

TRANSPORT FOR LONDON - SILVERTOWN TUNNEL – DEVELOPMENT CONSENT ORDER APPLICATION

Written Summary of Transport for London's Oral Submissions at the Air Quality, Noise and Other Environmental Issue Specific Hearing held on 18 January 2017

INTRODUCTION

1. This note summarises the oral submissions made by Transport for London ('TfL') at the Air Quality, Noise and Other Environmental Issue Specific Hearing held on 18 January 2017 ('the hearing') in relation to TfL's application for development consent for the Silvertown Tunnel ('the scheme').
2. Oral submissions by all parties attending the hearing were made pursuant to the agenda published by the Examining Authority on 10 January 2017 ('the agenda'). In setting out TfL's position on the issues raised in the agenda, as submitted orally at the hearing, this format of this note follows that of the agenda.
3. TfL's substantive oral submissions commenced at item 2 of the agenda (the Applicant to explain in brief what the Silvertown Tunnel is intended to achieve as an introduction to the consideration of the case for the scheme), therefore this note does not cover item 1 on the agenda (welcome, introductions and arrangements for the hearing).
4. In addition to covering the agenda items as noted above, this note also relates to the Examining Authority's list of action points arising from the hearing, published on 20 January 2017 ('ExA action point(s)').
5. This note also refers to the witnesses called by the Applicant for each agenda item. Where no witness is indicated, submissions on the item were led by the Applicant's Counsel. A CV for each of these witnesses, whose CV has not already been submitted to the Examination, is appended to this document at **Appendix 13**.

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
2. Terrestrial ecology			
<i>2.1 Please can the Applicant clarify the answers given to TE3 and DC98 regarding habitat creation outside the Order limits. How would any such planting/habitat creation be managed during its aftercare period and retained in the long term?</i>			

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<p>Agenda Item and Action Points 1 and 4 Response</p>	<p>Martina Girvan</p>	<ul style="list-style-type: none"> • The assessment findings in chapter 9 of the Environmental Statement ('the ES') show permanent habitat loss in Greenwich. • This chapter explains how, because the landscape design for the Scheme will not be finalised until detailed design, the Applicant does not know which specific habitats will be in deficit. The Applicant has therefore needed to come up with a means to ensure there is no net loss of value as a result of the Scheme. • However, the Applicant is able to establish that it will not be possible to avoid or mitigate the habitat loss from the Scheme entirely within the Order Limits. As such, it is proposed that any habitat loss shortfall is addressed by offsetting outside the Order Limits. • The Biodiversity Action Plan and Mitigation Strategy ('BAPMS') is ultimately the document which identifies the key receptors and design principles that will be adhered to for a range of habitats both for mitigation within the Order Limits and offsetting outside of the Order Limits. Compliance with this document is secured by the Design Principles and the DCO. • The Habitat deficit has been calculated and valued on a "worst case scenario" using Natural Capital Valuation methods, as explained at Appendix 1 to the BAPMS. • These NCV methods follow accepted NCV guidance both international (WBCSD and NCP) and national (Treasury Green book). Further detail on this methodology, as requested by the ExA under Action Point 1, is enclosed at Appendix 1 to this submission. • This value will be commuted into a sum of money to RB Greenwich through a S106 agreement with RB Greenwich. This agreement will ensure that the expenditure of these monies, in providing the off-site mitigation, is undertaken in line with the principles of the BAPMS, including its maintenance and management (ExA Action Point 4). • Please see the Applicant's response to First Written Question ('FWQ') DC98 for an 	<p>Responses to FWQ DC98 [REP1-177 pp 149-151], TE2 and TE3 [REP1-153 pp 8-12]</p> <p>Comments on Borough LIRs and WRs section 12.3.5 [REP2-035 pp 145-148].</p> <p>BAPMS [APP-065]</p> <p>Design Principles [REP2-029 p.30]</p> <p>DCO Revision 3 (submitted at Deadline 3 Applicant Reference 3.1)</p> <p>NCV Methodology Note (Appendix 1 to this submission)</p>

