



Framework:	Collaborative Delivery Framework
Supplier:	Jacobs UK Ltd
Company Number:	02594504
Geographical Area:	North West
Project Name:	Cringle Brook Ladybarn FRMS Pre SOC
Project Number:	ENV0001386C
Contract Type:	Professional Service Contract
Option:	[REDACTED]
Contract Number:	33108

Revision	Status	Originator	Reviewer	Date

**PROFESSIONAL SERVICE CONTRACT under the Collaborative Delivery Framework
CONTRACT DATA****Project Name** Cringle Brook Ladybarn FRMS Pre SOC**Project Number** ENV0001386CThis contract is made on 25 June 2021
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
Cringle Brook - PSC Scope - FINAL

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
OptionOption for resolving and
avoiding disputes

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

Understand the flood risk to the area and determine a preferred solution.

The *Client* is

Environment Agency

Address for communications

Horizon House
Deanery Road
Bristol
BS1 5AH

Address for electronic communications

The *Service Manager* is

Address for communications

Richard Fairclough House
Wash Lane
Warrington
WA4 1HT

Address for electronic communications

The *Scope* is in
Cringle Brook - PSC Scope - FINALThe *partner contract* isThe *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
We are highly likely to require additional modelling works dependent on the outputs of the initial review. The scope of the modelling work will be determined on

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

2 The *Consultant's* main responsibilities

The <i>key dates</i> and <i>conditions</i> to be met are	
<i>conditions</i> to be met	<i>key date</i>
'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 08 July 2021

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

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

The *completion date* for the whole of the *service* is 31 January 2022

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

The *interest rate* is 2.00% per annum (not less than 2) above the Base rate of the Bank of England

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. Managing and mitigating the impact of Covid 19 and working in accordance with Public Health England guidance, as may vary from time to time, between 1st April 2021 and 30th June 2021
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 <i>SERVICE</i> OR TERMINATION
The <i>Consultant's</i> failure to use the skill and care normally used by professionals providing services similar to the <i>service</i>	██████████ in respect of each claim, without limit to the number of claims	██████████ after Completion
Loss of or damage to property and liability for bodily injury to or death of a person (not an employee of the <i>Consultant</i>) arising from or in connection with the <i>Consultant</i> Providing the <i>Service</i>	██████████ in respect of each claim, without limit to the number of claims	██████████ after Completion
Death of or bodily injury to the employees of the <i>Consultant</i> arising out of and in the course of their employment in connection with the contract	<i>Legal minimum</i> in respect of each claim, without limit to the number of claims	<i>For the period required by law</i>
The <i>Consultant's</i> total liability to the <i>Client</i> for all matters arising under or in connection with the contract, other than the excluded matters is limited to	██████████	

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

Z6 The Schedule of Cost Components

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

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

OPTION X18: Limitation of liability

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

██████████

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

██████████

The *end of liability* date is ██████████ 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*

Environment Agency

NEC4 professional services contract (PSC)

Scope

Project / contract Information

Project name	Cringle Brook Flood Risk Management Scheme
Project SOP code	ENV0001386C
Contract number	ENV0001386C
Date	Feb 2021

Assurance

Author	Project Manager – [REDACTED]	May 2021
Consulted	Senior User – [REDACTED]	May 2021
Reviewed	Project Executive – [REDACTED]	May 2021
Checked prior to issue	Commercial Services Manager – [REDACTED] [REDACTED]	March 2021

Revision History

Revision date	Summary of changes	Version number
Feb 2021	First issue	V1
April 2021	Jacobs review	V2
May 2021	De-scope stage two of the works	V3

This Scope shall be read in conjunction with the version of the Minimum Technical Requirements current at the Contract Date.

1. Overview

Background

Cringle Brook, located in the area of Fallowfield, South Manchester, is a substantially culverted watercourse which is roughly 5km long flowing from east to west. Cringle Brook originates at Black Brook Bridge where the name changes from Black Brook. The channel remains fairly open until Egerton Road where it is culverted for 2.6km (51% of Main River length). The brook joins Chorlton Platt Gore which then flows into the River Mersey roughly 4km further downstream see Figure 1 below.

