

Thames Tideway Tunnel
Thames Water Utilities Limited



Application for Development Consent

Application Reference Number: WWO10001

Examining Authority's Procedural Decision Response from Thames Water

Minor Changes to the Application for Development Consent

Blackfriars Bridge Foreshore

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**Thames
Tideway Tunnel**



Creating a cleaner, healthier River Thames



Minor Changes to the Application for Development Consent: Blackfriars Bridge Foreshore

**Response to ExA's request in
paragraphs 2.20 (viii to x) and 5.1 (iv)
and (v) (c) of the procedural decision
dated 15 October 2013**

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Thames Tideway Tunnel

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Response to ExA's request in paragraphs 2.20 (viii to x) and 5.1 (iv) and (v) (c) of the procedural decision dated 15 October 2013

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1 Introduction

1.1 Minor changes to the application for development consent

1.1.1 On 28 February 2013 Thames Water Utilities Limited (Thames Water) submitted an application for development consent (the 'DCO application') to the Planning Inspectorate for the Thames Tideway Tunnel project (the 'project'). The DCO application was accepted by the Planning Inspectorate on the 27 March 2013.

1.1.2 On 23 September 2013, Thames Water made an application for minor changes (the 'minor changes application') to the DCO application at Blackfriars Bridge Foreshore (BBF). The minor changes application followed a process of targeted stakeholder engagement undertaken between mid-July and mid-August 2013 and a series of presentations at which environmental information was presented. A link to the minor changes application and all relevant documentation, on the Planning Inspectorate website, is here:

<http://infrastructure.planningportal.gov.uk/projects/london/thames-tideway-tunnel/?ipcsection=app>

1.1.3 The Examining Authority (ExA) accepted the proposed changes in its procedural decision dated 15 October 2013. A link to the procedural decision on the Planning Inspectorate website is here:

http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/WW010001/2.%20Post-Submission/Procedural%20Decisions/131015_WW010001_Hearing_notice_and_changes_decision.pdf

1.2 Accepted changes: Examining Authority request for additional information

1.2.1 In accepting the proposed changes (hereafter referred to as 'accepted changes'), in its procedural decision of 15th October 2013, the ExA made a request at paragraph 5.1 (iv) and (v) (c) for further information at paragraph 2.20 (viii to x) :

'2.20 *From consideration of the material submitted the ExA consider that the changes overall could result in detailed impact changes including the following matters:...*

Blackfriars Bridge Foreshore

viii) *dredging (3,350m³) and sheet piling (170m) for the temporary and permanent relocation of The President, and additional dredging (500m³) and sheet piling (66m) associated with the permanent relocation of the*

Millennium Pier would result from the proposed changes to the application. Any potential parameters, controls and thresholds will need to be established;

- ix) dredging and scour impacts and any consequential transportation and disposal. There will be a need to establish protection parameters;*
- x) at the Millennium Pier, significant noise effects would result to the City of London School from piling during a 2 month period (see 5.3.19 of the Proposed Minor Changes document). The effect is still assessed as 'low negative magnitude' but it is stated that measures proposed in the CoCP would effectively remove these effects. There is a need to demonstrate that any potential in combination effects of works at Chrysanthemum Pier are also accounted for. These considerations and receptors need to be taken into account in the Applicant's responses to the ExA's first written noise questions.'*

1.2.2 Paragraph 5.1 (v) (c) required that the assessment to be provided further to paragraph (iv) be scoped with the Environment Agency, the local planning authority, the Port of London Authority and Transport for London as appropriate.

1.3 Purpose of this report

1.3.1 This report has been prepared for the ExA to set out a response to the further information requested at paragraph 2.20 (viii to x) of the procedural decision relating to the accepted changes at the **Blackfriars Bridge Foreshore** (BBF) worksite.

1.3.2 This report should be read in conjunction with the *scoping report of environmental effects related to piling, dredging and scour* (doc ref: 100-RG-ENV-BLABF-000002) which provided a summary of the accepted changes, summarised the environmental assessment work undertaken to date in respect of the accepted changes and proposed the scope of assessment to be undertaken in response to the requirement set out in para 2.20 of the procedural decision. The Scoping Report is appended at Appendix A of this report .