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		explanation of why it would not be appropriate for there to be a requirement for such landscaping to be 'retained' in the long term.	
Response to matters raised by Interested Parties at the Hearing		<ul style="list-style-type: none"> At the Hearing, the Westcombe Society queried how landscaping would be maintained and retained by the Applicant in the long term. The Applicant has responded to this point in its response to FWQ DC98. 	Response to FWQ DC98 [REP1-177 pp 149-151]
<p><i>2.2 LBN consider that the arboricultural impact assessment and method statement (identifying the trees to be removed/retained) should be included within the landscaping scheme details to be approved in Requirement (R) 6(2). The Applicant's response to TE4 also refers to a Tree Protection Plan. Please can the Applicant confirm that these details can be included/secured in R6(2)?</i></p>			
Agenda Item and Action Point 2 Response	Martina Girvan	<ul style="list-style-type: none"> This is not required as paragraph 7.1.1 of the CoCP makes provision for the construction Ecology Management Plan (to be approved by the relevant planning authority) to include an arboricultural impact assessment, which will include a schedule of trees to be retained or removed, which would fulfil the role of a Tree Protection Plan. Furthermore, as set out at paragraph 7.1.3 of the CoCP, all habitat, including trees, will be retained and protected where possible, and areas of temporary land occupation will be returned to their previous state, condition and owner following completion of construction. Therefore, trees are subject to protection measures during the construction period, and those that are removed or retained will still be removed or retained once operation commences. The landscaping scheme submitted to the local planning authorities will therefore be dealing with replacing those trees that are lost, and how they interact with those trees that are retained. The type of wording sought would therefore not be necessary or relevant at this stage. 	CoCP [REP2-027 Chapter 7] Response to FWQ TE.4 [REP1-153 pp 12-13]

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		<ul style="list-style-type: none"> • Further to ExA Action Point 2, in recognition of this, and to avoid duplicity with the CoCP, this has already been recognised by the Applicant at Deadline 2, where such wording was removed from the Requirement. • Reference should also be made to the Applicant's response to FWQ TE.4. 	
Response to matters raised by Interested Parties and the ExA at the Hearing		<ul style="list-style-type: none"> • The London Borough of Newham ('Newham') queried whether the measures in the Code of Construction Practice accurately reflect what is contained in the ES, particularly the reference to the Tree Protection Plan. In response to this, the Applicant can confirm that it will be reviewing Chapter 7 of the CoCP to ensure it completely reflects the ES, and will reflect any changes in the updated CoCP to be submitted at Deadline 4. • This point prompted the Examining Authority ('the ExA') to ask whether, in general terms, either the CoCP or Requirement 5 should be amended to explicitly refer to the principle that all subsidiary plans to the CoCP should be in accordance with the CoCP and ensure that the construction methodology does not create any materially new or materially worse effects than those reported in the ES. • The Applicant is currently considering this point and will make amends to the DCO and CoCP at Deadline 4 in this regard. More detail on this is provided in the 'Applicant's Update' note submitted at Deadline 3. 	Applicant's Update Note (submitted at Deadline 3 Applicant reference 8.59)
<i>2.3 Royal Borough of Greenwich (RBG) require the grass seed mix used for amenity areas to be a suitable wild flower seed mix to assist biodiversity interests. Please can the Applicant confirm that details of grass seed and wildflower seed mixes can be approved through R6(2)?</i>			
Agenda Item Response	Martina Girvan	<ul style="list-style-type: none"> • As the landscape strategy for the Scheme has not been finalised, the BAPMS details the design of different habitats with regards to maximising their potential for biodiversity. The BAPMS has proposed two different types of grassland options both with wildflower elements. Section 5.2 of the BAP MS details enriched amenity grassland mix and semi improved neutral grassland with low lying flowering plant species (where wear and sight lines have been indicated as priority design features). 	BAPMS [APP-065]

