

**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

Victoria Embankment Foreshore

Doc Ref: **APP26.02.01**

Folder **148**  
November 2013

**DCO-DT-APP-ZZZZZ-260201**

**Thames  
Tideway Tunnel**



Creating a cleaner, healthier River Thames



# Minor Changes to the Application for Development Consent: Victoria Embankment Foreshore

---

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

This page is intentionally blank

# Thames Tideway Tunnel

## Minor Changes to the Application for Development Consent: Victoria Embankment Foreshore

### Response to ExA's request in paragraphs 2.20 (i to vii) and 5.1 (iv) and (vi) (c) of the procedural decision dated 15 October 2013

#### List of contents

	Page number
<b>1 Introduction.....</b>	<b>1</b>
1.1 Minor changes to the application for development consent.....	1
1.2 Accepted changes: Examining Authority request for additional information .....	1
1.3 Purpose of this report .....	3
1.4 Scoping .....	3
1.5 Structure of this Report.....	1
<b>2 Response to the ExA's request .....</b>	<b>2</b>
2.1 Introduction .....	2
2.2 Paragraph 2.20 (i) – permanent fixings .....	2
2.3 Paragraph 2.20 (ii) – sheet piling and dredging close to the river wall .....	6
2.4 Paragraph 2.20 (iii) – vibro piling .....	7
Paragraph 2.20 (.....	9
2.5 iv) and paragraph 5.1 (vi) (c) – dredging and scour impacts .....	9
2.6 Paragraph 2.20 (v) – ecology and compensation .....	14
2.7 Paragraph 2.20 (vi) – methods of disposal .....	14
2.8 Paragraph 2.20 (vii) – noise effects .....	15
<b>Appendices.....</b>	<b>16</b>
<b>Appendix A : VEF Scoping Report .....</b>	<b>18</b>
<b>Appendix B : Scoping Responses .....</b>	<b>19</b>
<b>Appendix C : Victoria Embankment Foreshore vessels (Scour Report) .....</b>	<b>20</b>
<b>Appendix D : Sediment Fluxes in the Tidal Thames.....</b>	<b>21</b>



## 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 Victoria Embankment Foreshore (VEF). 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](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 15<sup>th</sup> October 2013, the ExA made a request at paragraph 5.1 (iv) and (vi) (c) for further information (detailed at paragraph 2.20 (i to vii)):

'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:...*

*Victoria Embankment Foreshore*

*i) any permanent fixings into listed assets and any new visual features such as canopies;*

- ii) *sheet piling and dredging to create berthing pockets will be close to the listed river wall;*
- iii) *vibro piling is proposed for installation of the sheet piles (5.2.8 of Proposed Minor Changes document) but it is also noted at 5.2.5, e, of the ES, Volume 17, that vibro piling will be used 'where technically feasible'. Any potential parameters, controls and thresholds will need to be established;*
- iv) *dredging and scour impacts on heritage assets including the listed Embankment. There will be a need to establish protection parameters;*
- v) *it is noted that the impact of the amendments in terms of ecology, and any relevant compensation, has been made the subject of an independently chaired working group (4.7.3 of Proposed Minor Changes document). The ExA wish to be kept advised of the findings of the working group and any mitigation to be secured through the DCO or other means;*
- vi) *the additional dredging (4,750m<sup>3</sup>) to create berthing pockets would result in additional arisings, but no assessment has been given of the additional trips needed to dispose of such waste, assuming that it will be taken off site. (See also section 6.13 of the Proposed Minor Changes document - no waste management issues are thought to arise.) Confirmation of the method of disposal is therefore required;*
- vii) *there would be additional noise impact to the residential receptor at Whitehall Court, resulting in an exceedance of the ABC criterion threshold under BS5228, but the assessment provided states that this will not be significant on the basis that the internal noise level was also estimated and this would not exceed the relevant criteria set out in BS8233. This needs to be taken into account in the Applicant's responses to the ExA's first written noise questions<sup>8</sup>.*

[Footnote 8 is as follows " The Infrastructure Planning (Examination Procedure) Rules 2010 – Rule 8 Application by Thames Water Utilities Limited for the Thames Tideway Tunnel Examination Timetable and Procedure, letter and annexes dated 26 September 2013".]

1.2.2 Paragraph 5.1 (vi) (c) required that the assessment to be provided further to paragraph (iv) be scoped with the Environment Agency, English Heritage, 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 (i to vii) of the procedural decision relating to the accepted changes at the **Victoria Embankment Foreshore** (VEF) 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-VCTEF-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:...*

*vi) in relation to the proposed amendments at Victoria Embankment Foreshore:...*

*c) provide parameters and control mechanisms for an assessment of the potential effects of the additional piling and dredging, scour and any consequential waste and transportation arising and confirm that this has been scoped with the Environment Agency, English Heritage, the local planning authority, the Port of London Authority and Transport for London as appropriate.”*

