Framework:	**Collaborative Delivery Framework**
Supplier:	**Ove Arup & Partners Ltd**
Company Number:	**01312453**
Geographical Area:	**North East**
Project Name:	**Portrack Flood Alleviation Scheme**
Project Number:	[redacted]
Contract Type:	**Professional Service Contract**
Option:	**Option C**
Contract Number:	**project_34513**
Stage:	**SOC_to_OBC**

Revision	Status	Originator	Reviewer	Date
1	superseeded	[redacted]	[redacted]	08/10/2021
				25/10/2021
2	Live	[redacted]		12/11/2021

PROFESSIONAL SERVICE CONTRACT under the Collaborative Delivery Framework
CONTRACT DATA

Project Name Portrack Flood Alleviation Scheme

Project Number ENV0002571C

This contract is made on 29 November 2021
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
  Portrack NGSA SOC-OBC Scope_Ver6

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

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 This project will seek to reduce flood risk and deliver environmental improvements in the Portrack area of Stockton-on-Tees.

The *Client* is Environment Agency

Address for communications [redacted]

Address for electronic communications [redacted]

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

Address for electronic communications [redacted]

The Scope is in
Portrack NGSA SOC-OBC Scope_Ver6

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

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 — 02 December 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 — 01 March 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 — £252,516.00

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

Resolving and avoiding disputes

The *tribunal* is litigation in the courts

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

Z Clauses

Z1 Disputes
Delete existing clause W2.1

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

Z3 Disallowed Costs
Add the following in second bullet of 11.2 (18) add:
(including compensation events with the Subcontractor, i.e. payment for work that should not have been undertaken).
Add the following additional bullets after 'and the cost of ' :
• Mistakes or delays caused by the *Consultant's* failure to follow standards in Scopes/quality plans
• Reorganisation of the *Consultant's* project team
• Additional costs or delays incurred due to *Consultant's* failure to comply with published and known guidance or document formats
• Exceeding the Scope without prior instruction that leads to abortive cost
• Re-working of documents due to inadequate QA prior to submission, i e. grammatical, factual arithmetical or design errors
• Production or preparation of self-promotional material
• Excessive charges for project management time on a commission for secondments or full time appointments (greater than 5% of commission value)
• Any hours exceeding 8 per day unless with prior written agreement of the *Service Manager*
• Any hours for travel beyond the location of the nearest consultant office to the project unless previously agreed with the *Service Manager*
• Attendance of additional individuals to meetings/ workshops etc who have not been previously invited by the *Service Manager*
• Costs associated with the attendance at additional meetings after programmed Completion, if delay is due to *Consultant* performance
• Costs associated with rectifications that are due to *Consultant* error or omission
• Costs associated with the identification of opportunities to improve our processes and procedures for project delivery through the *Consultant's* involvement
• Was incurred due to a breach of safety requirements, or due additional work to comply with safety requirements
• Was incurred as a result of the *Client* issuing a Yellow or Red Card to prepare a Performance Improvement Plan
• Was incurred as a resulting of rectifying a non-compliance with the Framework Agreement and/or any call off contracts following an audit

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 X10: Information modelling

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

OPTION X18: Limitation of liability

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

£1,000,000

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

£5,000,000

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

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

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

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

3 months

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

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

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

term	*beneficiary*
Any	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: [redacted]

Address for electronic communications: [redacted]

The *fee percentage* is: Option C [redacted]

The *key persons* are

Name (1) [redacted]
Job
Responsibilities
Qualifications
Experience

Name (2) [redacted]
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

Impact of coronavirus and covid-19 on delivery

3 Time

The programme identified in the Contract Data is

TBC

5 Payment

The *activity schedule* is
Portrack OBC - activity schedule v0 - contract.pdf

Resolving and avoiding disputes

The *Senior Representatives* of the *Consultant* are

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

Address for electronic communications
[redacted]

Name (2)
Address for communications

Address for electronic communications

X10: Information Modelling

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

TBC

Contract Execution

Client **execution**

Signed Underhand by **[PRINT NAME]** for and on behalf of the Environment Agency

[redacted] [redacted] [redacted]

Signature Date Role

Consultant **execution**

Signed Underhand by **[PRINT NAME]** for and on behalf of Ove Arup & Partners Ltd

Alan Richmond

[redacted]

Signature Date Role

[redacted]

Environment Agency
NEC4 Professional Service Contract (PSC)
Scope

Project / contract information

Project name	Portrack Flood Alleviation Scheme
Project SOP code	[redacted]
Contract number	[redacted]
Date	5th November 2021

