



Framework:

Supplier:

Company Number:

Geographical Area:

Project Name:

Project Number:

Contract Type:

Option:

Contract Number:

Stage:

Collaborative Delivery Framework

Ove Arup & Partners Ltd

01312453

North East

Wheatley Park Embankment OBC appraisal

Professional Service Contract

Option C

SOC_to_OBC

Revision	Status		Originator		Reviewer		Date
V1	Final						11/08/2022

PROFESSIONAL SERVICE CONTRACT under the Collaborative Delivery Framework
CONTRACT DATA

Project Name Wheatley Park Embankment OBC appraisal

Project Number [REDACTED]

This contract is made on 15/09/2022
between the Client and the Consultant

- This contract is made pursuant to the Framework Agreement (the "Agreement") dated 01st 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
[REDACTED]-EA-00-00-SO-K-G0300_1-A2-C02-G0300-EA2-LOD2-Wheatley Park Embankment OBC scope.pdf

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	Option C	Option for resolving and avoiding disputes	W2
-------------	----------	--	----

Secondary Options

- X2: Changes in the law
- X7: Delay damages
- 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 To undertake the appraisal of the Wheatley Park Embankment project options and deliver the Outline Business Case

The Client is Environment Agency

Address for communications Lateral
8 City Walk
Leeds
LS11 9AT

Address for electronic communications [REDACTED]

The Service Manager is [REDACTED]
Address for communications [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Address for electronic communications [REDACTED]

The Scope is in [REDACTED]-EA-00-00-SO-K-G0300_1-A2-C02-G0300-EA2-LOD2-Wheatley Park Embankment OBC scope.pdf

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
Inclusion of CEEQUAL and Environmental requirements of the appraisal

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 19th September 2022

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

The whole of the site 19 September 2022

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

The *completion date* for the whole of the *service* is 30th October 2023

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 *Client* set total of the Prices is £239,153.00

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

If Option C is used The *Consultant's share percentages* and the *share ranges* are:

	share range			Consultant's share percentage
less than		80 %		0 %
from	80 %	to	120 %	as set out in Schedule 17
greater than		120 %		as set out in Schedule 17

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 <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	
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 Service	in respect of each claim, without limit to the number of claims	
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

Address for communications

'to be confirmed'

'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

Z4 Share on termination

Delete existing clause 93.3 and 93.4 and replace with:
93.3 In the event of termination in respect of a contract relating to services there is no *Consultant's* share'

Z6 The Schedule of Cost Components

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

Z7 Consultant's share

After cl54.2 and before cl54.3, insert the following additional clause:
54.2A If, prior to the Completion Date, the Price for Service Provided to Date exceeds 112% of the total of the Prices, the amount in excess of 112% of the total of the Prices is retained from the Consultant.

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 X7: Delay damages

X7 only Delay damages for Completion of the whole of the *service* are £50.52 per day

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

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 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

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 Ove Arup & Partners Ltd

Address for communications 8 Fitzroy Street
London
W1T 4BQ

Address for electronic communications [Redacted]

The fee percentage is [Option C] [Redacted]

The key persons are

Name (1) [Redacted]
Job [Redacted]
Responsibilities [Redacted]
Qualifications [Redacted]
Experience [Redacted]

Name (2) [Redacted]
Job [Redacted]
Responsibilities [Redacted]
Qualifications [Redacted]
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

3 Time

The programme identified in the Contract Data is
Programme to be delivered within 4 weeks of the contract start date

5 Payment

The *activity schedule* is

Resolving and avoiding disputes

The *Senior Representatives* of the *Consultant* are

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

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
To be delivered within 4 weeks of the contract start date

Contract Execution

Client execution

Signed Underhand by [PRINT NAME]

for and on behalf of the Environment Agency

[Redacted Signature]

15/09/2022

[Redacted Role]

Signature

Date

Role

Consultant execution

Signed Underhand by [PRINT NAME]

for and on behalf of

Ove Arup & Partners Ltd

[Redacted Signature]

[Redacted Signature]

Environment Agency

NEC4 Professional Service Contract (PSC)

