

Environment Agency

NEC4 Professional Service Contract (PSC)

Scope

Project / contract information

Project name	Gooseum Rhyne Reservoir Improvement Project
Project SOP code	ENV0001200C
Contract number	34176
Date	10 November 2021

Assurance

Author	Project Manager: [REDACTED] [REDACTED]	Date: 8th Nov 2021
Consulted	Senior User: [REDACTED]	Date: 25 th Oct 2021
Consulted	NEAS Environmental Project Manager: [REDACTED]	Date: 30 th June 2021
Reviewed	Project Executive: [REDACTED] [REDACTED]	Date: 14 th April 2021
Checked prior to issue	Project Executive: [REDACTED] [REDACTED]	Date: 10th Nov 2021
Checked prior to issue	Commercial Services Manager: [REDACTED]	Date: 8th Nov 2021
Consulted	Senior User Rep: [REDACTED] [REDACTED]	Date: 25 th Oct 2021
Consulted	DGC Commercial Officer: [REDACTED] [REDACTED]	Date: 25 th Oct 2021

Revision History

Revision date	Summary of changes	Version number
03.12.21	Further minor amendment to CI 3.3.3 for CST	P8 (FINAL)

02.12.21	Minor amendments to CI 3.3.3. and 3.3.4 to clarify for CST and early acceleration of survey work.	P7 (FINAL)
10/11/21	Final changes following CSM review and discussion with Atkins	P6
08/11/21	Minor changes prior to scope freeze	P5
21/10/21	Final update to incorporate all comments	P4
14.7.21	Updated to precisely show changes from the template, and the agreed revised approach	P3

This Scope should 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 04/05/2021	Minimum Technical Requirements	https://defra.sharepoint.com/:w:/r/sites/def-contentcloud/_layouts/15/Doc.aspx?sourcedoc=%7B3db593b9-5be5-4044-ae09-7f2dab62d3dd%7D&action=default&mobileredirect=true&cid=6e058739-4ac1-406c-9be3-cbd17873cd15	04/05/2021
LIT 13877	801_14 Environmental Sustainability, Design and Management	3	December 2015

1 Overview

Gooseum Rhyne Flood Storage Reservoir has been inspected by All Reservoirs Panel Engineer (ARPE) undertaking the role of the Inspecting Engineer who has recommended several Measures in the Interest Of Safety (MIOS) (under section 10(3c) of the Reservoirs Act 1975, as amended ("the Act") and other statutory recommendations (under Section 10(3b)) which must be completed before specified deadlines. These safety improvements to the reservoir are required under Section 10 of the Act.

The purpose of The Reservoirs Act 1975 is to ensure the safety large raised reservoirs (those with a volume in excess of 25,000 above natural ground). The Environment Agency is deemed to be the 'Undertaker' for any large raised reservoir that they manage and operate. As the Undertaker for a

large raised reservoir, the Environment Agency is responsible for the safety of that reservoir under the provisions of the Act.

As such, the Environment Agency has a legal obligation as the Undertaker of the reservoir to carry out the recommended improvements under section 10(3c) within this fixed timeframe.

1.1 Background

The Gooseum Rhyne Flood Storage Reservoir was inspected by an ARPE on 19/11/2015. The findings and recommendations are reported in the "Report on an Inspection Under Reservoirs Act 1975, Section 10(2) of the Act" (S10) issued in October 2016.

Atkins issued the Outline Design drawings in January 2021. The drawings address MIOS and other statutory recommendations of the ARPE in the 2015 Section 10(2) report.

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.