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

- 1.4.2 In order to scope the assessment with these bodies, the scoping report was submitted by email to these bodies on Monday 21<sup>st</sup> October, with a request that scoping comments be provided no later than Monday 28<sup>th</sup> 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
Environment Agency	<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>	
English Heritage	No response received	
Westminster City Council (WCC)	<p><i>“In order to fully assess the implications of these proposals Thames Water need to quantify the impacts and provide a full environmental assessment of the impacts of both the temporary and permanent relocation of the Vessel, specifically with regard to the proposed minor changes, within the context of those changes and not in the context of the whole work site, with regard to the newly proposed river wall connections, brow canopy, sheet piling and dredging of the new mooring on:</i></p> <ul style="list-style-type: none"> <li><i>• The listed Embankment Wall</i></li> </ul>	<p>We do not agree with WCC that a “full environmental assessment of the impacts” is required. An EIA has already been undertaken and these items are relatively minor, unlikely to give rise to significant effects and would not change the conclusions of the original assessment. Notwithstanding this, additional assessment work has been undertaken in accordance with the ExA request and this is presented in this report. The information presented is commensurate with the existing</p>

Organisation	Comments	TWUL Response
<p>Westminster City Council (WCC)</p>	<ul style="list-style-type: none"> <li>• <i>The Whitehall Conservation Area</i></li> <li>• <i>The RAF memorial, and</i></li> <li>• <i>Views”</i></li> </ul> <p><i>“Given that the proposals for Victoria Embankment Foreshore include a significant incursion into the listed flood defence, and the fixing and connecting of the access brow to the river wall, there will be significant negative impacts on the integrity of the flood wall and high value heritage significance. The assessment should include:</i></p> <p><i>a) Flood Risk Assessment – breach analysis for the proposed river wall connections</i></p>	<p>assessment in relation to the determination of likely significant effects. If new or impacts of a larger magnitude are identified these have been assessed by technical specialists as appropriate.</p> <p>The anchors do not penetrate the granite so should have no impact on the river walls / flood defences. The anchors proposed are similar to the existing so there is no impact on breach risk.</p> <p>In relation to the four specific bullets:</p> <p>a) Breach analysis has not been carried out for any sites within the project as the project is committed to maintaining statutory flood defence levels. With this mitigation approach in place, there would be no change in flood risk during construction or operation of the project in relation to the proposed changes at the Victoria Embankment site. It is considered that the likelihood of a breach of flood defences occurring in this location would not be increased and as a result, further breach modeling would not be required. The Westminster Strategic Flood Risk Assessment (SFRA) already includes details in relation to flood hazard should a breach occur in this location,</p>

Organisation	Comments	TWUL Response
<p>Westminster City Council (WCC)</p>	<p>b) <i>Scour – short, medium and long term impacts of changes in sediment and hydrodynamics at the location, in particular, the potential for increased accretion and possible permanent impacts, the frequency of dredging required to maintain the foreshore level for temporary and permanent works</i></p> <p>c) <i>Heritage – Any works at Victoria Embankment Foreshore will have a permanent significant major impact on the listed river wall and the historic setting, a quantitative assessment of the loss of significant heritage asset value of the Embankment Wall, RAF memorial and Whitehall Conservation should be undertaken.</i></p> <p>d) <i>Assessment of impacts of access structure landside ramp and associated step access</i></p>	<p>and hence provides sufficient information with respect to a residual flood risk to land which is defended by the assets in question. We do not propose to undertake breach analysis for this site.</p> <p>b) Scour in relation to the updated design at this site has been assessed by HR Wallingford by comparison with results provided in the detailed scour studies (100-RG-MDL-WALL-0036_AA). The report was appended to the scoping report (as report 100-RG-MDL-WALLI-0047_AB) and concluded that there was no significant change likely in predicted scour associated with the changed layout. Accretion is predicted adjacent to the wall but this would not adversely impact the wall.</p> <p>c) We believe that the Heritage assessment contained within this report fulfils the suggested scope, albeit that (as with the existing ES) this uses professional judgement and a qualitative approach (rather than a quantitative approach)</p> <p>d) We have undertaken an assessment of the impact on the footpath and pedestrian flows and believe that sufficient footpath width will be retained to support existing flows and that there</p>

Organisation	Comments	TWUL Response
Westminster City Council (WCC)	<i>points on the pedestrian movement and access on the public footpath”</i>	would be no significant effects on pedestrians. This assessment can be provided to the ExA if they believe it would be useful.
	<i>“In order to address this Thames are proposing to use sheet piling, which would have a significant impact on the historic setting of the listed Victoria Embankment. It would also require regular inspections and maintenance. Thames Water will need to assess the life expectancy and whole life costs of the sheet piling and an inspection regime, which would need to be put in place by the owner and maintainer of the sheet piling.”</i>	<p>The top of the sheet piles will be cut off at existing bed level and should have no visual impact.</p> <p>The design life for the temporary sheet piling would be 30 years and totally submerged and buried sheet piles have a very small corrosion rate. The piles would be designed with sufficient corrosion allowance to prevent the need for any maintenance over their design life.</p> <p>The design of the permanent sheet piling would include sacrificial anodes with a design life of 50 years, after which the anodes would be replaced. It is anticipated that inspections would be carried out every 25 years. Permanent sheet piling would also be totally submerged.</p>
	<i>“It is also proposed that the river will have to be dredged to maintain a ‘safe pocket’ for the Tattershall Castle to prevent it from grounding. Thames should specify the frequency of such dredging activity and show that the river hydrology, rate of silt build up, impacts on sheet piling as a result of dredging operations has been assessed</i>	There is unlikely to be the need for any maintenance dredging during the design life. No accretion under the moored vessels is predicted. This is covered further in Appendix C.