Scope

Project / contract information

Project name	Wheatley Park Embankment
Project SOP code	[REDACTED]
Contract number	[REDACTED]
Date	August 2022
BIM reference	[REDACTED]-EA-00-00-SO-K-G0300_1-A2-C02-G0300-EA2-LOD2-Wheatley Park Embankment OBC scope

Assurance

Author	[REDACTED] [REDACTED]	Date:05/07/22
Consulted	[REDACTED] [REDACTED]	Date:01/07/22
Reviewed	[REDACTED] [REDACTED]	Date: 12/07/22
Checked prior to issue	[REDACTED] [REDACTED]	Date: 16/08/22
Checked prior to issue	[REDACTED] [REDACTED]	Date 11/08/2022

Revision History

Revision date	Summary of changes	Version number
June 2022	First issue	V1
August 2022	DGC and CSM reviews	V2

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

Document	Document Title	Version No	Issue date
LIT 13258 (412_13_SD01)	Minimum Technical Requirements	12	30/12/2021

1 Overview

This commission is to build upon the information developed in the SOC stage to undertake an appraisal study of the Wheatley Park Embankment and produce an Outline Business Case for assurance review.

1.1 Background

The asset consists of an embankment from Long Sandall to Mile Thorn Sidings on a narrow strip of land between the River Don and the River Don Navigation canal. Collectively known as the Wheatley Park Embankment the structure prevents flows from the River Don entering the canal and protects the north-eastern suburbs of Doncaster near the river. The structure is owned by the Environment Agency.

The current system of embankments has a condition grade of 3-5 (fair-very poor) and are predominantly below their required condition. For the arrangement and asset condition please see figure 1 below. Substantial repair or replacement is required to maintain the current Standard of Protection (SoP) which is in excess of 200 years (0.5% AEP).