Table 1 – Previous Studies Report	Date	Format	Outcomes of study
Gooseum Rhyne Reservoir Ground Investigation Report (Mott MacDonald)	12/11/19	Digital Format (available on Asite)	-
Hydraulic Report (Mott MacDonald)	23/09/19	Digital Format (available on Asite)	-
Gooseum Reservoir Hydraulic Modelling (Atkins)	23/06/20	Digital Format (available on Asite)	-
Gooseum Rhyne Reservoir Options Report (Mott MacDonald)	17/10/19	Digital Format (available on Asite)	-
Protected Species Survey Report – Great Crested Newts and Bats (MM)	06/08/19	Digital Format (available on Asite)	-
Ecological Walkover Gooseum Rhyne, North Somerset (CH2M/Jacobs)	November 2018	Digital Format (available on Asite)	-
SW NEAS Screening Register – Gooseum	04/03/21	Digital Format (available on Asite)	-
Congresbury Yeo Hydraulic Model User Report (JBA)	March 2019	Digital Format (available on Asite)	-
Congresbury Yeo Model and Hydrology Update	June 2015	-	-
Gooseum Reservoir S10 2015	October 16	Digital Format REPORT IS CONFIDENTIAL AND PASSWORD PROTECTED	-
Addendum to Options Report (Atkins)	March 20	Digital format (available on Asite)	-
Lewis Brown Congresbury Millennium Green Topographical Survey	August 20	Digital Format (available on Asite)	-
Topographical Survey Specification (Mott MacDonald)	04/09/19	Digital Format (available on Asite)	-
Gooseum Rhyne Northern Embankment Outfall Locations	20/05/19	Digital Format (available on Asite)	-

Land Surveys 2018 (APLS0667 Gooseum Rhyne RevA_Model-2D)	20/05/19	Digital Format (available on Asite)	-
Land Surveys 2018 (APLS0667 Gooseum Rhyne RevA 3d_Model)	17/05/19	Digital Format (available on Asite)	-
Cross Sections 26 & 27 (Wessex Water Authority)	August 1979	Digital Format (available on Asite)	-
Somerset River Board - Congresbury Flood Prevention Scheme Cross Section Plan	October 1961(?)	Digital Format (available on Asite)	-
Check levels on flood bank (NRA) Sheets 1 & 2	20/10/95	Digital Format (available on Asite)	-
Channel Works Details (Wessex Water Authority) Sheets 1 & 2	October 1980	Digital Format (available on Asite)	-
Vegetation Locations (NRA) Sheets 1 & 2	October 1995	Digital Format (available on Asite)	-
Embankment & Road levels (AP Land Surveys) Sheets 1 - 4	April 2018	Digital Format (available on Asite)	-
Bank long Sections (AP Land Surveys)	April 2018	Digital Format (available on Asite)	-
Embankment Cross Sections (AP Land Surveys)	April 2018	Digital Format (available on Asite)	-

Table 2 – Contract Drawings Drawing number and title	Rev	Date
ENV0001200C-ATK-CC-3OL-DR-C-000001 Gooseum Reservoir, Open Land, Outfall Culvert (CC = Culvert)	P02	21/01/2021
ENV0001200C-ATK-CC-3RO-DR-C-000001 Gooseum Reservoir, Rhyne Outfall Culvert, Long Section (CC = Culvert)	P02	21/01/2021
ENV0001200C-ATK-CC-3WP-DR-C-000001 Gooseum Reservoir, Well Park Outfall Details (CC = Culvert)	P02	21/01/2021
ENV0001200C-ATK-DE-3XX-DR-C-000001 Gooseum Reservoir, Cross Section View, Sheet 01 of 02 (DE = Embankment)	P02	21/01/2021
ENV0001200C-ATK-DE-3XX-DR-C-000002 Gooseum Reservoir, Cross Section View, Sheet 02 of 02 (DE = Embankment)	P02	21/01/2021
ENV0001200C-ATK-DE-3XX-DR-C-000003 Gooseum Reservoir, Typical Pile Details (DE = Embankment)	P02	21/01/2021
ENV0001200C-ATK-DE-3XX-DR-C-000004 Gooseum Reservoir, Long Section of Embankment (DE = Embankment)	P02	21/01/2021
ENV0001200C-ATK-DG-3XX-DR-C-000001 Gooseum Reservoir, Foot Bridge (DG = Foot Bridge)	P02	21/01/2021
ENV0001200C-ATK-HA-3XX-DR-C-000001 Gooseum Reservoir, Eastern Footpath Access (HA = High Ground)	P02	21/01/2021
ENV0001200C-ATK-HA-3XX-DR-C-000002 Gooseum Reservoir, Western Access (HA = High Ground)	P02	21/01/2021
ENV0001200C-ATK-IR-3XX-DR-C-000001 Gooseum Embankment Rea, General Arrangement (IR = Reservoir)	P02	21/01/2021
ENV0001200C-ATK-IR-3XX-DR-C-000002 Gooseum Embankment Area, Access and Constraint Plan (IR = Reservoir)	P01	21/01/2021
ENV0001200C-ATK-SP-3SP-DR-C-000001 Gooseum Spillway Area, General Arrangement (SP = Spillway)	P02	21/01/2021
ENV0001200C-ATK-SP-3SP-DR-C-000002 Gooseum Spillway Area, Plan and Section (SP = Spillway)	P02	21/01/2021
ENV0001200C-ATK-SS-3GO-DR-C-000001 Gooseum Reservoir, Gooseum Outfall, Long Section (SS = Screen Structure)	P02	21/01/2021
ENV0001200C-ATK-SS-3RO-DR-C-000001 Gooseum Reservoir, Rhyne Inlet Headwall, Plan and Cross Section (SS = Screen Structure)	P02	21/01/2021
ENV0001200C-ATK-SU-3RO-DR-C-000001 Gooseum Reservoir, Rhyne Outfall Culvert, Plan and Cross Section (SU = Outfall Structure)	P02	21/01/2021