Organisation	Comments	TWUL Response
Westminster City Council (WCC)	<i>and mitigated for in this location taking account of the proposed construction of works in order to determine the frequency of dredging.”</i>	
	<i>“The proposal to connect the walkway into the Grade II listed river wall structure is causing serious concerns. The forces likely to be imparted into the river wall from the connection of the walkway, particularly horizontal forces from tidal movements, passing vessels and the Tattershall Castle need to be understood and the ability of the wall to withstand all forces (existing and predicted) will have to be assessed.”</i>	<p>It should be noted that the only loads on the wall would be those from the brow as the Tattershall Castle would be separately moored on retention piles.</p> <p>The proposed wall fixings would be similar to the existing ones which have not shown any signs of distress.</p> <p>Notwithstanding the above, an assessment of the overall impacts of the proposed walkway upon the stability of existing wall would be carried out at the detailed design stage.</p>
	<i>“The river wall has a vertical post tension system installed within it. The post-tensioned bars were installed in advance of the Thames Barrier becoming operational to strengthen the wall against very high tides, we seek assurance that the post tensioning system has been taken account of in any assessment and will not be compromised as a result of the proposed temporary and permanent re-location of the Tattershall Castle.”</i>	<p>The detailed design would take the existing post-tensioned bars into account and ensure that any new anchors for the access brows is designed to avoid said bars.</p>
	<i>“The temporary mooring of the Tattershall Castle directly into the river wall, will result in scars in the river wall, which will need to be made good in accordance with the Draft DCO requirement. The</i>	<p>Any grout used to fill holes could be just as strong as the parent material and so the structural integrity of the wall should not be compromised. Repairs using resin glued</p>

Organisation	Comments	TWUL Response
<p>Westminster City Council (WCC)</p>	<p><i>City Council is concerned that any repairs to the wall will introduce an inherent weakness in the wall at this location, the potential for this will need to be quantified.”</i></p>	<p>granite plugs would be as strong as the parent material and look similar.</p>
	<p><i>“The potential for scour of the flood defences and bridges and structures as a result of the proposed temporary and permanent works has been modelled ( Thames Tideway Tunnel: Victoria Embankment Foreshore vessel relocation#100-RG-MDL-WALLI-0047_AB). The model shows that some cross flows at the temporary re-location site for the Tattershall Castle have been identified. Thames will need to be quantified for the proposed mooring designs.</i></p> <p><i>In the permanent relocation site for the vessel the reduction in flow of current of between 0.5m/s and 0.75m/s is predicted along the north bank between Westminster and Hungerford Bridges. This reduction is sufficient to allow the deposition of clays, silts and fine sands in the vicinity of the site and HR Wallingford state the need for monitoring in the early stage of the permanent works. This suggests that the risk on the impacts of the accretion at the site is unknown. Given that the Victoria Embankment Flood Defence is also a grade II* listed structure, it would mean that any unforeseen negative impacts would be irreversible on the significant heritage value of this asset. The needs to be assessed and quantified for fully understand the implications of the proposed minor</i></p>	<p>Cross flows would be considered in the detailed design of the retention structures.</p> <p>As explained in para 2.5.21, the additional sediment from VEF is a small increase in the total sediment flux currently in the tidal Thames. The potential effect of the release of sediment from the proposed development at VEF is therefore considered to be negligible.</p> <p>The proposed monitoring strategy has been developed in consultation with the EA, the PLA and the MMO as a way of confirming the modeling and analysis undertaken in a dynamic and complex environment and can be regarded as best practice for an engineering activity of the type proposed.</p>



Organisation	Comments	TWUL Response
	<i>changes at Victoria Embankment Foreshore.”</i>	It is considered to be unlikely that any accretion along the toe of the river wall (if it occurs) would cause any stability issues.
<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 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</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 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 VEF has already been undertaken and was appended to the scoping report (email to J Trimmer, PLA on 21<sup>st</sup> October). As stated in the scoping report at 4.2.1, we do not propose any further work on scour extent.</p>

Organisation	Comments	TWUL Response
	<i>assessment as to the necessity of this element.”</i>	
Transport for London	<p>No specific comments on the scoping report were received from TfL by deadline although TfL indicated that in this event, their emailed comments of 12<sup>th</sup> August (in relation to the proposed changes) would stand. These comments in relation to VEF are as follows:</p> <p><i>“TfL does 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>	No comment



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: Scoping Report for VEF
  - Appendix B: Scoping Responses
  - Appendix C: Victoria Embankment 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 21<sup>st</sup> 2013) 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 (i to vii). Following these additional assessments, responses to paragraph 2.20 (i to vii), in relation to possible impacts, are provided in the sections below.

