Environment Agency
NEC4 Professional Service Contract (PSC)

Scope

Project / contract information

Project name	Bromsgrove Tributaries, Spadesbourne and Battlefield Brook, Bromsgrove
Project SOP code	ENV0004298C
Contract number	
Date	

Assurance

Author	[redacted]	
Consulted		
Reviewed		
Checked prior to issue		
Consulted (if required)		

Revision History

Revision date	Summary of changes	Version number
24/1/2022	First issue	1
31/2/2022	First round of updates following PAS issue from DP	2
3/4/2022	Added color coding to identify additions, amendments and removals.	

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	11	04/05/2021
801_14	Environmental sustainability, design and management	3	12/2015
801 14 SD01	Cultural heritage and archaeological standards	1	21/12/2015
801_14 SD02	Landscape and environmental design	2	25/2/2021

1. Overview

The Environment Agency requires the *Consultant* to produce an Outline Business Case, which investigates and provides evidence of the best course of action to reduce the flood risk on the Spadesbourne Brook within Bromsgrove The *Consultant* will need to work closely with stakeholders and make use of previous studies to demonstrate continued business justification, enabling the OBC approval and progression to Full Business Case

1.1. Background

Bromsgrove is a town in Worcestershire to the South West of Birmingham The town is set within the catchments of the Spadesbourne Brook and Battlefield Brook, both of which are predominantly ordinary watercourses until their confluence, after which the Spadesbourne Brook is designated as main river

This project aims to provide fluvial flood risk mitigation to the community of Bromsgrove alongside providing biodiversity and social value improvements, following a history of flooding throughout the 1980s, 1990s and 2000s, which affected businesses, highways and residential properties.

Significant flooding occurred on 28th June 2012 which resulted in flooding to over 40 residential properties and 10 businesses. External flooding to residential properties and internal flooding to businesses has also been recorded in at least 5 events since then again in 2012, 2013, 2014, 2016 and 2019 with highway flooding on the A38 and B4096 Alcester Road occurring more frequently.

The study area is at risk of surface water flooding and fluvial flooding from the Spadesbourne Brook Flooding has affected areas over the majority of the length of the brook, from Lickey End down to the Southern extents of Bromsgrove

Fluvial flooding occurs due to constrictions along the brook which cause out of bank flows. Due to the gradient of the catchment, these out of bank flows then flow overland along highways at low depths, impacting more receptors often just above or below the assumed property threshold. Due to the heavily modified catchment many channel constrictions exist as shown in Figure 1 1 Restrictions also exist at culverts under Littleheath Lane and Alcester Road in Lickey End as well as Aston Fields Sewer Bridge.