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		<ul style="list-style-type: none"> As the design for the Scheme will need to take account of the DCO Requirement for compliance with the BAPMS, the seed mix for the landscape design is already secured, and does not need to be added to Requirement 6. 	
<p>Response to matters raised by Interested Parties at the Hearing</p>		<ul style="list-style-type: none"> The Royal Borough of Greenwich ('Greenwich') requested that there be flexibility in determining the seed mix to be used at the detailed design stage. In response, the Applicant notes section 3 of the BAPMS requires continued stakeholder involvement in the implementation of the BAPMS. Furthermore, Requirement 6 requires any landscaping scheme, which by its nature would include the seed mix of the landscaping proposed, to be approved a relevant planning authority. Greenwich would therefore have the flexibility it seeks to influence the seed mix that is utilised on the Scheme. 	<p>BAPMS [APP-065]</p>
<p><i>2.4 The Environment Agency's (EA's) response to TE7 requires the Code of Construction Practice (CoCP) to set forward biosecurity measures (such as check, clean, dry) to minimise the spread of Invasive Non-Native Species (INNS) and pathogens via clothing, equipment and vehicles during construction. Please can the Applicant confirm that this matter will be included in the next edition of the CoCP to be submitted to the Examination?</i></p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> The Applicant updated the Code of Construction Practice (CoCP) at paragraph 7.1.10 for Deadline 2 to reflect the response to FWQ.TE7 by the Environment Agency. At the hearing, the EA confirmed that they were content with this wording. 	<p>CoCP [REP2-027 paragraph 7.1.10]</p>

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<p>2.5 With reference to NE's answers to the ExA's First Written Questions (FWQs) TE8 and TE9, [REP1-063], please could the Applicant confirm whether the next edition of the CoCP will include NE's requests, as follows:-</p>			
<p>(a) the bird breeding season to be amended to February to August (inclusive); and</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> As specified in the SoCG [REP1-128] with Natural England ('NE') submitted at Deadline 1, it was agreed with NE that the wording for the timing of the breeding bird season relating to vegetation clearance would be amended to February to August inclusive in the CoCP, and this was done at Deadline 1 [REP1-120]. 	<p>CoCP [REP2-027 paragraph 7.1.4] SoCG with NE [REP1-128 p. 24 Item TE8]</p>
<p>(b) NE's proposed additional wording to be added to paragraph 7.1.7 to ensure that specific measures would be taken to ensure suitable open mosaic habitat is provided for the invertebrate assemblage prior to and during construction?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> This wording does not need to be added to the CoCP as NE has indicated that they agree with the Applicant's previous response to Greenwich on this point. This is contained in the Applicant's Comments on Responses to ExA's First Written Questions [REP2-034] for TE9. This response explains the various construction phases and that such phasing of construction activities would create temporary open mosaic habitat and ensure continual suitable open mosaic habitat is provided for the invertebrate assemblage. NE's agreement to this response will be recorded in the next update of the Statement of Common Ground ('SoCG') with NE that is submitted to the Examination. 	<p>Comments on IPs Response to FWQs TE9 [REP2-034 pp 114-115]</p>

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<p>2.6 With reference to LBTH's response to FWQ TE11 [REP1-006], please could LBTH provide an update regarding the Lee Valley Park Authority's views on whether the dust suppression measures proposed in the CoCP to protect the East India Dock Basin SINC from fugitive dust are adequate?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> The Applicant notes that, as specified in the SoCG [REP1-128] with NE submitted at Deadline 1, NE is in agreement with the dust mitigation measures proposed in the CoCP. 	<p>SoCG with NE [REP1-128 p. 24 Item TE11] CoCP [REP2-027 Chapter 5]</p>
<p>2.7 Please can the Applicant now prepare the draft Ecology Management Plan, for submission to the Examination for DL3, so that the version approved under R5 (3) of the dDCO can be "substantially in accordance with" the last version submitted to the Examination, which would become a certified document?</p>			
<p>Agenda Item and Action Point 3 Response</p>	<p>Martina Girvan</p>	<ul style="list-style-type: none"> The CoCP (in chapter 7) already outlines the required mitigation and the need for an EMP to specify when, where and how this mitigation will be applied. As discussed at the Hearing, and in response to ExA Action Point 3, the Applicant can confirm that an outline Ecology Management Plan cannot be produced now, as the impacts of the Scheme depend on the precise timing of works, machinery to be used and accurate locations of working corridors, as such the full nature, timing and scale of this impact will not be known until the detailed design, such as, for example, the extent of site clearance, the trees likely to be retained or removed, or the location of exact worksite boundaries for the most appropriate form of screening to be chosen. 	<p>CoCP [REP2-027 Chapter 7]</p>

