

Environment Agency

NEC4 professional service contract (PSC)

Scope

Project / contract Information

Project name	Securing Land for a Future Thames Barrier
Project 1B1S reference	ENV0000713C
Contract reference	31656 – Production of High Level Construction Plan, Layouts and Schedule
Date	30 November 2020
Version number	6.1
Author	Victor Freeney

Revision history

Revision date	Summary of changes	Version number
05/03/2020	First issue for comment	1
14/10/2020	Comments incorporated: second issue for comment	2
5/11/2020	Minor modifications before issue for tender	3
25/11/2020	Minor modifications to clarify level of detail required	4
30/11/2020	Minor modifications	5
29/01/2020	Scope finalised following CSM & DGC review	6.1

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
412_13_SD01	Minimum Technical Requirements	2.0	18/03/2020

customer service line
03708 506 506
www.environment-agency.gov.uk

incident hotline
0800 80 70 60

floodline
0845 988 1188

Details of the service

Details of the *service* are:

Production of a high-level construction plan, layouts and schedule to contribute to the Securing Land Plan being developed by the *Client* for the Securing Land for a Future Thames Barrier project. Throughout this document, 'the project' refers to the Securing Land for a Future Thames Barrier project, of which this contract forms a part. Throughout the document 'high level design' means a design to a level that it is sufficient to withstand possible legal challenge when securing the land.

1. Description of the work:

1.1 Background and introduction

1.1.1 The Thames Estuary 2100 Plan (the Plan) sets out the strategic direction for managing tidal flood risk in the Thames estuary to the end of the century and beyond. It sets out how the *Client*, working with London and other boroughs, will continue to protect 1.3 million people and £275 billion worth of property from tidal flood risk. It was approved and then published in November 2012.

1.1.2 The Plan states that in the first 25 years (2010-2035) the *Client* must secure land for future flood risk management. Recommendation 10 of the Plan states that a Land Strategy will be prepared. The Land Strategy will include a Securing Land Plan. It should also include habitat creation and riverside strategies however these are being dealt with separately. The *Consultant* is not required to liaise with those producing these elements of the land strategy but shall bring any relevant details encountered during the course of their work to the *Client's* attention.

1.1.3 The overarching Securing Land for a Future Thames Barrier project will produce the Securing Land Plan, which will form part of the Land Strategy of the TE2100 Plan. It will show why land should be secured the legal mechanism to achieve this and a detailed plan for how to do so. This will enable the *Client* to manage costs and work to the most efficient timeframe for securing the required land. The Securing Land Plan will clarify the options for securing land so that the *Client* can decide what needs to be done, when and how.

1.1.4 The TE2100 Plan sets out 4 estuary-wide options and of these identifies 2 front runner options. The 4 estuary wide options are:

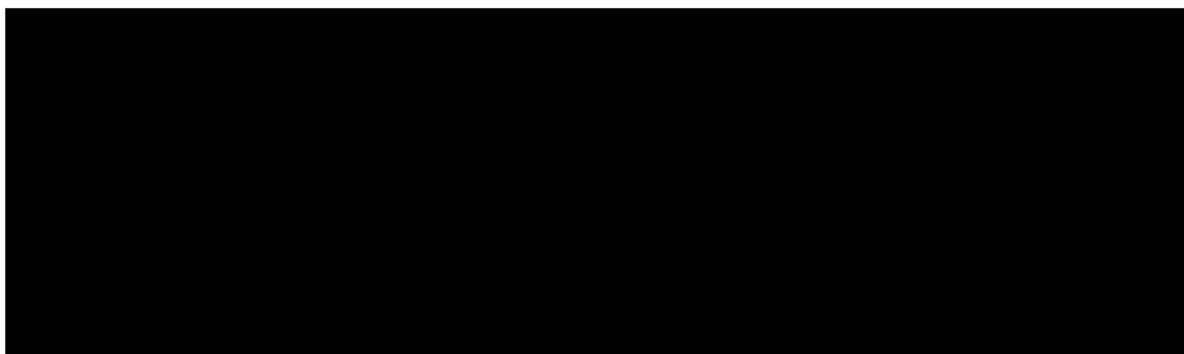
Option 1 – Improve the existing system

Option 2 – Tidal flood storage

Option 3 – New barrier without locks

Option 4 – New barrier with locks

[REDACTED] all options remain live and therefore the *Client* is aiming to secure the land accordingly.