Assurance

Author	[redacted]	Date: 8/10/2021
Consulted	[redacted]	Date: 26 February 2021
Reviewed	[redacted]	Date: 12 October 2021

Revision History`

Revision date	Summary of changes	Version number
February 2021	First issue	1
26/2/21	Client led stakeholder engagement. PD duties removed from the contract.	2
17/9/2021	MTR updated to versions 11	3
22/9/2021	Biodiversity Net Gain rewording	4
20/10/2021	Carbon values added	5
5/11/2021	PEA and baseline ecological surveys removed from contract as delivered under Option E. Removed non-intrusive surveys.	6

This Scope shall be read in conjunction with the version of the Minimum Technical Requirements current at the Contract Date. In the event of conflict, this Scope shall prevail.

The *service* is to be compliant with the following version of the Minimum Technical Requirements:

Document	Document Title	Version No	Issue date
LIT 13258	Minimum Technical Requirements	Version 11	5/04/2021

1 Overview

1.1 Background

The Portrack area of Stockton-on-Tees occupies an area of joint floodplain on the north bank of the Tees Estuary, between Lustrum Beck and Billingham Beck. It contains key infrastructure including the A19 Portrack Interchange and the large-scale industrial and retail units of Portrack Lane and associated developments.

The area, which was originally marshland, is very low lying, generally < 5 mAOD, and as such is highly susceptible to tidal flooding and vulnerable to future rises in sea level. Existing modelling and flood history confirm that the area is predominantly at risk of tidal flooding. This is because, although Lustrum Beck is protected against tidal influence by a flapped control structure, Portrack Outfall, at its confluence with the Tees Estuary, Billingham Beck is not. A series of ditches, known as the Portrack Ditches, are able to convey tidal floodwater from Billingham Beck, under the A19, into the industrial area. The lower reaches of Lustrum Beck can also become tide-locked when fluvial flows in the beck are unable to discharge through Portrack Outfall when tidal levels in the Tees Estuary are high.

This project seeks to increase the level of flood protection in the area, and also investigate the possibility of reconnecting the Tees Estuary with Lustrum Beck and Portrack Marsh to regenerate intertidal habitat. Options for achieving this might include the removal of Portrack Outfall, which would also remove an existing barrier to migratory fish, and the managed realignment of, or regulated tidal exchange through, the north bank of the Tees. The reinstatement of natural intertidal dynamics at Portrack Marsh would improve the climate resilience of this protected site and place it on a more sustainable footing in the face of future sea level rise. Any intertidal habitat created may help to provide a catalyst for future economic development through priming the proposed 'habitat banking' system for the Tees Estuary with biodiversity credits. There is an opportunity to collaborate with Stockton-on-Tees Borough Council as their proposed Portrack Relief Road scheme could act as a setback flood defence.

The project should focus primarily on managing the risk of fluvial and tidal flooding within the area of interest (see Appendix 3). The area of reduced fluvial and tidal flood risk will form the basis of the project benefit area. However, to avoid any double counting of benefits in future, the risk of surface water flooding within the benefit area should also be addressed as part of this project, in partnership with Stockton Borough Council and Northumbrian Water. Measures to reduce surface water flood risk may either be standalone options or form an integrated part of fluvial / tidal options. An InfoWorks ICM model of the Stockton East drainage area has been developed by [redacted] as part of the Northumbria Integrated Drainage Partnership (NIDP). This is being updated by [redacted] as part of a separate option E contract. The results of this modelling, together with intelligence provided by Stockton Borough Council and Northumbrian Water, will determine the extent of any surface water flood risk to be addressed within the project benefit area.

No households will benefit from the scheme (OM2). Therefore, in order to maximise FCERM GiA, the economic appraisal should seek to extract as much economic benefit (OM1) as possible, including that associated with protecting key transport infrastructure such as the A19 Portrack Interchange.

Holme House Road is the only vehicular access route to HMP Holme House. During a flood in September 2012 the road was rendered impassable to vehicles (adjacent to Portrack Retail Park) and the prison was effectively cut off by road for several hours (see study ref. N, section 1.2.1). This brought to light a risk to the safe operation of the prison. We have secured a financial contribution from the Ministry of Justice towards the cost of reducing the risk of all sources of flooding to Holme House Road and a solution to this must form part of the preferred option.