1.4 Scoping

1.4.1 The procedural decision at paragraph 5.1, required the scopes of assessment to be scoped with the relevant statutory bodies, as follows [emphasis added]:

“5.1 The following additional information is requested to be provided by the Applicant on or before the 4 November 2013 and clearly identified as a response to the procedural decision:...

- v *in relation to the proposed amendments at Blackfriars Bridge Foreshore:*
 - c. *provide an assessment of the potential effects of the additional piling and dredging and confirm that this has been scoped with the **Environment Agency, the local planning authority, Port of London Authority and Transport for London** as appropriate.'*

(Procedural Decision, Application Ref WW010001, para 5.1 (v) (c))

- 1.4.2 In order to scope the assessment with these bodies, the scoping report was submitted by email to these bodies on Friday 18th October, with a request that scoping comments be provided no later than Friday 25th October.
- 1.4.3 The following table provides the main comments in relation to the proposed scope from these bodies and confirmation of how we have taken the comments into account. The full responses provided by the consultees are included in an Appendix B. Unless otherwise stated, these responses refer to this site alone.

Table 1.1: Scoping Responses

Organisation	Comments	TWUL Response
<p>Environment Agency (response covers both VEF and BFF)</p>	<p><i>“We agree that the conclusions of the Environmental Statement (noting comments made by ourselves relating to the conclusions within our Section 56 Relevant Representation and our pending Written Representation) do not need to be altered in light of these minor alterations to the application. As noted in our response to the targeted consultation on these alterations dated 5th August, the matter of commenting and approving piling and dredging details has already been raised as needing a clear securing mechanism in our Relevant Representation. We note that the documents provided now state that this is covered by the CoCP. Whilst we are not in agreement over the securing mechanism for these aspects, we are satisfied that no further assessment is needed at this stage and will be considered further when the contractors come onboard.</i></p> <p><i>With regards to the river wall stability, we are satisfied again that no further assessment is needed at this stage. The Flood Defence Asset Interpretative Report, submitted to the Examining Authority on 26th September has been developed in consultation with us, and we are happy with the assessment to date of impact on the flood defence assets. We consider that further work on the impacts of the Thames Tideway Tunnel as a</i></p>	<p>Other than the limited additional assessment proposed within the scoping report, we agree with the EA that no further assessment is needed at this time for the minor alterations to the application.</p>

Organisation	Comments	TWUL Response
<p>Environment Agency</p>	<p><i>whole, including the minor alterations proposed here would be covered by our proposed requirements for flood defence monitoring and mitigation.</i></p> <p>.....</p> <p><i>We do not feel that further assessment is needed at this time for the minor alterations to the application. We are satisfied that further assessment at the detailed design stage will be covered within the scope of requirements we have requested on the DCO. We have noted that the Scoping reports state that additional information is being gathered and is to be submitted to the Examining Authority on 4th November. As a result of this, the proposed alterations submitted by TWUL to the Examining Authority on 23rd September will now be superseded.”</i></p>	
<p>City of London Corporation</p>	<p>No response received</p>	
<p>Port of London Authority <i>(response covers both VEF and BFF)</i></p>	<p><i>“It is noted in both scoping reports that no further assessment is proposed in relation to dredging. The PLA would comment that.....the volume of material now proposed to be dredged has been significantly increased. That the scoping report appears to rely on the previously expressed view within the supporting statements that no assessment is required because the dredged volume is small in relation to the total sediment load carried within a generic spring tide is, in the PLA’s view, inappropriate. The PLA contend that</i></p>	<p>The impacts of dredging were scoped in the scoping report and further assessment (for example in relation to the river wall) is presented in this report. The statement “no assessment is required” appears in the Water Quality section of the scoping report and relates only to the additional sediment that would be released into the water column and the impacts of this in water quality terms. In the light of new data on sediment flux we have revisited the surface</p>

