

SILVERTOWN TUNNEL

Volume 8

8.123 Comments on Deadline 6 Submissions

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Silvertown Tunnel

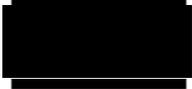
8.123 Comments on Deadline 6 Submissions

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The Infrastructure Planning (Applications: Prescribed Forms and Procedure)
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0	10/04/2017	David Rowe (TfL Lead Sponsor)		Submitted at Deadline 7

Contents

1.	APPLICANT'S COMMENTS ON DEADLINE 6 SUBMISSIONS	5
1.1	Introduction	5

1. APPLICANT’S COMMENTS ON DEADLINE 6 SUBMISSIONS

1.1 Introduction

1.1.1 The table in section 2 below provides the Applicant’s comments on interested parties’ submissions at Deadline 6. This is not intended to be a comprehensive list of all issues raised at Deadline 6, but rather the Applicant has identified where a matter has been raised for the first time by an interested party, where new evidence has been presented or where an issue has not already been addressed by the Applicant in earlier submissions.

Interested Party	Interested Party’s Comment (including reference)	TfL Comment
<p>AnSCO Arena (REP6-087) and Waterfront Limited Partnership (REP6-088)</p>	<p>No need to implement user charging after 7pm. This would undermine PO3, which concerns economic and population growth... Lack of substantive assessment undertaken by TfL to date. (Paragraph 5, bullet 1 and para 7)</p> <p>CPAP does not provide certainty on the user charges and so the impact on the O2 cannot be established. The proposals must not disadvantage Waterfront’s business. (Paragraph 5, bullet 2 and paragraph 6)</p>	<p>The Applicant has responded to the point on evening off-peak charges in Document 8.37. Part of the response (2.1.57-2.1.58) is copied below:</p> <p><i>As set out in Figure 7-8 of the Transport Assessment (APP-086), the Scheme will result in an increase in the number of vehicles travelling southbound across the River in the evening peak. Furthermore, the O2 Travel Plan 2012 sets out modal split targets and monitors against them. This shows the majority of visitors for events and other attractions travel by public transport. The step change in bus services facilitated by the Scheme will</i></p>

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		<p><i>therefore enable more people from across Newham, Greenwich, Lewisham and Tower Hamlets to access the O2 more quickly, and as passengers will avoid the user charge.</i></p> <p><i>Far from restricting the ability of people to access the Peninsula in the evening, the Scheme will therefore increase the number of people travelling south across the Thames and increase the potential market for the evening economy there.</i></p> <p>In summary, there is still a need to implement user charges (albeit at a lower level than during the peak) in order to manage demand. Users in this period will benefit from the time savings, journey time reliability and resilience arising from the Scheme; the user charges are an important means of controlling the environmental impacts of the tunnel; and user charges are required in order to pay for the Scheme. The Applicant has undertaken a comprehensive and robust assessment of the forecast effects of the Scheme (as set out in the ES (APP-031) and in the Outline Business Case (APP-100)). Furthermore, the Applicant has committed in CPAP (section 4.1) to undertake a re-assessment of the user charges prior to</p>

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		<p>Scheme opening; it must also consider the impacts of potential future variations of the charge on the achievement of the POs and other factors.</p> <p>It is also noted that after 10pm, when most return evening trips from the venue would be made, no user charges will apply.</p> <p>The continued achievement of the Project Objectives (POs) is a critical element in setting the user charges, as set out in Charging Policies and Procedures (REP6-060). There are seven POs in total, and in setting the charges TfL must consider the impacts on all the POs, and also on its network management duties and other relevant legislation. This is set out in Policies 9,11 and 12 and also in the User Charging Assessment Framework (UCAF) in Appendix A.</p> <p>There are three reasons that there is no conflict with the achievement of the POs arising as a result of the user charges. Firstly, it is not intended that any single PO be considered in isolation in the way that is suggested. Secondly, there are a number of metrics available (as shown in UCAF) which could measure the achievement of</p>

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		<p>PO3. Focusing purely on the economic impact on the O2 is not an appropriate measure of the user charges' overall performance in this regard. Thirdly, even if the previous two considerations did apply, it is not accepted by the Applicant that negative economic consequences will arise for the O2.</p> <p>The reasons for taking a flexible approach to user charges have been set out in section 3.7 of the Charging Statement (APP-097).</p> <p>The CPAP sets out the approach to setting the initial user charges (see Policy 9 and Policy 10) and making variations (Policy 12). An assessment against the POs will be undertaken in both scenarios.</p> <p>It should also be noted that Waterfront's comments pertain to the Assessed Case user charges. Based on current forecasts, the Applicant expects these to be applied on Scheme opening. However, and as set out in CPAP, there will be a refreshed assessment prior to Scheme opening in order to set the charges, decide local mitigations and set the opening bus network. In future the user charges will</p>

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		also be varied according to the procedures in CPAP.
Mr Darryl Chamberlain	<p>This submission draws the Examining Authority's attention to the Mayoral Decision made by the Mayor of London on 3 April 2017. It states that "the mayor is already acting as if it has been given permission to build the tunnel" and quotes from paragraph 1.2 of the report to the Mayor and the Executive Summary.</p>	<p>With reference to the representation made by Mr Darryl Chamberlain (IP SILV-430) at Deadline 6 the Applicant and GLA Land & Property would like to reassure the Examining Authority and Secretary of State that neither TfL or the GLA have pre-judged the outcome of the ongoing DCO process. The Applicant and GLA would wish to clarify that references in the Mayoral Decision paper entitled 'Thameside West – Preparing for development' (dated 3rd April 2017) to the Silvertown Tunnel scheme as 'recently confirmed' or similar are simply seeking to confirm its status as a NSIP with confirmed alignment and land acquisition proposals that are the subject of an ongoing DCO Examination and decision process. This can be more clearly understood in the context of the preceding sentence in paragraph 1.2 of the paper, which reads as follows:</p> <p><i>1.2 The area has been subject to a general safeguarding</i></p>

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		<p><i>direction for some years to allow for a potential new river crossing. This has now recently been confirmed via the Silvertown Tunnel Development</i></p> <p><i>Consent Order and there is a significant impact on the timing of the development of Thameside West as a result.</i></p> <p>The Applicant and GLA Land & Property trust that this clarifies this misunderstanding.</p> <p>There is no basis for suggesting that the Mayoral paper appended to Mr Chamberlain's submission shows the GLA or TfL somehow acting improperly as if development consent has already been granted for the Silvertown Tunnel. The Mayoral paper simply demonstrates GLA Land and Property taking appropriate steps in relation to the redevelopment of the Thameside West land by reference to the alignment of the Silvertown Tunnel as set out in the DCO application. The Applicant considers that these steps are entirely appropriate and are no different to an Applicant entering into negotiations with landowners to acquire land in advance of development consent being granted. Clearly, these arrangements are without prejudice to the outcome</p>

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		of the DCO application.
<p>Lichfields on behalf of U and I plc (REP6-016)</p>	<p><u>Design</u></p> <p>The submission by Lichfields on behalf of U+I raises issues in respect of pedestrian and cycle safety and bus stop provision.</p> <p><u>Hazardous Substances</u></p> <p>We request the Panel to recommend</p> <p>a) that the currently-proposed pre-occupation-based condition is not appropriate to create sufficient certainty to justify compulsory purchases or the substantial public expenditure</p> <p>b) that TfL be encouraged to work further with RBG and HSE to achieve satisfactory conditioning of the current HSC application to remove risk from Tunnel Avenue and the A102 approach roads – prior to any acquisition or construction</p>	<p><u>Design</u></p> <p>In response to the DL6 representation from Lichfields on behalf of U+I, the Applicant can confirm that:</p> <ul style="list-style-type: none"> • The Design Principles Design Guidance commit to a shared foot and cycle path on the west side of Tunnel Avenue of a minimum of 3m in width apart from a short pinch point at Brenntag where it would be 2.5m (Appendix C Design Guidance DG.TNAV.01) • The Design Principles Design Guidance show that this could result in a shared foot and cycle path of up to 6m in width (Appendix C Figure C2-13) • The Design Principles commit to not-precluding a south bound bus stop at a later date through either the design of the highway or the design of the Boord Street bridge. (Design Principle

