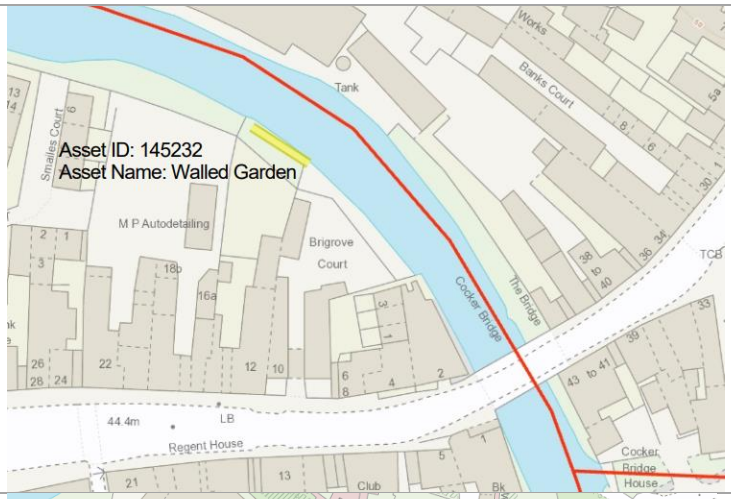
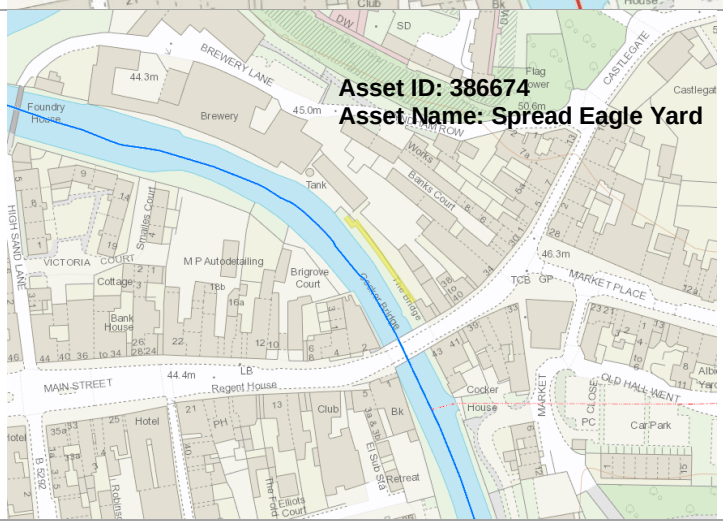
- Implement a permanent solution based on the preferred solution which accounts for future maintenance activities and impact of climate change on design life.

- To complete these works as soon as possible, within the overall budget.

Table 1 below summarises the failing assets identified within the project mandate with Figure 2 and 3 showing the Environment Agency assets and 3rd party assets respectively.

Table 1: Failing Assets (Extract from Project Mandate)

Asset	Asset ID	Description	Location
The Old Court House	77095	The Old Court House Building is a 3rd Party Asset which forms part of the Cockermouth Flood Defences which protect the Main Street area. Following the flood event on October 27th 2021, the building has been undermined and is in a state of structural failure. Allerdale Borough Council issued a Section 78 notice under the Building Act 1984 (dangerous structure) in November 2021 which was removed in June 2022 after temporary remedial work (installation of grout bags) was undertaken by the landowner. The requirement to undertake permanent repair/protection work has been highlighted to the landowner, in writing by Allerdale Building Control, to prevent further deterioration and subsequent reapplication of the Section 78 notice. Grade II listed. This property is adjacent to Cocker Bridge, also a Grade II listed structure.	
No.3 Brigrove Court	184181	No 3 Brigrove Court is an adjoining property to the Old Court House and is also a 3rd Party Asset which forms part of the Cockermouth FRMS, defending the Main Street area. Following the flood event on October 27th 2021 the retaining wall in front has been undermined and partially collapsed. The emergency works carried out in Winter 2021 provide temporary scour protection for this asset.	

The Old Police Station	156910	The old river retaining wall at the Old Police Station yard failed and collapsed into the river during the October 2021 flood event. This has exposed the foundations of the EA flood defence wall and put it at risk of structural damage and there is an increased flood risk from flow paths underneath the wall. Temporary emergency scour protection works have been carried out in Winter 2021 at this location, comprising of rock filled bags placed in the channel.	
Walled Garden	145232	The old river retaining wall at the rear of 14 Main Street failed during the October 2021 flood event. This has left the EA flood defence wall at risk of structural damage and there is an increased flood risk from flow paths underneath the wall. Temporary emergency scour protection works have been carried out at this location in Winter 2021, comprising of rock filled bags placed in the channel.	
Spread Eagle Yard	386674	The dwarf EA flood defence wall which links the brewery defences (sheet piled) to high ground at Cocker Bridge is at risk of structural damage, due to the condition of an old third party retaining wall which protects the toe of the river bank. Potential seepage reported by landowners at 46 Market Street. Both Cocker Bridge and 46 Market Street (upstream end of flood defence wall) are Grade II listed structures.	