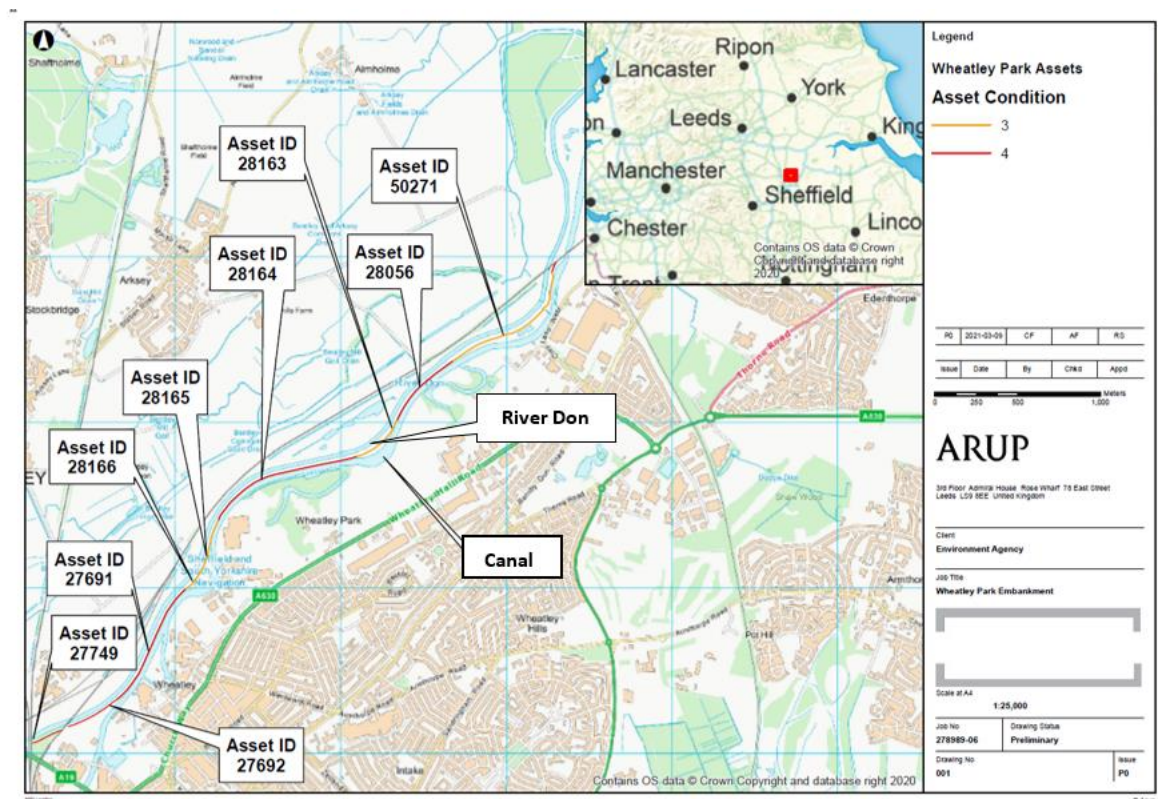


Figure 1: Location of the embankment system and their asset condition*

*note the downstream extent at the railway lines ends at asset 28055

1.2 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	Outcomes of study
*Kirk Sandall and River Don, ground investigation factual report	March 2021	Digital Format	Used in development of SOC
*Point cloud survey of Mega slip 2 site	February 2021	Digital Format	Used in development of SOC
*Remedial options for 'Mega slip 2'	February 2021	Digital Format	Used in development of SOC
*River Don and Kirk Sandall defects - DRAFT	January 2021	Digital Format	Used in development of SOC
*Kirk Sandall, River Don remedial works, factual report	January 2021	Digital Format	Used in development of SOC
*Draft ground investigation data from Asset Recovery works	Various 2020	Digital Format	Used in development of SOC
*Mile Thorn, River Don incident response design drawings	19/06/2020	Digital Format	Used in development of SOC
*Mile Thorne River Don restoration GI (trial pits) ground investigation factual report	June 2020	Digital Format	Used in development of SOC
*Mile Thorne sidings, Doncaster River Don embankment slip site visit	23/02/2020	Digital Format	Used in development of SOC
*Mile Thorn sidings to Long Sandall – log of defects identified since November 2019	unknown assumed early 2020	Digital Format	Used in development of SOC
*Aerial drone footage	March 2020	Digital Format	Used in development of SOC
* Aerial drone footage	Nov 2019	Digital Format	Used in development of SOC
*South slip at Arksey. General arrangement, Plans & sections. Drawings 1 to 3	June 2018	Digital Format	Used in development of SOC
*Borehole logs, Arksey Doncaster	December 2017	Digital Format	Used in development of SOC
*Mile Thorn Sidings and Wheatley Park Bank – Geotechnical report	August 2015	Digital Format	Used in development of SOC

*Mile Thorn Sidings and Wheatley Park Bank, factual report on ground investigation, Report no. E5046-15	August 2015	Digital Format	Used in development of SOC
*Arksey slips, CDM Regulations health and Safety File	July 2014	Digital Format	Used in development of SOC
*Arksey slip, analysis of defence failure draft v0.3	11 th April 2013	Digital Format	Used in development of SOC
*River Don – Arksey Ings scheme sections through slips on right bank	1977	Digital Format	Used in development of SOC
*River Don – Arksey Ings various historical sections and plans	1971 to 1973	Digital Format	Used in development of SOC
██████████_7-ARU-DE-00-TN-C-B1500_1-S2-P01-B1500-EA0-LOD0-Wheatley Park Embankment - Data and Hydraulic Review	29 th March 2021	Digital Format	Used in development of SOC
Wheatley Park Embankment Strategic Outline Case	Dated 20/04/2022	Digital Format	Approval to progress OBC

*denotes information was supplied in support of the development of the Strategic Outline Case and is referenced in Arup technical note BIM reference ██████████.7-ARU-DE-00-TN-C-B1500_1-01-1-B1500-EA0-LOD0-Wheatley Park Embankment – Data and Hydraulic Review’

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

Some existing data such as Light Detection and Ranging (LiDAR) data and base mapping can be found on the DEFRA data services platform - <https://environment.data.gov.uk/>

Environment Agency data and evidence must be used in compliance with the Open Government licence found here: <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3> along with any Conditional Data Licence requirements which are to be arranged.

1.3 Objective

The objectives for the project are as follows:

- To urgently address the high and imminent risk of defence breach whilst optimising the SoP;

- To improve the maintainability of the asset, by meeting or exceeding standards for design of new assets and reducing maintenance requirements where access is difficult or improving access;
- To work with partners to develop a scheme that delivers multiple benefits
- Reduce the need for cyclic emergency works repairs after future storm events.