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	<p>c) that alternatively TfL be encouraged to negotiate further with Brenntag to offer further restrictions on storage sufficient to remove that risk – or to include the necessary provisions in the approved DCO for compulsory acquisition of the necessary land and/or rights</p> <p>d) in the absence of any of the above, that any DCO approval shall be subject to the inclusion of an alternative second part of the relevant Grampian-style condition along the lines of the following basis:</p> <p><i>(b) TfL has submitted to the Secretary of State an assessment of whether opening the authorised development for public use and occupying the tunnel services building would increase the number of people at risk from existing hazards at the Brenntag Inorganic Chemicals Ltd site with the potential to impact on local populations, including loss of containment of hazardous substances and, on the basis of that risk assessment and following consultation with the Health and Safety Executive and the Hazardous</i></p>	<p>BRDFB.14 and Appendix C Design Guidance DG.TNAV.04)</p> <ul style="list-style-type: none"> • While additional illustrations are provided in the Design and Access Statement, all the above commitments are made in the Design Principles <p><u>Hazardous Substances</u></p> <p>The Applicant responds to these suggestions in turn:</p> <p>a) The condition is expressed in terms of pre-opening to enable sufficient time for the first limb to be utilised. This is because it is considered that the issue will be able to resolved through either the 2012 modification currently being considered by RBG, or, through the need for Brenntag to make an application to ‘continue’ their consent (in whichever form it may be at that time) prior to any change in control of any of their site pursuant to section 17 of the Planning (Hazardous Substances) Act 1990, and conditions that could be applied to that application; but that either may take some to resolve. In allowing these options to be</p>

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	<p><i>Substances Authority, the Secretary of State has confirmed further in writing that the compulsory purchase rights as granted by this Order may be exercised and that the works to construct Silvertown Tunnel and the tunnel services buildings at the South Portal comprised in Work No 12 may commence.</i></p>	<p>utilised, it is ensured that this issue will be able to go through the proper statutory processes.</p> <p>Furthermore, the second limb of the requirement does not limit the time at which the Applicant can submit its assessment of risks to the Secretary of State. As such, it would be in the Applicant's interest to do this as soon as possible to avoid abortive costs.</p> <p>b) The Applicant is already in discussions with RBG and Brenntag on this topic and to encourage the resolution of the 2012 application to vary the existing Hazardous Substances Consent, as set out in its update note at Deadline 5 (REP5-004). However, it is ultimately a decision for RBG as Hazardous Substances Authority.</p> <p>c) As the consent relates to the operations of Brenntag's site, ultimately it is within Brenntag's discretion whether to accept restrictions on storage, unless they are imposed through the statutory process. The Applicant's acquisition proposals at the Brenntag site relate only to land that is currently used as a car park by Brenntag. It would therefore not be possible to impose rights on that land which would achieve this goal. Furthermore, the Applicant is doubtful of the legality of such a</p>

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		<p>proposal.</p> <p>d) For the reasons given in (a) above, it is not considered that such a change is necessary.</p>
<p>London Borough of Tower Hamlets (REP6-027)</p>	<p>Para 2.3 (page 4)</p> <p>Finally, in order to ensure a long term commitment to buses, the Council also reiterated its previous request that the Silvertown Tunnel bus lane provisions set out in Schedule 11 (i.e. restricting general traffic from the inside lanes) should be made permanent.</p>	<p>At the ISH on the DCO on 29 March there was a discussion of Article 60 in the dDCO. The Applicant clarified that, if in future it wished to revoke the bus lane, it would be required to consult with relevant boroughs, as specified under Local Authorities' Traffic Orders (Procedure) (England and Wales) Regulations 1996.</p> <p>In response to LB Tower Hamlets' concerns, changes were made to Commitment 3 in the Bus Strategy submitted at DL6 (REP6-066). This stated that the bus lane would remain in place for the duration of the monitoring period (ie not less than three years after the Scheme opens for public use). The Applicant has now further strengthened this Commitment to state that the bus lane will be maintained to the extent that it is necessary or expedient to maintain the Project Objectives, and has also committed to a consultation with affected highway authorities prior to making any order (which would then be consulted on under</p>

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		<p>the Road Traffic Regulations Act 1984). These amendments have been made to Commitment 3 and the text at 2.2.7 in the DL7 version of the Bus Strategy.</p> <p>The Applicant expects the bus lane to be in operation for the long-term and cannot currently envisage a situation where it is not in place; however it is not considered appropriate to make the bus lane permanent because it is not possible to envisage all future circumstances. These amendments should provide further assurance, in the context of the other commitments in the Bus Strategy, of the Applicants' intention for the bus lane, and for cross-river bus services generally.</p>
<p>Silvertown Homes Limited (SHL) (REP6-003)</p>	<p>In submitting REP6-003, SHL proposed draft requirements for the Examining Authority's consideration, as follows:</p> <p>Proposed draft requirement 1 – Reuse of Spoil</p> <p style="padding-left: 40px;">TfL must procure the construction of a development platform on the Sites</p>	<p>The Applicant responds to the proposed requirements in turn, below.</p> <p>Proposed draft requirement 1 – Reuse of Spoil ('Requirement 1')</p> <p>For the reasons set out below, the Applicant does not accept Requirement 1.</p> <p>Requirement 1 would be:</p>

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	<p>using suitable spoil arising from and surplus to the authorised works carried out in the Silvertown area, subject to the respective owners of the Sites obtaining all necessary consents for said reuse of the spoil on the Sites. Such reuse must be carried out in accordance with the requirements and conditions of any planning permission granted by the relevant planning authority for such works.</p> <p>“Sites” means the Carlsberg-Tetley Site and the Diverse Ventures Site and the Thameside West Site.</p> <p>Proposed draft requirement 2 – Release of Temporarily Acquired Land</p> <p>TfL must, without prejudice to the provisions of Article 29, cease possession of all temporarily acquired land falling within the Carlsberg-Tetley</p>	<p>a) incompatible with the National Policy Statement for National Networks (NN NPS), which provides at paragraph 4.9 that <i>“The Examining Authority should only recommend, and the Secretary of State should only impose, requirements in relation to a development consent, that are necessary, relevant to planning, relevant to the development to be consented, enforceable, precise and reasonable in all other respects.”</i></p> <p>b) unacceptable in the context of the ‘six tests’ set out in paragraph 206 of the National Planning Policy Framework (‘NPPF’) and related Government Guidance on the use of planning conditions (6 March 2014) (see Paragraph: 004 Reference ID: 21a-004-20140306 and the related ‘key questions’ within that Guidance). The six tests in the NPPF are replicated in paragraph 4.9 of the NN NPS.</p> <p>Considering each of the six tests in turn:</p> <p>1) necessary:</p> <p>It would not be appropriate to refuse development</p>