2.1.2 Given that both dredging and scour have the potential to impact upon the flood defence function of the river wall, irrespective of its historic value, consideration of flood defence impacts are considered in the most appropriate sections below and linked to consideration of the historic environment as appropriate. 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 2.5.

### 2.2 Paragraph 2.20 (i) – permanent fixings

*2.20 (i) - any permanent fixings into listed assets and any new visual features such as canopies;*

2.2.1 Additional information is provided first in relation to the permanent fixings into the listed asset, and the impacts of this. The impact of any new visual features is then addressed.

#### Permanent fixings to listed assets

2.2.2 The Proposed Minor Changes to the Application: Victoria Embankment Foreshore submitted to PINS on 23 September 2013 described how the gangways (access brows) for the permanent and temporary mooring of the Tattershall Castle would be fixed directly to the river wall. It was stated that the temporary fixings would be carefully removed and the resulting scars made good in accordance with the Draft DCO Requirement to restore the fabric of the listed Victoria Embankment wall.

2.2.3 Further information on how the mooring fixings would be attached to the Grade II listed river wall, is provided as follows:

- a. we would use similar fixings as the existing to fix the access brows to the river wall i.e. fabricated steel and galvanised brackets formed from rectangular hollow sections attached to mild steel galvanised wall plates. The wall plates would be bolted to the existing wall using stainless steel rods with a total length of 290mm which would be resin anchored into the wall with approximately 215mm embedment.
- b. the holes left by removing the existing bolted fixings and the temporary fixings at the end of construction would be repaired by inserting a granite plug into the hole forming a tight joint. It is intended that spare weathered stones removed during the main works (in order to

construct the permanent foreshore structure) would be used to core out plugs which would then closely match the existing stone. The works would be undertaken by a stone mason.

- 2.2.4 It should be noted that we have considered alternatives to temporarily fixing the moorings to the listed embankment wall. The design team explored a “reversible” solution, by temporarily removing the parapet stones around the proposed position of the access brows, followed by placing a separating membrane and a cast concrete plinth onto the Thames Path, onto which the access brows would bear directly. An examination of the stones found that they are post-tensioned with vertical rods making removal difficult. It is also apparent that the walls have very tight joints and the act of physically removing them from the wall has the potential to damage the stones to be removed and those around them, particularly given the presence of the rods. It was concluded that this approach would pose a greater risk to the listed structure than a simple bolted connection.

**Figure 2.1: Example of stone plug - St. Aubin’s Harbour**



- 2.2.5 In terms of the impact of fixing the temporary and permanent brows to the listed river wall, and repairing the location of the current fixings which would be vacated by the relocation of the Tattershall Castle, it is acknowledged that this would lead to some impact on the historic fabric of the river wall. This would be minor in magnitude due to the localised and limited extent of the works, the use of fixings identical to the current fixings, and the careful repair of the fixings when removed. It would also be minor in relation to the other work on the river wall proposed at this location and assessed in the ES, i.e. the permanent removal of a stretch of the listed river wall for the creation of the foreshore structure and cutting

slots for the cofferdams. The overall impact of these works was predicted in the ES to be major adverse, with standing structure recording proposed as mitigation to achieve preservation by record, resulting in a moderate adverse residual effect.

2.2.6 The amendments to the mooring arrangements in relation to the overall works proposed to the riverwall are therefore minor and not significant and would not change the findings of the ES. The mitigation outlined in the ES would stand (i.e. a photographic record of the section of the wall affected by changes to the fabric and appearance of the wall).

2.2.7 The *Heritage Statement* similarly assessed the effects arising from the permanent as well as the temporary removal of sections of the listed wall and the works involved in the creation of the foreshore structure, such as cutting slots for the cofferdams, the presence of sheet piled cofferdams and the temporary relocation of the Tattershall Castle (proposals assessed are set out in *Heritage Statement*, Doc ref: 5.3 Appendix H, Paras H.4.9 to H.4.14). The additional intrusive fixings into the stonework to fix two gangways to provide access to the Tattershall Castle, instead of a single longer access gangway not directly fixed to the river wall would involve localised drilling and refilling of the holes with tight stone plugs of the same stone from the same wall after removal, as set out in para 2.2.3 above. There is evidence of this approach to making good, having been used historically elsewhere on the Embankment wall and in many other listed stone walls in the area. The fixings and the stone plugs used for making good would be on the river face of the wall, rather than on the landward side, beneath the coping, and would therefore not be visible from the embankment itself. After the relocation of the ship from its temporary location the plugs would not be visible from a distance, and there would be no close-up permanent viewing points. This would represent a very small change in relation to the more major localised works being undertaken to create the foreshore structure on the river wall and the overall conclusions of the *Heritage Statement* assessment would remain unchanged with these minor alterations. The response to the ExA's question Q8.11 sets out the reasons why the degree of harm would be less than substantial, with the minor changes included within the application.