The overall objective of this contract is to produce a flood risk management appraisal in line with Flood and Coastal Erosion Risk Management – Appraisal Guidance (FCERM-AG), which will appraise a range of options. This will result in the delivery of an OBC to the *Client* that can be submitted for approval.

The affordability of the scheme will be measured using Defra's partnership resilience funding calculations.

2 The service

2.1 Outcome Specification

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

- 2.1.1. The *Consultant* shall demonstrate sustainability leadership through fully considering and contributing to achieving the *Client's* environment and sustainability ambitions and targets. These are set out in the EA2025 Action Plan, e:Mission 2030 Strategy, the Defra 25 Year Environment Plan and are in line with the principles of sustainability as described by the United Nation's Sustainable Development Goals.
- 2.1.2. The *Consultant* shall design the scheme taking into account the environmental sensitivities and opportunities of the sites and involving key environmental specialists as appropriate within the *Consultant* and the *Client's* organisation.
- 2.1.3. The *Consultant* shall ensure the optioneering process fully considers and addresses sustainability including carbon reduction as strategic outcomes. The EA business case template further requires separate option appraisals of sustainability benefits and whole-life carbon to compare with the economic appraisal and promotes a preference for the most sustainable option.
- 2.1.4. The *Consultant* shall ensure the optioneering process fully considers environmental mitigation and opportunities to further conserve and enhance as per our legal and policy obligations but to also contribute to the Environment Agency's ambitions. This includes delivery against OM4, to achieve biodiversity net gain but must also consider wider sustainability opportunities. The *Consultant* shall ensure the optioneering process avoids where possible, minimises and compensates or offsets any adverse environmental effects.
- 2.1.5. The *Consultant* shall produce an outline design which seeks to provide the optimum economic, technical, social and environmental/sustainability/carbon outcomes, supported by evidence that will enable the *Client* to produce an Outline Business Case.

- 2.1.6. The *Consultant* shall produce an appraisal report and outline design that enables the *Client* to achieve efficiency targets set for this commission and future stages of the project using the Combined Efficiency Reporting Tool (CERT).
- 2.1.7. The *Consultant* shall ensure that the options and final solution take into consideration all relevant guidance and legislation and seek to minimise long-term asset/land management and maintenance costs and carbon.
- 2.1.8. The options will also demonstrate that the *Consultant* has learnt from best practice and demonstrate how optimum flood risk reduction, natural processes, carbon reduction, recreation, good ecological water quality and visual amenity can be combined.
- 2.1.9. This contract must consider planning permission and all other necessary permissions/licences being obtained at detailed design stage. The outline design shall feasibly be able to obtain planning permission.
- 2.1.10. The *Consultant* shall demonstrate that consideration has been given to a long list of potential options, identified an appropriate shortlist, appraised these to identify a preferred option and developed this option, its impacts, planning and Environmental Impact Assessment (EIA) requirements scoped to a level that it can be priced. The *Consultant* shall develop a series of options to meet the above objectives.
- 2.1.11. The *Consultant* shall assume that the options shortlisted in the OBC will be aligned with the strategy identified in the SOC. However, the *Consultant* shall not assume that the preferred option will necessarily be the same as that identified at the SOC stage.
- 2.1.12. The *Consultant* shall compile the supporting technical documentation required for the *Client* to obtain a screening opinion from the local planning authority.
-

2.2 Constraints

No constraints have been identified.

2.3 Consultant Project Management

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

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

- Contribute monthly to the updates to the project risk register.
- Provide input to project efficiency CERT Form.
- Attend progress meetings and prepare record minutes within a week for the *Client* to issue.
- Produce monthly financial updates and forecasts meeting the *Client's* project reporting timetable together with progress reports. Monthly financial updates and forecasts to meet EA deadlines provided by no later than the 10th day of each month, or otherwise agreed at the project start up meeting.

- Deliver a monthly progress report in the *Client's* standard template ([Link](#)) giving progress against programme, deliverables received and expected and financial and carbon summary against programme.
- Attend project board meetings as required.
- Ensure quarterly input into framework performance assessment/environmental Performance Measures.
- Ensure the *Consultant's* environmental lead provides monthly progress and risk reviews to the *Client* and attends progress meetings, as invited.
- Maintain and show how accurate and up to date information on the whole-life cost and carbon of options is driving optimum solutions at all stages of design development.
- Capture lessons learnt relevant to scheme delivery for the EA PM to include in the scheme lessons learnt log to be appended to the OBC.