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	<p>Site as soon as possible following completion of the authorised works specified in column (4) of Schedule 7 and in any event no later than three years after the date of the DCO. TfL must procure that its chosen contractor minimises as far as possible the extent of the land temporarily acquired in accordance with Article 29 on the Carlsberg-Tetley Site and Diverse Ventures Site with a view to preventing the temporary acquisition of any and all land falling within the Carlsberg-Tetley Site and Diverse Ventures Site.</p>	<p>consent for the Scheme in the absence of Requirement 1, therefore it follows that Requirement 1 is not needed to make the Applicant's Scheme acceptable in planning terms.</p> <p>Furthermore, in the context of the DCO as currently drafted, Requirement 1 is <u>not</u> necessary for the reasons set out in the Applicant's Deadline 6 submission REP6-077 (responding to SHL's Deadline 5 submission (REP5-032)).</p> <p>For details of those reasons, please refer to section 3 of REP6-077, which explains how the DCO as currently drafted already provides for the beneficial re-use of spoil materials in a manner which would include SHL's site(s) to the extent that it was technically feasible to do so through the proper application of the waste hierarchy.</p> <p>2) relevant to planning</p> <p>Requirement 1 is beyond the scope of the development consent to which it is proposed to be attached. Guidance on the use of planning conditions (as referenced above) advises that a</p>

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		<p>requirement must not be used to control matters that are subject to specific control elsewhere in planning legislation.</p> <p>As noted in the Applicant's Deadline 6 submission (REP6-077 – sections 2 and 5) SHL would need to secure separate and appropriate planning consents for the works to which any soil re-use was to contribute. Those works are not part of the Applicant's Scheme, for which development consent is now sought.</p> <p>3) relevant to the development to be consented</p> <p>Requirement 1 does not relate fairly or reasonably to the Applicant's Scheme in that it is not justified by the nature or impact of the Applicant's Scheme.</p> <p>SHL's site(s) would need to be prepared for development (pursuant to the Thameside West Masterplan) irrespective of whether or not the Applicants' Scheme was being brought forward first. The need for a development platform on SHL's site(s) does not arise as a consequence of the Applicant's Scheme; rather it relates to an</p>

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		<p>entirely separate project, as is noted in REP6-077 at paragraphs S.1.12 (7th bullet point), 3.1.5 and 4.4.8.</p> <p>This fact should also be noted in the context of the Guidance which advises that, “A [requirement] cannot be imposed in order to remedy a pre-existing problem or issue not created by the proposed development.”</p> <p>4) Enforceable</p> <p>The Applicant considers that it would not be practically possible to enforce Requirement 1, for the reasons set out in section 4 of REP6-077 which sets out the Applicant’s appraisal of SHL’s spoil re-use proposals (and perceived associated benefits) and explains how the assumptions (e.g. regarding quantities of available spoil) underlying those proposals are flawed and fail to take account of a number of factors, including some which are critical to the delivery of the Applicant’s Scheme, in both programming and financial terms.</p> <p>5) Precise</p> <p>Requirement 1 is not precise. It purports to impose</p>

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		<p>obligations on the Applicant the scope and nature of which cannot possibly be ascertained until such time as SHL has secured the separate consents necessary for the construction of its 'development platform'.</p> <p>Accordingly, Requirement 1 is imprecise because it does not (and for the reasons set out above, cannot) make it clear to the Applicant and others precisely what must be done to achieve compliance with its terms.</p> <p>The Guidance states that requirements "<i>that do not clearly state what is required and when must not be used.</i>"</p> <p style="text-align: center;">6) reasonable in all other respects</p> <p>Requirement 1 seeks to place unjustifiable and disproportionate burdens on the Applicant and therefore fails the test of reasonableness. The Applicant's Deadline 6 submission (REP6-077) explains (in sections 2, 3, 4 and 5) the many reasons why the obligations which SHL seeks to impose on the Applicant, through Requirement 1, are not reasonable.</p>

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		<p>Proposed draft requirement 2 – Release of Temporarily Acquired [sic] Land ('Requirement 2')</p> <p>For the reasons set out below, the Applicant does not accept Requirement 2.</p> <ul style="list-style-type: none"> a) Requirement 2 is unnecessary. As the Applicant has already set out in its Deadline 6 submission REP5-077 (at paragraphs S.1.23 and 6.2.2), it has always envisaged early release (i.e. release prior to the end of the construction period) of some of the land which is proposed to be subject to powers of temporary possession, in order to accommodate SHL's (and GLA Land and Property Limited's) development aspirations as far as possible. b) In addition, the Applicant will incentivise the efficient use of land occupied pursuant to powers of temporary possession, by charging its appointed contractor a rent for occupation. c) The Applicant has made its intentions in this regard clear in negotiations with SHL (and GLA Land and Property Limited) and therefore does not consider Requirement 2 to be necessary, proportionate or

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		<p>reasonable.</p> <p>d) On the latter point, the Applicant considers it is entirely unreasonable of SHL to seek Requirement 2 at this stage in the DCO Examination and application process, given that the Applicant's Scheme proposals on land to the north of the river Thames were developed precisely to accommodate SHL's predecessor's phasing proposals, as the chronology of engagement set out in section 2 of REP6-077 explains. It would be unfair and unreasonable for Requirement 2 to be imposed upon the Applicant's Scheme merely to accommodate SHL's recent radical and unilateral changes to its proposed development phasing strategy (see in particular paragraphs S.1.9, 2.2.1 (last bullet point) and 2.3.1 (second bullet point)).</p> <p>In conclusion, the Applicant resists the imposition of both Requirements 1 and 2 on the basis that they are unnecessary and unreasonable. If imposed, Requirement 1 in particular would constitute a significant change to the draft DCO, and would have significant detrimental effects</p>

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		<p>(as explained in paragraphs 2.4.5 and 2.4.6 of the Applicant's Deadline 6 submission (REP6-077)).</p> <p>The Applicant considers that ultimately, both the issue of spoil re-use and the issue of early land release are capable of resolution between the parties and it therefore seeks to sustain negotiations in order to achieve that aim. The Applicant believes that, in contrast with the consequences which would flow from the imposition of Requirement 1 and/or Requirement 2, a negotiated solution will provide the optimum outcome for all the parties involved.</p>
<p>LB Newham (REP-023)</p>	<p>Section 4 – User Charge Discounts</p> <p>The Applicant's initial offer of a 50% discount has been subsequently examined, both in subsequent discussions with the Host Boroughs and also by the questioning of the Examining Authority at the ISH on 28th March 2017. It is the Council's view that a flat rate 50% discount across all low income groups is insufficiently targeted at those in most need,</p>	<p>In response to LB Newham's request, the Applicant has amended Policy 6 of the Charging Policies and Procedures document to state that <i>'for the duration of the monitoring period, a discount of not less than 50% on the user charges will be available for eligible residents of host boroughs on a low income who register for an online account with TfL'</i>.</p> <p>This allows the Applicant to develop and implement a higher level of low income discount if the refreshed case identifies particular low income groups who are</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
	<p>and fails to offer an adequate discount for these lowest income groups. An alternative proposal was tabled by the Council at Deadline 5 suggesting a tiered discount scheme ranging from 50% up to 90% for those on the lowest incomes, which has verbally received favour by the Applicant. At the ISH on 28th March 2017, questioning from the Examining Panel revealed that the Applicant considered that a 90% discount for the very lowest income groups would have a negligible impact on both travel demand management or revenue objectives.</p> <p>Unfortunately, the Council had hoped to provide the Applicant with proposed qualification criteria in three or four tiers, corresponding to differing levels of discount ranging from 50% to 90%, with the estimates of numbers of Borough households qualifying in each tier, but this has not been possible in the limited time available. As a result, without the surety of knowing the numbers in each</p>	<p>disadvantaged by the user charge. This also allows the potential for a multi-tiered approach as suggested by LB Newham</p> <p>However, the Applicant does not believe that it is appropriate to specify in Policy 6 that the level of discount could be as high as 90%. This is because, although the likely traffic impact of a higher level of low-income discount could be relatively small (as a proportion of total traffic flow), the impacts have not been fully tested at this stage. Furthermore, there is no evidence that a much higher level of discount is required to mitigate impacts of the user charge on low income groups.</p> <p>The distribution of user benefits by income, originally set out for the Assessed Case in Table 3.7 of the Distributional Impacts Appraisal (APP-104) has been updated in the table below to reflect the Applicant's commitment to 20 cross-river buses per hour and the 50% discount on the user charge for low income groups. This shows that, under this scenario, low income highway users receive neutral user benefits (£0.0m), but still receive the majority of user benefits when public transport benefits are included (£11.3m).</p>