- 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* if the data is incorrect, contains anomalies, is not adequate for the purposes of detailed design or is based on inappropriate assumptions. Following this review, and completion of any work required to rectify the deficiencies identified, the *Consultant* will take the risk of any deficiencies in existing data quality and quantity which have not been notified to the *Client*.

1.3 Objectives

The key objective of this Scope is to produce information to support the preparation of a Full Business Case (FBC) by the *Client* to ensure Gooseum Rhyne Flood Storage Reservoir secures compliance with the legally enforceable requirements of the Section 10 Report under the Act.

This will be achieved by addressing the recommendations of the Qualified Civil Engineer (under the Act) within the stated deadline in the Qualified Civil Engineer's Second Partial Certificate Under Section 10(6) dated 21st October 2019. The Environment Agency as statutory Undertaker for reservoirs must comply with the Reservoirs Act 1975 and undertaking this work will ensure we continue to comply with this legislation. This will be done by carrying out works to satisfy the MIOS recommendations made in the Section 10 report (dated October 2016) for this reservoir.

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 required outcome of this commission is to develop the outline design produced at appraisal stage into a detailed design such that it meets the project objectives and enables the scheme to be priced and constructed under an NEC4 Engineering and Construction Contract.
- 2.1.2 The *Consultant* shall ensure that the detailed design takes into consideration all relevant guidance and legislation and seek to minimise long-term asset/land management, maintenance costs and whole life carbon where this is compatible with the *Client's* direction on project scope described in Section 1.3 above.
- 2.1.3 The design will also demonstrate that the *Consultant* has learnt from best practice and demonstrate how optimum flood risk reduction, natural processes, recreation, good ecological water quality and visual amenity can be combined.
- 2.1.4 Working with the *Client* and Early Supplier Engagement (ESE) contractor, the *Consultant* shall be responsible for ensuring the design is acceptable to the *Client*, (gaining approval of Gateway 3), is designed to gain planning approval and any other associated approvals and to be acceptable to statutory and key stakeholders. *Client* design acceptance is defined as the *Client* accepting the design at a 'design freeze' milestone, that shall be highlighted within the project programme. Any subsequent re-work on the design due to deviation from the design at this point is a Compensation Event.