### Visual features

2.2.8 The assessment for townscape and visual effects can be found in ES Vol 17, Section 11. The proposed changes to the scheme that could potentially result in changes to the assumptions underpinning the assessment of effects on townscape character and visual receptors in the ES comprise:

- a. a new arrangement of temporary access ramps during construction, slightly closer to the embankment wall, comprising two shorter and wider gangways rather than the single access over the river wall with a zig zag gangway;
- b. a new arrangement of permanent access ramps during operation, also comprising two gangways instead of the single zig zag arrangement.

- c. canopies would only be provided during both the temporary and permanent access arrangements, where canopies are already a feature of the existing gangways.
- 2.2.9 The full details of the townscape and visual assessment methodology are presented in ES Vol 2, Section 11. An assessment of effects of the amendments at Victoria Embankment Foreshore on townscape character and visual amenity is presented in paras 2.2.10 and 2.2.11 below.
- 2.2.10 As noted in the ES, the construction of the proposed development would give rise to significant adverse effects on townscape character areas (TCAs) and viewpoints focused predominantly along the river corridor. These effects arise largely from the large scale and long term construction activities within the temporary cofferdam around the construction of the shaft. This includes effects arising from the presence of the cofferdam itself, construction plant, site hoardings, stacked welfare facilities and intense construction activity. In this context, the temporary relocation of the mooring was considered to represent a barely perceptible change. The only viewpoint in which the temporary relocation of the moorings would be more evident than construction works at the main site is viewpoint 2.21 looking down Horse Guards Avenue. However, from this location, the moorings would be barely perceptible, with even the relocated Tattershall Castle vessel and any associated canopies (which would be provided only to match with existing facilities) largely obscured by the river wall and mature London plane trees along Embankment. Given that the mooring arrangements were considered to be a barely perceptible change in all instances in the ES, the minor adjustments to these would also be barely perceptible and would not be evident from any of the identified TCAs or visual receptors.
- 2.2.11 Similarly, in operation the ES identified adverse effects on TCAs and viewpoints arising from the introduction of the new foreshore structure into the river corridor. Effects were found to be negligible to minor adverse (i.e. not significant) due to the high quality design of the highly visible new structure. In this context, the permanent relocation of the Tattershall Castle vessel and associated moorings and access close to their current position was considered to be a barely perceptible change to the townscape or nature of views from receptors identified. The river edge here is already characterised by a number of permanent moorings, and the permanent relocation would be entirely in keeping with this. The minor changes to the permanent access arrangement would also be barely perceptible and not evident from any of the identified TCAs or visual receptors.
- 2.2.12 The proposed minor changes would therefore not result in any material changes to the likely significant effects presented in the ES.
- 2.2.13 The minor amendments would similarly not elevate the significance of effects in relation to the settings of the listed Victoria Embankment river wall and the RAF Memorial, or to the character or appearance of Whitehall Conservation Area above those identified in the ES and the *Heritage Statement*.



- 2.2.14 In relation to the setting of the Victoria Embankment river wall there is already an access gangway for the Tattershall Castle, which forms one of a small cluster of gangways close to Hungerford Bridge. The relocation of the Tattershall Castle would disipate this group further along the length of the section of the river wall nearest to the Hungerford Bridge. The main change would be the addition of an extra access gangway, one of which would have a canopy. The gangway and canopy would be visible temporarily above the wall's parapet along a small section of the listed building's approximately 1935m overall length. Such canopies are already, and have historically been, a feature of the Victoria Embankment for some years, and the addition of a further temporary canopied gangway would represent a small magnitude of change. There would be little change in setting as a result of the minor changes compared with the larger-scale changes, such as the cofferdams, cranes, hoardings and other temporary works that are assessed in the ES and *Heritage Statement*.
- 2.2.15 In relation to the setting of the RAF Memorial, the memorial is designed to be seen face on from the landward side. It is a focal point, a pause for contemplation and remembrance on the embankment. Its setting is dominated by the traffic and the monumental boulevard character of the embankment. The river and the south bank and their variety play little part in its setting, other than as part of its panoramic setting. The additional gangway and canopy would be visible in the setting, but would mainly add to the variety of, and play only a small part in the river views. It would therefore not significantly alter the contribution of the memorial's setting to its significance.
- 2.2.16 In relation to the Whitehall Conservation Area, the additional gangway and canopy would not introduce significant change to the character and appearance of the conservation area relative to that assessed in the ES and *Heritage Statement*. Although the gangway and canopy would be closer to the Ministry of Defence and other listed buildings, its distance from them, the intervening trees and the scale of the Victoria Embankment, would mean that it would little alter their settings and the character of the embankment.

### **2.3 Paragraph 2.20 (ii) – sheet piling and dredging close to the river wall**

*2.20 (ii) - sheet piling and dredging to create berthing pockets will be close to the listed river wall;*

#### **Need for piling and dredging**

- 2.3.1 There is a need to undertake an area of dredging in front of the listed river wall in order to ensure that the Tattershall Castle vessel would not bottom-out on the riverbed at low tide. This is particularly important due to the fabric of the vessel, which could be damaged if it were to bottom-out on gravels on the riverbed. Therefore it is proposed to create a dredged pocket to create a satisfactory berthing area. Dredging in front of the river wall could theoretically lead to instability of the river wall, should sediments

which provide support to the wall be removed. In order to avoid this, the dredged area would be bound by a length of sheet piles parallel to the river wall, to protect the stability of the wall.