The contract will be administered using FastDraft.

2.4 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* acceptance before commencing work on the product.

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

- Modelling report.
 - Economics report.
 - Options appraisal report.
 - Documentation of the environmental process and considerations including risks and opportunities (e.g. Scoping Report).
 - Outline Design(s).
 - Carbon Optimisation Report.
 - Programme showing milestones to construction completion for the preferred option including funding and environmental constraints and opportunities. The programme shall take account of the timeframe required for all approvals necessary for mitigation and enabling works to be carried out in advance of main construction.
 - Draft text within relevant sections of OBC.
-

3 Site Investigation

3.1 Topographic Survey

- 3.1.1 The *Consultant* will review previous topographic survey to identify gaps in existing data. The Consultant will use this to inform the scope of supplementary topographic survey required.
- 3.1.2 The *Consultant* shall work with NEAS to ensure that environmental and sustainability constraints within the likely scheme footprint are identified and included in the survey and to determine if efficiencies can be made by joint working.
- 3.1.3 ~~Example text~~ A cross sectional survey of the main river is being undertaken by Others and will be provided for the *Consultant* to use in constructing the hydraulic model. The *Consultant* shall liaise with the survey team on the requirements of the survey and the format of output.
- 3.1.4 ~~Example text~~ the *Consultant* shall undertake cross sectional survey of the main river and spatial survey of the flood plain sufficient to allow for in bank and floodplain modelling and determination of depths of flooding of properties within the flood plain. Spacing of the survey shall be determined to suit the hydraulic model and shall include a survey of all restrictions, bridges, culverts and structures.
- 3.1.5 ~~Example text~~ A topographical survey is required to provide further details of the existing piles so that the alignment of new piles may be optimised relative to this. A survey is also required to supplement that previously undertaken by XXX in order to identify the location of key features on the quay so that we may clearly define working areas and accesses in the ECC scope. Specific requirements are:
- ~~Preparation of a brief and procurement of the survey in accordance with the current version of the Environment Agency's National Standard Technical Specifications for Surveying Services, to enable the above.~~
 - ~~Review and agree surveyors' site risk assessment.~~
 - ~~Supervision and management of topographic survey company.~~
 - ~~Review data / checking deliverables.~~
 - ~~AD: The *Consultant* shall undertake the topographic survey necessary to be able to assess the shortlist of options and complete an outline design.~~
- 3.1.6 The *Consultant* shall use the outputs from the topographic survey in their modelling and option appraisal.
- 3.1.7 AD Any additional topographical survey required to support the appraisal is to be communicated to the *Service Manager* for acceptance and will be managed under this contract via a compensation event
-

3.2 Ground Investigation

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

AD Any additional ground investigations required to support the appraisal are to be communicated to the *Service Manager* for acceptance and will be managed under this contract via a compensation event

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

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

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

Subject to the *Service Manager's* acceptance the *Consultant* shall clearly communicate the scope of the Ground Investigation to the Lot 2 contractor for the Lot 2 contractor to undertake.

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

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

Services Search

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

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

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

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

4 Hydrology and Hydraulics

1.4 General

- 4.1.1. The existing modelling is identified in the table in section 1.2. The extents of the modelling and assumptions made are within the model report.
 - 4.1.2. The *Consultant* shall verify the model with quality and extent checks.
 - 4.1.3. The *Consultant* shall provide the *service* in accordance with the Modelling Technical Scope, included in Appendix 2.
 - 4.1.4. Additional runs shall be allowed for the final design case to give a sensitivity analysis on key parameters.
 - 4.1.5. The output shall be designed to interface with the economic analysis to allow for depths and durations of flooding to be determined.
 - 4.1.6. ~~Add any project specific requirements.~~
-

5 Economics Appraisal

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

Costs will be the whole life expenditure including, design, investigation, construction, operation and maintenance. Costs can be devised in the most efficient but accurate manner and Early Supplier Engagement (ESE) input is required. The *Client* will provide support and costs where possible to complete this estimate.