1.2 Previous Studies

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

Ref	Study	Date
A	NIDP ICM model of Stockton East drainage area	2020
B	Tidal Tees Integrated Flood Risk Modelling Study	2020
C	Portrack FAS Strategic Outline Case (SOC)	2020
D	Portrack Screen Optioneering	2019
E	Lustrum Beck As Built Model	2018
F	Portrack Embankment Crest Level Survey	2017
G	Lustrum Beck Billingham Beck Tidal Interactions Study	2015
H	Lustrum Beck Velocity Depth Modelling Study	2013
I	Lustrum Beck Structural Assessment	2010
J	LiDAR	2019-20
K	Tees Tidal Sep 2002 Survey	2002
L	Extended Phase 1 Habitat Survey of Portrack Marsh	2018
M	EA Impact Report Tidal Flood Dec 2013	2013
N	LLFA Flood Investigation Report.	2012

A [redacted] have developed an InfoWorks ICM model for the Stockton East drainage area as part of the Northumbrian Integrated Drainage Partnerhip (NIDP). It combines the existing fluvial, tidal and sewer models into a fully integrated model. A survey was undertaken as part of this study to investigate the upstream extent of the Portrack Ditches and ascertain whether or not they connect to Lustrum Beck. This model should be used as the basis for the appraisal.

B A Flood Modeller-ESTRY-TUFLOW model of the Tees Estuary. The model has been updated following completion of schemes at Port Clarence & Greatham. It also includes the latest allowances for sea level rise in line with the UK Climate Projections 2018.

C A SOC to support the development of Portrack Flood Alleviation Scheme. Note the long list of options in the SOC does not address surface water flood risk. FSoD reference: [redacted].

D A study by [redacted] to assess the change in flood risk associated with connecting the area upstream of Portrack Screen with the Tees Estuary to regenerate inter-tidal habitat.

E The existing Flood Modeller-TUFLOW model (ref. H) was updated with as-built information from Phase 1 of the Lustrum Beck FAS.

F A crest level survey of Portrack Embankment (asset I.D.s 29246, 29247 and 50804) by [redacted] in January 2017.

G A new Flood Modeller-ESTRY-TUFLOW model was constructed by [redacted] of the tidal flood risk area between Lustrum and Billingham Becks. A survey was undertaken as part of this study including channel and structure cross section data on Billingham Beck (downstream of Billingham Beck Bridge), Portrack Ditches 1-5 and crest levels on Billingham Beck's right bank.

H An updated 1D-2D Flood Modeller-TUFLOW fluvial model of Lustrum Beck by [redacted].

I A structural assessment of flood defence assets on Lustrum Beck / River Tees downstream of A177 Primrose Hill Culvert by Jacobs. The walkover survey was undertaken in January – February 2009.

J A 0.5m resolution LiDAR survey of the area was flown during winter 2019-20.

L Northumbrian Water Ltd. commissioned [redacted] to undertake an extended Phase 1 habitat survey of Portrack Marsh in [redacted]. The results of this survey are available for use as background information by this project.

M An internal report summarising the property impacts of the East Coast tidal flood event on 5-6 December 2013.

N A report by Stockton Borough Council on their investigation into the flooding at various locations in Stockton-on-Tees on 25th and 26th September 2012 under Section 19 of the FWMA 2010. Of particular relevance are details of the flooding affecting Holme House Road in Section 6.5.

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

1.3 Objective

A scheme to reduce the risk of flooding in the Portrack area of Stockton-on-Tees is proposed. Under this Contract the *Consultant* will develop a preferred option for the scheme and produce an Outline Business Case (OBC) that is accepted by the Project Board, the relevant assurance body and subsequently the Financial Scheme of Delegation (FSoD) approver. The preferred option will be affordable and deliver the maximum possible flood reduction, social, environmental and economic benefits. Our ambition is that this is a scheme to deliver environmental improvement as well as reduce integrated flood risk.

Project objectives:

- To assess the most cost effective and sustainable approach to managing all sources of flood risk at Portrack including tidal, fluvial and surface water.

- To work with partners to deliver wider benefits, including Water Framework Directive (WFD); Ensure the flood alleviation measures deliver multiple benefits, including exploring opportunities for intertidal habitat creation in the lower reaches of Lustrum Beck and Portrack Marsh

- To minimise and mitigate any adverse impacts from a health, safety and environmental perspective that may result from the programme.