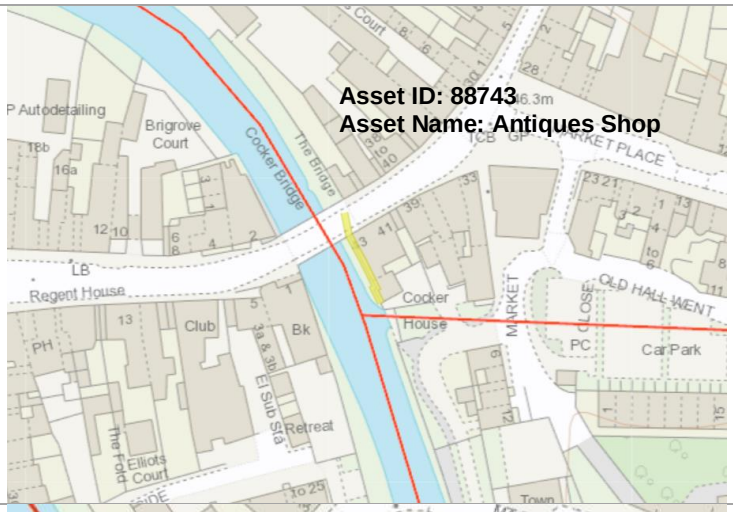
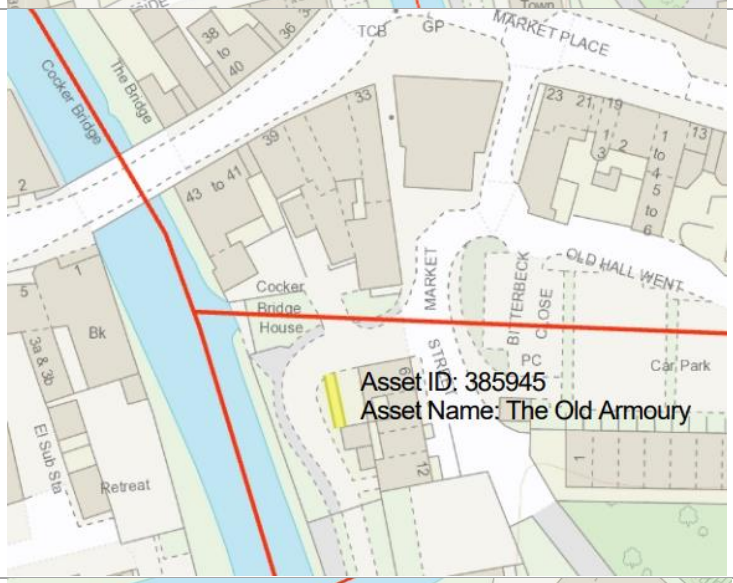
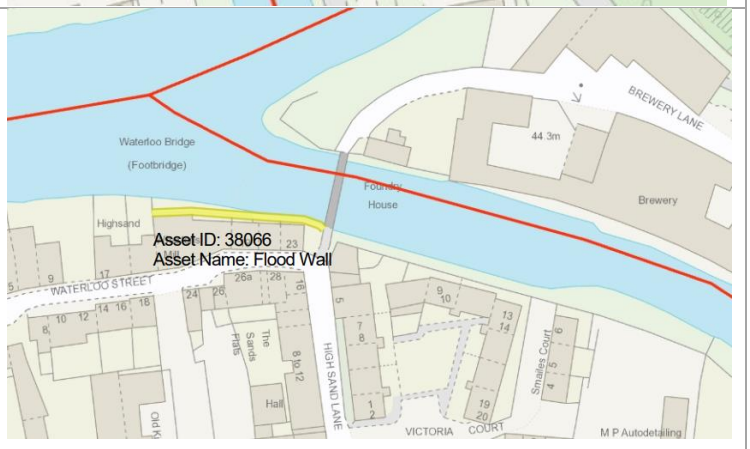
Antique Shop	88743	The Antiques Shop building is a 3rd Party Asset which forms part of the Cockermouth FRMS which protect Market Street immediately upstream of Cocker Bridge (right bank). A small retaining and berm which protect the foundations of the property are failing and if left with no maintenance/intervention could result in the property suffering from structural damage.	
The Old Armoury	385945	This building is set back from the River Cocker but forms the defence alignment. The 3rd party asset is currently not watertight allowing flooding to occur to properties behind on Market Street. This structure is not listed but may be a locally listed building as it has a degree of interest and should be considered as an undesignated heritage asset.	
Flood Wall D/S of Waterloo Footbridge	38066	EA Flood Defence Wall directly downstream of Waterloo Street Footbridge on the left bank near the confluence with the River Derwent. During the October 2021 flood event the rip rap (crushed aggregate) has been washed away and the wall undermined.	

Figure 2: EA Maintained Asset Location Map

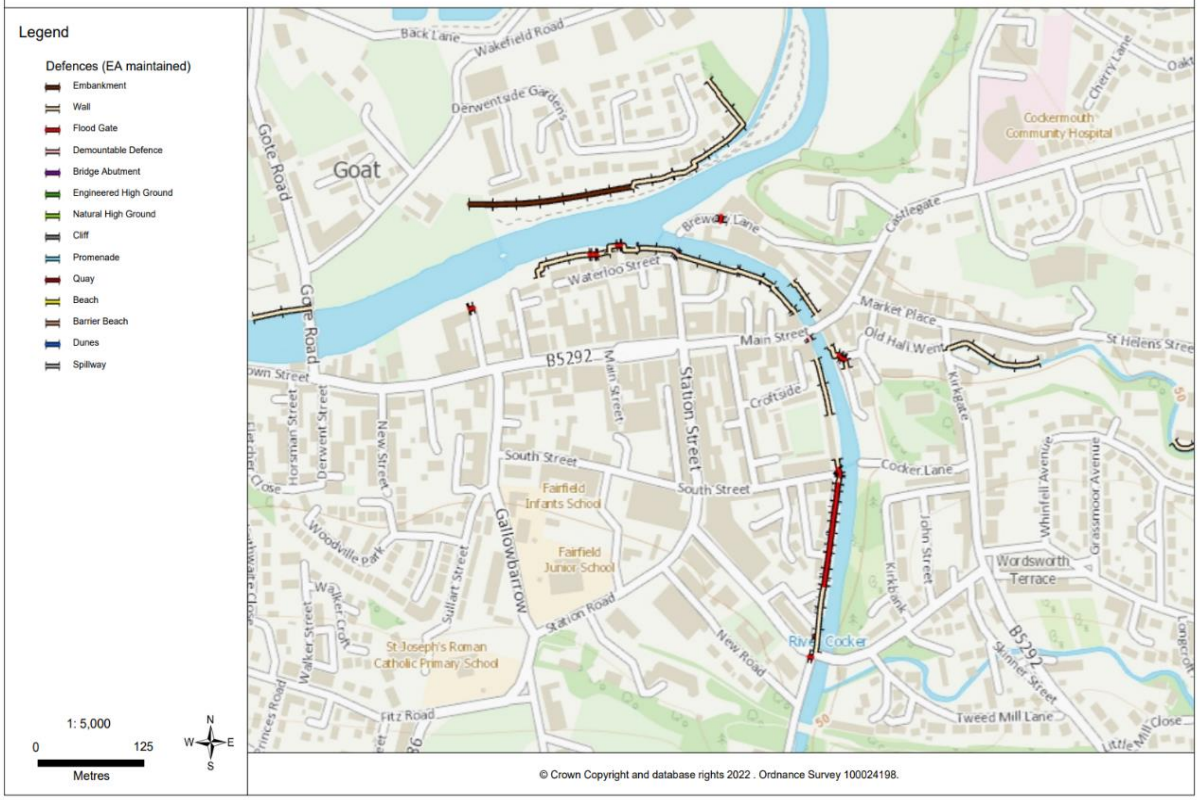
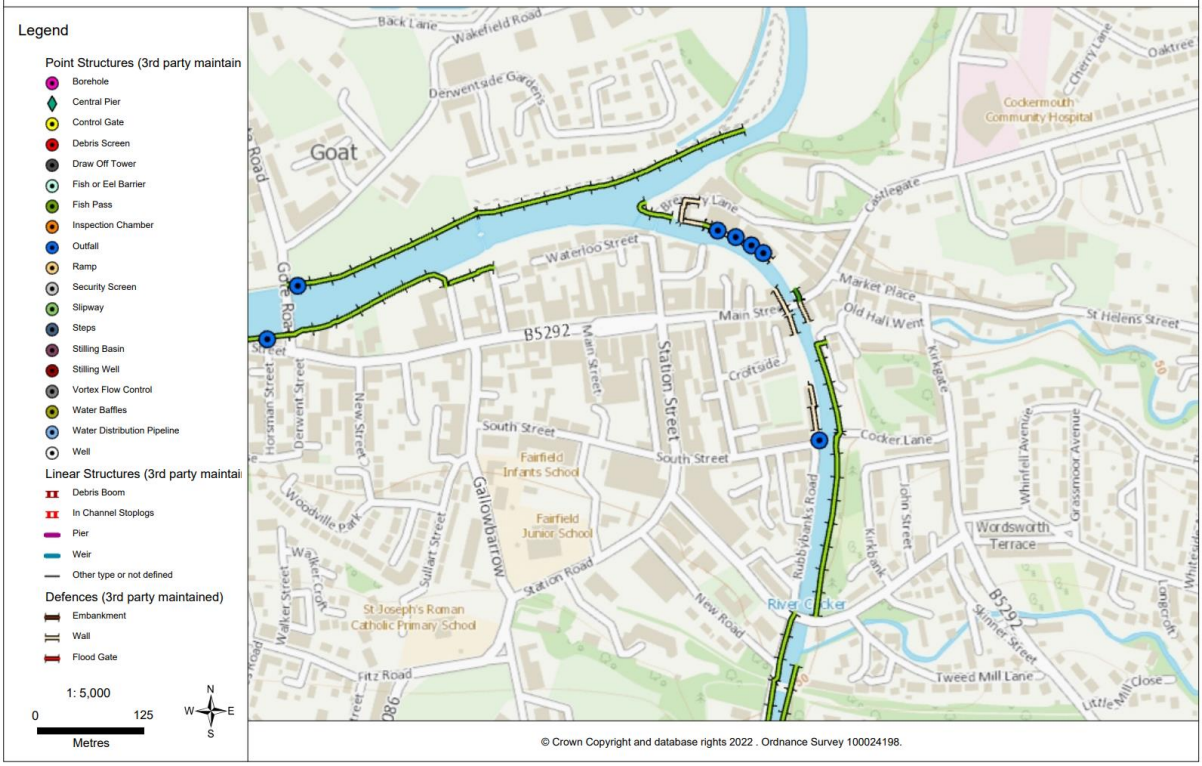