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3. Construction on land			
3.1 Is any percussive piling on land proposed? If so, where would it take place?			
Agenda Item Response	Ian Gee	<ul style="list-style-type: none"> • No percussive piling on land is proposed to form the foundations, cut-and-cover tunnels and tunnel approach structures of the Scheme. • Controls over piling on land in general terms will be considered through the section 61 application that will be required at detailed design, which, as set out in paragraph 11.2.2 of the CoCP, will form part of the Noise and Vibration Management Plan to be approved by the relevant planning authority. 	CoCP [REP2-027 paragraph 11.2.2]
<p>3.2 What is the reason for additional paragraph (1.4.5) in the revised CoCP [REP2-028], and would this enable the Applicant to amend any of the subsidiary plans following their approval or consultation with the relevant bodies?</p> <p>Do IPs have concerns that this could give rise to the possibility that circumstances may change to such an extent that the changes would no longer reflect the project as described and assessed in the ES?</p>			
Agenda Item Response	Martin Beckett	<ul style="list-style-type: none"> • The reason for the additional paragraph (1.4.5) in the revised CoCP is to enable the Applicant (<i>Contractor</i>) and/or Approving/Consulting Authority to instigate amendments to the subsidiary plans throughout the construction phase of the project, these amendments may come about due to a number of reasons including: <ul style="list-style-type: none"> ○ Changes in legislation, ○ Changes/advancements in best practice, ○ Changes in external conditions (e.g. adjacent development phases), ○ Innovations/improvements in contractor methodology which were not 	

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		<p>foreseen at the initial agreement of the subsidiary plan.</p> <ul style="list-style-type: none"> Any revised subsidiary plans would be subject to the same conditions and approvals as the initial plans and as such could not implement changes which did not reflect the parameters of the mitigation measures described in the ES. 	
<p>3.3 Are the host boroughs satisfied with the complaints procedure that the Applicant has included in the updated CoCP, which would be secured by draft Development Consent Order (dDCO) R5?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> The Applicant will be discussing this topic with the host boroughs after Deadline 3 and will respond to any points made by them at that meeting or at Deadline 3 at Deadline 4. 	
<p>3.4 The CoCP [REP2-028], paragraph 2.4.2, notes that a 'black top plant' would be included in the Silvertown work site. Where in the ES is this assessed, in terms of noise and air emissions (including odours)? It is not included in the Applicant's response to ExA FWQ 8.1–envisaged construction plant inventory.</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> The black top plant has not been assessed in the ES. It was included in the CoCP in error. This term will be removed from the CoCP when the document is updated for Deadline 4. 	
<p>3.5 Whilst some aspects of the decommissioning of the temporary jetty would be incorporated in the deemed marine licence (DML) (dDCO, schedule 12), the decommissioning of the land-based temporary works should be covered by a requirement. Please can the Applicant and the host LPAs suggest draft wording?</p>			
<p>Agenda Item and Action Point 6</p>	<p>Martin Beckett</p>	<ul style="list-style-type: none"> A requirement to control the de-commissioning of land based temporary works associated with the jetty is not necessary as the return of land used temporarily is 	