### **Flood risk and flood defence asset considerations**

- 2.3.2 Section 2.5 below considers the impacts of dredging and scour in more detail. It concludes that there would be no change in the stability of the river wall in terms of its flood defence function from either scour or dredging and so no change in flood risk.

### **Historic environment considerations**

- 2.3.3 Given the conclusions on river wall stability (see 2.5 and para 2.3.2 above), in terms of the historic fabric of the Grade II listed river wall it is concluded that there would be no increased impact on the fabric of the river wall from structural movement over and above the minor adverse effect predicted in the ES as a result of ground movement from construction works. As noted in the ES, damage resulting from ground movement would be repaired using appropriate conservation techniques, resulting in a negligible residual effect.
- 2.3.4 The piling itself would be located approximately 10m in front of the river wall, and would therefore have no direct physical impact on the fabric of the wall. The activity of piling would be controlled via measures in the CoCP to protect the listed structure. The contractor would be required to prepare a Heritage Management Plan which would include details of measures for protecting listed structures, as well as controls to be put in place to protect heritage assets adjacent to the construction works.

## **2.4 Paragraph 2.20 (iii) – vibro piling**

*2.20 (iii) - vibro piling is proposed for installation of the sheet piles (5.2.8 of Proposed Minor Changes document) but it is also noted at 5.2.5, e, of the ES, Volume 17, that vibro piling will be used 'where technically feasible'. Any potential parameters, controls and thresholds will need to be established;*

- 2.4.1 The responses to questions 11.23 and 11.25 of the ExA's first written questions are relevant here. These set out the process by which the need and technical feasibility of using low noise/vibration cofferdam or pile/pier installation techniques have been examined, how it will be determined if they can be used and, if not, proposed mitigation measures.
- 2.4.2 As the design work has progressed, further analysis has been undertaken of the ground conditions for each of the foreshore sites where piling will be carried out. The findings of this analysis indicate that the depth of strata to which the sheet piles are to be driven for the construction of temporary cofferdams and/or other works is suited to either low noise or low vibration techniques. Therefore there is a greater degree of confidence that sheet piles can be driven using low noise techniques, and as such, the assumptions and predicted effects for the noise and vibration assessments for cofferdam construction, remain valid. In the case of

larger piles for piers and jetties, it is envisaged that low noise/vibration methods will be used where technically feasible, subject to ground conditions, and ratified by the contractor. The revised CoCP Part A (Doc ref: 9.21.03), paras. 6.4.10 to 6.4.14 places responsibility on the contractor to use Best Practicable Means (BPM) in establishing the criteria, controls and working methods to limit the effects of vibration on people, buildings and sensitive equipment. The requirement to undertake vibration predictions would form the basis of the contractor's application to the relevant local authority for prior consent under Section 61 of the Control of Pollution Act 1974.

- 2.4.3 The process to ensure use of appropriate construction methods can be summarised as follows:
- a) contractor assesses the ground conditions, methodologies, proximity to sensitive receptor in selecting the most appropriate construction methodology for the works including piling techniques (this a requirement of the Code of Construction Practice Part A)
  - b) contractor is advised of specific locations which require protection from piling activities at particular sites through any additional noise and vibration control measures in the site-specific Part B of the CoCP.
  - c) contractor prepares method statements and section 61 application and this needs to include Best Practical Means to control noise and vibration impacts particularly in close proximity to sensitive receptors
  - d) method statement review process by the Employer's Project Manager who accepts methodology as meeting requirements
  - e) as required in the CoCP Part A, the Control of Pollution Act (1974) Section 61 process is followed including submission of methods and vibration assessments. The Local Planning Authority's Environmental Health Officer reviews and approves Section 61 application
  - f) where residual effects are still predicted, these will be managed locally through liaison, notification and compensation procedures. The details of the contractor's community liaison plan are contained in Section 3 of the CoCP Part A. The duration of any residual effect will depend on the period of work in close proximity to the property and the use of the property.
- 2.4.4 For the Section 61 consent, the contractor would be required to include details on the method for piling, incorporating BPM and specifying the type of piling technique proposed, justification for this technique and mitigation measures proposed. Under the contract the contractor will be required to produce detailed methods for works that include piling activities such as cofferdam construction. The method statement would be submitted, and subject to the approval of the Project Manager in consultation with the Environment Agency (see the revised CoCP Part A (Doc ref: 9.21.03) para. 6.4.4, p. 38).
- 2.4.5 Through this process, due consideration can be given to the method of piling to be used and relevant controls, parameters and thresholds.