Figure 3: 3rd Party Maintained Asset Location Map



The objectives identified within the project mandate will be reviewed by the *Consultant* and *Client* through the development of the SOC to ensure that the project satisfies the requirements of the Sustain SOS assurance route in progression to Outline Business Case (OBC). The assurance route has been agreed with FCRM Investment team with the key project objective to reinstate the design life that the Cockermouth FRMS intended to deliver (i.e. Currently 9 years old, therefore assets should remain functional until 2113).

The project shall collaboratively deliver a high quality, concise and compelling Strategic Outline Case in accordance with Business Case Guidance: Five Case Model - Operational Instruction 672_15. The *Consultant* will undertake the first stages of a flood risk management appraisal in line with Flood and Coastal Erosion Risk Management – Appraisal Guidance (FCERM-AG), following a Sustain SOS business case approach. This will require applying cost effectiveness analysis to identify options to reinstate the design life. This is likely to include capital investment and proposed revenue investments through updates to the Maintenance Management Plan.

The *Client* will be responsible for producing the Strategic, Commercial, Financial and Management Cases, and for collating and submitting the overall document. The *Consultant* shall produce the Economic Case within the SOC and deliver all the supporting technical, economic and environmental analysis in accordance with FCERM-AG.

1.32 Outcome Specification

The key deliverables of this Scope will be the SOC technical appendices and Economic Case chapter required to contribute to a concise business case, which will also include:

- Revise project objectives for Outline Business Case;
- Assess the structural integrity and summarise the residual asset life of the flood defence assets forming the Cockermouth FRMS (project extents shown on Figure 1) including any third party structures/features which either form the defence alignment or are structurally integrated with the flood defence asset. This shall also assess the likely impact of climate change and/or geomorphological change on the design life; including an assessment of the impact of more frequent high-velocity flows and increased overtopping, which are likely to affect toe scour and structural integrity of dry side of flood defence assets;
- Utilise the findings and recommendations made by the landowner's structural assessment and surveys, as detailed in Table 2, to advise on the likely failure mechanism, likely consequences of failure, and consider potential impacts of construction work to repair/reinstate flood defences adjacent, in determining the most likely option. As the structural assessment was completed in early 2022 and the landowner only completed temporary repairs, the *Consultant* shall apply engineering judgement to consider further deterioration in providing this advice.
- Develop a short list of options for repair/reinstatement of assets which have either failed already or likely to fail in the short term (pre-emptive works) and management of assets which are likely to need intervention in the medium/long term to achieve the scheme design life (to 2113). This will be presented in an Options Report, which may include developing a matrix of options, including constraints and investigations required, to detail the design process for assessing the most likely way forward to account for the project risks. This shall conclude with a most likely option for SOC submission based on cost effectiveness analysis with a supporting initial carbon calculation.
- Present the economic case for a Sustain SOS business case in line with FCERM-AG, which requires an indicative assessment of "Do Nothing" and options for 'Do Something' to sustain standard of service (i.e. reinstate design life);
- Complete a gap analysis of the existing topographic and ground investigation. If further survey and investigations are identified, and agreed by the *Client,* the scope/specification and supporting Environmental Action Plan shall be produced via Compensation Event(s).

- Support the *Client* in delivering the Benefit Management framework to SOC, as detailed in LIT 58244. This will require the *Consultant* to provide feedback on the Benefits Realisation Strategy and through a workshop with the project team, develop Benefit Mapping and initial Benefits Register, including quantification of benefits. The *Client* will finalise these deliverables for SOC submission.

Further detail on the key deliverables is given within the specific sections within the Scope.

1.4. *Consultant* project management

The *Consultant's* attention is drawn to the recent changes to appraisal of FCERM projects. An Operational Instruction (672_15 (3) - Business Case Guidance) providing information on this has been provided with the Scope.

The *Consultant* is to provide any reports and other deliverables as work in progress to allow for collaborative review, allowing a two week review period for comment by the *Client* prior to final issue.

2 *Consultant* management services

2.1 Managing the *services*

Management of project delivery shall be the responsibility of the *Consultant*. In managing the services, the *Consultant* shall, as a minimum:

- Attend a virtual start up meeting and “kick off” meeting (team behaviours workshop) within 2 weeks of Contract Award with the Contractor and *Client.*
- Produce a high level project risk register for submission with SOC.
- Provide input to the project efficiency register.
- Attend virtual monthly progress meetings and draft and record minutes, the *Client* to issue. One attendee from the *Consultant* will be required.
- Produce monthly financial updates and forecasts for issue to the *Client* on the 10th of each month.
- Deliver a monthly progress report giving progress against programme, deliverables received and expected and financial summary against programme.
- Ensure quarterly input into framework performance assessment/environmental Performance Measures.
- Co-operate with the *Client* in the role of the BIM Information Manager.
- Review and feedback on the Stakeholder Engagement Plan prepared by the *Client*.
- Deliver a copy of all models, survey data etc. undertaken and collected for the appraisal, and supporting detailed technical reports.
- Ensure all modelling and survey exercises, and associated outputs, are conducted in conjunction with the latest technical requirements published by the *Client* on Collaborative Delivery Community hub on Sharepoint.
- For each data set used necessary for preparation of the deliverables, provide an analysis of the assumptions made to accompany the risk register.
- The *Consultant* is to make full use of the *Client’s* web based project collaboration tool (Asite). Whenever practical all project and contract communications and records are to be distributed and stored using this project collaboration tool.