Organisation	Comments	TWUL Response
	<p><i>the impacts of dredging – and backfilling in the permanent phase – together with the associated sediment quality issues should be scoped and assessed in relation to both sites.</i></p> <p><i>The PLA further notes from the scoping reports that further work will be submitted in relation to scour as a result of ongoing discussions with a range of regulators including the Authority. This additional work will be considered in due course and the PLA has no further comments to make at this time.</i></p> <p><i>The PLA further makes no comments in relation to the issues identified within the scoping reports associated with the construction of the sheet piling, although would comment that there is no assessment as to the necessity of this element.”</i></p>	<p>water quality assessment for VEF with this new context and this assessment is presented in this report.</p> <p>The further work in relation to scour at BFF has already been undertaken and was appended to the scoping report (email to J Trimmer, PLA on 18th October). As stated in the scoping report at 4.2.1, we do not propose any further work on scour extent.</p>
<p>Transport for London</p>	<p>No specific comments on the scoping report were received from TfL by the deadline although TfL indicated that in this event, their emailed comments of 12th August (in relation to the proposed changes) would stand. These comments in relation to BBF are as follows:</p> <p><i>“It’s worth noting that the plan you have sent to show the proposed changes, No. 110-DA-ENG-BLABF-000945, suggests that the BT cooling tunnel was shown on your original DCO submission. I am not sure this is the case, as it’s relevance as an issue and it’s impacts are only</i></p>	<p>Discussions are ongoing with several parties, including TfL, in relation to the location of the outflow. If it is helpful to the ExA we will provide an update on progress if requested.</p>

Organisation	Comments	TWUL Response
	<p><i>now being discussed in detail with TfL. You will be aware that this issue was further discussed at a meeting on 19 July 2013 between TWUL, TfL, the PLA and BT. At this meeting TfL made it clear that it is not acceptable for the outflow of the tunnel to emerge in the river bed immediately below where vessels would berth at the pier. We believe this would cause unacceptable operational risks for these vessels and would also potentially operationally constrain the future use of this pier. Potential alternative options were discussed at the meeting, including moving the outflow further towards the river wall - TfL hopes a solution can be found and we look forward to discussing this with you. TfL does of course however welcome the fact that you are proposing to increase the length of the pier pontoon as there were significant operational concerns with the original design.</i></p> <p><i>Given this, we cannot at present agree to your proposed changes as we cannot agree to your original proposal, which in itself has the same issue surrounding the impact of the outflow pipe. You will also be aware of the fact that TfL is still seeking a binding agreement with Thames Water regarding the proposal to relocate Blackfriars Pier, and that we require assurances as to an approved design and methodology for the replacement facility which must be provided and agreed by TfL before any work commences which affects the current operational facility.</i></p>	

Organisation	Comments	TWUL Response
	<p><i>If the issues described above can be resolved to TfL's satisfaction, then we do not envisage any serious adverse impacts upon our assets or operations from your proposed changes to amend and increase the sheet piling and works boundary for dredging. This comment is however subject to ongoing communication between TUWL and TfL and, taking London Underground as an example, adherence to LUL's standard requirements / constraints for piling in close proximity to its structures during the detailed design and construction phases of your project."</i></p>	

1.4.4 The scope of the assessments proposed in the scoping report has not been amended other than where indicated in the above table. As can be seen in the table, in some cases, we disagree with a consultee on the required scope and our reasons for doing so are also given in the above table.

1.4.5 The additional assessments which have been undertaken (beyond the obvious scope of the ExA request, have been inserted in to the most relevant section of Section 2 of this report.

1.5 Structure of this Report

1.5.1 The structure of the remainder of this report is as follows:

- Section 2: response to the ExA's request
- Appendices:
 - Appendix A : BBF Scoping Report
 - Appendix B : Scoping Responses
 - Appendix C : Blackfriars Bridge Foreshore vessels (Scour Report)
 - Appendix D : Sediment Fluxes in the Tidal Thames

2 Response to the ExA's request

2.1 Introduction

- 2.1.1 The scoping report (dated October 18th 2012) and the table of scoping responses (Table 1.1 in section 1) sets out the scope of additional assessments to be completed to provide answers to the further information requested at paragraph 2.20 (viii to x). Following these additional assessments, responses to paragraph 2.20 (viii to x) are provided in in the section below.
- 2.1.2 The potential for aquatic ecology to be impacted by the proposed changes and specifically the new dredging volumes and scour predictions is covered at section 2.3.