2 The Service

2.1 Outcome Specification

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

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

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

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

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

2.1.5 The *Consultant* shall produce an outline design which seeks to provide the optimum economic, technical, social and environmental / sustainability / carbon outcomes, supported by evidence that will enable the *Client* to produce an Outline Business Case.

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

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

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

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

2.1.10 The *Consultant* shall demonstrate that consideration has been given to a long list of potential options, identified an appropriate shortlist, appraised these to identify a preferred option and developed this option, its impacts, planning and Environmental

Impact Assessment (EIA) requirements scoped to a level that it can be priced. The *Consultan*t shall develop a series of options to meet the above objectives.

2.1.11 AD: The *Consultant* shall not assume that the options shortlisted in the OBC will be the same as those identified at the SOC stage. The *Consultant* shall comprehensively review and update the long and short list options identified in the SOC. This should include consideration of surface water flood risk which was not covered in the SOC.

2.1.12 The *Consultant* shall compile the supporting technical documentation required for the *Client* to obtain a screening opinion from the local planning authority.

2.1.13 The *Consultant* shall produce a design that gains OBC approval and enables the *Client* to gain a price for the construction phase of work and demonstrates:

- Implementation of the best economic and environmental option to manage flood risk in this cell.
- Improved connectivity with the River Tees to allow the creation of intertidal habitat.
- Defences that are resilient to sea level rise and adaptable to accommodate future climate change impacts.
- Improvement and creation of additional habitat that will contribute towards new Biodiversity Net Gain targets; providing a minimum 20% uplift and maximising the additional biodiversity units.
- Contribute to improving the WFD status of this waterbody, which will help to meet the *Client's* legal obligations under the WFD.

2.2 Constraints

2.2.1 No detrimental effects on habitats or species is allowed during investigatory works.

2.2.2 A fully collaborative approach to designing habitat creation opportunities should be undertaken. This will include working closely with Natural England, INCA, TVWT and other conservation bodies.
AD: A design meeting should be held with all the interested parties to formulate a design.

2.3 Consultant Project Management

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

2.3.2 In managing the service the Consultant shall:

- Contribute monthly to the updates to the project risk register.
- Provide input to project efficiency CERT Form.

- AD: Maintain the 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 giving progress against programme, deliverables received and expected and financial and carbon summary against programme.

- Attend project board meetings as required.

- Ensure quarterly input into framework performance assessment/environmental Performance Measures.

- Ensure the *Consultant's* environmental lead provides monthly progress and risk reviews to the *Client* and attends progress meetings, as invited.

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

- Capture lessons learnt relevant to scheme delivery for the EA PM to include in the scheme lessons learnt log to be appended to the OBC.

2.3.3 The contract will be administered using FastDraft.

2.3.4 The *Consultant* is to provide minimum three weeks of notice to the *Client* to issue Notices of Intended Entry to landowners for any survey works.
AD: The *Consultant* will be required to provide a red line boundary drawing showing intended work areas and access routes.

2.4 Outputs and Deliverables

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

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

- Modelling report

- Economics report

- Options appraisal report

- Documentation of the environmental process and considerations including risks and opportunities (e.g. Scoping Report).

- Outline Design(s)

- Carbon Optimisation Report

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

- Draft text within relevant sections of OBC

- AD: Short technical summary from consideration of previous investigations and surveys, explaining how best use will be made of historical data.

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 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. If required, this will be instructed as a Compensation Event.

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

3.1.5 In the absence of property threshold data, and on the basis that they are commercial and industrial in nature, the *Consultant* shall assume all properties have a ground level threshold for the purposes of the economic appraisal (subject to sensitivity testing).

3.2 Ground Investigation

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

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

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

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

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

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

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

3.2.8 There may be ground investigation survey data available as part of the proposed Portrack Relief Road scheme. If so these could be used to inform this project and realise efficiency savings.

3.3 Services Search

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

3.3.2 The *Consultant* shall use the outputs from any non-intrusive surveys (e.g. GPR etc.) to inform the GI scope. Survey outputs shall also be included in the appraisal, including revising the plans.

4 Hydrology and Hydraulics

4.1 General

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

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

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

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

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

5 Economics Appraisal

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

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

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

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

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

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

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

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

5.1.9 The *Consultant* shall use relevant information from the 'Tees Estuary Investment Strategy', which will consider the wider economic impacts of flooding in the Tees Estuary and the benefits of managing this. This work will be commissioned separately but will be carried out in parallel to this OBC commission. Whilst not relevant to the investment case for Flood and Coastal Erosion Risk Management Grant in Aid, this assessment will assist the *Client* in securing funding contributions from local beneficiaries.