## 2.5 Paragraph 2.20 (iv) and paragraph 5.1 (vi) (c) – dredging and scour impacts

*2.20 (iv) - dredging and scour impacts on heritage assets including the listed Embankment. There will be a need to establish protection parameters;*

*Also at 5.1 (vi) c) - provide parameters and control mechanisms for an assessment of the potential effects of the additional piling and dredging, scour..*

### Dredging – background

2.5.1 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 Tattershall Castle to provide the vessel with sufficient under keel clearance at all states of the tide. Following the relocation of the Tattershall Castle to the permanent mooring location, the temporary dredged pocket would be infilled in order to prevent the retained foreshore from collapsing and compromising the river wall, and the associated sheet piling removed. The quantity of additional dredging and associated sheet piling is as follows:*

- i approximately 750m<sup>3</sup> of dredging at the temporary location and 4,000m<sup>3</sup> of dredging at the permanent mooring location*
- ii approximately 50m of sheet piling at the temporary location and 100m of sheet piling at the permanent mooring location”*

2.5.2 It should be noted that the dredged volumes listed above were based on an initial conservative estimate and are now superseded. Detailed calculations have been undertaken to estimate the likely volumes of proposed dredging at each site and across the project to support our response to the ExA first written questions. These estimates and how they have been calculated have been provided in full within the assessment provided to the ExA on 4<sup>th</sup> November (see our response to Q3.8 and Q17.1). The estimated volume of dredged material arising at the VEF worksite is 3,100m<sup>3</sup> (see Table 2.1 of Q.3.8), which accounts for approximately 13% of the total volume of dredged material arising from the project (ie, 23,200 m<sup>3</sup>).

### Historic environment considerations in relation to dredging

2.5.3 In terms of impacts of dredging on archaeology, it is probable that all alluvial deposits and any archaeological remains in the channel beside the river wall have already been removed by past dredging and water action. Although there is a generally low potential for remains, the dredging required for the temporary and permanent locations for the vessel would entirely remove any remains present. It is predicted that any assets present would be of low asset significance, and the adverse environmental

effects would be minor (i.e. not significant). Dredging would have a high magnitude of impact on the following assets:

- a. There is a moderate potential for palaeoenvironmental remains associated with the past environment of the river. These remains would be of low asset significance and their removal would reduce their significance to negligible and comprise a minor adverse effect.
- b. There is low potential for isolated prehistoric finds of low asset significance. Removal of such remains would reduce their significance to negligible and constitute a minor adverse effect.
- c. There is a low potential for isolated Roman artefacts of low asset significance. Removal of such remains would reduce their significance to negligible and constitute a minor adverse effect.
- d. There is a low potential for early medieval artefacts of low asset significance. Removal of such remains would reduce their significance to negligible and comprise a minor adverse effect.
- e. There is a low potential for later medieval artefacts of low asset significance. Removal of such remains would reduce their significance to negligible and comprise a minor adverse effect.
- f. There is a low potential for post-medieval remains, such as remains of jetties or barge beds and piled structures, which would be of low asset significance. The removal of such remains would reduce their significance to negligible and comprise a minor adverse effect.

2.5.4 Mitigation would be in the form of an archaeological watching brief during the dredging. This would entail monitoring a sonar screen of the deposits being dredged along with visual monitoring of arisings, noting the location from which any artefacts or other remains of heritage interest have been dredged. A sample would be selected for further analysis. An archaeological watching brief report summarising the findings at the dredge location would be deposited with the Greater London Historic Environment Record and the National Record of the Historic Environment. With this measure in place, the residual effects would be negligible.

#### **Flood risk considerations in relation to dredging**

2.5.5 As already explained at paragraph 2.3.1, there is a need to undertake an area of dredging in front of the listed river wall in order to ensure that the Tattershall Castle vessel would not bottom-out on the riverbed at low tide. Dredging in front of the river wall could theoretically lead to instability of the river wall, should sediments which provide support to the wall be removed. The dredged area in front of the river wall would be bound by a length of sheet piles parallel to the river wall, to protect the stability of the wall.

2.5.6 The piling itself would be located approximately 10m in front of the river wall, and would therefore have no direct physical impact on the fabric of the wall. The activity of piling would be controlled via the measures set out in the *Code of Construction Practice*' (see [Revised Code of Construction Practice \(CoCP\) Part A](#) (September 2013), Doc Ref: 9.21.01). Furthermore, working method statements to cover all in channel

- and bank side works would be developed by the contractor at the detailed design stage, in consultation with the EA. No additional impacts on existing flood defence assets are therefore predicted to occur as a result of the proposed dredging and piling activities.
- 2.5.7 In its scoping response dated 25<sup>th</sup> 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 Interpretative Report, submitted to the Examining Authority on 26<sup>th</sup> 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.'*
- 2.5.8 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.

#### Scour - background

- 2.5.9 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: Victoria Embankment Foreshore vessels" and was issued by HRW to Thames Water on 7<sup>th</sup> October 2013. The report was appended (see Appendix C) to the scoping report issued to the statutory consultees on 21<sup>st</sup> October 2013.
- 2.5.10 The report concludes that: *'The implications of the amendments for the hydrodynamic and sedimentary regime in the area have been assessed. The conclusion of the study is that the existing predictions of hydrodynamic effects and scour associated with the works [i.e. the effects presented in the Environmental Statement] are considered broadly insensitive to the proposed change in the position of the Tattershall Castle'*.
- 2.5.11 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.

- 2.5.12 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 Representations<sup>i</sup>) 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).
- 2.5.13 In its scoping response dated 25<sup>th</sup> 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.