2.2 Existing Information

The *Consultant* shall ensure that appropriate use is made of existing data to avoid duplicating work already undertaken (as provided in the Scope, including the studies listed in Table 2, and any other existing sources known to the *Consultant*). The *Consultant* shall advise the *Service Manager* of any errors or inconsistencies discovered and await instruction on how to proceed.

Table 2: Previous Studies/Reports

Date	Report / Study	Format	Summary / Outcomes of study
2009	Derwent Catchment Flood Management Plan (DCFMP)	Available online here	Policy Option 5: *Areas of moderate to high flood risk where we can generally take further action to reduce flood risk"*. The strategy for this area is that future improvements may be required for the local flood defences to cope with increased flows, and the maintenance and upgrades of flood defences within Cockermouth may also be needed to cope with changes in flood levels associated with climate change. The DCFMP also states that maintenance of river channels and associated assets may be necessary within Cockermouth.
2010	[redacted] [redacted] Ground Investigation and Pile Drawings	PDF	Provided by [redacted]. Ground investigation logs and details.
2012	Cockermouth FRMS Environmental Statement Including: Scoping Report (Sept 2011), Archaeological Desk Based Assessment (Sept 2011) and Environmental Action Plan (Jan 2012)	PDF	Assessment of significance of environmental and heritage impacts on Cockermouth as a result of the design and construction of the flood risk management scheme. Includes opportunities of environmental enhancement, control measures and opportunities to mitigate impacts.
2012	Cockermouth FAS – Project Appraisal Report (PAR) inc Appendix E (Economic Appraisal). Appendices available on request.	PDF	FSoD approval for the FRMS to progress to Construction. Problem definition, appraisal summary and details of preferred option including economic summary.
2013	Cockermouth FAS – H&S File Including Appendices B (As Built), C (Tec Specs), E (Risk Assessments – DRA & PSRA), H (O&M Manual) and DRA. Other appendices available by request.	PDF DWG	HSF and supporting appendices in accordance with CDM Regulations (2007). As Builts supplied as PDF & AutoCAD DWG.
2016	Cockermouth Flood Investigation Report	PDF (online)	Summary of flooding mechanisms and impacts following Storm Desmond (Dec

			2015) which caused extensive flooding across Cumbria. Available online: Cockermouth Flood Investigation Report (cumbria.gov.uk)
2017	Cockermouth Scheme Performance Review	PDF	Technical review of performance of the flood defences in Cockermouth, following Storm Desmond and comparison with updated extreme flood analysis. Updated modelling and hydrology indicates that the Scheme now provides a lower SoP. Recommendations improvements to flood forecasting and warning and prompted the subsequent Appraisal.
2017	Cockermouth FRMS Hydraulic Model Review	PDF	Review of existing floodplain mapping model of Cockermouth, identifying recommendations prior to the development of the Appraisal baseline.
2017	Cockermouth – Asset Assessment Report	PDF	Identification of asset condition baseline to enable the appraisal project to develop preferred option.
2017	Cockermouth – Environmental Constraints and Opportunities	PDF	Identification of constraints/opportunities to develop the long list of options in the appraisal project.
2018	Cockermouth FRMS 5CBM Appraisal, inc Appendices: A – Hydrological Modelling Report B – Hydraulic Modelling Report C – Economic Assessment D – Options Assessment PFC - Cockermouth	PDF	Appraisal focussed on reducing uncertainty in the baseline (defined by hydrological and hydraulic modelling) to evaluate and improve the economic case. A leading option was defined at an enhanced 1.33% linear defence scheme, but required significant PF therefore did not progress to OBC.
2021	Emergency Works – sketches and photos	Various	Details of emergency works carried out. The *Consultant* should already have access to this information via Sharepoint due to involvement in emergency works.
2021	Bitter Beck CCTV Culvert Survey	Various	Includes CCTV video (.mpg), photos (.jpg), data capture sheet (excel), site plan and report (pdf).
2021	Cocker Bridge Inspection Report (Cumbria County Council) 22nd November 2021	PDF	Inspection report including defect plan.
2022	Old Court House Dive Survey: [redacted] 204-21 – 22nd Nov 2021 Structural Inspection Report: [redacted] K38883 – Jan 2022 Works Completion Report:	PDF	Commissioned by private landowner to assess damage and provide structural recommendations to the Old Court House in Winter 2021.

	[redacted] 204-21 – 31st Jan 2022 Allerdale Borough Council: Removal of Section 78 letter – 27th June 2022		

3 Services required

3.1 Initial assessment

3.1.1 Desk study of all existing information

Where the *Consultant* proposes to use data not available at the Contract Award, the *Consultant* shall include data costs in their cost estimate and explain how the data will be used. The *Consultant* accepts all risks associated with this data.

The *Client* assumes that the data provided within this Scope to be correct and the *Consultant* will complete a gap analysis to identify the need for additional data required to support development of the OBC. The *Consultant* shall advise the *Service Manager* of any errors or inconsistencies discovered and await instruction on how to proceed.

3.1.2 Site visit

The *Consultant* attended a site visit on 27th July 2022 (via a separate Scope Development Contract) with key members of the team to gain an understanding of the situation on the ground, identify any environmental or communication risks, opportunities and issues. An annotated map with site visit notes was shared with the *Client*.

3.2 Site investigation

3.2.1 Topographic survey

The table below contains details of previous topographic surveys, which will be available on Asite post Contract Award:

Report	Date	Format
Survey Ops J00566	September 2016	PDF/DWG/ISIS/Photo
Atlantic Geomatics J02596	December 2021	PDF/DWG/ISIS/Photo

The *Client* also provides information to the *Consultant* from the AIMS database. Standard data sets such as mapping, LIDAR and the receptors database is available to the *Consultant* through GEOSTORE.

If further topographical survey is required to deliver the next phase of the project (SOC to OBC), the *Consultant* shall develop a proposal for *Client* acceptance. If agreed by the *Client,* the topographic survey scope development and preparation of an associated Environmental Action Plan will be a Compensation Event to this Contract.