5.1.10 The *Consultant* will take into account other projects in the same geographic area to ensure there is no double counting of benefits and Outcome Measures.

5.1.11 Do Nothing and Do Minimum schematisation, modelling and economics have not been undertaken as part of the SOC. The Do Nothing and Do Minimum schematisation and modelling will be carried out under the separate Option E baseline modelling contract.

5.1.12 AD: The Do Nothing and Do Minimum economic assessment should be undertaken as part of this Option C SOC-OBC contract.

Economic, Sustainability and Carbon Appraisal Deliverables

5.1.13 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.

6 Environmental Assessment

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

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

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

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

6.1.5 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.

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

6.1.7 In support of the OBC, the *Consultant* shall:

- Prepare, issue and manage consultation of the Scoping Letter in agreement with the *Client*. The *Client* will lead in obtaining the letter of support from Natural England.
- Compile the supporting technical documentation required to obtain the screening and scoping opinion. The *Client* will lead in the direct communication for obtaining the screening and scoping opinion from the Local Planning Authority (LPA) and MMO.
- Provide an ecological specification for habitat creation to include an assessment of the environmental quality of the sites (flora, fauna etc).
- Include environmental considerations fully within the options appraisal and ensure this information is used to inform the preferred option selection and be incorporated into the Preliminary Environmental Information Report (PEIR) or Environmental Advice Note as applicable.
- Undertake proportionate environmental assessment:
- Provide a PEIR to enable the *Consultant* to seek a screening and scoping opinion from the Local Planning Authority (LPA) under the Town & Country Planning (Environmental Impact Assessment) Regulations (2017), where appropriate.
- Note: Northumbrian Water Ltd. commissioned [redacted] to undertake an extended Phase 1 habitat survey of Portrack Marsh in [redacted]. The results of this survey are available for use as background information by this project.

- Undertake a high level BNG assessment for shortlisted options utilising the most recent Natural England BNG Metric tool (the baseline survey to be carried out under a separate Option E contract)
- Detailed BNG assessment of the preferred option within an agreed red line boundary.
- Identify opportunities for habitat creation to achieve a minimum 20% biodiversity net gain uplift and to maximise the biodiversity units.
- Identify opportunities for habitat creation where habitat compensation is required.

- Identify opportunities for wider environmental enhancements, considering local benefits and stakeholder requirements to maximise OM1 where possible, and support the *Client* in identifying funding opportunities to aid deliverability of enhancements.

- Provide environmental resource to support the communications programme and stakeholder/partnership working as stipulated by the *Client*. Specific support will be instructed as a Compensation Event.

- Undertake a Water Framework Directive (WFD) preliminary assessment (screening and scoping) which confirms if a detailed WFD assessment is required and sets out its scope. This should include an assessment of opportunities to deliver WFD improvements, through options selection and integrated design elements.

- AD: Undertake a Habitats Regulations Assessment (HRA) – this work will be instructed as a Compensation Event:

    - Scope, agree with Natural England, and undertake surveys necessary to enable the required stages of an HRA.

    - Assume an Appropriate Assessment will be required.

- All works should be carried out in accordance with the MTR 801_14 Environmental Sustainability, Design and Management and associated guidance documents – 801_14 SD01 Cultural Heritage and Archaeology and 801_14 SD02 Landscape and Environmental Design.

- The *Consultants* proposals shall break down costs, deliverables and tasks into the following headings:

    - Environmental assessment (PEIR)

    - Environmental input into options appraisal and OBC input

    - Landscape assessment and appraisal

    - Heritage assessment and appraisal, including GI requirements

    - WFD assessment

    - HRA and associated surveys

This proposal should include a schedule of the expected *Consultant* management products as well as a schedule of environmental product delivery timescales that fit the current project plan including key milestones.

All tasks and deliverables should be clearly allocated to the OBC stage.

6.1.8 Cultural Heritage and Archaeology

- The *Consultant* will provide a costed proposal for archaeological work for the *Client* to accept. The outcome of any proposed heritage studies, desk-based assessment and site investigation, will be to influence design and manage the opportunities and risk and so ameliorate any impact to the historic environment (buried and upstanding).

- The archaeological work will be designed and undertaken to gain heritage stakeholder acceptance of the preferred option through Environmental Impact Assessment (EIA) scoping consultation prior to planning as required. The proposed archaeological work and the timing of such will be agreed with the *Client* and meet the standards identified in the Cultural Heritage MTR and Standards (801_14_SD01).