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	<p>discount tier, the Applicant cannot, understandably, commit to any tiered discount scheme at this stage. However, as the likely effect of such a tiered system is likely to be negligible in comparison with the flat 50% discount proposal, by the Applicant's own admission, it has been possible to secure agreement with the Applicant over an agreed form of words in the CPAP.</p> <p>The revised commitment will be to offer a discount scheme of at least 50% for low income residents, with a further commitment to offer higher discounts of up to 90% to those on lowest incomes, subject to there being no adverse impacts on travel demand management identified in the pre-scheme modelling of such a discount scheme. Ease of administration will also be a factor, so the tiers in any tiered discount scheme must also be readily identifiable from DWP benefit data, although this is not considered to be a major</p>	<p>Further discounts are therefore not considered necessary to mitigate impacts on low income highway users, although Policy 6 allows them to be developed if the findings of the refreshed case support this.</p> <table border="1" data-bbox="1111 624 1854 1294"> <thead> <tr> <th data-bbox="1111 624 1420 791"></th> <th data-bbox="1420 624 1565 791">Low income</th> <th data-bbox="1565 624 1711 791">Medium or high income</th> <th data-bbox="1711 624 1854 791">Total</th> </tr> </thead> <tbody> <tr> <td data-bbox="1111 791 1420 959">Net user benefits £m, 2010 prices (road users)</td> <td data-bbox="1420 791 1565 959">0.0</td> <td data-bbox="1565 791 1711 959">1.0</td> <td data-bbox="1711 791 1854 959">1.0</td> </tr> <tr> <td data-bbox="1111 959 1420 1126">Net user benefits £m, 2010 prices (public transport)</td> <td data-bbox="1420 959 1565 1126">11.3</td> <td data-bbox="1565 959 1711 1126">3.8</td> <td data-bbox="1711 959 1854 1126">15.1</td> </tr> <tr> <td data-bbox="1111 1126 1420 1294">Total net user benefits £m, 2010 prices</td> <td data-bbox="1420 1126 1565 1294">11.3</td> <td data-bbox="1565 1126 1711 1294">4.7</td> <td data-bbox="1711 1126 1854 1294">16.0</td> </tr> </tbody> </table> <p>The revised Policy 6 therefore provides the flexibility that</p>		Low income	Medium or high income	Total	Net user benefits £m, 2010 prices (road users)	0.0	1.0	1.0	Net user benefits £m, 2010 prices (public transport)	11.3	3.8	15.1	Total net user benefits £m, 2010 prices	11.3	4.7	16.0
	Low income	Medium or high income	Total															
Net user benefits £m, 2010 prices (road users)	0.0	1.0	1.0															
Net user benefits £m, 2010 prices (public transport)	11.3	3.8	15.1															
Total net user benefits £m, 2010 prices	11.3	4.7	16.0															