2.2 Paragraph 2.20 (viii) – parameters, controls and thresholds

2.20 (viii) - dredging (3,350m³) and sheet piling (170m) for the temporary and permanent relocation of The President, and additional dredging (500m³) and sheet piling (66m) associated with the permanent relocation of the Millennium Pier would result from the proposed changes to the application. Any potential parameters, controls and thresholds will need to be established;

- 2.2.1 The impacts associated with dredging and scour (which might arise from the changes at this site) and any necessary modifications to proposed control measures, via way of parameters, controls and thresholds, are covered at 2.3 below.
- 2.2.2 The in-combination impacts associated with piling in relation to noise and any necessary modifications to proposed control measures, via way of parameters, controls and thresholds, are covered at 2.4 below.

2.3 Paragraph 2.20 (ix) and paragraph 5.1 (v) (c) – dredging and scour impacts

2.20 (ix) - dredging and scour impacts and any consequential transportation and disposal. There will be a need to establish protection parameters;

Also at 5.1 (v) c) - provide an assessment of the potential effects of the additional [piling and] dredging...

Dredging – background

- 2.3.1 The proposed extent of the additional dredging at this site in relation to the changes is :
- a. *“Dredging and associated sheet piling: Dredging with associated sheet piling (to protect the river wall) for the temporary and permanent*

relocation of the President. This requires an extension of the zone within which all permanent structures would be located (green line on the Site works parameter plan) by 4,760m². The quantity of additional dredging and associated sheet piling is as follows:

- i approximately 750m³ of dredging at the temporary location and 2,600m³ of dredging at the permanent mooring location of the President*
- ii approximately 35m of sheet piling at the temporary location and 136m of sheet piling at the permanent mooring location”*

2.3.2 The total in the ES of 4,200m³ could be added to the additional volumes (given above) in the BBF Scoping Report of 3,350m³ to provide a provisional estimate of 7,550m³ of dredging.

2.3.3 Estimates of the likely volumes of proposed dredging at each site and across the project have been determined in further detail to support our response to the first written questions. These estimates and how they have been calculated have been provided in full within the assessment provided to the ExA on 4th November (see our response to Q 3.8 and Q17.1). The estimated volume of dredged material arising at the BBF worksite is now estimated as 7,200m³, which accounts for approximately 30% of the total volume of dredged material arising from the project (ie, 23,200 m³) and is slightly lower than the total figure calculated using the predictions in the scoping report (see paragraph 2.3.2).

Scour - background

2.3.4 A study of the scour effects related to the accepted changes has already been undertaken by HR Wallingford (HRW). This report is titled “Thames Tideway Tunnels: Blackfriars Bridge Foreshore vessels” and was issued by HRW to Thames Water on 7th October 2013. The report was appended (see Appendix C) to the scoping report issued to the statutory consultees on 21st October 2013.

2.3.5 The report concludes that: *‘the existing predictions [i.e. as presented in the Environmental Statement] of hydrodynamic effects and scour associate with the works are considered broadly insensitive to the proposed change in the position of the HMS President (and associated works) and the lengthening of the relocated Blackfriars Millennium Pier (and associated works).’*

2.3.6 Any scour that arises as a result of the accepted changes would be monitored and mitigated by way of the approaches already described within Appendix L4 to Volume 3 of the ES (temporary work) and the Engineering Design Statement (doc ref: 7.18) (in relation to the permanent works). There would be no need to vary the methodologies therein other than to further consider the extent of the proposed survey area at this site. The HRW report also concludes that *‘both the potential for accretion and erosion in the revised project area should be included in the bed level monitoring plan for the project. The scour monitoring strategy developed for the project meets these requirements.’*

- 2.3.7 The Scour Strategy contained within Appendix L4 has been revised to account for comments made to date (including the requirements proposed by the EA in its Relevant Representationsⁱ) and the accepted changes at this site, as relevant. The revised strategy has been submitted to the ExA as an appendix to our response to Q3.5 (of the ExA's first written questions) (see APP03.05.01 Scour and accretion monitoring and mitigation strategy for temporary and permanent works in the foreshore). The revised strategy expands on the approach to permanent scour protection presented in the Engineering Design Statement (doc ref: 7.18).
- 2.3.8 In its scoping response dated 25th October 2013 (see section 1) the EA confirmed that no *'further assessment is needed at this time for the minor alterations to the application'* and that the EA is *'satisfied that the works involved in the minor alterations will be covered by its proposed requirements for scour monitoring and mitigation'*. No changes to the existing assessments are required.

