NGSA SOC-OBC PSC Standard Scope - Appraisal

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Environment Agency

NEC4 Professional Service Contract (PSC)

Scope

Project / contract information

Project name	Farlington Marshes Project Appraisal (SOC - OBC)
Project SOP code	ENV0002137C
Contract number	29427
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Assurance

Author	[redacted] Project Manager	Date: 07/10/20
Consulted	[redacted] Senior User	Date: 07/10/20
Reviewed	[redacted] Project Executive	Date: 07/10/20
Checked prior to issue	[redacted] Defra Group Commercial	Date: 27/10/20 & 03/12/20
Consulted	[redacted] NEAS	Date 07/10/20

Revision History

Revision date	Summary of changes	Version number
02/07/2020	First issue – PM draft	1.0
21/07/2020	2nd issue EA/DGC review	2.0
07/08/2020	3rd issue EA comments incorporated/ issued to JBA	3.0
21/08/2020	4th Issue –transferred to new scope template- to be reissued to JBA	4.0
26/08/2020	4th issue- issued to JBA	4.1
10/09/20	5th issue – incorporating EA and JBA comments and changes post review meeting	5.0
21/09/20	Plus TW comments	6
28/09/20	Following pricing meeting OS	7.1
02/10/20	Updated with Env deliverables – issued to JBA	7.2
07/10/20	Minor adjustment to env deliverables after discussion with NEAS	7.3
21/10/20	Incorporating adjustment after CSM comments	7.4
23/10/20	Issue to JBA	8
03/12/20	Comments removed, DGC review date added, project name amended to match contract, grammatical oversights corrected and contractual terminology corrected (e.g. use of *Client* in place of EA or Environment Agency or Employer)	8.1

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

Document	Document Title	Version No	Issue date
412_13_SD01	**Minimum Technical Requirements**	**2**	**18/03/2020**

1 Overview

1.1 Background

Farlington Marshes is a 125ha peninsula of undeveloped coastal land, situated between the city of Portsmouth and Thorney Island. A 4km sea wall protects low lying land from tidal inundation (see fig 1).

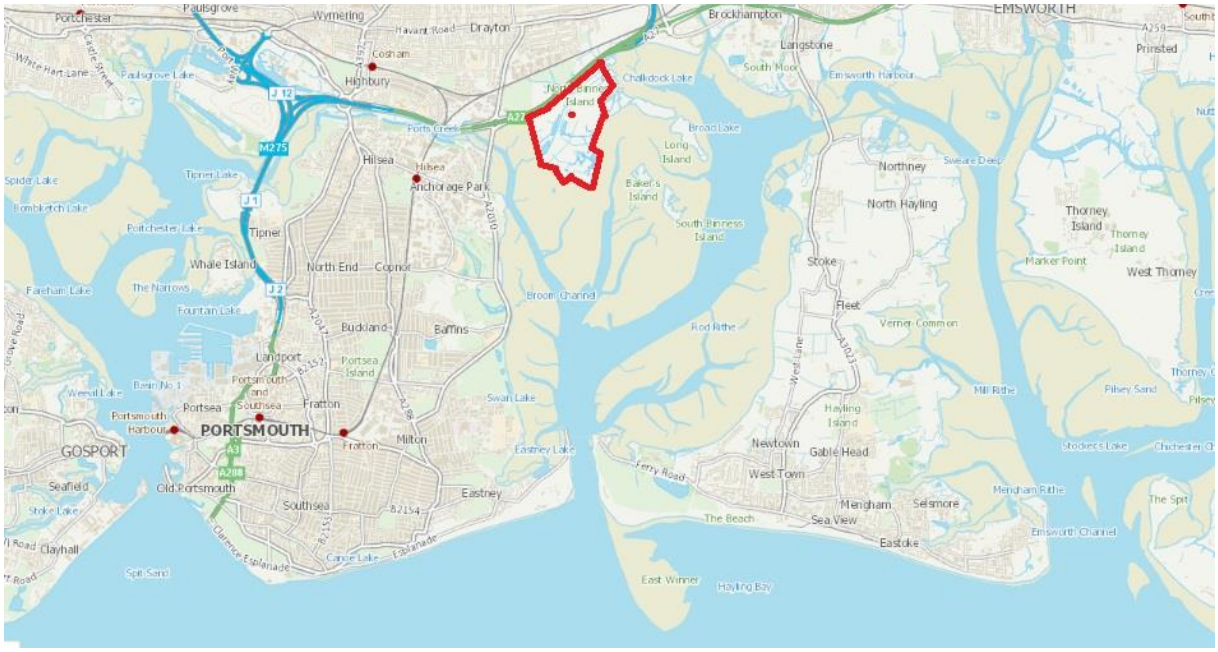
Farlington Marshes is an internationally, European and nationally designated site (SAC, SPA and RAMSAR) comprised of coastal grazing marsh and lowland meadow. Farlington Marshes plays a critical role in supporting the tens of thousands of waterfowl and wading birds that overwinter in the Chichester, Langstone and Portsmouth Harbour Special Protection Areas (SPAs) every year and is a key refuge site within the Solent-wide network of high tide roost sites.