Interested Party	Interested Party's Comment (including reference)	TfL Comment
	<p>concern and the identification of three or four tiers should be achievable.</p> <p>The Council is yet to receive the precise wording, hence If this wording is so revised by the Applicant in the CPAP submitted at Deadline 6, then the Council is content that a mechanism exists to deliver targeted discounts to ensure low income Newham residents are protected from any adverse socio-economic impacts of the Scheme.</p>	<p>allows the low income discount to potentially be higher, but does not set an upper limit without the evidence of the need for, or the impacts of, this at the current time.</p>
<p>LB Lewisham (REP-025)</p>	<p>LB Lewisham has raised concerns that the borough is not included in the proposals for a low income discount.</p> <p>In paragraph 7.6 they state that: 'From the meeting on 4 April 2017, it is understood that TfL will not be including LB Lewisham within this proposal. TfL have provided some further</p>	<p>The Applicant wanted to bring to the ExA's attention that the note that LB Lewisham refer to in paragraph 7.6, and include as Appendix D, of their Deadline 6 submission (REP6-025), was subsequently updated and submitted by the Applicant at Deadline 6 (as Appendix A of REP6-075), as part of a request from LB Lewisham for further detail.</p> <p>This updated version does include analysis of demand at a ward level, as well as demand from deprived areas. The</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
	<p>information in an attempt to justify their rational, however, this is not agreed nor considered fair and reasonable by the borough. The supplied note is attached at Appendix D for information. It is understood that TfL will also be submitting this note to the examination at Deadline 6.</p> <p>In paragraph 7.7 they state that: 'Tfl's main reason for excluding LB Lewisham relates to the expected low number of trips with origins in LB Lewisham compared to host boroughs and the latter's reliance on the Silvertown / Blackwall crossing. Whilst this is acknowledged to some extent, the analysis does not consider the deprived wards in detail and as such may not tell the whole story. Taking that point, if the number of eligible residents from LB Lewisham is so low then why not include them as the traffic impact of these will be minimal?</p>	<p>note demonstrates that the number of highway users of the Blackwall and Silvertown Tunnels from deprived areas is very small. Furthermore, the note identifies that there are just 13 low income highway users in the morning peak that use the Blackwall and Silvertown Tunnels.</p> <p>Whilst it is acknowledged that the traffic impacts of allowing low income residents from LB Lewisham access to the low-income discount may be relatively minor, the very small number of highway users affected do not justify the additional administrative costs of expanding the discount zone.</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
<p>Royal Borough of Greenwich (RBG) (REP-028)</p>	<p>RBG (in section 2.1 of their deadline 6 submission – REP6-028) has included a number of comments relating to the Code of Construction Practice. These relate to:</p> <ul style="list-style-type: none"> - The use of Brewery Wharf for the movement of materials by river; - The Construction Environmental Management Plan (CEMP); - Construction HGV routes; - River transport commitments, including the proposal for commitments based on worksites. 	<p>The Applicant notes that the responses to each of these topics have been provided throughout the Examination, most recently in Section 5, Code of Construction Practice (CoCP) of the Applicant's Explanatory Note on the Updated Certified Documents (REP6-072).</p> <p>The Applicant notes that the phrasing of the proposal for a minimum <i>percentage</i> committed level of transportation by weight of materials by river on a worksite basis (REP6-028 section 2.1) differs to the way this proposal has been previously presented in the RGB Local Impact Report (REP1-002), Item 196 which proposes a commitment to a <i>quantum</i> of movement by river from each worksite.</p> <p>Notwithstanding the different phrasing used, the Applicant notes that a thorough response was submitted to this proposal in the Explanatory Note on the updated CoCP (REP6-072). This included the conviction that stipulating borough-specific percentage or quantum targets for river transport would stifle flexibility, constrain efficient construction methodology, potentially create monopoly situations and could feasibly lead to counter-productive</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
		behaviours (e.g. double handling of spoil and other materials) in order to achieve these borough-specific percentage targets.
Marine Management Organisation (MMO) (REP-004)	<p>The MMO have raised concerns regarding coastal processes, specifically as to whether monitoring and mitigation of suspended sediment and/or scour is required.</p> <p>The MMO's DL6 submission outlines that a teleconference was held on 23 March 2017 and that the applicant was to produce a note that will provide further detail on the assumptions within the suspended sediment modelling;</p> <ol style="list-style-type: none"> 1. The applicants choice of dredger and why it represents a worst case; 2. The type and location of material within the proposed dredge pocket, including depths; 3. The consideration of potential levels of scour, with reference to types of material in the proposed dredge pocket; 	<p>The applicant notes that the MMO are content that condition 5 of the DML includes provision for suspended sediment and or scour monitoring and mitigation to be secured should it be required.</p> <p>The Applicant submitted a Hydrodynamic Modelling Additional Clarifications technical note to the MMO on the 4th April 2017 to provide the necessary evidence to demonstrate the assumptions with the suspended sediment and scour modelling represent a likely worst case. The review concludes that suspended sediment monitoring and/or a scour and accretion monitoring and mitigation is not required based on the current design. The Hydrodynamic Modelling Additional Clarifications technical note is appended to this document. The Applicant was copied into MMO's written representation submitted at Deadline 7 on the 10th April 2017 at 15:12 which indicates that the MMO have no further concerns regarding impacts</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
	<p>4. The consideration of the impacts of suspension of contaminants within the superficial sediments in the dredge pocket during works.</p> <p>It is the intention that this note will provide sufficient evidence to demonstrate that suspended sediments monitoring and/or a scour and accretion monitoring and mitigation strategy will not be required.</p> <p>Should the note not provide sufficient evidence to demonstrate that further suspended sediment monitoring and/or a scour and accretion monitoring and mitigation strategy is not required, then the MMO is content that a safeguard is in place under draft deemed marine licence condition 5.</p>	<p>on coastal processes, particularly regarding suspended sediment or scour and accretion, and the potential need for further modelling, monitoring or mitigation.</p> <p>Condition 5 of the DML ensures the applicant submits a detailed method statement of the marine works ahead of commencing works. The approval process will ensure that should the MMO require monitoring/mitigation in relation to the detailed design so it can be conditioned at this stage. This will ensure that any monitoring/mitigation, if required, is proportionate and directly related to the final detailed design.</p>
<p>Port of London Authority (REP6-029)</p>	<p><u>Tunnel Glucose</u></p> <p>The PLA has noted (in section 2.7 of its Deadline 6 submission – REP6-029) that the Wharves Access Impact Assessment (REP4-048) omitted discussion on potential</p>	<p><u>Tunnel Glucose</u></p> <p>The Applicant has assessed the potential impacts on access to the safeguarded Tunnel Glucose Wharf caused by the construction of Silvertown Tunnel. These impacts are discussed below. The Applicant has determined that</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
	<p>construction phase impacts on physical access by road and river to safeguarded Tunnel Glucose Wharf. The PLA has further proposed in section 2.8 of its submission that, for completeness, the impacts on Tunnel Glucose Wharf should be assessed.</p>	<p>any disruption to the wharf accesses will be very low.</p> <p><u>Road transport impact</u></p> <p>1) Tunnel Glucose Wharf is located in the Royal Borough of Greenwich, on the southern side of the River Thames and to the southwest of the Greenwich Peninsula. The wharf is outside of but adjacent to the DCO limits less than 1km (measured in a straight line) from the construction area. The wharf is shown on the location map provided in REP2-074 Annex 2 submitted as Appendix D of the Wharves Access Impact Technical Note [REP4-048].</p> <p>2) The entrance to Tunnel Glucose Wharf is through an existing barriered access on Tunnel Avenue, just south of Morden Wharf Road. It is accessed from the A102 Blackwall Tunnel Southern Approach Northbound via Blackwall Lane junction and Tunnel Avenue. There is an existing gantry at this location with a concrete base positioned in the middle of the 20m wide wharf access. The gantry and associated substructure is proposed to be removed as part of the Scheme. Minor modifications to the access may be required temporarily to facilitate removal of the gantry superstructure and substructure. Access to Tunnel Glucose Wharf will generally be maintained</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
		<p>throughout these works and the landowners will be consulted on the timing of these works. Any necessary closures will tie-in with closures on the A102 (as described below).</p> <p>3) The A102 Blackwall Tunnel Southern Approach would be operational at all times with the exception of some night closures at key stages in the construction process. These would include for the demolition of existing gantries and existing footbridge at Boord Street and for the erection of the proposed replacement pedestrian and cycle bridge and for the proposed gantry structures. Advanced notice to motorists, landowners and tenants would be provided for any closures that are required of the A102 Blackwall Tunnel Approach (refer to Transport Assessment, paragraph 6.5.7 [APP-086]).</p> <p>4) It is therefore anticipated that any disruption to the wharf access, caused by the construction of Silvertown Tunnel, will be very low.</p> <p><u>River transport impact</u></p> <p>1) The access routes into Tunnel Glucose Wharf</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
		<p>traverse through the main navigable channel in the Thames when running beside the both the Silvertown and Greenwich Peninsula construction sites.</p> <p>2) Construction activities are not envisaged to extend out into the channel, however, should the closure of any part of the river be necessary, approval from the PLA under the provisions of the DCO would be required.</p> <p>3) Any changes to moorings and jetties or river structures as a result of the works do not extend into the vicinity of the Tunnel Glucose Wharf.</p> <p>4) The river traffic associated with the Scheme will be managed by a Passage Plan, as discussed in the Wharves Access Impact Note.</p> <p>5) Therefore there will be no impact on river access into the wharf as a result of construction activities associated with the Scheme.</p>
	<p><u>NAABSA</u></p>	<p><u>NAABSA</u></p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
	<p>The PLA has raised (in section 5 of its Deadline 6 submission – REP6-029) the issue of who will be responsible for the long-term future of the NAABSA berth. The PLA consider it would be advantageous to retain the berth on licence by a future user of the wharf. However, until such a future user is identified, the PLA submit that the Applicant should be required to retain the berth under a river works licence.</p>	<p>The Applicant considers that it should not be responsible for retaining the NAABSA berth when it has vacated the site. The Applicant would be occupying the NAABSA berth under its temporary possession powers under the DCO. No river works licence would be required during this occupation, by virtue of the disapplication of the Port of London Act 1968 by article 3 of the DCO. The Applicant understands the PLA to be the landowner of the land upon which the NAABSA berth currently sits. As such, when the Applicant vacates the land, it must, as required by articles [29](7) and [30](8), hand back the land to the existing landowner to that landowner's reasonable satisfaction. Therefore, the Applicant will be handing back the berth to the PLA.</p> <p>The NAABSA berth is an existing structure and is not being constructed as part of the scheme (it is merely being 'refurbished' for use), and therefore the Applicant considers it should not have a long-term responsibility to hold a river works licence for the NAABSA berth until a wharf user decides it wants to take responsibility for it from the PLA. There would be no certainty as to the timing, and it would be inappropriate for the Applicant, as a public body, to take</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
	<p><u>Access to Peruvian Wharf</u></p> <p>The PLA state in paragraph 2.11 of their Deadline 6 submission [REP6-029] that the access arrangements to Peruvian Wharf are unsatisfactory. They provide an explanation for this view in paragraphs 2.13 to 2.15 and Annex 1 of their Deadline 5 submission [REP5-013].</p>	<p>on the financial burden (potentially for a significant period of time) of maintaining the NAABSA berth which serves no operational purpose to the Applicant.</p> <p>The PLA would be entitled to compensation in respect of TfL's occupation and use of the NAABSA berth by virtue of section 67 of the Port of London Act 1968, which is applied by paragraph 49 of Schedule 13 to the dDCO.</p> <p>For the avoidance of doubt, the Applicant does not consider that paragraph 42(3) of Schedule 13 to the dDCO (based on the numbering in revision 5 of the dDCO) applies to the NAABSA berth.</p> <p><u>Access to Peruvian Wharf</u></p> <p>The matter of access to Peruvian Wharf was addressed within the "Wharves Access Impact Technical Note" submitted at Deadline 4 [REP4-048].</p> <p>The temporary closure of Dock Road during the construction of the Scheme will require that all vehicles to/from Peruvian Wharf approach from the east via the signalised junction at Silvertown Way / North Woolwich Road. The Royal Docks modelling study (2014), which</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
		<p>represents the most up-to-date approved modelling available, indicates there is spare capacity at this junction.</p> <p>Furthermore, for vehicles traveling to/from the west, the alternative route via Tidal Basin Roundabout and Silvertown Way is not expected to have a material impact on travel time in comparison to the route which would otherwise be available via Dock Road. North Woolwich Road provides convenient access both west and east for all vehicles accessing Peruvian Wharf.</p> <p>The "Wharves Access Impact Technical Note" [REP4-048] also addresses more specific matters regarding potential vehicle conflicts at the Peruvian Wharf site access point which have been raised in submissions made by the PLA. The Applicant notes that the most recently approved site access arrangement (understood to be under construction) indicates that such vehicle 'conflicts' and the potential need to alter parking arrangements occur regardless of the temporary closure of Dock Road. It is not agreed that the works associated with the Scheme exacerbate these issues, which have been accepted as part of the existing planning approval applicable to Peruvian Wharf.</p> <p>The impacts of the temporary closure of Dock Road on the</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
		<p>operation of the wharf have therefore been appraised as 'very low', recognising that the temporary closure of Dock Road will require all site traffic to travel via Silvertown Way / North Woolwich Road. The Applicant does not consider that further assessment or modelling is required as part of the Scheme.</p>
<p>Royal Borough of Greenwich London Borough of Newham</p>	<p><u>Section 2.2 of RBG's submission and section 3 of LBN's submission suggest that TfL should be required by Required 13 and the Bus Strategy to commit to provide bus services which deliver the same benefits as set out in the Assessed Case.</u></p> <p><u>The boroughs have provided suggesting drafting for Requirement 13 and, if in event that this wording is not accepted, have proposed an alternative requirement which obliges TfL to secure the provision of 37 buses per hour.</u></p>	<p>As set out in section 2 of REP6-072, the Applicant has added a clear objective to the Bus Strategy ('Objective 1') that TfL will seek to deliver the Assessed Case user benefits when planning and implementing bus services. Furthermore, Requirement 13 of the DCO has been amended to expressly refer to TfL developing bus services in accordance with the objectives set out in the Bus Strategy.</p> <p>The Applicant has given consideration to a requirement along the lines suggested by the Boroughs but does not consider that an obligation to deliver the Assessed Case user benefits is capable of meeting the clear legal and policy tests that apply to DCO requirements. As noted in PINS Advice Note 15:</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
		<p><i>“It is likely that the law and policy relating to planning conditions, imposed on planning permissions under the Town and Country Planning Act 1990 (the TCPA 1990), will generally apply when considering requirements to be imposed in a DCO in relation to the terrestrial elements of a proposed NSIP. Requirements should therefore be precise and enforceable, necessary, relevant to the development and reasonable in all other respects.” (para 17.2).</i></p> <p>The Assessed Case user benefits represent the results of an economic analysis which monetises various impacts (beneficial and negative) over a 60 year period. A DCO requirement imposing a legal obligation to deliver those benefits would not be precise or enforceable. It is not clear at what point over the 60 year period compliance with this obligation would be tested, not whether any imposed period would be appropriate. And how would changes to external economic factors outside the control of the Applicant, such as growth, be taken into account when assessing compliance?</p> <p>For these reasons, the Applicant considers the public transport user benefits can only be ‘secured’ in the form of</p>