- 2.1.5 The *Consultant* shall prepare a single planning application covering the proposed construction works and shall submit these to the relevant Planning Authority for Planning Consent. The *Consultant* shall be responsible for submitting the required documents through the Planning Authority portal. The *service* exclude the payment of Planning Fees. This commission must result in planning permission being obtained, and all other necessary permissions required for construction being identified. Should the *Consultant* become aware that the Planning Authority is not expected to support the scheme, or if the *Consultant* considers the refusal of the Planning Authority was not reasonably foreseeable, the *Consultant* shall raise an early warning. The design shall also be acceptable to statutory and key stakeholders. Dealing with any objections, including Planning Objections, from any statutory and key stakeholders that have not been consulted prior to the date of award of this design contract is a Compensation Event.
- 2.1.6 Once planning permission has been obtained, the *Consultant* shall apply for protected species licences, on behalf of the *Client*.
- 2.1.7 The *Consultant* shall seek to develop the detailed design such that the cost and quality of the scheme represents value for money and can be constructed within the approved budget.
- 2.1.8 As far as possible within the constraints of the *Client's* direction on project scope described in Section 1.3 above, 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.
- 2.1.9 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.
- 2.1.10 As far as possible within the constraints of the *Client's* direction on project scope described in Section 1.3 above, the *Consultant* shall ensure the design process fully considers and addresses sustainability including carbon reduction as strategic outcomes.
- 2.1.11 The *Consultant* shall develop the outline design into a detailed design that optimises the project objectives and outcomes, whilst limiting any increased maintenance liability for the *Clients'* Area teams in the future as far as possible within the constraints of the *Client's* direction on project scope described in Section 1.3 above, supported by evidence that will enable the *Client* to produce a Full Business Case.
- 2.1.12 The *Consultant* shall produce a detailed design that supports the *Client* to achieve efficiency targets set for this commission and future stages of the project using the Combined Efficiency Reporting Tool (CERT).
- 2.1.13 The *Consultant* shall prepare the ECC Scope for the main works tender document. The ECC Scope shall not contradict the *Client's* standard documents. If there is a requirement to do so the *Consultant* shall justify the need and obtain the prior written agreement of the *Client*.
- 2.1.14 **AD:** The *Consultant* shall deliver a detailed design developing the outline design that allows the MIOS and other statutory requirements in the Section 10 report (dated October 2016) for this reservoir to be met. The outline design drawings are listed above in Section 1.2.1.

- 2.1.15 **AD:** The outline design drawings (Jan 2021) are the baseline for this Scope and from which any change will be measured. The *Client* and *Consultant* shall use the EW and CE process for any modifications that change the basis of the detail design from that of the outline design drawings noted above, including for circumstances that result in new or unforeseen constraints.
- 2.1.16 **AD:** The outline design drawings incorporate project developments up to 21st January 2021. Further changes requested after this date have not been included and the *Consultant* shall continue refining the option in collaboration with the *Client* at the start of the detail design, and will be closed through the issue of the product description (see section 2.4.1). The outline drawings are listed in Table 2.

2.2 Constraints

- 2.2.1 **AD:** The *Consultant* shall review all programme requirements and ecological/environmental limitations. These include, but are not limited to, those identified within the work completed to date.

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 The overall management of the commission shall:
- Contribute monthly to the updates to the project risk register.
 - Provide input to project efficiency CERT Form.
 - Attend and facilitate monthly progress meetings and take minutes and share the minutes with all relevant parties.
 - Produce monthly financial updates and forecasts meeting the *Client's* project reporting timetable together with progress reports. Monthly financial updates and forecasts to meet EA deadlines provided by no later than the 10th day of each month or otherwise agreed at the project start up meeting.
 - Deliver a monthly progress report in the *Client's* standard template ([Link](#)) giving progress against programme, deliverables received and expected and financial and carbon summary against programme.
 - Attend project board meetings as required.
 - Ensure quarterly input into framework performance assessment/environmental Performance Measures.
 - Ensure the *Consultant's* environmental lead provides monthly progress and risk reviews to the *Client* and attends progress meetings, as invited.

- As far as possible within the constraints of the *Client's* direction on project scope described in Section 1.3 above, maintain and show how accurate and up to date information on the whole-life cost and carbon 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 FBC.

2.3.3 The contract will be administered using FastDraft.

2.3.4 **AD:** On behalf of the *Client*, the *Consultant* shall apply for an Impoundment Licence if required. Any temporary footpath / bridleway diversions or closures will be dealt with by the Contractor.

2.4 Outputs and Deliverables

2.4.1 The *Consultant* shall confirm the list of products with the *Client* and submit the product description for the *Client's* acceptance before commencing work on the product.