A recent survey undertaken by JBA (2020) concluded that the sea wall is in poor condition and if significant defects are not repaired, the current defence at Farlington Marshes will continue to deteriorate and could possibly fail within five years.

This failure of the flood defence would result in the loss of important coastal habitat at Farlington Marshes and have an adverse impact not only on the immediate SPA/SAC and RAMSAR but also Solent wide SPA's. This would also require the Environment Agency to find a significant amount of compensatory habitat to meet the requirements of the Habitat Regulations (2010), which initial studies have shown would be hard if not impossible to find within the Solent.

The initial recommendation from the SOC after engagement with key stakeholders including Portsmouth City Council, Natural England, East Solent Coastal Partnership and the Hampshire and Isle of Wight Wildlife Trust is that Hold the Line is the preferred management strategy for Farlington Marshes, at least until the end of the second epoch (2060).

Fig 1 – Farlington Marshes



1.2 Previous Studies

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

Report	Date	Format	Outcomes of study
Farlington Marshes assessment of coast defence options – Jonathan Cox	August 2010	Digital Format (Already Supplied)	The report reviews the current (2010) use of Farlington Marshes by wintering and passage migrant birds and the effects of a number of different coast defence options against the conservation objectives of the internationally protected sites and then looks at the options for mitigating and compensating for loss and damage to habitats
Farlington Marshes Feasibility Report, ATKINS Also see references in appendix for list of other useful studies	April 2011	Digital Format (Already Supplied)	Identified partial realignment as the economically preferred option, but identified that further study was needed into the importance of Farlington Marshes
Portchester Castle to Emsworth Coastal Flood and Erosion Risk Management Strategy Note the Shoreline Management Plans are currently being reviewed	September 2012	Digital Format (Already Supplied)	Identified that the preferred economic option is sustain followed by managed realignment in year 20, however this would be subject to further studies including alternative high-water roosts for birds
JBA pre SOC report	January 2020	Digital Format (Already supplied-JBA produced)	As summary report of previous studies, including a condition assessment of the sea wall and embankment
Shoreline Management Plan	2010	Online http://www.northsolentsmp.co.uk/	Latest Shorline Management Plan covering Farlington Marshes
Topographic data/LiDAR	n/a	Downloadable at https://environment.data.gov.uk/DefraDataDownload/?Mode=survey	
East Solent Model (2018)	2018	On Hard drive in PSO area, Romsey. Can provide on a hard drive if required.	See section 3.3
NaFRA Data	2015 (latest)	GIS format + online map	Risk of flooding from rivers and seas taking into account flood defences – includes the Modelling and Decisions Support Framework (MDSF2) a toolset for assessing flood risk
NiCAS data	2015	Already supplied – digital format	Point cloud data for Farlington Marshes defence
Flood Estimation Handbook	2000	PDF	Used to estimate the flood peak magnitudes in the UK
JFLOW	2004	JBA hosted	JFLOW is a two-dimensional (2D) hydraulic modelling package, developed by JBA Consulting, used to produce fluvial flood extents