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Response		<p>already controlled through Article 29 of the DCO.</p> <ul style="list-style-type: none"> Specifically Article 29(6) requires the Applicant to remove all temporary works and restore the land to the reasonable satisfaction of the owners of the land. It could also be dealt with through Land and Works Agreements where necessary. In terms of the environmental effects of the removal of the temporary jetty, the controls within the CoCP would apply to this activity as it is part of the construction process that that document seeks to control. The CoCP has been developed further to the assessment of effects of the construction activities necessary for the Scheme carried out in the ES. This is explicitly set out in paragraph 5.2.32 of the ES, which states that '<i>Decommissioning of temporary construction elements of the Scheme (such as the temporary jetty) is considered as part of the assessment of construction effects</i>'. Any mitigation measures that form part of the CoCP would therefore apply to the jetty's decommissioning in both a terrestrial and marine setting. However, the Applicant will consider the wording of the CoCP in this regard and make any changes, if required, in the updated document to be submitted at Deadline 4. 	
4. Air quality			
4.1 Why, in the updated air quality assessment [REP2-040] was it assumed that the addition of 400 Over Height Vehicles (OHVs) travelling northbound would be a "worst case" and how was the number of additional OHVs derived?			
Agenda Item Response	Billy Parr	<ul style="list-style-type: none"> The approach taken by the Applicant to estimating the number of OHVs that could want to use Silvertown Tunnel in the northbound direction is explained in section 5 of the Draft HGV Management Strategy (Appendix K of response to AQ FWQs). The figure on page 47 of the document illustrates the steps taken in producing the 	Draft HGV Management Strategy (Appendix K of response to AQ FWQs) [REP1-151]

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		<p>estimate.</p> <ul style="list-style-type: none"> In summary, the estimate is based on both the total number of OHVs recorded at Blackwall Tunnel southbound and the difference in northbound and southbound flows at the Blackwall Tunnel (520 AADT). The estimate also takes into account the deterrence effect of the user charge on HGVs (assumed 10% reduction, 470 AADT) and the additional journey time that would be incurred in using the Silvertown Tunnel compared to the Blackwall Tunnel (assumed 15% reduction, 400 AADT). The estimate is considered to be a 'worst case' because it doesn't take into account expected future changes in land uses in the Royal Docks that would likely result in a reduction in background HGV trips in the Silvertown area. As a result of these land use changes it is estimated that the number of HGV trip origins and destinations in this area would reduce by a minimum of around 70%, meaning the 'additional' HGVs in the area could be in the order of 120 AADT. 	[REP1-151 pp.1022-1089]
<p>4.2 Does the updated air quality assessment [REP2-041] consider emissions from the following in its cumulative impacts assessment:- <i>cruise liners going to and from Enderby Wharf; and</i> <i>cruise liners that are stationary at Enderby Wharf.</i> If not, why not?</p>			
Agenda Item Response	Stephen Pyatt	<ul style="list-style-type: none"> The air quality assessment is undertaken in accordance with the relevant technical guidance, including Local Air Quality Management Technical Guidance 2016 (LAQM.TG(16)), enclosed at Appendix 2 to this submission. The prediction of impacts in the future is reliant on a set of published tools issued by the Department for Environment, Food and Rural Affairs (Defra). These tools include the vehicle emission factors for each year up to 2030 and background pollutant maps 	Local Air Quality Management Technical Guidance 2016 (LAQM.TG(16)) (Appendix 2 to this submission) Chapter 6 – Air

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		<p>for each year to 2030.</p> <ul style="list-style-type: none"> • The background maps are updated by Defra periodically to ensure that the underlying data, including emission factors and new emission sources are included in the projections that are published and utilised in assessments. As the maps provide emissions projections in the future they will need to factor in not just current emissions but future emissions projections. • The Background Maps are broken down into various Sectors (Roads, Industrial, Domestic, Aircraft, Rail, and Other (which includes Ships)). • Even assuming background maps don't fully account for the emissions from Enderby Wharf (EW) Cruise Terminal, the ES for the site was reviewed (undertaken by Royal Haskoning and enclosed at Appendix 3 to this submission). This ES indicated impacts would be localised around the development and would not impact on the Scheme assessment as the closest receptors to the EW development which have been modelled in the Scheme assessment show an improvement in air quality. Overall, there would be no impact on the outcome of the assessment arising from the Enderby Wharf development. • In relation to ship movements produced by the Enderby Wharf development, this was scoped out of assessment as the number of movements did not trigger the criteria in the Local Air Quality Management Technical Guidance, and are therefore not considered to be significant. The Royal Haskoning DHV July 2015 report assumed 55 visits as a worst case, therefore assuming 110 movements this is well below the LAQM.tg(16) criteria of: <ul style="list-style-type: none"> • Is there more than 5,000 large ship movements per year, with relevant exposure within 250m of the berths and main areas of manoeuvring; or • Is there more than 15,000 large ship movements per year, with relevant exposure within 1km of these areas? 	<p>Quality (as updated in Pre-Examination AS-022)</p> <p>Updated Air Quality and Health Assessment [REP2-041]</p> <p>Environmental Statement Appendix 17A [APP-084 p.17-18, and 38]</p> <p>Enderby Wharf, Greenwich, Air Quality Assessment (July 2015) (Appendix 3 to this submission)</p>
Response to matters		<ul style="list-style-type: none"> • At the Hearing, the East Greenwich Residents Association queried whether RB Greenwich were content that 'old' data had been considered in respect of Enderby 	<p>Note on the Applicant's</p>