Interested Party	Interested Party's Comment (including reference)	TfL Comment
		<p>an objective which TfL must seek to deliver when planning and implementing bus services as currently proposed.</p> <p>The Applicant does not accept the Boroughs' alternative proposal that TfL should be forced to commit to operating 37.5 buses per hour. The Applicant has set out in its summary of the ISH on 29 March 2017 (REP6-073) why it is not appropriate for such a requirement to be imposed. This reasoning has been supported by supplementary analysis which demonstrates that the minimum bus service level of 20 bph provides 90% of the Assessed Case public transport user benefits (REP6-082). This analysis is further supported by the Applicant's submission at Deadline 7.</p>

SILVERTOWN TUNNEL

**Hydrodynamic Modelling
Additional Clarifications**

Volume 8

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April 2017

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Silvertown Tunnel

Hydrodynamic Modelling – Additional Clarifications

Author: Transport for London

Rev.	Date	Approved By	Signature	Description
0	04/04/2017	David Rowe (TfL Lead Sponsor)		Technical note to provide clarifications on hydrodynamic modelling to the MMO following a meeting on the 23 rd March 2017.

Contents

List of Abbreviations	5
Glossary of Terms	6
1. INTRODUCTION	8
2. ADDITIONAL DETAILS ON SUSPENDED SEDIMENT MODELLING ASSUMPTIONS	9
2.1 Background.....	9
2.2 Characteristics of dredge material.....	9
2.3 Description of dredging method options.....	12
2.4 Summary of the Chemical sediment analysis	13
2.5 A description of the ‘Intermediate Scenario’ as referred to in para 5.4.1 of Appendix 16.B – Hydrodynamic Modelling (APP-078).....	14
2.6 Suspended Sediment Monitoring	14
3. SCOUR AND ACCRETION MONITORING	16
3.1 Scour and Accretion Modelling Results.....	16
3.2 Requirement for Scour and Accretion Monitoring.....	16
4. CONCLUSION	17

List of Abbreviations

CMS	Construction Method Statement
DCO	Development Consent Order
DML	Deemed Marine Licence
ES	Environmental Statement
MMO	Marine Management Organisation
TfL	Transport for London

Glossary of Terms

Back hoe Dredger	A backhoe is a hydraulic excavator with a single digging bucket positioned on the end of a two-part articulated arm. Land-based backhoes are typically mounted on the back of a tractor or front loader that has an undercarriage with wheels or with tracks. A backhoe dredger (BHD) is water-based excavator that evolved from the land-based backhoe.
Dredging	Dredging is the removal of sediments and debris from the bottom of lakes, rivers, harbours, and other water bodies.
Contractor	The Contractor will be the construction entity which will deliver the design and construction of the Scheme and includes anyone who directly employs or engages construction workers or manages construction work. Contractors include sub-contractors, any individual self-employed worker or business that carries out, manages or controls construction work.
Scour	The erosion, deposition, and transport of sediment by water.
The Scheme	The construction of a new bored tunnel with cut and cover sections at either end under the River Thames (the Silvertown Tunnel) between the Greenwich peninsula and Silvertown, as well as necessary alterations to the connecting road network and the introduction of user charging at both

	Silvertown and Blackwall tunnels.
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1. INTRODUCTION

1.1.1 During the teleconference held on 23 March 2017, the Applicant and the Marine Management Organisation (MMO) discussed any outstanding matters to be agreed in relation to the assessment of effects of any in-river works for the Scheme. This note is to demonstrate the assumptions used within the suspended sediment and scour and accretion modelling are likely worst case and whether monitoring or mitigation is required based on the results of the assessments. The MMO have requested further detail on the following elements of the hydrodynamic modelling and sediment chemical analysis undertaken for the Scheme:

- describe the type of material to be dredged by producing a cross section showing strata layers beneath the river, overlay the core locations. Provide details of refusal level of coring;
- provide a summary of information of chemical sediment analysis, the depth and geographical location of material between action level 1 and 2;
- describe the dredging method options considered and the rationale for selecting the backhoe dredger;
- Describe 'Intermediate Scenario' as referred to in para 5.4.1 of Appendix 16.B – Hydrodynamic Modelling (APP-078); and
- Determine the need for monitoring requirements and control mechanisms.

1.1.2 This technical note also sets out the findings from the modelling undertaken with regard to the extent of scour as a result of the temporary jetty piles and operation of the temporary jetty.

2. ADDITIONAL DETAILS ON SUSPENDED SEDIMENT MODELLING ASSUMPTIONS

2.1 Background

2.1.1 The details of the methods used for suspended sediment modelling are set out in the Appendix 16.B Hydrodynamic Modelling (APP-078). Further information has been requested as follows.