TUFLOW		http://www.tuflow.com/	TUFLOW is a one-dimensional (1D) and two-dimensional (2D) flood and tide simulation software. It simulates the complex hydrodynamics of floods and tides using the 1D St Venant equations and the full 2D free-surface shallow water equations.
HEC-RAS		JBA hosted	HEC-RAS allows you to perform one-dimensional (1D) steady flow, unsteady flow, sediment transport / mobile bed computations, and water temperature modelling.
SWAN		JBA hosted	JBA produced model covering Hurst to Lymington, mentioned in the Solent Model report
Sea Level Data	2018	Shape Files/ https://environment.data.gov.uk/	Sea Level data showing still water design sea level estimates 5% and 95% confidence levels for all data points with design sea level estimates Highest astronomical tide (HAT) and mean high water spring (MHWS) tide conditions for some locations Sea Level data, 5% and 95% confidence levels, HAT and MHWS levels for estuary, tidal river and harbour locations Design surge profile shapes around the coastline in Excel spreadsheet format together with the location where they are to be used
Solent Bird Study	2020 (draft)	Electronic/PDF (already supplied)	Study of bird populations within the Solent- showing the importance of Farlington Marshes within the network of SPA's
Surface Water Study – draft modelling report	2018	Electronic/ PDF	An assessment of flood risk and flood mechanisms at Farlington, including the development of an Integrated Catchment Model to prepare surface water flood risk maps

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

The project objective is to deliver an Outline Business Case (OBC) that will gain assurance through the Large Projects Review Group (LPRG).

The SOC preferred option and that requested by stakeholders at this stage is Hold the Line at 5% AEP to 2060. The key project objectives for Farlington Marshes are for a suitable sustainable solution that will protect and enhance both the functionality of the protected sites within the Natura 2000 (N2K) network and the recreation and amenity value of the site, minimise carbon and also help to develop strong working partnerships with the key stakeholders in the area.

Farlington Marshes is one of the top SPA sites in the country for Brent Geese and ranks 3rd in the South and 13th in the UK for overall bird numbers. Under the Conservation of Habitats and Species Regulations, there is a legal requirement to maintain the features for which nature conservation sites are internationally designated.

This project aligns with Defra and EA policy on flood risk management as set out in the National Flood and Coastal Erosion Risk Management Strategy for England (2011), in particular in the strategy's

reference to the powers provided in the Flood and Water Management Act 2010 to manage flooding or coastal erosion in the interests of nature conservation.

Scheme development will aim to comply with and contribute positively to the objectives of the South East River Basin Management Plan objectives with respect to affected waterbodies.

The North Solent Shoreline Management Plan (SMP) (2010) provided the following policy for policy unit 5A20 (Farlington Marshes):

- Epoch 1 (0-20 years): Hold the Line
- Epoch 2 (20-50 years): Hold the Line*
- Epoch 3 (50-100 years): Hold the Line*

The asterisk referred to the following text:
'* In addition to a study looking across the context of the wider strategic network of sites, a study is required to confirm the future management of the site. This is likely to be a range of options from Hold the Line (HTL) to Managed Realignment (MR). This is likely to result in doing something different, to recognise coastal change. The study will address the economic, environmental and social implications and flood management issues of the site.

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 AD: The overall objective of this commission is to produce a flood risk management appraisal for the Farlington Marshes project in line with Flood and Coastal Erosion Risk Management – Appraisal Guidance (FCERM-AG), which will appraise a range of options including those longlisted within the SOC. This will result in the delivery of an Outline Business Case (OBC) to the *Client* that gains assurance from LPRG. The *Consultant* shall be responsible for the delivery of the Strategic Case, Economic Case and Financial Case within the OBC.

2.1.2 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.

2.1.3 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's* and the *Client's* organisation.

2.1.4 The *Consultant* shall ensure the optioneering process fully considers and addresses sustainability including carbon reduction as strategic outcomes. The *Client*'s 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.

2.1.5 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 *Client*'s ambitions. This includes delivery ~~against OM4,~~ to achieve biodiversity net gain ~~but must~~ and also consideration of wider sustainability opportunities. The *Consultant* shall ensure the optioneering process avoids where possible, minimises and **AD: then** compensates or offsets any adverse environmental effects.

2.1.6 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.

2.1.7 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).

2.1.8 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.

2.1.9 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.

2.1.10 The *Consultant* shall 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.

2.1.11 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.