Flood risk considerations in relation to scour

- 2.3.9 The impacts of scour on the existing river walls (from the perspective of flood defence function) have already been considered within the [Flood Defence Asset Interpretive Report](#) (FDAIR) submitted to the ExA on 23rd September 2013.
- 2.3.10 The conclusions of the HRW report ("Thames Tideway Tunnels: Blackfriars Bridge Foreshore vessels") is that *'the existing predictions [i.e. as presented in the Environmental Statement] of hydrodynamic effects and scour associate with the works are considered broadly insensitive to the proposed change in the position of the HMS President (and associated works) and the lengthening of the relocated Blackfriars Millennium Pier (and associated works)'* No additional scour impacts on existing flood defence assets are therefore predicted to occur as a result of the proposed alterations.
- 2.3.11 In its scoping response dated 25th October 2013, the EA confirmed that *'With regards to the river wall stability, we are satisfied again that no further assessment is needed at this stage. The Flood Defence Asset Interpretive Report, submitted to the Examining Authority on 26th September has been developed in consultation with us, and we are happy with the assessment to date of impact on the flood defence assets. We consider that further work on the impacts of the Thames Tideway Tunnel as a whole, including the minor alterations proposed here would be covered by our proposed requirements for flood defence monitoring and mitigation.'*

ⁱ Environment Agency letter, dated 24 May 2013, Ref: TTT_RReps_240513

- 2.3.12 The EA also confirmed that *'We do not feel that further assessment is needed at this time for the minor alterations to the application. We are satisfied that further assessment at the detailed design stage will be covered within the scope of requirements we have requested on the DCO'*. No changes to the existing assessments are required.

Sediment release from dredging and scour

- 2.3.1 Both scour and dredging may lead to the release of sediments to the water column. An assessment of the release of sediments into the water column from works at BBF can be found in ES Vol 18, Section 14. The proposed changes to the scheme that result in changes to the assumptions underpinning the assessment of effects on surface water from sediment release comprise the additional dredging and associated piling.
- 2.3.2 The total volume of sediment released to the tidal Thames by the proposed dredging and associated piling activity at BBF has been estimated to be 7,200m³ (see para. 2.3.3). Using the methodology set out in the ES, it has also been estimated that there would be a loss of 5% of the dredged material to the water column, and therefore an estimated 360m³ (assuming an insitu density of 2 tonnes per m³) of sediment being released during the dredging operation.
- 2.3.3 It is also possible that the works would affect the river regime with the potential that localised increases in flow velocity could cause scour of the river bed and foreshore and could result in the mobilisation of suspended solids and sediment release (see para 2.3.4 to 2.3.8).
- 2.3.4 The ES Vol 18, Sections 5 and 14 gave a baseline sediment flux for the tidal Thames of 40,000t per tide. The sediment flux of 40,000 t per tide is most directly relevant for the lower estuary including the easternmost sites within the project. The document attached in Appendix D "Sediment Fluxes in the Tidal Thames" provides further consideration of sediment levels within the upper estuary. This shows that at Vauxhall the average suspended sediment concentrations may vary from 60 – 140 mg/l giving an average total sediment flux in the range 1100 – 2500 t per tidal phase. These volumes provide a better indication of the sediment flux currently present at the BBF site.
- 2.3.5 This additional sediment from BBF is a small increase in the total sediment flux currently in the tidal Thames, even allowing for the smaller sediment fluxes in the upper estuary. The potential effect of the release of sediment from the proposed development at BBF is therefore considered to be negligible.
- 2.3.6 The release of sediments from spilled dredgings and scour associated with the amended works at this site do not change the conclusion in the *ES* that there would be no significant adverse effects on water quality during the construction or operational phases from sediment release. Sediment release would have a negligible effect on water quality due to the high levels of sediment currently present in the tidal Thames. Therefore the proposed minor changes would not result in any material *changes* to the likely significant effects presented in the *ES*.