1.1.7 The project does not include for securing land for the walls, embankments and 9 other barriers which will require raising, major refurbishment or replacement in several stages as recommended in the TE2100 Plan. The *Client* will work closely with another project that will be set up to look at this; the *Consultant* is to be mindful of this in the provision of advice to the *Client*.

1.2 Objectives

1.2.1 The primary objective of this project is to produce a Securing Land Plan. This will involve the commissioning of pieces of technical work across 14 different workstreams, which will be combined into a Living Technical Evidence Report. This report will provide the necessary evidence the *Client* needs to refine the location of a new barrier, facilitate the *Client's* influence over development plans in the area and, if necessary, allow the *Client* to object to development proposals that prevent a barrier being built in those locations. The *Consultant* is to provide advice that supports these overall project objectives.

1.3 Standards required

1.3.1 The *Consultant* shall provide high level technical evidence that is sufficiently robust to withstand a legal challenge to the *Client* in relation to securing the land. This legal challenge may arise from a land owner, developer or other stakeholder such as an environmental non-governmental organisation, amongst others.

1.3.2 The *Consultant* shall prepare technical evidence using conservative assumptions so that nothing is likely to emerge before the strategic decision date around 2040 that would render the land secured inadequate or deficient in some way. The assumptions made shall be a reasonable though conservative case in terms of land take required.

1.3.3 The work undertaken shall also not store up problems for the future by assuming construction methods which use less land but that may prove to be high risk when the project is actually delivered. These assumptions would probably add constraints to the future delivery which are down to those delivering the project to assess and it is therefore inappropriate for us to constrain them now in that way. The *Consultant* shall allow only limited use of just in time and similar delivery mechanisms as these add risk to the project delivery. Other techniques that also add risk to the project delivery are not to be included.

1.3.4 The *Consultant* shall prepare a list of opportunities and innovative techniques that could reduce land take at a future date.

1.3.5 Land-based permanent works as defined in section 1.4.2.2 will be required for which outline designs will be prepared under a separate Professional Service Contract in the future. These land-based permanent works are likely to be constructed at the same time as the river-based permanent works (i.e. the barrier). A construction site area will also be required for building the land-based permanent works. The *Consultant* shall make an assumption for the land area that may be required. This may require a high level design of the land based permanent works under this contract.

1.3.6 The *Client* is currently assuming that 12 hectares of land is required both on the north and south banks of the river. Further hydraulic navigational modelling will be undertaken for the *Client* by another consultant to confirm the straight river approach lengths required. The *Consultant* shall only consider prospective barrier locations that can subsequently be converted to a barrier with locks in 2135. The following information is provided to enable the *Consultant* to scale the project, for example in terms of workforce required to build it and therefore the size of the welfare and other facilities on the site:

- The existing barrier was constructed over a period of eight years from 1974 to 1982. Information on the construction site area and the permanent area is in the

information provided ('Existing barrier operational and construction layout maps version 1').

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1.4 Outcome Specification

1.4.1 The *Consultant* shall provide the following [REDACTED]:

- Construction site layout drawings
- Construction site access arrangements including temporary and permanent road access arrangement layout drawings
- Construction schedule for all temporary and permanent works
- [REDACTED]
- Written assessment of the impact on the construction site area required of offsite construction techniques with onsite assembly.
- Written assessment of the timing of the delivery of the permanent land-based structures and how these interact with the construction area and the delivery of the river-based structures. The conservative assumption is that the land based permanent works will be built at the same time as the barrier and river based works.

1.4.2 The *Consultant* shall prepare a preliminary construction plan which includes site layout drawings and a construction schedule. This shall include recommended road, river and other access arrangements required for the construction but shall take account of whether these may also be required for the permanent operation and maintenance of the barrier.