2.1.12 AD: The *Consultant* shall ensure that the appraisal of options follows a clear logical progression which should include an initial desk based assessment of the extent to which an increased ('heavy') maintenance regime at Farlington Marshes would meet the project objectives.

2.1.13 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.

2.1.14 The *Consultant* shall compile the supporting technical documentation required for the *Client* to obtain a screening AD: and scoping opinion from the local planning authority (LPA) and Marine Management Organisation (MMO).

2.1.15 AD: The *Consultant* shall apply for consents and permissions from relevant statutory stakeholders required to complete the objectives.

2.2 Constraints

2.2.1 All deliverables and products will show evidence of a quality control system. The quality of all deliverables shall be of a standard acceptable to the Project Board and LPRG. The *Consultant* shall define and present detailed quality processes for this commission. General quality tolerances shall consist of:

- All first draft deliverables shall be free from significant error and be consistent with other documents and avoid repetition.
- All first draft products shall tell a logical story with a clear audit trail of consultation and decision making processes, supported by robust evidence, which can be easily transferred and interpreted by future users.
- All first draft deliverables shall be grammatically correct, clearly presented with consistent formatting.
- All first draft deliverables shall satisfy the relevant latest guidance and legislative requirements.
- All first draft deliverables shall conform to the latest and necessary guidance and meet the template requirements, unless otherwise agreed with the *Client* in advance of submission.
- Products shall be suitable for the audience and written using 'plain English'.

2.2.2 Due to the environmental designations and sensitivities of Farlington Marshes and the surrounding area the project is likely to require a series of licences and consents all of which will need broad consultation. The processes themselves will take time and the licences and consents may contain onerous conditions concerning development and construction phasing.

2.2.3 The *Consultant* shall ensure that the options considered are compliant with all relevant guidance and legislation, especially in relation to the protected sites habitats and species.

2.2.4 Access for construction and Ground/ Site Investigations is difficult and highly constrained, both by land and by sea and there is uncertainty about the embankment material and the ability to support heavy plant; early *Contractor* input will be key in assessing the buildability/ viability of any options.

2.2.5 The project site is well used by the public for amenity, and any investigative work undertaken on the sea defence may require a period of footpath closure or diversion to be in place prior to that work taking place.

2.2.6 The preferred option will need to satisfy the requirements of the key stakeholders such as Natural England in the area, therefore good stakeholder management will be key to the success of the project. Stakeholder engagement will be led by the *Client* with support from the *Consultant* as detailed in Section 8.

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 Minimum Technical Requirements.

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

- Follow the table of timescales for outputs as shown below:

  Table 1: Table of timescales for outputs

Required notice or response period	**Activity / Output**
15 working days	Review of documents by NEAS and other *Client* consultees
10 working days	Site visits, Stakeholder consultation invitation
1st Friday or nearest working day of the month.	Expenditure forecast
1st Friday or nearest working day of the month.	Progress report
1st Friday or nearest working day of the month.	Programme
End of the 2nd month of the quarter or nearest working day	Efficiency register
5 working days	Prepare and issue reports and information before meetings /workshops/ Circulate minutes from meetings

- 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 *Client* deadlines as shown in Table 1.
- 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 *Service Manager* 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 AD: Lead required workshops at key gateways/ milestones/ decision points, and attend interactive programming and planning workshops led by the *Contractor* to allow the project team to understand the risk/ dependencies within the programme and how tasks are related and risks are managed. This will result in aligning project team members' objectives, resources and mitigation of constraints.

2.3.5 AD: Attend a team start up meeting and 2 subsequent team building meetings required to develop the team charter.

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. The *Consultant* shall agree the list of products with the *Client* and submit the product description for the *Client's* acceptance before commencing work on the product **AD: making sure that the submission dates and the appropriate period of reply for *Client* acceptance are clearly shown on the programme.**

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 **AD: as outlined in the MTR 801 14** (e.g. ~~Scoping Report,~~ ~~PIER etc~~.).

- Outline Design.

- 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.

2.4.3 AD: The *Consultant* shall deliver the strategic, economic and financial cases of an OBC for the scheme

2.4.4 AD: The *Consultant* shall produce a smart register with links to incoming information of historical data, to allow the best use to be made of the historical data in a format to be agreed with the *Client* that they will be able to use and maintain beyond the project.