2.2 Characteristics of dredge material

2.2.1 As set out in Appendix 16.F (APP-082), on the 28th of January 2016 sediment cores were successfully collected at 5 sites by Seastar Ltd to inform the hydrodynamic assessment. All samples were undertaken within 5m of the locations shown on Figure 2.1, approved by the MMO. The intention was to collect sediment samples at depth intervals of 1m, 2m, and 3m. However, sediment conditions prevented the collection of cores down to 3.3m depth (the maximum depth of the dredge pocket) at any site. Therefore, the sampling interval was modified to obtain as many samples as possible while maintaining a sampling interval close to that proposed by the MMO.

2.2.2 The area to be dredged was characterised by very dense brown clay beneath a surface of more mobile surface sediment (predominantly gravelly sand). At Vibracore sites 01, 03, 05, and 06 the surface sediment layer was between 0.13 and 0.25 m deep and consisted of gravelly sand; below this the sediment consisted of brown clay. However at site VIB 04 the surface sediment layer was 0.84 m thick and consisted of black mud; below this the sediment consisted of brown clay as per the other sites.

2.2.3 The dense clay plugged the vibracore barrel and prevented further sediment being collected despite the barrel being pushed deep into the sediment. The sediment sampling instrumentation penetrated to depths between 1.9 - 3.4 m, however sediment samples were only achieved for depths between 0.45 - 1.9 m. It was determined that further ground penetration could not be achieved without damaging the instrumentation, therefore the decision was made not to pursue deeper sediment samples. The refusal and maximum sample depth of each core is included in Table 2-1, below.

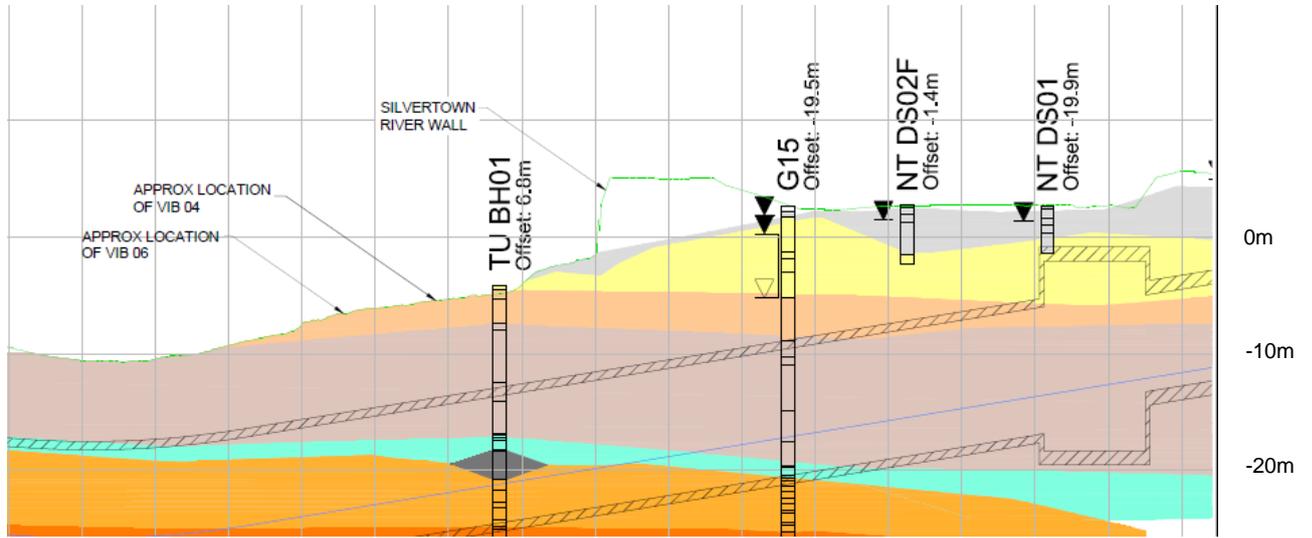
2.2.4 A plan showing the approximate (within 5m) locations of the Vibracores undertaken to collect sediment samples is provided within Figure 2-1 below. To demonstrate the geology within the proposed dredge pocket, the

approximate locations of Vibracores 04 and 06 have been plotted on the geological cross section for the alignment of the Silvertown Tunnel. As can be seen from Figure 2.2, the River Terrace Deposit layer ranges in depth from 0 to 2.5m within the dredge pocket. This correlates with the refusal depths for the cores shown in Tab 2-1 which became plugged when they encountered the dense London clay layer which lies beneath.

Figure 2-1 Vibracore Locations



Figure 2-2 Geological Cross Section (Silvertown)



GEOLOGICAL SECTION LEGEND:

- | | | | |
|-------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------|----------------------------------|
|  | HARDSTANDING |  | EXISTING GROUND LEVEL / RIVERBED |
|  | MADE GROUND |  | ROAD ALIGNMENT |
|  | ALLUVIUM |  | TUNNEL OUTLINE |
|  | RIVER TERRACE DEPOSIT | | |
|  | LONDON CLAY | | |
|  | HARWICH FORMATION | | |
|  | WOOLWICH FORMATION LAMINATED BEDS | | |
|  | WOOLWICH FORMATION LOWER SHELLY CLAY | | |
|  | READING FORMATION LOWER MOTTLED CLAY | | |
|  | UPNOR FORMATION | | |
|  | THANET SAND | | |
|  | CHALK | | |
|  | ZONE OF CORE LOSS | | |

* Please note the cross section has been reproduced from Appendix 12.A - GIR Borehole Location Plan and Geological Long Sections (APP-069). It includes a series of Boreholes used to construct the geological section.

Table 2-1 Refusal Level and Sample Depth

Vibracore number	Max Penetration Depth (Refusal Level) (m)	Max Sample Depth (m)
VIB 01	2.6	0.8
VIB 02	N/A	N/A
VIB 03	2.72	0.73
VIB 04	3.4	1.57
VIB 05	2.3	1.9
VIB 06	2.67	0.8

2.2.5 As shown from the results of the Seastar survey the dredge area is characterised by only a relatively thin layer <1m of gravels, sands and muds and then a much denser consolidated layer of clay which plugged the sampling equipment. This correlates with the geological cross section which shows River Terrace Gravels between 0 and 2.5m depth in the dredge pocket and then London Clay. Although the number of samples of sediment that could be collected was restricted, the survey results demonstrate that the material is very consolidated, rather than unconsolidated muds, sands and gravels for the full depth of the dredge.

2.3 Description of dredging method options

2.3.1 As set out at paragraph 4.4.76 of the Construction Method Statement ('CMS') (APP-046), the most likely capital dredge method to be used by the Contractor is backhoe dredger, however this will be finalised at the detailed design stage.

2.3.2 This is based on the preliminary results of ground investigation, described above which indicate that the river bed material to be dredged will comprise River Terrace deposits in the initial 0-2m of the dredge pocket and London Clay below. A small to medium size Backhoe Dredger (bucket capacity 3m³ to 10m³) loading to self propelled or dumb hopper barges with capacity in the range 350m³ to 1,000m³ has been considered as the likely methodology. This is expected to be the most reliable method, as the London Clay may be resistant to suction methods.

2.3.3 A grab or clamshell bucket loading to hopper barges could be an alternative option. However, the grab/clamshell is very rarely a viable option in clay, especially if it is stiff clay.

2.3.4 If the initial capital dredging is undertaken by backhoe dredger, and properly controlled through the mechanisms in the Code of Construction Practice (Section 15) and Deemed Marine Licence, the release of sediment due to

spillage and general disturbance, is expected to be very modest, and is unlikely to have any significant environmental impact, as described in Appendix 16.B (APP-078).