- The *Consultant* shall:

    - Produce a heritage desk-based assessment (DBA) of the preferred option, in accordance with MTR 801_14_SD01 Cultural Heritage and Archaeology.

    - AD: If required, carry out the following work which shall be agreed as a Compensation Event:

        - Undertake cultural heritage surveys as necessitated by the option selection to inform the appraisal process and manage the opportunities and risks related to archaeological or heritage features on the detailed project planning or construction phases of the project. This should be scaled to influence the consideration of the options, and then to assess the preferred option in sufficient detail.

        - Agree a programme of survey works with the *Client's* cultural heritage advisor, and prepare heritage project designs, procure, manage and supervise the required surveys in accordance with MTR 801_14_SD01 Cultural Heritage and Archaeology,

        - Be responsible for the quality of the cultural heritage survey output in accordance with the MTR 801_14_SD01.

        - Provide deliverables to the *Client* in accordance with the MTR-801_14_SD01 and the programme agreed in the heritage project design.

- All work undertaken by the *Consultant* shall be reviewed by an appropriate cultural heritage specialist from their team who will be a full member of the Chartered Institute for Archaeologists (CIfA) or the Institute of Historic Building Conservation (IHBC) or equivalent.

6.1.9 Landscape Assessment and Appraisal

The *Consultant* shall:

- In agreement with the *Client's* NEAS Landscape Architect (LA) and in accordance with the document MTR 801_14_SD02 Landscape and Environmental Design (V3) (MTR-LED):

    - Identify the Landscape and Environmental Design (LED) services to be provided to support the development and submission for approval of the OBC with reference to the Landscape Institute Scope of Service schedules and the Environment Agency's Landscape and Environmental Design Guidance (LEDG),

    - Provide a product description for each of the agreed LED activities and products in accordance with section 1.6 of the MTR-LED,

    - Provide a proposal which identifies the LED activities, programme and costs.

  The programme for the delivery of the agreed LED activities and products will be set against the wider project programme and indicate key dates (incorporating a minimum 10 day response period where the *Client's* NEAS LA is required to review and respond).

- Undertake a landscape desk study and site walkover survey in accordance with the MTR-LED to identify key landscape and environmental design constraints and opportunities, landscape stakeholders and determine the scope of Landscape and Visual Impact Assessment (LVIA) to be undertaken in a manner proportionate to the project. LVIA shall include townscape assessment as appropriate to the location, scale and type of development proposed,

- Use the LED products developed from the desk-based assessment, site walkover survey and LVIA to inform the consultation, appraisal outline design process, manage landscape risk, identify landscape mitigation requirements and enhancement opportunities at an appropriate level of detail to support the OBC,

- Be responsible for the timing of surveys, assessments and consultation with landscape stakeholders and for the quality of landscape assessment, appraisal and design products,

- Provide deliverables to the *Client* in accordance with MTR-LED and with reference to LEDG,

- Undertake landscape and environmental design activities and deliver landscape products in accordance with the project programme to allow efficient management of risks and issues.

All work undertaken by the *Consultant* shall be quality assured and approved prior to submission by their landscape architect who will be a Chartered Member of the Landscape Institute.

EA Standard Landscape Products

To support preparation of the PEIR, the *Consultant* will undertake the following landscape activities and deliver the following EA standard LED products, in accordance with the MTR-LED and with reference to the good practice guidance contained within LEDG:

- Landscape desk study,
- Landscape walkover survey.

AD: To support the OBC, the *Consultant* will determine the need for, scope of, and where agreed delivery of the following EA standard LED products, in accordance with the MTR-LED and with reference to LEDG. These will be instructed as a Compensation Event:

- Environmental Site Appraisal Plan(s) (ESAP),
- Landscape options plans,
- Indicative Landscape Plan(s) (ILP),
- Baseline Landscape and Visual Assessment (BLVA),
- Outline cost estimate (pre-OBC) – for landscape and environmental works implementation and agreed 5 year establishment maintenance period, plus a professional fees proposal for inspection and monitoring during the same implementation and establishment period.

6.1.10 Sustainability Targets

- The *Consultant* shall work towards the Environment Agency's Sustainability and Environmental Management Strategy to 2030 (e: Mission), the 25 Year Environment Plan and the principles of sustainability as described under the United Nations 17 Sustainable Development Goals.
- AD: The Consultant shall carry out a full CEEQUAL assessment. This will be instructed as a Compensation Event.