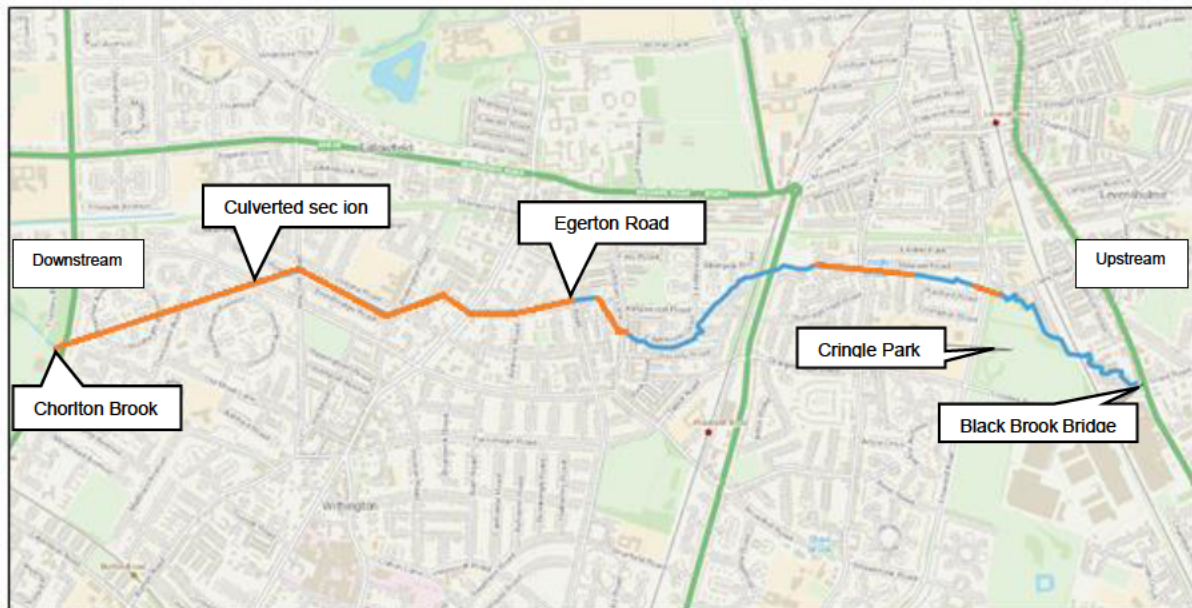


Figure 1: Cringle Brook Location

Fallowfield is a suburb of Manchester, 5km south of Manchester city centre. Bordering Whalley range, Withington, Rusholme, Burnage and Moss Side the area has a very large student population, including University of Manchester's main accommodation complex. The study area is generally flat but many of the rivers react quickly to heavy rainfall due to urbanisation and a lack of open spaces, resulting in a high proportion of rapid runoff. Cringle Brook is not a natural channel having been straightened and canalised to accommodate development. Many smaller watercourses and drainage channels in the area have been "lost" altogether as the land around them has been developed.

Flood events have occurred in the South Manchester area in 1965, 1981, 1998 and 2004 with more than 110 properties in Fallowfield and Withington being recorded as flooded In August 1981. In 2004 the Environment Agency completed the Cringle Brook Flood Alleviation Scheme. This scheme aimed to offer a 100 year SoP with a focus on a reduction of culvert blockage. This was achieved through the replacement of Ladybarn Culvert and Kingswood Wood Culvert, and the addition of several culverts (Erwood Road, Davenhill Road, Kempton Road and Kingsway) along a 4km length of the brook. The scheme also added a debris screen to Egerton Road Culvert and Acorn Close to reduce culvert blockage risk.