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<p>raised by Interested Parties at the Hearing</p>		<p>Wharf.</p> <ul style="list-style-type: none"> The Applicant considers that this point is also something that falls to be considered by it, and has produced a note at Appendix 4 explaining the veracity of the data it has considered in reaching the conclusions above. 	<p>consideration of Enderby Wharf (Appendix 4 to this submission)</p>																
<p>4.3 Further to paragraph 6.6.11 of updated chapter 6 [AS-022], why does the Applicant consider that the contribution to NOx and PM levels from river barges “is likely to be not significant”?</p>																			
<p>Agenda Item Response</p>	<p>Stephen Pyatt</p>	<ul style="list-style-type: none"> The assessment of barges is covered more fully in paragraphs 4.42 to 4.49 (pages 25-28) of the Construction Dust Assessment set out at Appendix 6.A to the ES (APP-049). This explains that the Scheme creates only a few barge movements a day, and the barges are well away from receptors who could be subject to exposure. This is the basis of the conclusion that impacts will be insignificant from such movements. This can be seen most clearly on table 10 from this document, extracted below: <p>Table 10: Total Transport Movements for Entire Construction Period</p> <table border="1" data-bbox="701 943 1628 1139"> <thead> <tr> <th>Transport</th> <th>Silvertown</th> <th>Greenwich</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>River</td> <td>3,350</td> <td>560</td> <td>3,910</td> </tr> <tr> <td>Road</td> <td>58,000</td> <td>65,700^a</td> <td>123,700</td> </tr> <tr> <td>Total</td> <td>61,350</td> <td>66,260</td> <td>127,610</td> </tr> </tbody> </table> <p>^a Includes short-haul HGV trips, which equate to 15,500 total trips (approximately 24% of all trips)</p> <ul style="list-style-type: none"> It can be seen from this table that there are far more lorry movements than barge movements. In broad terms, there would be 4000 barge movements over 4 years, compared to 130,000 lorry movements. Without these barge movements, there would be a further 130,000 lorry movements on local roads, with resultant environmental 	Transport	Silvertown	Greenwich	Total	River	3,350	560	3,910	Road	58,000	65,700 ^a	123,700	Total	61,350	66,260	127,610	<p>ES Appendix 6A Construction Dust Assessment [APP-049]</p> <p>ES Appendix 7.A Navigational Issues and Preliminary Risk Assessment [APP-054. Para 2.2.7, Fig 2-3 and para 3.2.12 – pages 26, 29, and 37]</p>
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		<p>effects as they pass closer to residential properties than barges.</p> <ul style="list-style-type: none"> • The barge movements equate to an average of less than 4 per day, which could equate to less than 4 tug movements per day if one tug serves one barge. • Existing tug movements on the river within the vicinity of the Scheme are around 17 per day (from a 2 day count in July 2015) with many more movements of ferries etc. (as explained at paragraph 3.2.12 of the Navigational Issues and Preliminary Risk Assessment). The increase associated with Silvertown construction in the context of these movements is thus small (4 on 17). • The background maps of concentrations of nitrogen dioxide and PM include shipping movements on the river. Existing movements contribute less than 0.5% to the background of both nitrogen dioxide and PM, so any increase will make a negligible contribution to the background. • It should also be noted that tugs use gas-oil to fuel the engines. This is a low sulphur fuel. Sulphur dioxide emissions will be minimal, and there is no evidence of sulphur dioxide concentrations being significantly affected by existing shipping movements. 	
<p>4.4 Is RBG satisfied that impacts of emissions from barges that would use the Greenwich jetty were “screened out as not significant” [AS-022, paragraph 6.6.12]?</p>			
<p>Agenda Item Response</p>	<p>Billy Parr</p>	<ul style="list-style-type: none"> • The Applicant notes that Brewery Wharf is a wharf already in use and that the Scheme would propose to use the wharf only within its permitted activities i.e. utilise 2 barge movements per day. • As the proposed worksite on the Greenwich Peninsula does not have direct access to the riverfront, utilisation of a local wharf and associated short-haul construction vehicle movements (including HGVs) would be required to transport materials to and/or from the worksite via river. A number of possible local wharves that could be used for this 	