If instructed via the *Service Manager,* the *Consultant* shall liaise, plan and specify any topographic survey in consultation with the *Client's* NW Survey Advisor and the *Client.*

3.2.2 Ground investigation

The *Consultant* is to review ground conditions from existing information, including but not limited to: British Geological Survey GeoIndex, nearby borehole records (inc HSF App C) and Local Authority searches.

The *Consultant* shall undertake a high level overview of the available information and also highlight any significant geotechnical risks that may influence the design from a buildability perspective. The *Consultant* shall summarise the results of the above requirements in a Geotechnical Summary Note for inclusion in the SOC. The *Consultant* shall determine if further ground investigation is required to support the subsequent design phase. If agreed by the *Client* and instructed as a Compensation Event to this Contract by the *Service Manager,* the *Consultant* shall develop a Ground Investigation scope/specification for works to be delivered in the next phase of the project (SOC-OBC) and supporting Environmental Action Plan.

3.3 Hydrology and hydraulics

3.3.1 General

Details of existing hydraulic models are provided in the table below.

Model Name	Area covered	Date	Format	Source
Cockermouth_v29_DM.Dat	Derwent Catchment	Updated 2018	ISIS-TUFLOW 1D/2D	EA

A copy of relevant hydraulic model files and associated hydrology will be available to the *Consultant* via Asite after Contract Award.

The *Client* does not anticipate any updates to the hydraulic model and/or hydrology to be required to support the delivery of this Scope. The level of detail the model provides should be proportionate to the requirements of the Scope. If the *Consultant* identifies a need to complete any updates to the hydraulic model and/or hydrology to deliver this Scope, the *Client* should be informed.

3.3.2 Hydrology

As the Hydrology was updated through the Appraisal in 2018, further hydrological analysis is not anticipated within this *Scope.*

Any recommendations made by the *Consultant* must be scoped and agreed by the *Client* prior to undertaking.

3.3.3 Hydraulic model

The *Client* will provide model files and outputs for *Consultant* use to deliver the requirements of this Scope.

3.4 Economic appraisal

As the project will be delivered as a Sustain SOS appraisal, the economic appraisal will be limited to identifying the least cost solution to achieve the project objectives. This requires a cost effectiveness analysis to be carried out to compare the costs of the potential options. In accordance with FCERM-AG, the Economic Appraisal requires a Carbon Appraisal to estimate the likely whole life carbon impact using the Carbon Modelling Tool, a qualitative Sustainability Appraisal and planned approach to the appraisal of non-financial benefits.

3.5 Environmental assessment

The *Consultant* shall carry out *services* in accordance with Environment Agency Minimum Technical Requirements 801_14, 801_14_SD01 and LIT 13879 and advise the *Client* if any additional environmental *services* are required to support the SOC delivery.

It is anticipated that the Environmental Assessment at this stage in the project will be high level and proportionate to support the case for change, in providing the *services* specified below.

The following *services* will be required for the project:

- The *Consultant* shall review the existing environmental and heritage reports provided by the *Client*, to identify key environmental constraints, risks and/or opportunities associated with the short list options identified. This shall include, but is not limited to, consideration of ecology and associated designations, heritage, archaeology, landscape, and Water Framework Directive.
- The *Consultant* shall provide a summary of the likely level of Environmental Assessment required for the short list options and whether a formal EIA could be required as part of the future options appraisal.
- The *Consultant* shall also inform the *Client* whether Planning Permission and other consents/permits e.g. Listed Building Consent, are required for each option. Any Planning Permission applications would be submitted to Cumberland Council (due to replace Allerdale Borough Council in April 2023) during subsequent contracts.
- The *Consultant* shall identify effects on the programme due to need for surveys or environmental licences and approvals for each option. It is not anticipated that environmental surveys, licenses or approvals will be required to support the delivery of the SOC.
- The *Consultant* shall summarise the key environmental constraints and identification of further survey in an Environmental Technical Note.

Any survey requirements before obtaining SOC approval shall be agreed with the *Client* and will be a compensation event if accepted by the *Client.*

3.6 Option development

The *Consultant* shall assess the condition of the existing flood defence assets to estimate the residual life of each asset. This should include but is not limited to a structural survey of the flood defence assets forming the Cockermouth FRMS and any third party assets which either form the flood defence alignment or have structural interaction with the flood defence assets. Option development shall consider the outcomes of these inspections and assessments to provide proposals to repair/reinstate the design life of assets. These proposals shall strongly consider the buildability associated with tight spatial constraints and working in close proximity to other (potentially hazardous) structures.

The *Consultant* shall discuss and agree the indicative definition for the Do Nothing scenario, in accordance with FCERM Appraisal Guidance, with the *Client* prior to proceeding.

The options appraisal will include a review of the previous work, technical understanding and application of buildability assumptions to determine potential solutions. Costings will be provided by the *Client's* Cost and Carbon Estimator (CCE) to support cost effectiveness analysis.

To account for the various risks at this stage in the project, the option development could be explained by a matrix, demonstrating the decision process which will be informed by the realisation of risks associated with third party interactions, site constraints, investigations required and outcomes.

The proposed most likely, least cost option will be presented within the Options Report. The *Consultant* shall screen and assess for technical, environmental, and economic suitability, as considered appropriate.

The *Consultant* shall undertake a carbon calculation using the Carbon Modelling Tool during this process with the *Client's C*ost and Carbon Estimator (CCE). The *Client* will also engage the *Client* Carbon Cost Estimator to verify the cost estimates provided by the ESE supplier, before confirming with the *Consultant.* Risk allowances will be Optimism Bias based in line with current guidance.

3.6.1 Option development deliverables

This section of the study should conclude with a technical report summarising the methods followed and presentation of the results, and the rationale to support the most likely (least cost) option. This report will be appended to the SOC.

3.7 Consultation

The *Client* will lead on consultation with professional partners and stakeholders. Production of consultation material by the *Consultant* for this activity will be agreed as a Compensation Event.

3.8 Health and safety

Health and safety is the top priority of the *Client*. The *Consultant* will promote and adopt safe working methods and shall strive to deliver solutions that provide optimum safety to all. This includes their own activities and *sub-Consultant*s working for them. Together with the *Client,* the *Consultant* shall deliver preferred options that take due regard for health and safety in construction, maintenance, operation, and demolition; and are safe for the public and other users throughout the asset lifecycle.

The *Consultant* will provide Principal Designer for this scheme. The Principal Designer duties will include for a review of any site based works at appraisal stage (not anticipated to support delivery of this Scope) and notifying the HSE of these, as well as a review of the proposed options. The *Consultant* shall supply designer risk assessments, drawings and any other data, where appropriate, for Principal Designer comment and include for any work required following review.

3.9 Business case submission

The deliverables from this Scope will be used to prepare the Strategic Outline Case (SOC), which will be produced jointly between the *Client* and *Consultant* as described in Section 1.31. The format of this document and guidance on the contents is detailed in the guidance 'Business Case Guidance: Five Case Model - Operational Instruction 672_15' and the templates.