The Cringle Brook SOC appraisal was commissioned to consultant Jacobs in 2018. Using one of the models supplied and understanding of flood mechanisms gained, a long list of options

was developed and narrowed down to a short list through the use of Multi-criteria Analysis. As well as Do-Minimum and Do-Nothing, the shortlist consisted of wall raising at Edgeworth Drive, a flood storage area at Cringle Park and a storage area at allotments adjacent to the A34. A high-level options appraisal of the shortlisted options was undertaken, assessing available and required storage volumes and wall heights were approximated from the model results and topographic data.

A Geomorphological and WFD assessment of the watercourse was also carried out, this being the largest potential source of environmental constraints and opportunities relating to the scheme. Other environmental constraints were determined through reviewing the Defra Magic Map.

The Greater Manchester, Merseyside and Cheshire (GMMC) Partnership and Strategic Overview (P&SO) team had identified, following a review of the Cringle Brook Flood Model in 2018, that approximately 748 residential and commercial properties (443 of which are within the significant and very significant flood risk bands) that are shown at risk within the Cringle Brook catchment. These numbers were in stark contrast to the 30 number of properties identified in the draft SOC [REDACTED]

The EA looked at trying to undertake the work on the revised model in-house to complete the SOC due to the limitations on available FSOD. However it was identified that additional modelling and economic assessment was required but due to resource and funding allocation constraints, the project was paused early in 2019.

It has remained high on the Area list of priorities and both funding allocation and approval for additional FSoD has been secured. This has allowed the project team to look to re-visit the model, review the flood risk to the area, and ensure the SOC is sufficiently developed for submission and approval.

In the interim works to Egerton Road culvert have been completed in 2021 to bring it in line with current safety requirements. It should be noted that no OM2's have been claimed as a result of this work.

Previous Studies

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
EA E&R – Hydraulic model review and considerations	March 2018	MS Word
JBA – Technical Review Certificate	June 2017	PDF
Egerton Road Culvert designs	January 2021	File - PDF
EA PCM – Cringle Brook, Ladybarn Pre SOC	March 2021	Ms Word
JBA – Cringle Brook Model Update	April 2018	PDF – see appendix 3
JBA - Cringle Brook 2017 Model (eao13_0238)	2017	Digital
Cringle Brook 2006 Survey (EA060037)	2006	Digital
Spot Level Survey JBA	2017	Digital
Jacobs - Strategic Outline Case	22/02/2019	MS Word – see appendix 3
Jacobs - Initial Findings Technical Note	17/12/2018	PDF – see appendix 3

Report	Date	Format
Jacobs - Cringle Brook Glass Wall Note	25/02/2019	PDF – see appendix 3
Jacobs – Long List of options	12/2018	PDF – see appendix 3
Jacobs – PF calculator	2019	PDF – see appendix 3
Jacobs – Geomorphological assessment	2019	PDF – see appendix 3
EA – Davenhill Road culvert information	2005-2021	Zip - File
EA – Errwood Road culvert information	2005-2021	Zip - File
EA – Kempton Road culvert information	2005-2021	Zip - File
EA – Kingsway Road culvert information	2005-2021	Zip - File
EA – Ladybarn Lane culvert information	2005-2021	Zip - File
EA – Railway Cringlefields Park culvert information	2005-2021	Zip - File
EA – Royal Street culvert information	2005-2021	Zip - File
EA – Wellington Road culvert information	2005-2021	Zip - File
EA – Woodland Road culvert information	2005-2021	Zip - File
EA – Previous flooding to Woodlands Road, Fallowfield	2016/17	Zip - File

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. *The Client* will then determine if *the Consultant* is to rectify the deficiencies identified. *Consultant* shall take the risk of any deficiencies in existing data quality and quantity which have not been notified to *the Client*.

Objective

The key objectives are to:

- Investigate the risk of flooding to people and property including climate change predictions by developing the Do Nothing and Do Minimum scenarios. Both scenarios require modelling of collective blockages to determine the flood risk profile including climate change simulations for a range of storm frequencies.
- Determine monetary benefits resulting from a FAS on Cringle Brook; Review the long list and short list of options to ensure they remain appropriate and the most sustainable options following modelling updates of the Do Nothing and Do Something scenarios.
- Updating economics calculations to ensure alignment with updated Multi-Coloured Handbook (MCH) guidance and Partnership Funding guidance.
- Identify project risks and mitigation, reflecting the issues for the project.
- Prepare a project programme including allowances for the likely major activities and likely risks with defined activity inputs from others (e.g. Area Operations Team).