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		<p>purpose exist within 4km of the Greenwich worksite, including Brewery Wharf.</p> <ul style="list-style-type: none"> • For the purpose of presenting a 'worst case' assessment, Brewery Wharf was assessed in the Transport Assessment (section 6.7) (APP-086) as this was the furthest local wharf considered to be a viable option. Brewery Wharf is an existing wharf which is located within Greenwich on Deptford Creek, capable of importing material, which currently generates a number of HGV trips in the local area. Furthermore, the Contractor is anticipated to use the chosen wharf within the parameters of the consents/licenses the operator holds. The wharf is located within 3km of the proposed worksite as the crow flies, and less than 8km by road (avoiding the A206). • There are several local wharves which could potentially be used by the appointed Contractor, and a decision on which wharf to use would be determined by the Contractor based upon the availability, capacity, consents/licenses and operations of local wharves closer to the time of construction. Brewery Wharf is hence one of several potential options considered, and has duly been assessed as the 'worst case', but in practice a local wharf within closer proximity of the worksite could be selected by the Contractor. • Ultimately, the construction vehicle routes will be set out within Construction Traffic Management Plans (CTMPs). As stated in Section 3.1.4 of the Code of Construction Practice (CoCP) (REP1-119), "Detailed construction and delivery traffic routes will be specified and agreed by the relevant planning authority in consultation with the relevant highway authority, with local roads only to be used for immediate access to the worksites or local businesses (including wharves)." The CTMPs therefore must set out the expected volume, type and impacts associated with construction vehicle routes. • Based on the current assessment as set out in the Transport Assessment (APP-086), a maximum of around 20 daily short-haul HGV movements to/from a local wharf are expected over the course of the construction period (as shown in Figure 6-8). This 	

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		<p>equates to a peak of around 2 movements per hour, and it is considered this level of movement would not have a material impact on the performance of the road network. It is also noted that all of the Wharves considered for use in Greenwich (including Brewery Wharf) currently generate a number of HGV trips associated with existing operations. The applicant would not expect the total number of trips generated by the wharf to change as a result of the Scheme.</p>	
<p>4.5 Were emissions from existing river barges, clippers and other forms of river transport and the river barges that are proposed for delivering materials and collecting waste considered in the cumulative impacts section of updated chapter 6? If not, why not?</p>			
<p>Agenda Item Response</p>	<p>Duncan Laxen</p>	<ul style="list-style-type: none"> • There is no explicit mention of cumulative impacts of barges in either Chapter 6 (Air Quality) Appendix 6.A (Construction Dust Assessment) or Chapter 17 (Cumulative Effects). • However, as discussed for item 4.3, the background maps of concentrations of nitrogen dioxide and PM include shipping movements on the river. The impacts of the Scheme from barges are considered to be insignificant, and the same would apply to cumulative impacts. 	
<p>4.6 Carbon dioxide (CO₂) is considered in terms of the updated regional assessment [AS-022, paragraph 2.3.56], but not in terms of air quality impacts upon local receptors. Why not?</p>			
<p>Agenda Item Response</p>	<p>Duncan Laxen</p>	<ul style="list-style-type: none"> • As explained at the Hearing, CO₂ does not give rise to direct local effects (i.e. exposure to CO₂ does not affect health or the environment), therefore impacts on local receptors are not considered. • This is in compliance with DMRB, because, as established at paragraph 6.3.73 of the ES, this guidance only requires CO₂ to be considered in terms of regional emissions. • The effects of CO₂ emissions are related to global warming and it is national emissions 	<p>ES Chapter 6 [APP-022] paragraph 6.3.73.</p>