7 Option Development

7.1.1 The *Consultant* shall undertake an options appraisal, which will include a review of the previous work, to prepare a long list of options. The long list shall not be constrained by previous work and will be agreed with the *Client* at an options meeting. AD: Please note that the long list of options in the SOC needs to be comprehensively reviewed and updated as part of the appraisal following advances in our knowledge and understanding since its approval in April 2020. The *Consultant* shall screen and assess this long list of options for technical, environmental, sustainability, carbon and economic suitability, as considered appropriate.

7.1.2 Following this screening, the *Consultant* shall, in consultation with the *Client,* prepare a short list of viable options for the *Client's* approval, giving reasons for including or excluding each of the long list options. Both parties, and potentially other stakeholders, will conduct a workshop to determine the final short list. The most sustainable option shall be included in the short list. Then the *Consultant* will document the process undertaken, the final short list and the reason for including or excluding each of the long list options. On the agreement of the *Client*, the *Consultant* shall assess in detail these short listed options for technical, environmental and economic suitability, as discussed in the relevant sections of this brief, utilising the evidence and data collated as part of this commission.

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

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

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

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

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

7.1.8 AD: 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.

7.1.9 The development of the options long list and short list should take account of the proposed Portrack Relief Road that is currently at detailed design stage.

7.1.10 This section of the study should conclude with an options appraisal report summarising technical issues and the development of the preferred option.

7.1.11 The *Client* has secured a financial contribution from the Ministry of Justice to reduce the risk of flooding at Holme House Road which can disrupt access to HMP Holme House. The *Consultant* should ensure that the preferred option addresses the flood risk at this location.

8 Stakeholder Engagement

Stakeholder engagement will be led by the *Client* with technical support from the *Consultant*.

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

8.1.2 The *Client* will arrange and advertise 2 no. public meeting / workshops. The *Consultant* shall provide technical support, prepare information for input into the consultation documents and prepare site plans and typical outline design drawings for the short listed options for public display. Attendance at these meetings shall include the *Consultant* project manager, environmental lead and other roles as necessary.

8.1.3 The *Consultant* shall provide technical support and attend 4 no. x 2hr meetings with key external organisations / individuals impacting upon option selection process. The *Client* will lead on discussions with external organisations, including the Tees Valley Wildlife Trust, about habitat creation opportunities.

9 Health and Safety

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

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

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

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

10 Business Case Submission

10.1.1 The *Consultant* shall aggregate all of the work undertaken from this commission into a business case document – the Outline Business Case - with support from the *Client* in preparing text, particularly for the Strategic, Commercial and Management cases. The format of this document and guidance on the contents is detailed in Write a Business Case LIT 55124 (Link) and the Business Case templates.

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

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

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

11 Carbon

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

11.1.2 The carbon budget for the project has been set to 267.2 tonnes of CO2 The *Consultant* is required to work with the *Client* and the ESE contractor to reduce the project carbon footprint by 40% (define this following review).

11.1.3 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.

12 General

12.1.1 AD: The *Consultant* is expected to make a site visit with key members of the team to gain an understanding of the situation on the ground, identify any environmental or communication risks and issues. The *Client* will arrange this.

13 Relevant guidance

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

Ref	Report Name	Where used
LIT 16559	Safety, health environment and wellbeing (SHEW) Code of Practice	Throughout
183_05	Data management for FCRM projects	Mapping and modelling
379_05	Computational Modelling to assess flood and coastal risk	Modelling
LIT 14847	Risk Guidance for Capital Flood Risk Management Projects	Option development
OI 120_16	Whole-life Carbon Planning Tool	Option development
LIT 14284	Whole Life (Construction) Carbon Planning Tool User Guide	Option development
	Access for All Design Guide	Option development
	Project Cost Tool	Costs
LIT 12982	Working with Others: A guide for staff	Consultation & Engagement
Gov.uk	Appraisal Guidance Manual	OBC
672_15_SD03	Business case template – 5 case Model	OBC
672_15_SD02	Short Form Business case template	OBC
LIT 4909	Flood and Coastal Erosion Risk Management appraisal guidance (FCERM-AG)	OBC
	Flood and Coastal Erosion Risk Management: A Manual for Economic Appraisal (the 'Multi Coloured Manual')	OBC
OI 1334_16	Benefits management Framework	OBC
Gov.uk	Partnership Funding Calculator Guidance	OBC
LIT 15030	The Investment Journey	OBC
LIT 55124	Write a Business Case	OBC
LIT 14953	FCRM Efficiency Reporting – capital and Revenue	OBC
LIT 12280	Lessons Log template	OBC
LIT 55096	Integrated Assurance & Approval Strategy	Approvals

14 Requirements of the Programme

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

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

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

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

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

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

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

15 Services and other things provided by the *Client*

15.1.1 Access to Environment Agency systems and resources including:

- [redacted].
- [redacted]
- Collaborative Delivery Community SharePoint access.