Carbon will be whole-life emissions of an asset including embodied (construction), operation, maintenance and end of life emissions. The values will be calculated from the carbon tool (OI 120_16) to help optimise all options through all stages of design and business case development.

Risk and Optimism Bias allowances shall be calculated in accordance with Risk Guidance for Capital Flood Risk Management Projects. The *Consultant* shall attend risk workshops facilitated by others / the *Consultant* to deliver the Scope.

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

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

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

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

Economic, Sustainability and Carbon Appraisal Deliverables

The *Consultant* shall provide the results of this section of the study in an economics report which shall feed into the economics appendix of the OBC. This will provide a clear view of the process in order that the economic lead for the review team can review the process. As a minimum this will include, but not be limited to:

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

~~Add any project specific requirements.~~

6 Environmental Assessment

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

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

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

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

~~The *Consultant* shall report the findings of the scoping exercise as required which will form an Appendix to the OBC with relevant summary details incorporated into the relevant section(s) of the OBC main text.~~

~~AD: The *Consultant* shall report on the CEEQUAL assessment in accordance with the hub workload plan.~~

~~Add any project specific requirements.~~

7 Option Development

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

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

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

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

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

The *Consultant* shall use these outputs to select a preferred option. The *Consultant* shall facilitate design workshops, facilitate risk workshops to produce a risk register with analysis in accordance with LIT 14847 Risk Guidance for Capital Flood Risk Management Projects.

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

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

~~Add any project specific requirements.~~

8 Stakeholder Engagement

- 1.5 The *Client* shall lead on consultation. The *Consultant* shall assist and prepare materials for use in meetings.

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

Monthly circulation of updated communications record at progress meetings.

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

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

The *Consultant* shall provide technical support and attend two no. meetings with key external organisations/individuals impacting upon option selection process. The current known stakeholders are identified in Appendix 3.

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

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

~~Add any project specific requirements.~~

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) – dated June 2022.

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

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

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

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

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

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

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

Add any project specific requirements.

10 Business Case Submission

The *Consultant* shall aggregate all of the work undertaken from this commission into a business case document – the Outline Business Case (OBC). 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.

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

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

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

~~Add any project specific requirements.~~

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*.

The carbon budget for the project has been set to 2,282t (Capital), 4,406t (Whole life). The *Consultant* is required to work with the *Client* and the ESE contractor to reduce the project carbon footprint by 45%.

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

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

~~Add any project specific requirements.~~

12 General

Not used.

13 Relevant guidance

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

Ref	Report Name	Where used
LIT 16559	Safety, health environment and wellbeing (SHEW) Code of Practice	Throughout
183_05	Data management for FCRM projects	Mapping and modelling
379_05	Computational Modelling to assess flood and coastal risk	Modelling
LIT 14847	Risk Guidance for Capital Flood Risk Management Projects	Option development
OI 120_16	Whole-life Carbon Planning Tool	Option development
LIT 14284	Whole Life (Construction) Carbon Planning Tool User Guide	Option development
	Access for All Design Guide	Option development
	Project Cost Tool	Costs
LIT 12982	Working with Others: A guide for staff	Consultation & Engagement
Gov.uk	Appraisal Guidance Manual	OBC
672_15_SD03	Business case template – 5 case Model	OBC
672_15_SD02	Short Form Business case template	OBC
LIT 4909	Flood and Coastal Erosion Risk Management appraisal guidance (FCERM-AG)	OBC
	Flood and Coastal Erosion Risk Management: A Manual for Economic Appraisal (the 'Multi Coloured Manual')	OBC
OI 1334_16	Benefits management Framework	OBC
Gov.uk	Partnership Funding Calculator Guidance	OBC
LIT 15030	The Investment Journey	OBC
LIT 57759	Write a Business Case	OBC

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

1.6

14 Requirements of the Programme

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

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

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 review and consultation periods for drafts, scoping letters, statutory consultation etc.

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

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

Date	Event
XX/XX/XXXX	Completion of stakeholder engagement plan
	Consultation meeting Any Village Parish Council
XX/XX/XXXX	Submission of OBC to NPAS

The following are absolute requirements for Completion to be certified:

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

15 Services and other things provided by the *Client*

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.

Add any project specific items.