2. The service

Outcome Specification

The required outcome of this commission is to understand the flood risk to the area and determine a preferred solution that that will reduce the existing risk to life. The solution must be supported by economic, social and environmental evidence that will enable the Client to produce a SOC.

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.

From the previous work undertaken, there remains significant uncertainty in both the model, the current level of economic damage and therefore the potential viability of any scheme. To avoid unnecessary expenditure, it is proposed that the SOC is developed in two stages, as outlined below.

Further scope detail of the main activities are presented in Section 0 to 11.

Stage 1: Problem Definition

The aim of Stage 1 is to address the residual uncertainties that remain and to assess the strategic viability of a potential FAS project. In doing so, *the Consultant* will

- Undertake a model review to ensure it is a tool suitable for use for the SOC project. This should consider the EA E&R hydraulic model review undertaken in March 2021 and the recommendations within.
- Develop a Method Input Statement for updating the hydrology and hydraulic model for agreement with *the Client*. This should identify any additional data or survey required to undertake the proposed works.
- Carry out the agreed model and hydrology updates and produce a report detailing the changes and the results. Submit the baseline model and report to *the Client* for review.
- Define and agree the baseline definitions for the Do Nothing and Do minimum scenarios with *the Client* and run the baseline scenarios within the hydraulic model across a range of present day and climate change design events.
- Undertake a baseline economic damage assessment
- Produce a Preliminary Advice Note giving initial advice on the viability of the project together with a Partnership Funding (PF) calculator for the project. The Preliminary Advice Note should make reference to the baseline economic information throughout the project life-cycle to provide information on the likely affordability (based on raw PF score) and scale of options that will be achievable at this location. The Preliminary Advice Note should detail anticipated risks and known limitations of including activities in Stage 2 and their potential to change the advice note

contents (this includes activities not currently known and detailed herein). This note will be shared with the Client to inform the decision-making process as to whether to continue the development of the SOC (progress to Stage 2). Affordability may be dependent upon partnership contributions and an understanding of local damages and benefits.

- Review the long list and short list of options to ensure they remain appropriate.

Stage 2: SOC

Based on the findings of the Preliminary Advice Note, should it be agreed that there is a potential viable scheme, the project will enter Stage 2. The aim of Stage 2 will be to undertake the necessary technical work required to delivery of a concise and compelling SOC, in accordance with Business Case Guidance: Five Case Model.

Due to the money already spent on the original SOC there is a limited budget to complete this work within the revised FSoD approval. It should be noted that this may constrain some of the deliverables in Stage 2.

The deliverables are therefore to be agreed following completion of stage 1 and will be compensation event to the works.

Consultant Project Management

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.

In managing the *service* the *Consultant* shall

- Contribute monthly to the updates to the project risk register.
- Attend progress meetings and prepare record minutes within a week for the *Client* to issue.
- Produce monthly financial updates and forecasts (including financial forecast at completion) 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 giving progress against programme, deliverables received and expected and financial and carbon summary against programme.
- Submit an updated programme every month.
- 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.

The contract will be administered using FastDraft.

Constraints

Monthly financial and carbon updates and forecasts to meet EA deadlines together with the production of checkpoint reports, end stage reports, end project report, daily log and other management products in accordance with PRINCE2.

Outputs and Deliverables

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.

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

Stage 1: Problem Definition

- Hydraulic model method input statement
 - Blockage assessment
 - Non-stationarity assessment
- Updated hydraulic model
- Hydrology & modelling report
- Baseline (Do Nothing & Do Minimum) definition technical note
- Baseline (Do Nothing & Do Minimum) flood mapping
- Economics baseline report
- Long list of options advice note
- Preliminary advice note (including PF calculator)

3. Site Investigation

Not applicable at this stage. Any Ground Investigation would not be carried out at SOC stage (and would form part of the scope for any OBC stage).