1.4.2.1 The construction site layouts shall identify land areas required such that the *Client* can be confident that there is a very low likelihood of needing a greater area of land when further stages of design are completed in the future. The areas of land shall therefore be considered conservative for the purposes of progressing the project without being unnecessarily cautious.

The site layouts during construction shall include for welfare facilities, a visitor centre (intended for non-public use during the construction phase), car parking area, materials handling and storage areas, concrete batching plant, site office accommodation including logistics centre, site access roads including separation of construction vehicles from staff vehicles, car parking, site transport arrangements for vehicular traffic and pedestrians, security facilities, wharfing arrangements including loading and unloading facilities, provision and maintenance of public footpath and access arrangements around the sites and transport arrangements for staff shuttle buses from the nearest stations [REDACTED].

1.4.2.2 The size of the construction area is dependent upon the construction sequence and when construction commences for the land based permanent facilities relative to the completion of construction for the barrier itself. It is likely that the river based works (the barrier) will be built at the same time as the land based permanent works. Therefore, the land area for the land based permanent works and the construction area for these works will need to be included in the total construction area required. The *Consultant* shall take account of this constraint which may require a high level engineering design for the land based permanent works. The land based permanent works shall be included in the construction site layouts. These works shall include facilities such as control building, offices, workshops, security and permanent visitors' centre, warehouse storage, car park and a playground as on the existing site.

Furthermore, the future barrier is a very large engineering infrastructure project requiring a large workforce to build it as well as the supply of large quantities of plant and materials. Some of these materials will be transported by river, thus requiring wharf facilities for offloading and trans-shipment. Adequate road access arrangements are required to ensure the barrier can be built; these must be built at a level sufficiently high to withstand the anticipated level of flood risk during and after construction. During construction, consideration will also need to be given to whether there are any land requirements for temporary flood defences. If the construction is going to cause a breach in the defence line then other defences will need to be put in place. The road access arrangements will differ at each potential barrier site but are likely to be considerable engineering projects in their own right. The *Client* may also require them to be retained for the permanent operation and maintenance of the barrier, not just for the construction period.

[REDACTED]

[REDACTED]

[REDACTED]

1.4.2.5 The *Consultant* shall record and submit all assumptions made to the *Client* for approval during the course of the work. *Client* approval as the work progresses will avoid abortive work.

1.4.2.6 The *Consultant* shall prepare a labour histogram for the duration of the construction schedule detailing the size of the workforce for each month of the construction phase.

1.4.2.7 The *Consultant* shall arrange and attend technical and progress review meetings which will take place every 2 weeks at the *Consultant's* office or online. These meetings will examine physical evidence of the work which is progressing so that the *Client* can make comments to help ensure the work is completed satisfactorily. Technical queries can also be addressed in these meetings.

1.4.2.8 In addition to the usual skills required to do this work, the *Consultant* will also need to ensure that there are technical staff with skills in road access and transport arrangements as well as staff with skills in transporting materials and equipment by river.

[REDACTED] n and outcomes of this service. The *Consultant* shall not consider this to be exhaustive.

2. Drawings, site information or reports already available

2.1 The following is provided for information to assist the *Consultant* with the provision of the services identified:

- [REDACTED]
- [REDACTED]

- [REDACTED]

2.2 The *Consultant* shall make the Service Manager aware of any errors or inconsistencies discovered in the information provided by the *Client*.

3. Specifications or standards to be used

These are specified in the Minimum Technical Requirements document mentioned at the start of this document.

4. Requirements of the programme

The following are absolute requirements for Completion to be certified:

- Transfer to the *Client* of BIM data
- Clause 11.2(2) work to be done by the Completion Date

5. Services and other things provided by the Client

Documents as listed in Section 2 above.

6. Consultant Project Management

6.1 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.

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

- Attend fortnightly progress meetings and prepare record minutes within a week for the *Client* to issue.
- Deliver a progress report at each progress meeting summarising progress against programme, deliverables received and expected and financial summary against programme.
- Capture lessons learnt relevant to scheme delivery and include in the scheme lessons learnt log to be included within the report.
- Agree with the *Client* as soon as practicable any assumptions required to enable the work to progress.

Appendix 1 BIM Protocol – Production and Delivery Table

Not used