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

- Detailed Design.
- Updated Programme showing milestones to construction completion of the Full Business Case including funding and environmental constraints and opportunities. The Integrated Project Programme, to be developed by the ESE contractor, 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.
- Update Carbon Optimisation Report.
- Draft text within relevant sections of the FBC.

2.4.3 The detailed design shall be sufficient for a contractor to set out and construct the works. The detailed design should include but not be limited to:

- i. Calculations.
- ii. Drawings (including landscape/ ecological design drawings/ planting schedules).
- iii. Environmental Assessment (for further detail reference to section 6).
- iv. Documents necessary to enable the *Client* to form a NEC4 Engineering and Construction Contract for the construction works with the Lot 2 Delivery Partner.
- v. Specifications (including any additional clauses to Environment Agency standard specifications - e.g. Environment Agency NEAS Landscape Specification template).
- vi. Design philosophy statement, giving design process, standards used, and assumptions made to the satisfaction of the *Client*. This shall demonstrate compliance with the *Client's* sustainability targets.
- vii. Design report, including asset schedule, buildability statement and maintenance plan.
- viii. Designer's Risk Assessments.
- ix. Public Safety Risk Assessment.
- x. Pre-construction information.
- xi. Application for all necessary consents and permissions required at FBC stage.
- xii. Environmental Action Plan and associated drawings.
- xiii. Materials Management Plan.

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 the *Client* 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 A topographical survey is required to supplement that previously undertaken by Lewis Brown in August 2020. The *Consultant* shall undertake the topographic survey necessary to be able to complete a detailed 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, 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 design.

3.2 Ground Investigation

- 3.2.1 The *Consultant* shall scope any additional Ground Investigation required to undertake the 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 based on the Ground Investigation undertaken by the Lot 2 contractor.

3.3 Ecological surveys

- 3.3.1 Undertake additional surveys consistent with current guidelines, where these are essential to securing permissions or are essential to achieving good environmental design such as informing the Biodiversity Metric. Utilise project information regarding habitat condition as well as the distribution of species and the current understanding of the factors governing their distribution. Use habitat, species and survey information in a scientific and informed way to justify environmental decision making.
- 3.3.2 **AD:** Initial surveys consistent with current guidelines were undertaken in 2020 as part of a previous contract.
- 3.3.3 **AD:** The following surveys consistent with current guidelines are currently underway under a separate appointment in 2021:
 - Bat (transect surveys, static bat detector deployment surveys, climbed inspection surveys on trees and dusk emergence/dawn re-entry surveys conducted on structures and trees unsafe to climb).
 - Reptiles (population surveys).
 - Water Vole (presence/likely absence surveys).
 - Otter (presence/likely absence surveys).
 - White-clawed crayfish (eDNA surveys).

3.3.4 **AD:** The following deliverables are included in the scope and are due to be completed in 2021/22, during the detailed design phase:

- Ecological Impact Assessment Report.
- Habitat Regulations Assessment Stage 1 Screening Report.
- Habitat Regulations Assessment Stage 2 Appropriate Assessment Report.
- Sites of Special Scientific Interest (SSSI) Section 28 Assent.
 - Note: The requirement of a Sites of Special Scientific Interest (SSSI) Section 28 Assent will be dependent on the scheme details. As such, the *Consultant* will contact Natural England via the Discretionary Advice Service during the detailed design phase to determine the requirement. The cost for this service is currently unknown and will be addressed through a Compensation Event when known.

3.3.5 **AD:** The following additional surveys and deliverables are required immediately prior to construction and are included in the scope:

- Pre-construction walkover for protected species.
- Precautionary Method of Working Report for bats, badger, water vole, otter, white-clawed crayfish, common species of reptile, and nesting birds.
 - Note: The inclusion of white-clawed crayfish within the Precautionary Method of Working will be dependent on the results of the white-clawed crayfish eDNA surveys.

3.3.6 **AD:** Once these surveys are finished, the *Consultant* will report the results and advise next steps in a Technical Note.

- Note: The contents of the Technical Note will be dependent on the findings of each survey detailed above. The cost for this service is therefore currently unknown and will be addressed through a Compensation Event when known.