- 2.3.5 Although paragraph 2.3.1 of the Code of Construction Practice (REP4-035) states that non-tunnel construction works will be limited to normal working hours, the hydrodynamic model has been based on continuous (24 hours/day) dredging. This is considered to represent a worst case scenario as continuous dredging would release more suspended sediment into the water column.

2.4 Summary of the Chemical sediment analysis

- 2.4.1 Table 2-2 provides a summary of the chemical sediment analysis and the depth and location of material between Action Levels 1 and 2. This table has been prepared from information available in Chapter 16 – Surface Water Quality and Flood Risk of the ES (REP1-109) and the CEFAS lab results presented within Appendix 16.F: On Site Factual Report and Information (p.54 onwards) (doc ref). Those cells highlighted in pink show the results which exceed Cefas Action Level 1 but not Action Level 2. Those in red show the results which also exceed Action Level 2.

Table 2-2 Chemical Sediment Analysis Data.

Sample Description	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (total) (mg/kg)	Copper (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Lead (mg/kg)	Zinc (mg/kg)
AL1 (mg/kg)	20	0.4	40	40	0.3	20	50	130
AL2 (mg/kg)	100	5	400	400	3.0	200	500	800
Vib 01, 0.5m	9.7	0.23	66	37	<0.035	50	20	97
Vib 03, 0.5m	12	0.14	72	34	<0.035	55	18	93
Vib 04, 0.75m	28	9.0	184	203	7.4	73	248	679
Vib 04, 1.5m	13	0.16	65	37	0.05	56	19	93
Vib 05, 1.0m	6.2	0.48	55	35	<0.033	37	15	101
Vib 05, 1.8m	4.1	0.64	40	30	<0.031	31	12	85
Vib 06, 0.5m	18	0.33	73	51	0.06	72	23	119

- 2.4.2 The total concentrations, when compared to the Cefas Action Level thresholds, show occasional (1 in 7 samples) exceedances of cadmium and mercury. In the proposed dredge area, all exceedances were found in one sample, VIB04 at a depth of 0.75m. When this sample is removed from the dataset the concentrations in the proposed dredge area are all notably lower, suggesting this may be an anomaly in the results. However to ensure a worst case was considered in the ES these elevated levels from Vib04 were used in the water quality analysis.

- 2.4.3 Table 16-10 of Chapter 16 Surface Water Quality and Flood Risk of the ES (REP1-109), sets out the maximum potential metals and dissolved phase concentrations are many orders of magnitude less than the Environmental Quality Standards (EQS), indicating that the potential for impact to water quality from metals in sediment is minimal.
- 2.4.4 Historically, the River Thames has been contaminated with sources of trace metal and organic compounds from industrial discharges and untreated/partially treated sewage discharges. In the 1970s, parts of the estuary were to all intents “lifeless” and heavily contaminated. In common with many estuaries in England, declining manufacturing industry, effluent control and improved sewage treatment have led to improvements in water quality and estuarine ecosystems (*Environment Agency and Plymouth Marine Laboratory. Thames Estuary Environmental Quality Series No. 2. Bioaccumulation of Metals in the Thames Estuary – 1997. October 2000*).
- 2.4.5 The chemical analysis of sediment samples obtained from within the Order Limits shows the continued improvement in sediment concentrations of trace metals in the River Thames.

2.5 A description of the ‘Intermediate Scenario’ as referred to in para 5.4.1 of Appendix 16.B – Hydrodynamic Modelling (APP-078)

- 2.5.1 The term ‘Intermediate Scenario’ refers to the spill conditions of the dredger type selected. The dredger described in Section 2.3 of this note and included in the hydrodynamic modelling in Appendix 16.B of the ES describes the most likely dredger type based on the ground investigations. The dredging technique is described as ‘intermediate’ as there are other options available which generate a larger volume of suspended sediment, however if they were to be selected by the Contractor at the detailed design stage they would require approval by the MMO as required by Condition 5 within the Deemed Marine Licence (DML) and described further in Section 2.7 of this note.

2.6 Suspended Sediment Monitoring

- 2.6.1 The Environmental Statement considers a likely worse case in terms of area and depth of the proposed dredge pocket and scale of the proposed temporary jetty. The final design will be informed by the type of vessel the future contractor wishes to service the proposed jetty with and as such the design has allowed for a large HAV ship to be accommodated as a worst case.

- 2.6.2 As set out in Sections 2.2 – 2.3 of this note, having considered the most likely scenario for the dredge method, the character of the geology and taking into account the negligible effects of the dredging on suspended sediment concentration in the water column and the high concentration of existing sediment transport/deposition regime, it is considered that a requirement for suspended sediment monitoring is not required.
- 2.6.3 Under condition 5 of the Deemed Marine Licence (DML) contained in Schedule 12 to the dDCO, a method statement must be submitted to the MMO for approval, at least 6 weeks prior to the commencement of any relevant works. The details of dredging, including selected dredging method, duration and timing that only will become available at the detailed design stage would need to be incorporated into this method statement for the MMO to examine (see condition 5(2) of the DML which sets out what a method statement must contain).
- 2.6.4 Although the Environmental Statement considers a likely worse case in terms of design of the proposed dredge pocket, the MMO can also approve the method statement subject to conditions (condition 15(2)(b) of the DML). This means that in the event that any further modelling and/or monitoring is considered necessary to support the proposals contained in the method statement submitted at this stage, this can be required by the MMO through this ability to attach conditions to any approvals.

3. SCOUR AND ACCRETION MONITORING

3.1 Scour and Accretion Modelling Results

- 3.1.1 As set out in Appendix 16.B of the ES (APP-078) the predicted scour depth around the jetty piles is 0.46m with a corresponding lateral extent of 1.61m. It is important to note that the maximum extent of scour width will occur at the downstream edge of the flow. Therefore, with peak tidal flow occurring from east to west during the flooding tide, and from west to east during the ebbing tide, the point of maximum lateral extent of scour will alternate from east to west. All scour calculations in Appendix 16.B have taken the Seastar survey results and the CEFAS particle size analysis included in Appendix 16.F (p.56): On Site Survey Factual Report and Information (APP-082) into account.
- 3.1.2 In comparison, the Thames Tideway Tunnel Scour and Accretion Strategy - Temporary and Permanent Works (Doc Ref: APP184.01.04) predicted up to 2.8m of scour at ten temporary work sites, as shown in Table 2.1 (p.6) of the strategy. This is a significantly deeper predicted scour at a greater number of sites than the Silvertown jetty, which is limited to only one site for up to 4 years. Therefore, it is considered that monitoring for scour and accretion is not required, as described below.

3.2 Requirement for Scour and Accretion Monitoring

- 3.2.1 Based on the results of the modelling undertaken to date, scour and accretion monitoring is not considered to be required at this stage because negligible impacts on scour are expected.
- 3.2.2 The outline design of the temporary jetty has been designed to accommodate a large HAV ship and is the largest jetty the contractor would likely consider constructing. This is what has been considered to ensure a likely worst case is assessed within the Environmental Statement. At detailed design stage when the exact size of vessel and jetty is known, any appropriate monitoring/mitigation that the MMO considers is necessary could be attached as a condition to the required method statement approvals under the conditions of the DML, as described in Section 2.6, above.

4. CONCLUSION

- 4.1.1 At the request of the MMO, further detail and clarifications with regard to the suspended sediment modelling are provided. Based on these clarifications and the meeting on the 23rd March it is agreed that monitoring of suspended sediments is not deemed required at this stage of the project. If required, the MMO will have the powers to request further modelling/monitoring at the detailed design stage within the conditions in the DML.
- 4.1.2 Similarly, scour and accretion monitoring is not required at this stage due to no significant effects predicted by the modelling undertaken to date. If required, the MMO has the powers to request further modelling/monitoring at the detailed design stage within the conditions in the DML.