The *Consultant* shall be responsible for producing the Economic Case within the SOC document, alongside technical appendices and key figures. The deliverables required are as follows:

1. Structural Assessment Technical Note; indicating residual life of assets as described in Section 1.32
2. Geotechnical Summary Note
3. Options report which identifies the most likely option and includes, but is not limited to, the cost-effectiveness analysis, environmental constraints and a summary of project risks.
4. Designer's Risk Assessment
5. Environmental Technical Note
6. Geomorphological Technical Note
7. Ground Investigation scope/specification (if agreed as Compensation Event)
8. Topographic survey scope/specification (if agreed as Compensation Event)
9. Environmental Action Plan (to support Ground Investigation/Topographic Survey scope, if agreed by *Client)*

10. Risk register
11. Carbon calculator

The delivery of the SOC shall be in accordance with the *Client's* submission programme for National Project Assurance Service (NPAS). The *Consultant* shall update the *Client* with progress and submission dates, in order that the delivery of this to the review team can be programmed. NPAS reviews are carried out on a weekly rolling programme with submissions, reviews and responses being provided through correspondence in place of formal review meetings.

The *Client* shall be responsible for submitting the SOC to NPAS for approval, dealing with responses to queries during the approval process and any resubmission required. The *Consultant* may be required to support the Client in responding to queries regarding the SOC submission; this may include but is not limited to, provision of further information, technical responses and updates to the submission.

4 Specifications of standards to be used

4.1 Health and safety

The *Consultant* will promote and adopt safe working methods and shall strive to deliver solutions that provide optimum safety to all.

The *Consultant* shall familiarise and apply recent updates to Safety, Health, Environment and Wellbeing Code of Practise (SHEWCoP).

4.2 Guidance documents

Guidance is available for the *Consultant* in carrying out the activities required by the *Scope*. Use of guidance should be proportionate to the scale of the problem and anticipated solution. The guidance includes, but is not limited to, the following documents:

Ref	Report Name	Date	Where used	Available
563_26	Fluvial modelling Standards	15/07/21	Modelling	SharePoint
672_15	Using the 5 Case Model for Business Case Development	25/01/18	Business Case Documents	SharePoint
GEHO0310bsdb-e-e	FCERM-AG	17/06/22	Business Case Documents	Gov.uk
183_05	Date and information management for FCRM projects	23/06/20	Mapping and modelling	SharePoint
801_14	Environmental sustainability, design and management	30/12/21	Environmental Assessment and Optioneering	SharePoint
	Flood and coastal risk projects, schemes and strategies: climate change allowances	22/07/20	Modelling and option development	Gov.uk
120_16	Whole life (construction) Carbon Planning Tool User	02/09/21	Carbon reporting	Asite
LIT 58244	Benefits Management Framework	09/06/22	Benefits management	SharePoint

5 Constraints on how the *Consultant* provides the *services*

For any topographic surveys or ground investigation works, access on to land for carrying out the survey shall not be made without a Notice of Entry or other similar arrangements made by the *Client,* with the assistance of the *Consultant,* subject to *Service Manager* instruction.

It is intended that the SOC will be submitted by the *Client* in Spring 2023.

6 Requirements of the programme

6.1 Programme

The *Consultant* shall provide a detailed project Programme meeting all requirements of Cl.31 of the *Conditions of Contract* and shall be produced in Microsoft Project Professional 2016 format. A Programme for Acceptance shall be provided for the project start up meeting. Once accepted by the *Client*, as a minimum, this will be updated monthly for progress meetings with actual and forecast progress compared with the accepted programme.

The Programme shall cover all the activities to be undertaken by the *Consultant* and other members of the project team. It will include:

- All major project milestones from commencement to the end of the reporting, consultation and approvals stage.
- All *Client*'s activities required to provide the *services.*
- The dates to provide the *services*.
- Review and consultation periods related to key information and deliverables.
- Allowances for project risks and uncertainties.
- Internal project team / board decision gateways and meetings.

The *Consultant* shall identify opportunities (and associated risks) to accelerate the programme to the *Client,* in order to reduce the flood risk to Cockermouth. This could include, but is not limited to, bringing forward project tasks (e.g. applying for licenses/permits, or completing surveys) or making efficiencies through project management (e.g. procurement processes).

7 Services and other things provided by the *Client*

7.1 Data and information management and intellectual property rights

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

7.2 Data custodianship

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

7.3 Licensing information

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

7.4 Data management and metadata

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.

7.5 Data security

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. It is expected that 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.

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.

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

7.6 *Client's* Advisors

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 APT, PSO, FBG, Estates, Field Operations, etc.

7.7 *Client* Documents the *Consultant* contributes to;

The *Client* maintains several project documents, the *Consultant* is required to contribute to these *Client* owned documents; Project Risk Register and the Project Efficiency Register.

Appendices

Appendix 1 BIM Protocol – Production and Delivery Table

All *Client* issued information referenced within the Information Delivery Plan requires verifying by the *Consultant* unless it is referenced elsewhere within the *Scope.*

Framework: Collaborative Delivery Framework
Supplier: Jacobs UK Ltd
Company Number: 02594504

Geographical Area: North West
Project Name: Cockermouth Asset Reconditioning Project SOC
Project Number: [redacted]

Contract Type: Professional Service Contract
Option: [redacted]

Contract Number:

Stage: Pre_SOC

Revision	Status		Originator		Reviewer		Date

PROFESSIONAL SERVICE CONTRACT under the Collaborative Delivery Framework
CONTRACT DATA

Project Name Cockermouth Asset Reconditioning Project SOC

Project Number [redacted]

This contract is made on
between the *Client* and the *Consultant*

- This contract is made pursuant to the Framework Agreement (the "Agreement") dated 12th day of April 2019 between the *Client* and the *Consultant* in relation to the Collaborative Delivery Framework. The entire agreement and the following Schedules are incorporated into this Contract by reference
- Schedules 1 to 22 inclusive of the Framework schedules are relied upon within this contract.
- The following documents are incorporated into this contract by reference

Part One - Data provided by the *Client*

Statements given in all Contracts

1 General

The *conditions of contract* are the core clauses and the clauses for the following main Option, the Option for resolving and avoiding disputes and secondary Options of the NEC4 Professional Service Contract June 2017.

Main Option [redacted]

Option for resolving and avoiding disputes W2

Secondary Options

X2: Changes in the law

X9: Transfer of rights

X10: Information modelling

X11: Termination by the *Client*

X18: Limitation of liability

X20: Key Performance Indicators

Y(UK)2: The Housing Grants, Construction and Regeneration Act 1996

Y(UK)3: The Contracts (Rights of Third Parties) Act 1999

Z: *Additional conditions of contract*

The *service* is Development of technical outputs to support a Strategic Outline Case (SOC) for the Cockermouth Asset Reconditioning project, using a cost effectiveness analysis to identify options to reinstate the Cockermouth FRMS (constructed in 2013) design life.