3 Site Investigation

3.1 Topographic Survey

3.1.1 The *Consultant* shall review the previous topographic survey data (see section 1.2) to identify gaps in existing data. The *Consultant* shall use this to inform the scope of any additional topographic survey required.

3.1.2 The *Consultant* shall work with the *Client*'s NEAS project lead to ensure that environmental and sustainability constraints within the likely scheme footprint are identified and included in the survey and to determine if efficiencies AD: and opportunities can be made by joint working with other projects or initiatives in the area.

3.1.3 AD: The *Consultant* shall undertake the additional topographic survey necessary for the hydraulic model and/or to be able to assess the shortlist of options and complete an outline design. 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 (4.01), to enable the above.
- Review and agree surveyors' site risk assessment.
- Supervision and management of topographic survey company.
- Review data / checking deliverables

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

3.2 Ground Investigation

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

3.2.2 The *Consultant* shall work with the NEAS project lead to:

- Ensure that the environmental risks, opportunities and constraints associated with the Ground Investigation, including the collection of environmental evidence to support appraisal and assessment, are identified and addressed
- Determine if efficiencies and opportunities can be made by joint working with other projects and initiatives in the area

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 AD: through completing in a format to be agreed with the *Client* an NEC4 Engineering and Construction Contract scope for the *ECC Project Manager* to issue as an instruction to change the scope.

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* AD: obtaining *ESE Contractor* advice *and* input into their estimated costs.

3.2.8 AD The *Consultant* shall demonstrate how historical data and the results of previous reports and surveys have been considered when identifying and undertaking any necessary Ground Investigations.

3.3 Services Search

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

~~3.3.2 The *Client* will arrange for a non-intrusive survey to detect key utilities (e.g. GPR etc.) to inform SI and or options appraisal. The *Consultant* shall determine the extent of the survey and produce a specification for the survey in accordance with EA Guidance and Principal Designer discussion; defining type and purpose of survey including extents and available information.~~

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

3.3.4 The outputs from the services search shall be included in the appraisal, including revising the plans.

4 Hydrology and Hydraulics

4.1 General

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

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

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

4.1.4. Additional runs shall be allowed for the 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.

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5 Economics Appraisal

5.1.1 The *Consultant* shall undertake a cost effectiveness analysis (CEA) approach to establish the least cost method of meeting the project objectives, rather than a full cost benefit analysis (CBA).

5.1.2 ~~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~~.

5.1.3 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.~~ AD: however *Client* and *ESE Contractor* input is required. A 'Project Estimate Pricing Strategy Meeting' will be required to agree the appropriate method for costing and deliverables required

5.1.4 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. AD: The *Consultant* shall undertake this by leading a carbon workshop, based on the outcomes of the carbon modelling tool at the short list options stage. The results of this workshop shall feed into the low carbon option selection process using the Appraisal Summary Tables.

5.1.5 Risk and Optimism Bias allowances shall be calculated in accordance with Risk Guidance for Capital Flood Risk Management Projects (LIT 14847). The *Consultant* shall attend risk workshops facilitated by the *Consultant* to deliver the Scope.

5.1.6 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.

5.1.7 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.

5.1.8 ~~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.

5.1.9 The *Consultant* shall **AD: support** the *Client* in identifying suitable sources of external funding.

Economic, Sustainability and Carbon Appraisal Deliverables

5.1.10 The *Consultant* shall provide the results of this section of the study in an economics report which shall feed into the economics case and 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

Background

In assuring the SOC, the LPRG assurance panel have stated an expectation to see adaptive sustainable transition in the presentation of options at OBC. The options presented must “not make matters worse” for the future integrity of function of the site (beyond the lifetime of any scheme) or for the availability of greenspace for Portsmouth’s community.

The context of integrity applies to both the Natura sites of which Farlington comprises a key functional element – and to their functional value for the Solent network of sites. The value of the unit in its present form is vulnerable – both through disconnection of the roost area from intertidal and by increasing urban pressure and pollution.

The options may require an element of compensation. Farlington is part of a Natura site that is the subject of several restoration proposals that have been identified by multiple EA-NE working groups in 2019-20 - the project should work with topic specialists and expertise to develop proposals, and if possible also identify synergies with other projects/ proposals.