16 Data

Not used

17 *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 *Client*. 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*.

18 *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.
- Project Efficiency CERT Form.
- Scheme Lessons Learnt Log.

- Cost and Carbon Tool (CCT).
 - ~~Add any project specific requirements.~~
-

Appendices

Appendix 1 – BIM Protocol

The *Consultant* shall adhere to the Environment Agency's Employers Information Requirements (EIR) framework level minimum technical requirements.

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

<https://www.asite.com/login-home>

The project is named and displayed on Asite in the format shown below:

██

The *Consultant* shall register for an Asite Account and request access to the project workspace to view the IDP.

Appendix 2 – Modelling Technical Scope

Modelling Technical Scope created using the Quick Scope Writer, referenced in Section 4.

Refer to *Appendix 2 - Wheatley Park Embankment Modelling Technical scope* document (attached separately) with BIM reference [REDACTED]-EA-00-00-SO-K-G0300_3-A2-C01-G0300-EA2-LOD2-Appendix 2 Modelling Technical Scope

Appendix 3: Current known stakeholders

- Residents and businesses in Wheatley Park and Kirk Sandall
- Doncaster Metropolitan Borough Council
- Sheffield City Regional Mayoral Combined Authority
- The Canals and Rivers Trust
- Network Rail
- Doncaster & District Angling Association

Appendix 4: Glossary of Terms

AEP	Annual Exceedance Probability
ASCII	American Standards Code for Information Interchange
BEP	BIM Execution Plan
BIM	Building Information Model
CEEQUAL	Civil Engineering Environmental Quality and Assessment Scheme
CERT	Combined Efficiency Reporting Tool
CDF	Collaborative Delivery Framework
CDM	Construction Design Management
CE	Compensation Event
CFMP	Catchment Flood Management Plan
CifA	Chartered Institute of Archaeologists
DAP	Drainage Area Plan
EA	Environment Agency
EAP	Environmental Action Plan
EIA	Environmental Impact Assessment
EIR	Employers Information Requirements
ESE	Early Supplier Engagement
ESRI	Environmental Systems Research Institute
EW	Early Warning
FAS	Flood Alleviation Scheme
FBC	Full Business Case
FCERM-AG	Flood and Coastal Erosion Risk Management – Appraisal Guidance
FRM	Flood Risk Management
FsoD	Financial Scheme of Delegation
G3	Gateway 3
G4	Gateway 4
GI	Ground Investigation

GIS	Geographical Information System
GPR	Ground Penetrating Radar
GVA	Gross Value Added
HRA	Habitat Regulations Assessment
HSE	Health & Safety Executive
IAR	Information Asset Register
ISIS	Integrated Systems and Information Services
IDP	Information Delivery Plan
IHBC	Institute of Historical Building Conservation
ILP	Indicative Landscape Plan
LED	Landscape and Environmental Design
LEDG	Landscape and Environmental Design Guidance
LiDAR	Light Detection and Ranging
LPRG	Large Project Review Group
LVIA	Landscape and Visual Impact Assessment
MEICA	Mechanical and Electrical, Instrumentation, Control and Automation
MIDP	Master Information Delivery Plan
MTR	Minimum Technical Requirements
NaFRA	National Flood Risk Assessment
NEAS	National Environmental Assessment and Sustainability
NFCDD	National Flood and Coastal Defence Database
NGR	National Grid Reference
NPAS	National Project Assurance Service
NYCC	North Yorkshire County Council
OBC	Outline Business Case
OMs	Outcome Measures
PAB	Project Assurance Board
PAR	Project Appraisal Report
PCCT	Project Cost and Carbon Tool

PCT	Project Cost Tool
PEIR	Preliminary Environmental Information Report
PESTLE	Political, Economic, Social, Technological, Legal and Environmental
PM	Project Manager
PSRA	Public Safety Risk Assessment
PSC	Professional Services Contract
PSO	Partnership & Strategic Overview
SHE	Safety, Health and Environment
SHEW	Safety, Health, Environmental and Wellbeing
SMP	Shoreline Management Plan
SOC	Strategic Outline Case
SoP	Standard of Protection
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
UXO	Unexploded Ordnance
WFD	Water Framework Directive
YW	Yorkshire Water