The *Client* is Environment Agency

Address for communications [redacted]

Address for electronic communications [redacted]

The *Service Manager* is
Address for communications [redacted]

Address for electronic communications [redacted]

The Scope is in
Cockermouth AR_NEC4 PSC Scope_SOC_v5 20Oct22

The *language of the contract* is English

The *law of the contract* is
the law of England and Wales, subject to the jurisdiction of the courts of England and Wales

The period for reply is 2 weeks

The *period for retention* is
6 years following Completion or earlier termination

The following matters will be included in the Early Warning Register
None

None
None
None

Early warning meetings are to be held at intervals no longer than 2 weeks

2 The *Consultant's* main responsibilities

The *key dates* and *conditions* to be met are *conditions* to be met	*key date*
'none set'	'none set'
'none set'	'none set'
'none set'	'none set'

The *Consultant* prepares forecasts of the total Defined Cost plus Fee and *expenses* at intervals no longer than 4 weeks

3 Time

The *starting date* is [redacted]

The *Client* provides access to the following persons, places and things

access	*access date*
Asite / Fast Draft	[redacted]
EA Office Space	[redacted]

The *Consultant* submits revised programmes at intervals no longer than 4 weeks

The *completion date* for the whole of the *service* is [redacted]

The period after the Contract Date within which the *Consultant* is to submit a first programme for acceptance is 4 weeks

4 Quality management

The period after the Contract Date within which the *Consultant* is to submit a quality policy statement and quality plan is 4 weeks

The period between Completion of the whole of the *service* and the *defects date* is 26 weeks

5 Payment

The *currency of the contract* is the £ sterling

The *assessment interval* is Monthly

The forecast of the Prices is

The *expenses* stated by the *Client* are as stated in Schedule 9

The *interest rate* is 2.00% per annum (not less than Base rate of the Bank of England) above the

The locations for which the *Consultant* provides a charge for the cost of support people and office overhead are All UK Offices

6 Compensation events

These are additional compensation events

1. 'not used'
2. 'not used'
3. 'not used'
4. 'not used'

5. 'not used'

8 Liabilities and insurance

These are additional *Client's* liabilities

1. 'not used'

2. 'not used'

3. 'not used'

The minimum amount of cover and the periods for which the *Consultant* maintains insurance are

EVENT	MINIMUM AMOUNT OF COVER	PERIOD FOLLOWING COMPLETION OF THE WHOLE OF THE *SERVICE* OR TERMINATION
The *Consultant's* failure to use the skill and care normally used by professionals providing services similar to the *service*	**£5,000,000** in respect of each claim, without limit to the number of claims	12 years after Completion
Loss of or damage to property and liability for bodily injury to or death of a person (not an employee of the *Consultant)* arising from or in connection with the *Consultant* Providing the Service	**£15,000,000** in respect of each claim, without limit to the number of claims	12 years after Completion
Death of or bodily injury to the employees of the *Consultant* arising out of and in the course of their employment in connection with the contract	*Legal minimum* in respect of each claim, without limit to the number of claims	*For the period required by law*
The *Consultant's* total liability to the *Client* for all matters arising under or in connection with the contract, other than the excluded matters is limited to	**£5,000,000**	

Resolving and avoiding disputes

The *tribunal* is litigation in the courts

The *Adjudicator* is	'to be confirmed'
Address for communications	'to be confirmed'
Address for electronic communications	'to be confirmed'
The *Adjudicator nominating body* is	The Institution of Civil Engineers

Z Clauses

Z1 Disputes
Delete existing clause W2.1

Z2 Prevention
The text of clause 18 Prevention is deleted.
Delete the text of clause 60.1(12) and replaced by:
The *service* is affected by any of the following events
• War, civil war, rebellion, revolution, insurrection, military or usurped power;
• Strikes, riots and civil commotion not confined to the employees of the *Consultant* and sub consultants,
• Ionising radiation or radioactive contamination from nuclear fuel or nuclear waste resulting from the combustion of nuclear fuel,
• Radioactive, toxic, explosive or other hazardous properties of an explosive nuclear device,
• Natural disaster,
• Fire and explosion,
• Impact by aircraft or other aerial device or thing dropped from them.

Z3 Disallowed Costs

Add the following in second bullet of 11.2 (18) add:
(including compensation events with the Subcontractor, i.e. payment for work that should not have been undertaken).
Add the following additional bullets after 'and the cost of ' :
• Mistakes or delays caused by the *Consultant's* failure to follow standards in Scopes/quality plans
• Reorganisation of the *Consultant's* project team
• Additional costs or delays incurred due to *Consultant's* failure to comply with published and known guidance or document formats
• Exceeding the Scope without prior instruction that leads to abortive cost
• Re-working of documents due to inadequate QA prior to submission, i.e. grammatical, factual arithmetical or design errors
• Production or preparation of self-promotional material
• Excessive charges for project management time on a commission for secondments or full time appointments (greater than 5% of commission value)
• Any hours exceeding 8 per day unless with prior written agreement of the *Service Manager*
• Any hours for travel beyond the location of the nearest consultant office to the project unless previously agreed with the *Service Manager*
• Attendance of additional individuals to meetings/ workshops etc who have not been previously invited by the *Service Manager*
• Costs associated with the attendance at additional meetings after programmed Completion, if delay is due to *Consultant* performance
• Costs associated with rectifications that are due to *Consultant* error or omission
• Costs associated with the identification of opportunities to improve our processes and procedures for project delivery through the *Consultant's* involvement
• Was incurred due to a breach of safety requirements, or due additional work to comply with safety requirements
• Was incurred as a result of the *Client* issuing a Yellow or Red Card to prepare a Performance Improvement Plan
• Was incurred as a resulting of rectifying a non-compliance with the Framework Agreement and/or any call off contracts following an audit

Z6 The Schedule of Cost Components

The Schedule of Cost Components are as detailed in the Framework Schedule 9.