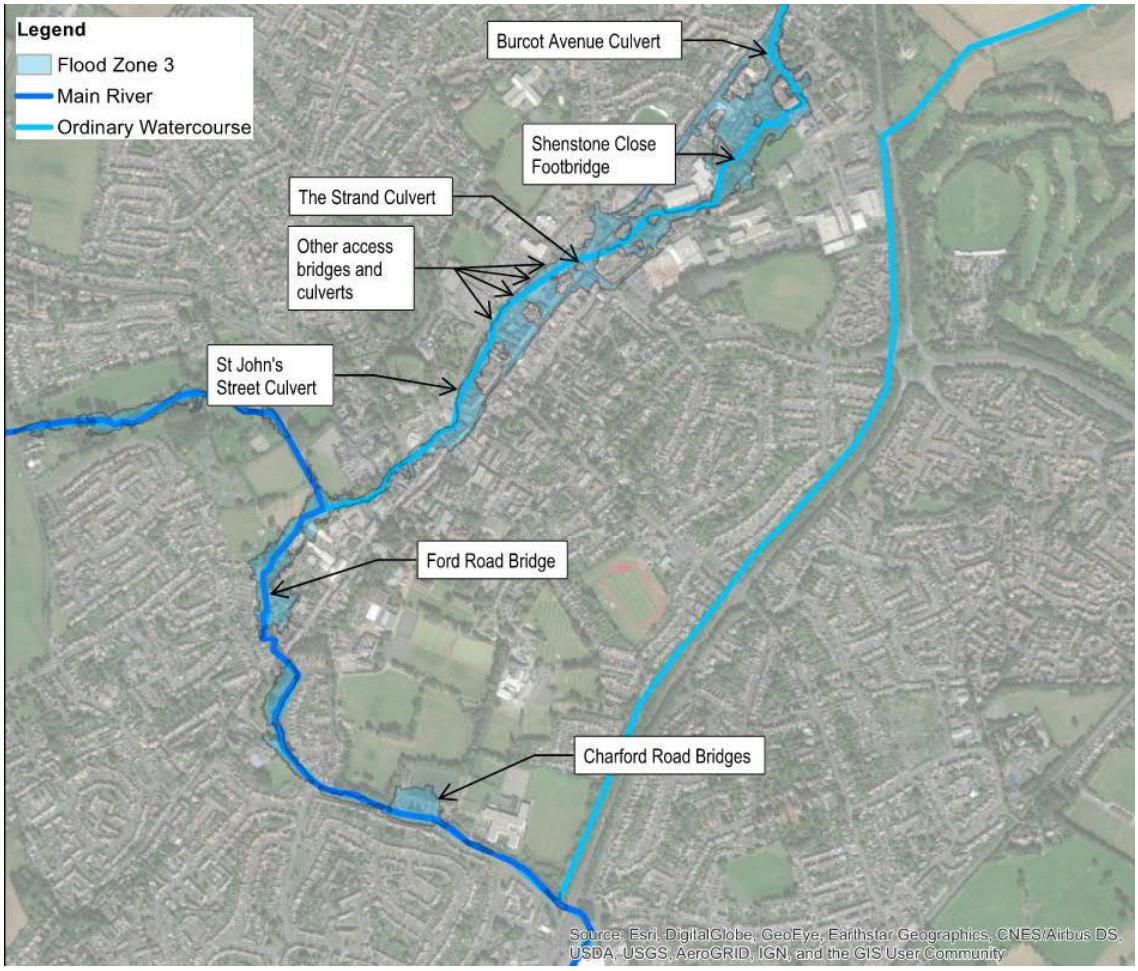

Figure 1 1 Sites of key channel restrictions in Central Bromsgrove

Surface water flooding also affects numerous areas of the town most recently to the High Street in June 20201 where there was damage to a number of businesses Sewer flooding has also been a problem in Bromsgrove on the A38 where flooding has been reported at least 13 times since 2012. There is currently an ongoing highways improvement scheme led by Jacobs on the A38 in Bromsgrove; this scheme is also considering changes to the sewer network with Severn Trent Water to alleviate sewer flooding on the highway

Hydraulic modelling indicates that for a 1 in 100-year event 60 residential properties are at risk of fluvial flooding if current maintenance regimes continue; 35 of these properties are at Significant to Very Significant risk. Six commercial properties are also at risk in the 1 in 100-year event. This will only be worsened by the effects of climate change, with the frequency and severity of flooding expected to rise

Doing Nothing in Bromsgrove would mean that the frequent fluvial flooding would continue and worsen over the coming years due to climate change and opportunities for partnership funding would be missed

The Strategic Outline business Case (SOC) completed in July 2021 highlights that there are opportunities to provide an improved Standard of Protection The leading option in the SOC (Option 3 Ground Level Reduction at Lickey End Flood Storage) is expected to mitigate direct flood risk to 23 residential properties and reduce flood risk and associated damages to all at risk properties This option was determined to offer a benefit calculation of £6.66m with an estimated construction cost of £1.54m

4:3 benefit cost ratio). The option however is very sensitive to assumptions used within the economic appraisal and therefore need to be reviewed

The Strategic Outline Case for the project was approved on 05/08/2021.

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
Initial Assessment	01/03/2019	Digital	
Strategic Outline Case v2.0	20/07/2021	Digital	The SOC report delivered a leading option (Option 3 Ground lowering at Lickey End flood storage) that aims to provide fluvial flood risk mitigation to the community of Bromsgrove by providing an improved Standard of Protection, providing a reduction in flood risk to all properties at risk including mitigating direct flood risk to 23 residential properties. It seeks £170k funding approval for delivery of the Outline Business Case. The overall scheme benefit is current estimated at [redacted] for a whole life cost of [redacted] The SOC report has been approved to allow continued economic investment for the Bromsgrove FAS.
Bromsgrove Modelling as undertaken during production of the SOC			

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

This Contract is to develop an outline design and enable approval of a preferred option and Outline Business Case that meets the Environment Agency's investment criteria. The design must also be acceptable to the local community and all scheme partners to reduce flooding to Bromsgrove

The outline design must optimise the Outcome Measures that be delivered as part of the scheme and needs to ensure a financially viable preferred option with a benefit cost ratio greater than 1

AD: Through the development of this scheme, the project's environmental objectives seek to implement carbon reduction, avoid harm to the environment and also to integrate environmental opportunities and enhancements, including (but not limited to) Biodiversity Net Gain requirements

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 Midlands Hub Sustainability Plan, 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. AD: The Consultant shall demonstrate that consideration has been given to a long list of potential options, identified an appropriate shortlist, appraised these to identify a preferred option and developed this option, its impacts, planning and Environmental Impact Assessment (EIA) requirements scoped to a level that it can be priced The Consultant shall develop a series of options to meet the above objectives.