### Historic environment considerations in relation to scour

- 2.5.14 It is considered that the assessment of scour effects on archaeology presented in the ES remains extant. Para 7.5.9 of Vol 17 of the ES concludes that scour around temporary structures could constitute a high magnitude of impact upon any archaeological remains in the area of the scouring. However, as noted in the ES at Para 7.4.25 of Vol 17, archaeological survival potential is anticipated to be generally low at this location as it is probable that alluvial deposits and any archaeological remains in the channel beside the river wall have already been removed by past dredging and water action. The predicted effects would be minor and therefore not significant. Effects would be mitigated through a programme of monitoring and the provision of scour protection if required, as detailed in the CoCP Part A (Section 12) and paragraph 2.5.10 above.

### Flood risk considerations in relation to scour

- 2.5.15 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 23<sup>rd</sup> September 2013.
- 2.5.16 The conclusions of the HRW report ("Thames Tideway Tunnels: Victoria Embankment Foreshore vessels") is that *'the existing predictions of hydrodynamic effects and scour associated with the works [i.e. the effects presented in the Environmental Statement] are considered broadly*

---

<sup>i</sup> Environment Agency letter, dated 24 May 2013, Ref: TTT\_RReps\_240513

*insensitive to the proposed change in the position of the Tattershall Castle.* No additional scour impacts on existing flood defence assets are therefore predicted to occur as a result of the proposed alterations.

#### Sediment release from dredging and scour

- 2.5.17 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 VEF can be found in ES Vol 17, 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 dredging and associated piling.
- 2.5.18 The total volume of sediment released to the tidal Thames by the proposed dredging and associated piling activity at VEF has been estimated to be 3,100 m<sup>3</sup> (see para 2.5.1 and 2.5.2). 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 15.5m<sup>3</sup> (assuming an in situ density of 2 tonnes per m<sup>3</sup>) of sediment being released during the dredging operation.
- 2.5.19 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 2.5.9 to 2.5.13).
- 2.5.20 The ES Vol 17, 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 the at VEF site.
- 2.5.21 This additional sediment from VEF 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 VEF is therefore considered to be negligible.
- 2.5.22 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

- 2.5.23 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.
- 2.5.24 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.

## 2.6 Paragraph 2.20 (v) – ecology and compensation

*2.20 (v) - it is noted that the impact of the amendments in terms of ecology, and any relevant compensation, has been made the subject of an independently chaired working group (4.7.3 of Proposed Minor Changes document). The ExA wish to be kept advised of the findings of the working group and any mitigation to be secured through the DCO or other means;*

- 2.6.1 Regarding the biodiversity compensation working group, the inaugural meeting for this was held on 23 July 2013 and hence after the application for consent was submitted. Independently chaired by Chris Baines from the Thames Estuary Partnership, the purpose of this Working Group is to identify measures to compensate for the permanent loss of 1.2 hectares of estuarine habitat likely to result from the Thames Tideway Tunnel. Progress made by the Working Group can be provided to the ExA at any time.

## 2.7 Paragraph 2.20 (vi) – methods of disposal

*2.20 (vi) - the additional dredging (4,750m<sup>3</sup>) to create berthing pockets would result in additional arisings, but no assessment has been given of the additional trips needed to dispose of such waste, assuming that it will be taken off site. (See also section 6.13 of the Proposed Minor Changes document - no waste management issues are thought to arise.) Confirmation of the method of disposal is therefore required;*

- 2.7.1 Waste arising at the VEF 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.
- 2.7.2 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.

- 2.7.3 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.
- 2.7.4 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).
- 2.7.5 The EA in its relevant representations indicated that in its opinion, 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 and the Statement of Common Ground with the EA).

## 2.8 Paragraph 2.20 (vii) – noise effects

*2.20 (vii) - there would be additional noise impact to the residential receptor at Whitehall Court, resulting in an exceedance of the ABC criterion threshold under BS5228, but the assessment provided states that this will not be significant on the basis that the internal noise level was also estimated and this would not exceed the relevant criteria set out in BS8233. This needs to be taken into account in the Applicant's responses to the ExA's first written noise questions<sup>8</sup>;*

- 2.8.1 The findings of the noise assessment for residential and non-residential receptors, incorporating any changes arising from the accepted changes, are summarised in the responses Q11.15 and Q11.16 of the ExA's first written questions.

## Appendices

### List of contents

**APP26.02.07 : VEF Scoping Report**

**APP26.02.08 : Scoping Responses**

**APP26.02.09 : Victoria Embankment Foreshore vessels (Scour Report)**

**APP26.02.10: Sediment Fluxes in the Tidal Thames**

This page is intentionally blank

## Appendix A: VEF Scoping Report

Please refer to APP26.02.07 : VEF Scoping Report

## Appendix B: Scoping Responses

Please refer to APP26.02.08 : Scoping Responses

## **Appendix C: Victoria Embankment Foreshore vessels (Scour Report)**

Please refer to APP26.02.09 : Victoria Embankment Foreshore vessels (Scour Report)

## **Appendix D: Sediment Fluxes in the Tidal Thames**

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