4. Hydrology and Hydraulics

The existing modelling is identified in the table in Section 1.2 is the JBA 2017 model. The extents of the modelling and assumptions made are within the model report. The *Consultant* shall make use of existing hydraulic models, which will be supplied by the *Client*.

As described in Section 2, the *Consultant* shall review the model with quality and extent checks to ensure that it is suitable for use for a SOC considering the recommendations made by the EA Evidence and Risk team April 2021. Written commentary should be provided using the standard Environment Agency Non-Real Time Hydraulic Model Review template.

The *Consultant* shall provide clear recommendations on required activities and survey to update the model in line with Environment Agency hydrology and modelling guidance for acceptance by the Employer prior to model update activity. Recommendations shall consider the use of the model for outline and detail design and the project risks introduced if further model quality improvement are deferred beyond the SOC stage. Undertake a Non-Stationarity Screening and agree with the client whether an assessment is needed.

The *Consultant* shall produce written commentary in the Hydrology Review section of the Report to document local flood history analysis. The *Consultant* shall collect and evaluate data from the *Client*.

The *Consultant* shall undertake a review of the existing hydrometric data (rainfall, levels, flow, and flood extent) and assess data availability, and the uncertainties in the accuracy of the data and what effect this could have on the reliability and accuracy of model outputs. The works should include, but are not limited to;

- Validation of any calibration exercises undertaken.
- Comparison of modelled hydrograph shapes against the WISKI data for a number of low AEPs
- Review the performance of all rating relationships that will be used in this study during high flow conditions and the rating throughout the full range of flows. The review shall include commentary on the extrapolation above validated range, modular limits, likely hydraulic control in drowned mode and inter-site comparison. Clear conclusions on the suitability of ratings for rainfall-runoff model development and calibration of hydraulic models shall be provided. Conclusions must include an estimate of likely gauge accuracy (% error in flow) for flows up to and including AMAX1. An indication of gauge accuracy at high and extreme flows (0.1% AEP or similar) shall be provided where possible.
- The *Consultant* shall confirm the findings with the *Client* and agree the next stages.

The *Consultant* shall review the Do Minimum and Do Nothing assumptions from the 2018 Scope commissioned to Jacobs and provide written commentary for *Client* acceptance. A workshop will be required to agree the baseline scenarios. For Stage 1, on acceptance of the model and baseline scenarios by the *Clients*, the *Consultant* shall undertake model runs for a range of flood return periods suitable to inform the economic appraisal.

The *Consultant* shall consider at least 8 design events over the 100 year appraisal period for both the Do Nothing and Do Minimum model scenarios to generate flood mapping deliverables. Suggested design events are:

- 20%, 10%, 5%, 2%, 1.3%, 1%, 0.5% and 0.1% AEP

The impact of climate change on the design event should be considered across three epochs in line with the latest EA Flood and coastal risk projects, schemes and strategies: climate change allowances.

The output shall be designed to interface with the economic analysis to allow for depths and durations of flooding to be determined in accordance with the multi-coloured manual methodologies and the FCERM-AG.

5. Economics Appraisal

To build up an economic business case the *Consultant* shall undertake a Cost Benefit Analysis of the scheme.

The *Consultant* shall undertake an economic appraisal in line with FCERM – Appraisal Guidance (FCERM-AG), supplementary guidance and the HM Treasury ‘Green Book’ including the Multi-Coloured Manual (MCM). 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.

During Stage 1, *the Consultant* shall undertake a high-level assessment using the baseline damages and key assumptions to understand likely scheme costs, Partnership Funding scores and scheme viability.

Understanding of the economics should be documented within a Preliminary Advice Note to provide information on the likely affordability and scale of options that will be achievable at this location to help inform the decision-making process as to whether to proceed to Stage 2.