3.3.7 **AD:** This survey data (set out in 3.3.4) will be used to apply for permissions and achieving good environmental design such as informing the Biodiversity Metric. The *Consultant* shall utilise this project information regarding habitat condition as well as the distribution of species and the current understanding of the factors governing their distribution. The *Consultant* shall use

habitat, species and survey information in a scientific and informed way to justify environmental decision making.

- 3.3.8 **AD:** Additional or further surveys may be required including for white-clawed crayfish and bats. The requirement for these shall be determined following the completion of the white-clawed crayfish eDNA surveys and the various bat surveys included in 3.3.4 above and shall be subject to a Compensation Event. Additional surveys and deliverables may also be required as a result of the current surveys and shall be subject to a Compensation Event.

3.4 Services Search

- 3.4.1 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 design, including preparation of plans.
- 3.4.2 The *Client* will arrange for a non-intrusive survey to detect key utilities (e.g. GPR) to inform SI and/or detailed design. 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.
- 3.4.3 The *Consultant* shall also provide a site supervisor to manage the survey supplier.
- 3.4.4 The outputs from this survey shall be included in the design, including revising the plans. The output shall be used to make recommendations for any further surveys required which would include intrusive investigations to inform the detailed design.

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 model is to be used for updating levels with detailed design components, if the *Consultant* feels this is necessary. It is not intended for the whole range of options to be re-run, only the scheme design at the design flow(s).
- 4.1.4. The *Consultant* shall provide the *service* in accordance with the Modelling Technical Scope, included in Appendix 2.
- 4.1.5. Following completion of the study, this model will be handed over to the Flood Incident Management team and the model should be able to determine thresholds of flooding and trigger levels. All electronic data should be in an agreed format in line with the scheme data management plan. A copy of the plan will be provided by the *Client*.
- 4.1.6. Hydraulic modelling (Flood Modeller-TUFLOW) was completed for the outline design stage and detailed in the Gooseum Reservoir Hydraulic Modelling report (Atkins, 2020). The extents of the modelling and assumptions made are within the report and include modelling the Probable Maximum Flood (PMF), 0.01% and 0.1% Annual Exceedance Probability (AEP) for two options and the baseline.
- 4.1.7. Topographic data has been collected subsequent to the completion of the modelling; therefore, a model update to include this topographic data and confirmation of the crest level is required.
- 4.1.8. The *Consultant* shall update the model to include updating levels with detailed design components. It is not intended for the whole range of options to be re-run, only the final detail design at the required design flows (the 10,000 year, and the Probably Maximum Flood) considering the Dam as a Category A reservoir.
- 4.1.9. The model will be returned to the *Client* with the proposed physical works incorporated. All electronic data should be in an agreed format in line with the scheme data management plan. A copy of the plan will be provided by the *Client*.

5 Economics Appraisal

The economics appraisal is intended to take the outputs of the earlier work and update the economic business case for input to the scheme business case. The detail should (normally) be covered by appraisal guidance and the Multi-Coloured Manual (MCM) and by the business case template and guidance. This work will be undertaken by the *Client*.