2 1 11 The *Consultant* shall assume that the options shortlisted in the OBC will be aligned with the strategy identified in the SOC. However, the *Consultant* shall not assume that the preferred option will necessarily be the same as that identified at the SOC stage

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

2.1.13.

2.2. Constraints

2.2.1. AD: All reports shall be written to be able to be shared in public in accordance with the Equality Act

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:

- Provide input to project efficiency CERT Form
- Attend bi-weekly progress meetings ~~as invited~~
- 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
- Deliver a monthly progress report in the *Client's* standard template (Link) giving progress against programme, deliverables received and expected and financial and carbon summary against programme.
- Ensure quarterly input into framework performance assessment/environmental Performance Measures.

- Ensure the *Consultant's* environmental lead provides monthly progress, risk reviews and quarterly indicative CEEQUAL scores to the *Client.*

- 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.

2.4. Outputs and Deliverables

2.4.1. The *Consultant* shall provide a list of products and deliverables for the *Client's* approval. The list of products shall be agreed and the product description submitted for approval before commencing work 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* 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, PEIR)

- 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.

- Buildability Workshop x 1 (including summary note/minutes)

- Value Engineering Session x 1 (including summary note/minutes)

- Carbon Workshop x 1 (including summary note/ minutes)

2.4.3. AD: As part of the options appraisal, the *Consultant* shall use Appraisal Summary Tables (AST) to present the impacts of the options, both positive and negative, this includes the carbon impacts of the options.

3. Site Investigation

Any additional site investigations required in addition to the below will be recorded as Compensation Events to this scope of works.

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 AD: The *Consultant* shall scope a topographic survey to encompass Lickey End storage area and embankment, Spadesbourne/ Battlefield confluences, Spadesbourne Walk bridge and Aston Fields sewer bridge. Spacing of the survey shall be determined by the *Consultant*, to suit the hydraulic model and should include a survey of all restrictions, bridges, culverts and structures

3 1 4 AD: The *Consultant* shall scope a threshold survey to encompass properties and businesses effected by fluvial flooding noted within this scheme. The area of the survey shall be determined by the *Consultant,* to suit the hydraulic model.

3.1.5 AD: The *Consultant* shall scope and in-channel survey at Lickey End and FSA culvert. The survey extents shall be determined by the *Consultant,* to suit the hydraulic model.

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

3.1.7 AD: The *Consultant* shall compare the levels of the Lickey End embankment taken from As Built drawings to the new topographical survey to ascertain any discrepancy in the levels Detailed survey (site walkover, GI) and assessment of the existing embankment at Lickey End is not included within this scope. Addition to scope will be managed as a Compensation Event.

3 1 8 AD: Any additional topographic, in channel or other survey needs identified by the *Consultant* are to be managed as a Compensation Event.

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.

3.3. 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 this survey shall be included in the appraisal, including revising the plans.

3.3.5. AD: Any additional service search or non-intrusive survey requirements are to be managed as a Compensation Event

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 amended model with quality and extent checks against historical flood events.

4 1 3 The *Consultant* shall provide the *service* in accordance with the Modelling Technical Scope, included in Appendix 2

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

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

4 1 6 AD: The *Consultant* shall update the model, with the new topographical survey of Lickey End and Spadsbourne/ Battlefield confluence and threshold survey, as provided by the Client as part of this commission It is not expected that further amendments to the representation of the Spadesbourne or Battlefield Brooks in the model will be required. The *Consultant* shall inform the *Client* at the earliest opportunity if they believe further amendments are necessary.

4.1.7. AD: No Joint Probability Assessment is proposed at OBC stage.

5. Economics Appraisal

5.1. General

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 (OI 120 16) to help optimise all options through all stages of design and business case development. The calculation of carbon emissions and completion of the carbon tool will be carried out by the *Client,* the *Consultant* is required to provide the information needed to complete this.