During Stage 1, *the Consultant* shall review the Long and Short list of options produced as part of the work undertaken by Jacobs in 2018/2019 under the original contract to deliver the SOC for Cringle Brook FRMS.

6. Environmental Assessment

This section will be completed as part of Stage 2 of the works.

7. Option Development

This section describes the *service* required to select a long list of options, narrow this down to a shortlist that should be investigated in detail and determine a recommended option at the conclusion of the phase of work.

The *Consultant* shall review the long list of options and assess their continued suitability following the updated modelling work. The *Consultant* shall provide an advice note with their conclusions from the review and any recommendations to be taken forward to stage 2.

8. Stakeholder Engagement

The *Client* will provide a stakeholder engagement plan including details of any supporting information to be provided by the *consultant*.

The Engagement Strategy should aim to secure stakeholder consensus on the problem definition or understand stakeholder's views. It is expected that there will be little engagement with the community at this stage.

9. Health and Safety

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.

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

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.

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.

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.

10. Business Case Submission

This section shall be progressed following completion of Stage 1.

In Stage 2, the *Client* shall aggregate all of the work undertaken from this commission to update the business case document – the Strategic Outline 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.

In Stage 2, the Strategic outline case shall be produced in collaboration with the *Client*, the *Consultant* will lead on financial and economic cases, and relevant appendices, with the *Client* leading on the strategic, commercial and management cases.

11. Carbon

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* in Stage 2 of the works.

12. 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	SOC
672_15_SD03	Business case template – 5 case Model	SOC
672_15_SD02	Short Form Business case template	SOC
LIT 4909	Flood and Coastal Erosion Risk Management appraisal guidance (FCERM-AG)	SOC
	Flood and Coastal Erosion Risk Management: A Manual for Economic Appraisal (the 'Multi Coloured Manual')	SOC
OI 1334_16	Benefits management Framework	SOC
Gov.uk	Partnership Funding Calculator Guidance	SOC
LIT 15030	The Investment Journey	SOC
LIT 55124	Write a Business Case	SOC
LIT 14953	FCRM Efficiency Reporting – capital and Revenue	SOC
LIT 12280	Lessons Log template	SOC
LIT 55096	Integrated Assurance & Approval Strategy	Approvals

13. Requirements of the Programme

The *Consultant* shall provide a detailed programme in Microsoft Project 2016 meeting all requirements the contract.

The programme shall also include alignment and submission of the BIM Execution Plan (BEP) and Master Information Delivery Plan (MIDP).

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.

The programme shall include the 2 week review and consultation periods for draft reports and

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

The following are absolute requirements for Completion to be certified:

- Transfer to the *Client* of BIM data
- Completion of the relevant phase of the *Client's* carbon tool
- Clause 11.2(2) work to be done by the Completion Date

14. Services and other things provided by the *Client*

Access to Environment Agency systems and resources including:

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

Letter of Appointment of Principal Designer.

Site access authorisation letter(s).

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

Data and BIM protocol

Requirements for the handling of project data are covered by the framework schedules. All *Client* issued information referenced within the Information Delivery Plan requires verifying by the *Consultant* unless stated otherwise in Scope (refer to Schedule 19 Clause 4 of the Framework agreement).

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.

***Client's* Advisors**

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.

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 *Service Manager*. These departments include Asset Performance, Partnership & Strategic Overview, NEAS, etc.

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*.

Client Documents the *Consultant* Contributes to

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

- Strategic Outline Business Case
- Project Risk Register.

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

Jacobs UK Ltd

Address for communications

1180 Eskdale Road
Winnersh
Wokingham
Berkshire
RG41 5TU

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)
Address for communications

Address for electronic communications

Name (2)
Address for communications

Address for electronic communications

X10: Information Modelling

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

Contract Execution

Client execution

Signed under hand by for and on behalf of the Environment Agency


Signature


Role

Consultant execution

Consultant execution

Signed under hand by for and on behalf of Jacobs UK Ltd


Signature


Role