6 Environmental Assessment

- 6.1.1 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 as far as possible within the constraints of the *Client's* direction on project scope described in Section 1.3 above.
- 6.1.2 The *Consultant* shall ensure that the project level assessment sits within the context of any previous strategic environmental assessment and additional information developed through the Appraisal Stage. This commission will bring forward all relevant information and conclusions.
- 6.1.3 The *Consultant* shall be able to demonstrate how the information from the environmental assessment has been used to inform and adapt the detailed design.
- 6.1.4 Should the preferred option or the design significantly change (unless instructed to do so by the *Client*), the scope of the environmental assessment shall be adapted accordingly.
- 6.1.5 The *Consultant* shall ensure that the detailed design includes all of the necessary information to assure the delivery of all mitigation, management and monitoring measures and the delivery of wider benefits during construction as far as possible within the constraints of the *Client's* direction on project scope described in Section 1.3 above.
- 6.1.6 The *Consultant* shall report the findings of the environmental assessment as required which will form an Appendix to the FBC with relevant summary details incorporated into the relevant section(s) of the FBC main text.
- 6.1.7 As far as possible within the constraints of the *Client's* direction on project scope described in Section 1.3 above, the *Consultant* shall be able to demonstrate how they have taken account of the *Client's* wider sustainability aspirations in the development of the detailed design and the associated benefits.
- 6.1.8 **AD:** The *Consultant* shall set up and undertake the CEEQUAL assessment and evidence-gathering throughout the services, using the CEEQUAL online tool via BREEAM Projects in line with the provided scoping note based on CEEQUAL V6 Technical Manual Requirements. For these Services, 13 assessment issues have been scoped in (covering 73 individual criteria). The *Consultant* shall ensure that all of the evidence is uploaded prior to completion of the services.
- 6.1.9 **AD:** The *Consultant* shall provide a qualified CEEQUAL assessor and scope the individual questions within the assessment issues identified for agreement with the *Client*,
- 6.1.10 **AD:** The *Consultant* shall support providing supporting information to the *Client* when handling verifier consultation.
- 6.1.11 **AD:** The Sustainability Lead is an integrated member of the project team attending monthly progress meetings, key project workshops including but not limited to options/design and risk, and championing sustainability across the project team. If the CEEQUAL Lead does not also lead on sustainability for the project, they should also be considered integrated members of the project team liaising regularly with the Sustainability Lead and project team. The CEEQUAL Lead will, lead a CEEQUAL workshop as early as possible in scheme development to build understanding of CEEQUAL requirements and expectations within the project team, carry out the CEEQUAL assessment and provide updates against CEEQUAL targets.

6.1.12 **AD:** The *Consultant* shall design the scheme taking into account the heritage sensitivities and opportunities of the sites, involving key heritage specialists as appropriate within the *Consultant* and the *Client's* organisation.

6.1.13 **AD:** The Environmental deliverables shall comprise:

- Landscape and Visual appraisal, including a Viewpoint Location Plan and Final Landscape Masterplans.
 - Environmental Action Plan.
 - Environmental Report.
 - Preliminary WFD Assessment.
 - Heritage Impact Assessment.
 - Contaminated Land Detailed Quantitative Risk Assessment and Materials Management Plan.
 - Arboriculture Impact Assessment.
 - Environmental Screening.
 - Noise and vibration impact assessment.
 - Flood Risk Assessment.
-

7 Preferred Option Development – Detailed Design

- 7.1.1 The *Consultant* shall assist with pricing and buildability which will be led by the *Client's* CCE and ESE contractor respectively.
- 7.1.2 The *Consultant* shall develop designs with the *Client* including the Field Service and Area Teams.
- 7.1.3 The *Consultant* shall discuss with the *Client* where environmental information, landscape details, archaeological information, methodologies or on-site management deviate from that stated in the environmental report or associated documents. This will enable any legal implications to be checked and for the environmental implications of the changes to be assessed.
- 7.1.4 The *Consultant* shall discuss developments in the design with the appointed Principal Designer.
- 7.1.5 The *Consultant* shall discuss with the *Client* how the design enables carbon reduction targets to be met.
- 7.1.6 The *Consultant* shall facilitate design workshops and facilitate two risk workshops.
- 7.1.7 **AD:** The *Consultant* shall discuss developments in the design with the QCE appointed by the *Client*. The QCE will be available during wider project meetings for this purpose. Any additional work requested by the QCE will be treated as a Compensation Event.

8 Stakeholder Engagement

- 8.1.1 **AD:** The *Consultant* will lead on external stakeholder consultation, but the *Client* will assist and prepare materials for use in meetings. Consultation materials will make efficient use of project information, e.g. 2-d line drawings/sketches. Supplementary documents and drawings, including computer aided design graphics, would be subject to a Compensation Event.
- 8.1.2 **AD:** The *Consultant* shall undertake the following Stakeholder engagement activities:
 - Hold 1 x stakeholder analysis meeting (internally with the Environment Agency).
 - Develop engagement materials – a letter drop to 200 households, 4 newsletters (issued quarterly), 5-10 display boards, 4 website updates, 2 press releases, 4 social media posts.
 - Organise and attend 3 x key stakeholder meetings (attendance by one engineer, and one stakeholder engagement officer).
 - Organise and attend 2 x public consultation events (attendance by one engineer, and one stakeholder engagement officer).
 - Author consultation report and statement of community involvement for planning documents.
 - Maintain engagement records for the duration of the *Consultant's* FBC programme.