The principles of compensation, functional integrity, climate resilience, sustainable delivery, seeking lowest carbon viable solutions and of seeking the opportunities to enhance social value, health and wellbeing and positive change for the site should be sought and the appraisal demonstrate how each of these is assessed.

The completion of this stage will be demonstrated through achieving *Client* led letters of support from statutory consultees (as per MTR requirements) and relevant screening and scoping (e.g. MMO, LPA).

Opportunities to streamline processes with statutory consultees should be identified where possible and the NEAS project lead can provide support in accomplishing this.

The project can support an approach where elements of disturbance or damage occur to protected sites where it can be clearly shown as a means to provide a more sustainable and ecologically functional outcome.

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 environmental project level assessment sits within the context of any previous strategic environmental assessment and supporting information for the area and brings forward all relevant information and conclusions.

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

6.1.5 AD: The *Consultant* shall ensure that the development and assurance of the environment product deliverables is undertaken by someone with relevant chartered status and experience in each topic area (e.g. CEcol, CEnv with WFD specialism, CMLI).

6.1.6 AD: The outcome of the project is to protect and enhance the functionality of the SAC, SPA & Ramsar sites within the N2K network (and features of the SSSI). The environmental deliverables must ensure that the OBC can be approved by LPRG on first submission.

6.1.7 AD: All deliverables shall be undertaken in line with the current Minimum Technical Requirements including those for Environmental sustainability, Cultural heritage and archaeology, and Landscape and Environmental Design.

6.1.8 AD: Where surveying for aquatic or terrestrial fauna and flora takes place the *Consultant* shall give NEAS and FBG the opportunity to attend and contribute, to support maintenance of skill-sets and knowledge of site.

6.1.9 AD: When producing the environmental deliverables for this stage of the project the *Consultant* shall take into account that the project is expected to require a statutory EIA and as per the MTR's will therefore require an Environmental Statement (ES) and Environmental Action Plan (EAP) in the next stage of the project.

6.1.10 AD: The *Consultant* shall provide the Environment Appraisal deliverables as agreed with the *Client* with the support of NEAS to include:

- A consenting strategy, identifying all consents required for the Services to ensure key dates are accurately reflected in the programme and key dependencies identified to the *Client*.
- Water Framework Directive (WFD) assessment appropriate to the project stage
- A technical report to identify how the project will contribute to the required protected sites favourable condition/conservation objectives targets, for inclusion into the evidence in support of funding
- Preliminary Environmental Information Report (PEIR) (Document Ref 163_06_SD06), as set out in the relevant MTR's which should include all required information needed to allow OBC approval, including (not limited to):
    - Biodiversity Assessment, including:
        - Preliminary Ecological Assessment (PEA)* (*this requires integrated and iterative working with specialists and NEAS with reference to restoration initiatives)
        - Habitat survey including recommendations for net gain

        - Collation and assessment of existing bird and Natura, SSSI, marine and terrestrial features and species survey data as required to satisfy and inform the assessments and consenting.
        - The identification of any required protected habitat/ species surveys required, to include liaison with internal and external stakeholders where required.
        - Undertake HR01 identification of Likely Significant Effects and agreement of HR02 sufficient for the OBC and to obtain a comfort letter of support from Natural England
    - Landscape Assessment, including**:**
        - Landscape Cost Estimate (for OBC) – to be high level costing only with costs included within the engineering costing.
        - Landscape Character area assessment – to inform options
        - Landscape and Visual Impact Assessment (LVIA) with Landscape Option Plan – landscape appraisal of short-listed options to be informed by Habitat Regulations Assessment (HRA) and biodiversity benefits and dis-benefits, and carbon / natural capital analysis of options
        - Environmental Site Appraisal Plans (ESAP) for each short-listed option - and Indicative Landscape Plan (ILP) for the Preferred Option only – referencing (but not limited to) Equalities, Policies (EA and wider) and benefits (e.g. net gain calculations)
    - Heritage assessment, including:
        - Heritage baseline and preliminary statement of significance
        - Assisting the *Client* and preparation for engagement with, Historic England (HE) and Local Planning Authority (LPA) archaeology advisor
        - Heritage review of options reports
        - Creation of a deposit model
    - UXO and Contaminated Land assessment sufficient for the OBC
    - Undertake an initial Natural Capital Assessment scoping exercise to allow the *Client* to assess, where a natural capital approach/assessment could add value to the options appraisal.
    - Equalities Assessment as per Equality Analysis Guidance Document LT13513 informed by an access assessment

The PEIR will consolidate and integrate findings, reporting assumptions, limitations, and rationales and will form an Appendix to the OBC with relevant summary details incorporated into the relevant section(s) of the OBC main text. Raw data will be included as appendices to the PEIR.