Delete existing clauses 54 and 93.4 and replace with:
54.7 The Project Manager assess the Contractor's share of the difference between the Aggregated Total of the Prices and the Aggregated Price for Work Done to Date. The difference is divided into increments falling within each of the share ranges. The limits of a share range are the Aggregated Price for Work Done to Date divided by the Aggregated Total of the Prices, expressed as a percentage. The Contractor's share equals the sum of the products of the increment within each share range and the corresponding Contactor's share percentage.
54.8 If the Aggregated Price for Work Done to Date is less than the Aggregated Total of the Prices, the Contractor is paid its share of the saving. If the Aggregated Price for Work Done to Date is greater than the Aggregated Total of the Prices, the Contractor pays its share of the excess.
54.9 If, prior to the Completion Date, the Aggregated Price for Work Done to Date exceeds 110% of the Aggregated Total of the Prices, the amount in excess of 110% of the Aggregated Total of the Prices is retained from the Contractor.
54.10 The Project Manager makes a preliminary assessment of the Contractor's share at Completion of the Whole of the works using forecasts of the final Aggregated Price for Work Done to Date and the final Aggregated Total of Prices. This share is included in the amount due following Completion of the whole of the works.
54.11 The Project Manager makes a final assessment of the Contractor's share, using the final Aggregated Price for Work Done to Date and the final Aggregated Total of the Prices. This share is included in the final amount due.
93.4 If there is a termination, the Project Manager assesses the Contractor's share after certifying termination. The assessment uses as the Aggregated Price for Work Done to Date the sum of
• the total of
o the Defined Cost which the Contractor has paid and
o which it is committed to pay for work done before termination
and
• the total of
o the Defined Cost which the Contractor has paid and
o which it is committed to pay
in the partner contract before the date the termination certificate is issued under this contract.
The assessment uses as the Aggregated Total of the Prices the sum of
• the total of
– the lump sum price for each activity which has been completed and
– a proportion of the lump sum price for each incomplete activity which is the proportion of the work in the activity which has been completed
and
• the total of
– the lump sum price for each activity which has been completed and
– a proportion of the lump sum price for each incomplete activity which is the proportion of the work in the activity which has been completed
in the partner contract before the date the termination certificate is issued under this contract.

Add:
11.2(37) The Aggregated Total of the Prices is sum of
• the total of the Prices and
• the total of the Prices in the partner contract

11.2(38) The Aggregated Price for Work Done to Date is the sum of
• the Price for Work Done to Date and/
• the Price for Service Provided to Date in the partner contract.

Z23 Linked contracts

Issues requiring redesign or rework on this contract due to a fault or error of the *Consultant* will neither be an allowable cost under this contract or any subsequent contract, nor will it be a Compensation event under this contract or any subsequent contract under this project or programme.

Z24 Requirement for Invoice

Add the following sentence to the end of clause 51.1:
The Party to which payment is due submits an invoice to the other Party for the amount to be paid within one week of the *Service Manager's* certificate.
Delete existing clause 51.2 and replace with:
51.2 Each certified payment is made by the later of
• one week after the paying Party receives an invoice from the other Party and
• three weeks after the assessment date, or, if a different period is stated in the Contract Data, within the period stated.
If a certified payment is late, or if a payment is late because the *Service Manager* has not issued a certificate which should be issued, interest is paid on the late payment. Interest is assessed from the date by which the late payment should have been made until the date when the late payment is made, and is included in the first assessment after the late payment is made

Z25 Risks and insurance

The *Consultant* is required to submit insurances annually as Clause Z4 of the Framework Agreement

Secondary Options

OPTION X2: Changes in the law

The *law of the project* is the law of England and Wales, subject to the jurisdiction of the courts of England and Wales

OPTION X10: Information modelling

The period after the Contract Date within which the *Consultant* is to submit a first Information Execution Plan for acceptance is 2 weeks

OPTION X18: Limitation of liability

The *Consultant's* liability to the *Client* for indirect or consequential loss is limited to

£1,000,000.00

The *Consultant's* liability to the *Client* for Defects that are not found until after the *defects date* is limited to

£5,000,000

The *end of liability* date is 6 years after the Completion of the whole of the *service*

OPTION X20: Key Performance Indicators (not used with Option X12)

The *incentive schedule* for Key Performance Indicators is in Schedule 17

A report of performance against each Key Performance Indicator is provided at intervals of

3 months

Y(UK)2: The Housing Grants, Construction and Regeneration Act 1996

The period for payment is 14 days after the date on which payment becomes due

Y(UK)3: The Contracts (Rights of Third Parties Act) 1999

term	*beneficiary*
Not Used	None

1 General

The *Consultant* is

Jacobs UK Ltd — Name and address etc. of *Consultant*

[redacted]

[redacted] — Email address for communications — Enter email address

[redacted] — The *fee percentage* is — Insert the relevant framework tendered *fee percentage*

The *key persons* are

[redacted] — Name (1) — Name the *key persons* to be working on the contract
Job
Responsibilities
Qualifications
Experience

[redacted] — Name (2)
Job
Responsibilities
Qualifications
Experience

[redacted] — Name (3)
Job
Responsibilities
Qualifications
Experience

Name (4)
Job
Responsibilities
Qualifications
Experience

Name (5)
Job
Responsibilities
Qualifications
Experience

Name (6)
Job
Responsibilities
Qualifications
Experience

Name (7)
Job
Responsibilities
Qualifications
Experience

The following matters will be included in the Early Warning Register;

insert details	These are items which could affect the total of the Prices or delay Completion, which are known about at the time of completing this Contract Data
insert details	
insert details	
insert details	
insert details	
insert details	
insert details	
insert details	

3 Time

insert details — The programme identified in the Contract Data is; — This is optional and is inserted if a programme is being initially provided

5 Payment

£51,400.00 — forecast of the total Defined Cost plus the Fee

Resolving and avoiding disputes

The *Senior Representatives* of the *Consultant* are

[redacted] — Name (1) — [redacted]
address Line 3
address Line 4
address Line 5
address Line 6

[redacted] — Email address for communications — Enter email address

[redacted] — Name (2) — [redacted]
address Line 3
address Line 4
address Line 5
address Line 6

[redacted] — Email address for communications — Enter email address

X10: Information modelling;

The *information execution plan* identified in the Contract Data is; — If an *information execution plan* is to be identified in the Contract Data — X10 is always used

insert details

Part Two - Data provided by the *Consultant*

Completion of the data in full, according to the Options chosen, is essential to create a complete contract.

1 General

The *Consultant* is

Name

Address for communications

Address for electronic communications

The *fee percentage* is

The *key persons* are

Name (1)
Job
Responsibilities
Qualifications
Experience

Name (2)
Job
Responsibilities
Qualifications
Experience

Name (3)
Job
Responsibilities
Qualifications
Experience

Name (4)
Job
Responsibilities
Qualifications
Experience

Name (5)
Job
Responsibilities
Qualifications
Experience

Name (6)
Job
Responsibilities
Qualifications
Experience

Name (7)
Job

Responsibilities
Qualifications
Experience

The following matters will be included in the Early Warning Register

3 Time

The programme identified in the Contract Data is

Resolving and avoiding disputes

The *Senior Representatives* of the *Consultant* are

Name (1) [redacted]
Address for communications
[redacted]
Address for electronic communications
[redacted]

Name (2) [redacted]
Address for communications
[redacted]
Address for electronic communications
[redacted]

X10: Information Modelling

The *information execution plan* identified in the Contract Data is

Contract Execution

Client **execution**

Signed Underhand by [redacted] for and on behalf of the Environment Agency

[redacted]

Signature Date [redacted] Role

Consultant **execution**

Signed Underhand by [redacted] for and on behalf of Jacobs UK Ltd

[redacted]

Date [redacted] Role