8.1.3 The *Client* shall be responsible for engaging with individual landowners.

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 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. Detailed design work 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 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.
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10 Business Case Submission

Not Used.

11 Carbon

- 11.1.1 As far as possible within the constraints of the Client's direction on project scope described in Section 1.3 above, carbon emissions shall be identified and assessed on a strategic whole life basis (cost and benefit) in the design and also as a specific operational target (carbon budget) of the *Client*.
- 11.1.2 The carbon budget for the project has been calculated to be 1,015 tonnes by the *Client* (figure obtained from PAFS). The project team shall work collaboratively to reduce the carbon budget of the project as far as possible within the constraints of the *Client's* direction on project scope described in Section 1.3 above.
- 11.1.3 The *Consultant* shall demonstrate how they have met the corporate requirement for carbon reduction (as far as possible within the constraints of the *Client's* direction on project scope described in Section 1.3 above) using the Carbon Tool, 'ERIC' and:
- 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 and Carbon Optimisation Report at the pre-defined stages.
 - Inclusion of a whole-life carbon appraisal to ensure optimisation of lowest carbon in detailed design.
- 11.1.4 **AD:** The *Consultant* shall organise and facilitate a low carbon workshop and capture how this workshop has informed the project and its delivery.
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12 General

Not Used

13 Relevant guidance

- 13.1.1 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

Ref	Report Name	Where used
183_05	Data management for FCRM projects	Mapping and modelling
379_05	Computational Modelling to assess flood and coastal risk	Modelling
OI 120_16	Whole-life Carbon Planning Tool	Detailed design
LIT 14284	Whole Life (Construction) Carbon Planning Tool User Guide	Detailed design
	Access for All Design Guide	Detailed design
	Project Cost Tool	Costs
LIT 12982	Working with Others: A guide for staff	Consultation & Engagement
LIT 12280	Lessons Log template	FBC
LIT 55096	Integrated Assurance & Approval Strategy	Approvals
MTR 801_14 SD 02	Landscape and Environmental Design Guidance (LEDG) – Volume 3	Throughout

14 Requirements of the Programme

- 14.1.1 The *Consultant* shall provide a detailed programme in Microsoft Project format version 2013 meeting all requirements of clause 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 Include internal project team/board decision gateways (as a minimum) for:
- Gateway 3, to ensure the detailed design and costings are complete and the works can be constructed within the allowed time and budget.
- 14.1.6 The following consultation periods shall be incorporated into the programme, with adequate allowance for review and revision of documents by the project team where appropriate:
- Consultant* internal review (as per *Consultant's* quality review procedures) and *Client* review of all outputs before circulation to the wider project team to ensure high quality of all output.
 - Sufficient allowance for internal and external consultation. Statutory consultation periods at scoping & draft stages. Note local authority approvals through cabinet prior to public consultation can take a long time.
 - Local Authority time for planning approval.
 - Client* approvals as required to include for Reservoirs Act, impoundment licence and working in watercourse approvals.
 - Time for pricing up of the works by the *Clients* CCE .
 - Submission for approval and time allowance for the *Client's* approval process.
- 14.1.7 The *Consultant* shall produce a programme such that the following milestone dates are achieved:

Date	Event
30-Sep-25	MIOS Construction Sign-off (Environment Agency Objective)
30-Sep-26	MIOS Construction Sign-off (Statutory)

- 14.1.8 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.

14.1.9 AD. Additional elements associated with update of Employer's Information Requirements from v2.3 to v2.5.

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), and coordination with Landowner for access to site as required.

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 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 *Service Manager*. These departments include Asset Performance, Partnership & Strategic Overview, NEAS and others.
- 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* or the *Service Manager*.

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.
 - Project Cost Tool (PCT).

Appendices

Appendix 1 – BIM Protocol

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

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

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

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