Aquatic ecology considerations

- 2.3.7 All effects would be as detailed in the ES or in the Proposed Minor Changes document. The receptors for aquatic ecology are the same as described in the ES since the total assessment area has not changed materially as a result of the proposed changes.
- 2.3.8 The area does not form spawning habitat for fish or habitat of specific importance for other aquatic ecology receptors. It is therefore not considered that mobilisation of sediment, or sediment loss arising from the updated dredging volumes or scour would have any additional effects over and above those already assessed in the ES.

Methods of disposal

- 2.3.9 Waste arising at the BBF site (including dredged materials) would be managed using the project-wide Waste Management Plan (WMP) and the Site Waste Management Plan (SWMP) (Doc ref: 6.2.03, Vol 3, Appendix A.3, Section 8.3, paras. 8.3.1 to 8.3.23, pp. 56 to 61), as detailed in our response to Q 17.1.
- 2.3.10 The project-wide WMP would be produced to ensure that a consistent approach to managing the excavated materials and waste at individual construction sites is carried out. It would be the central record of all waste management activities and would be used to manage and monitor project-wide performance.
- 2.3.11 The SWMP provides a framework for managing and documenting the excavated material and waste that would be generated by the individual site and would:
- a) set out how the excavated material and waste streams (using the [European Waste Catalogue](#) codes) would be managed at the site, taking account of the activities being undertaken;
 - b) be used to record the waste management activities on the site, including actual tonnages, waste carriers, specific facilities used; and
 - c) be used to measure progress against both the project-wide commitments and the contractual requirements.
- 2.3.12 Templates for both the project-wide WMP and SWMP were included within the EM&W Strategy submitted as part of the application for development consent (Doc ref: 6.2.03, Vol 3, Appendix A.3, Annex E, paras. E.1.1 to E.2.1, pp. 123 to 155).
- 2.3.13 The EA in its relevant representations indicated that in its option, both the project-wide WMP and SWMP templates lacked sufficient detail. Following discussions with the EA, revised templates for the project-wide WMP and SWMPs have been developed and agreed with the EA (and included in our response to Q 17.1).

2.4 Paragraph 2.20 (x) – noise effects

2.20 (x) - at the Millennium Pier, significant noise effects would result to the City of London School from piling during a 2 month period (see 5.3.19 of the Proposed Minor Changes document). The effect is still assessed as 'low negative magnitude' but it is stated that measures proposed in the CoCP would effectively remove these effects. There is a need to demonstrate that any potential in combination effects of works at Chrysanthemum Pier are also accounted for;

2.4.1 Consideration has been given to potential in combination effects experienced by the City of London School arising from works being undertaken at the Chrysanthemum Pier and the proposed re-located Blackfriars Millennium Pier. The two worksites are some 500m apart and separated by Blackfriars Bridge (road) and the railway bridge serving Blackfriars Station, there is no direct line of sight between the two pier worksites.

2.4.2 The distance between the two worksites, the shielding offered by the two bridges and their uses as a busy road link and railway infrastructure mean that the worksites are effectively separated and there would be no in combination effects arising from works at the two sites.

In relation to any modifications to the parameters, controls and thresholds relating to piling and the control of noise and vibration, these are set out in the [minor changes application](#). Specific measures were added to the CoCP to control adverse noise effects on the City of London School arising from piling at the relocated Blackfriars Millennium Pier.

Appendices

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Appendix A: BBF Scoping Report

Please refer to APP26.02.11 : BBF Scoping Report

Appendix B: Scoping Responses

Please refer to APP26.02.12 : Scoping Responses

Appendix C: Blackfriars Bridge Foreshore vessels (Scour Report)

Please refer to APP26.02.13 : Blackfriars Bridge Foreshore vessels (Scour Report)

Appendix D: Sediment Fluxes in the Tidal Thames

Please refer to APP26.02.10 : Sediment Fluxes in the Tidal Thames