15.1.2 Site access authorisation letter(s).

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

15.1.4 Outputs from the option E baseline modelling contract including the updated baseline model (NIDP ICM model of Stockton East drainage area) and Do Nothing and Do Minimum modelling results. All associated baseline ecology surveys and Biodiversity Net Gain baseline information.

16 Data

16.1.1 Add any project specific requirements.

17 *Client's* Advisors

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

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

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

18 *Client* Documents the *Consultant* Contributes to

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

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

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.

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

Appendix 2 – Modelling Technical Scope

This Scope should be read in conjunction with Operational Instruction 379_05 "Computational modelling to assess flood and coastal risk" current at the Contract Date. The service is compliant with the version of the Minimum Technical Requirements set out in OI_379_05.

Project Overview

This modelling work is required to support the appraisal of the proposed flood alleviation scheme in the Portrack area of Stockton-on-Tees. The existing risk within the project area is complex and comes from a number of sources including: the tidal risk from the River Tees and Billingham Beck (and associated Portrack Ditches); the fluvial risk from the Lustrum Beck (due to tide-locking behind the tidal control structure at its mouth, Portrack Outfall); and surface water risk.

In [redacted] have developed and InfoWorks ICM model of the Stockton East drainage area as part of the Northumbria Integrated Drainage Partnership (NIDP). This combines the existing fluvial, tidal and sewer models into a fully integrated ICM model. This model provides our latest understanding of flood risk in the area and is to be used as the basis for the project appraisal.

Please note the following:

- This Scope is to outline the requirements for modelling of the optioneering scenarios.

- The *Consultant* shall specify the survey scope in accordance with the *Client's* standard survey specification. The consultant will check existing data and carry out check surveys where required and supplement surveys with additional data where required. Refer to sections 3 and 12 of the appraisal scope document for specific survey and site visit requirements.

- The *Consultant* has undertaken a technical review of the 2020 Stockton East ICM model. Any updates required to the model to create a representative baseline model for the appraisal is additional (Pre-SOC) work and will be carried out under a separate Option E contract. The required updates are to be reviewed and agreed with the *Client* prior to commencing modelling.

- Do Nothing and Do Minimum modelling has not been undertaken as part of the SOC and is therefore additional (Pre-SOC) work which will be carried out under a separate Option E contract. The schematisations of the Do Nothing and Do Minimum scenarios are to be agreed with the *Client* at a workshop. The % AEPs to be run are to be confirmed with the *Client* at this workshop.

Options Appraisal

The *Consultant* shall:

- Use the *Client's* accepted baseline model and outputs (2020 Stockton East ICM model) to construct and deliver flood alleviation scheme design modelling to reduce tidal, fluvial and surface water risk.

- Options have not been defined as re-long listing and shortlisting is required. Optioneering scenarios to be modelled will be agreed between the *Consultant* and *Client* following shortlisting of options. It is assumed that 3 Do Something options are to be modelled in addition to 1 Do Minimum and 1 Do Nothing scenario. The Do Nothing and Do Minimum

modelling is additional (Pre-SOC) work and will be carried out under a separate Option E contract.

- The Consultant shall run the final flood alleviation scheme design model for the following:
    - Fluvial defended: 50%, 20%, 10%, 5%, 3.3%, 2%, 1.33%, 1%, 0.5%, 0.1% AEPs
    - Tidal defended: 50%, 20%, 10%, 5%, 3.3%, 2%, 1.33%, 1%, 0.5%, 0.1% AEPs
    - Surface water defended: 50%, 20%, 10%, 5%, 3.3%, 2%, 1.33%, 1%, 0.5%, 0.1% AEPs.

  Climate change scenarios will be defined as those required for economic appraisal.

- Once the preferred option has been chosen, the *Consultant* shall conduct sensitivity testing of the preferred option to optimise the design (e.g. testing bund height / orifice size / flood storage reservoir area, etc.)

- Produce a report and model log documenting the changes in the model for each option.

Appendix 3 – Area of Interest