The *Client* will seek the following approvals, supported by the information in the PEIR and other relevant documents provided by the *Consultant*:

- Screening and scoping opinions on the preferred option from the Local Planning Authority and the Marine Management Organisation (MMO).
- Natural England (NE) comfort letter.
- WFD (EA-NE) comfort letter
- MMO comfort letters (Habitat Regulations)

6.1.11 AD: The *Consultant* shall produce a report containing a summary of key environmental risks and issues (e.g. site sensitivities, socio-environmental constraints, challenges, assumptions and uncertainties) including an outline of potential environmental and socio-environmental improvement opportunities that could be delivered through the project. This summary should also identify any opportunities for partnership working, partnership funding or specific engagement activities and approaches that may be required to meet the project objectives.

6.1.12 AD: The *Consultant* shall facilitate a CEEQUAL scoping workshop with the key internal consultees and shall complete a CEEQUAL assessment based on the current version of the CEEQUAL Technical Manual requirements (Version 6) and in accordance with the hub workload plan, as advised by the *Service Manager.*

7 Option Development

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

7.1.2 Following this screening, the *Consultant* shall prepare a short list of viable options for the *Client's* 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 acceptance by the *Client*, the *Consultant* shall assess in detail these options for technical, environmental and economic suitability, as discussed in the relevant sections of this brief, utilising the evidence and data collated as part of this commission.

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

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

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

7.1.6 The *Consultant* shall use these outputs to select a preferred option. The *Consultant* shall facilitate design workshops, and 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 The *Client* shall draft the scope for the next stage of the project (OBC-FBC) and the *Consultant* shall support the *Client* to produce the scope.

8 Stakeholder Engagement

8.1.1 AD: The *Client* shall lead on consultation, but the *Consultant* will need to assist and prepare materials, in consultation with the *Client*, for use in meetings and manage the relationships to gain approvals from statutory consultees

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

8.1.3 Monthly circulation of updated communications record at progress meetings.

8.1.4 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).

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

8.1.6 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.

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

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

9 Health and Safety

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

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

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

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

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

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

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

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

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

10 Business Case Submission

10.1.1 The *Consultant* shall aggregate all of the work undertaken from this commission into a business case document – the Outline Business Case. The format of this document and guidance on the contents is detailed in Write a Business Case LIT 55124 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 the Large Projects Review Group (LPRG). 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 *Client* guidance including all appendices and FSoD approval following submission to LPRG.

10.1.5 AD The *Consultant* shall be responsible for the delivery of the Strategic Case, Economic Case and Financial Case within the OBC. Prior to commencing these cases, the *Consultant* shall agree the key messages and structure of the cases with the *Client*. The *Consultant* shall also support the *Client* in the production of Commercial Case and Management Cases as required

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 74,914t. The *Consultant* is required to work with the *Client* and the ESE *Contractor* to reduce the project carbon footprint by 40%.

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

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
Gov.uk (and NEAS)	WFD assessment templates and guidance	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
4.01	National Standard Technical Specifications for Survey Services	OBC
LIT13513	Equality Analysis Guidance Document	Option development

14 Requirements of the Programme

14.1.1 The *Consultant* shall provide a detailed programme in Microsoft Project format ~~version X~~ 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 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

15 Services and other things provided by the *Client*

15.1.1 Access to Environment Agency systems and resources including:

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

15.1.2 Letter of Appointment of Principal Designer.

15.1.3 Site access authorisation letter(s).

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

16 Data

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

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).
- CEEQUAL Assessment.

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

Appendix 2 – Modelling Technical Scope

See attached Appendix 2

Appendix 3 - Stakeholder list

See attached Appendix 3