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 others ~~/ 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

Economic, Sustainability and Carbon Appraisal Deliverables

5 1 9 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 This should include the below deliverables, and anything additional beyond this will be managed through a Compensation Event: 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. General

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. AD: The *Consultant* shall compile the supporting technical documentation required for the *Client* to obtain a non-statutory Environmental Impact Assessment (EIA) screening opinion from the local planning authority (LPA) in accordance with the applicable EIA Regulations and address any comments. The *Consultant* shall seek *Client* acceptance of technical document before submitting to the local planning authority.

6.1.8. AD: The Consultant shall record the scoping process and environmental and sustainability assessment methodology for the preferred option in a Scoping Report (Preliminary Environmental Information Report). The Scoping Report shall be proportionate and include the environmental information required to obtain an Environmental Impact Assessment (EIA) scoping opinion from the relevant Competent Authority. Prior to any external consultation, the Consultant shall make provision for and incorporate comments from a consultation with internal stakeholders

6.1.9. ~~AD: Following the screening opinion return from the LPA, the *Consultant* shall assist the *Client* in drawing up requirements for a draft EIA/ environmental assessment~~

6.1.10. ~~AD: The *Client* shall lead on obtaining a letter of support from Natural England, where this is required to accompany the Outline Business Case. The *Consultant* shall provide the *Client* with supporting information to facilitate this process, as requested~~

6.1.11. AD: The *Consultant* shall assess the preferred option and inform its design in accordance with the accepted Scoping Report, the outcomes of any EIA scoping opinion consultation (as required) and the MTR 801_14 Environmental Sustainability, design and management.

6.1.12. AD: The *Client* shall arrange and facilitate meetings with key environmental stakeholders. The *Consultant* shall attend 1 No meeting (2 attendees) and provide technical documents and drawings to support the engagement in line standard deliverables at OBC stage. Specific information, drawings and documents required for liaison will be managed as a Compensation Event.

6.2. Ecology

6 2 1 AD: The *Consultant* shall undertake a Preliminary Ecological Appraisal (PEA) and supporting habitat surveys of the shortlisted options. The *Consultant* shall notify the *Client* of any gaps and deficiencies requiring additional work so that the product is adequate for the purposes of the options appraisal and assessment of the preferred option. The *Consultant* shall address any identified gaps and or deficiencies, as agreed by the *Client* ~~This shall include, but not limited to, re assessing existing baseline habitat surveys, where required, during the optimal survey season~~ The habitat survey data gathered for the PEA shall be compatible with utilising the Defra Biodiversity Metric 3.0 (or subsequent updates).

6 2 2 AD: The *Consultant* shall ensure the PEA informs the option appraisal, identification and assessment of the preferred option and outline design. This shall include the application of the mitigation hierarchy with respect to potential ecological impacts Any requirements for further ecological surveys and assessments shall be identified and an appropriate programme provided and maintained by the *Consultant* The *Consultant* shall ensure the programme enables all relevant surveys to be undertaken during optimal survey periods, so they inform the outline design and, as necessary to inform the later detailed design, meet requirements for permissions (e.g., planning application) and construction delivery dates.

6 2 3 AD: The *Consultant* shall undertake additional ecological surveys consistent with current guidelines, where these are essential to addressing potential risks, securing permissions, meeting construction delivery dates and or are essential to achieving good environmental design. Further ecological surveys shall be agreed with the *Client.* The *Consultant* shall support the *Client* in liaising with key stakeholders on the requirement for and a proportionate approach to additional ecological surveys. This will be treated as a Compensation Event

6 2 4 AD: Further protected species surveys may include, but not limited to: water vole, bats (roost surveys), badger, moth and butterfly, hedgehog, polecat and fish (Brown/ sea trout and bull head) Required surveys shall be subject to separate Compensation Event(s) and to be agreed with by the Client.

6 2 5 AD: The *Consultant* shall complete a Preliminary Environmental Impact Report (PEIR) for the shortlisted options and update upon confirmation of the preferred option. The PEIR shall follow the *Client's* template

6.2.6. AD: The *Consultant* shall undertake a tree survey to BS5837 using an arboriculturist to identify the potential of trees to be affected by the short-listed option identified at SOC for the purposes of the options appraisal and assessment of the preferred option. As part of the tree survey the *Consultant* shall ensure Conservation Areas and TPOs are checked Further work shall be managed via a Compensation Event and shall include, as a minimum, an Arboricultural Impact Assessment and Tree Protection Plan when a preferred option is known

6.3. Biodiversity Net Gain

6.3.1. AD: The PEA and the Biodiversity Net Gain (BNG) assessment shall be mutually supportive, with the PEA establishing the scheme's overall policy context, baseline and ecological appraisal.