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		that matter, hence the EFT update to the regional assessment of CO2 emissions.	
<p>4.7 Further to PHE's representation, in lieu of a SoCG [REP2-005], please can the Applicant provide an update regarding the potential for mitigation in areas around the Hoola development including urban greening?</p>			
<p>Agenda Item Response</p>	<p>David Rowe Stephen Pyatt</p>	<ul style="list-style-type: none"> An update on discussion with Public Health England was submitted at Deadline 2 (REP2-039). This included the Applicant's response to issues raised by PHE. <p>Urban Greening</p> <ul style="list-style-type: none"> Landscaping cannot be linked to a direct reduction in NO_x, as explained to PHE, and is therefore not included in the ES. PHE has acknowledged this in their own submissions in response to FWQ AQ.19, when they say that there is 'limited evidence for urban greening improving air quality at pollution hotspots' (REP1-074) TfL has, however discussed greening within the Scheme from a landscaping point of view. The Applicant presented the proposals set out in the Design Principles for greening at Silvertown at the meeting with PHE on 1.12.16, and sent links to the document on 2.12.16, highlighting Design Principle LSCP.11, which provides for the detailed design of the Scheme to provide green infrastructure that adds amenity value. Notwithstanding this, the Hoola development is directly adjacent to and outside the limits of the Scheme. According to the existing planning permission, the Hoola development remodels the footway and delivers its own landscaping between the footway and the buildings themselves. The Silvertown Tunnel Scheme does not impact upon the Hoola development's landscaping area, and given the Hoola development is not included within the Order Limits, there is no scope to provide any additional landscaping there. 	<p>Update on discussion with Public Health England [REP2-039].</p> <p>PHE Response to AQ.9 [REP1-074]</p> <p>Design Principles [REP2-029]</p> <p>Response to FWQ AQ1 [REP1-151 pp . 9-12]</p> <p>Technical Note on Air Quality at the Hoola Development (Appendix 5 to this submission)</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references												
		<p>Other Hoola Mitigation</p> <ul style="list-style-type: none"> As re-affirmed at the Hearing, the Air Quality assessment for the Scheme concludes that there are no significant effects. The Applicant has also committed, through a requirement, for Euro VI buses to be used through the Tunnel, to minimise any impact from any new bus route. As set out in the ES and explained in the Applicant's response to FWQ AQ1, the opening year assumed in the air quality assessment 2021, however this is a conservative assessment as the Scheme is not likely to open in 2023, and emissions would decrease in the future (First Written Question - AQ1). Taking this as a starting point, the Applicant has undertaken additional work which illustrates that the Hoola development will be below the air quality objective and 'limit value' for NO₂ by the time the scheme opens in 2023. The results of this note are set out in Appendix 5 to this submission. In summary, this note shows that at the height of relevant exposure (the first floor, as discussed at paragraph 6.6.32 of the ES), the maximum NO₂ concentrations are: <p>Table 1 – First Floor Concentrations 2021 and 2023</p> <table border="1" data-bbox="721 983 1632 1211"> <thead> <tr> <th>Year</th> <th>Reference Case</th> <th>Assessed</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td>2021</td> <td>35.5</td> <td>41.5</td> <td>6.0</td> </tr> <tr> <td>2023</td> <td>33.9</td> <td>39.6</td> <td>5.7</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Thus at opening of the Silvertown Tunnel in 2023, when any operational effects would be first experience, the concentrations of NO₂ will not exceed the air quality objective 	Year	Reference Case	Assessed	Change	2021	35.5	41.5	6.0	2023	33.9	39.6	5.7	
Year	Reference Case	Assessed	Change												
2021	35.5	41.5	6.0												
2023	33.9	39.6	5.7												

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		value or EU Directive 'limit value' for that pollutant.	
Response to matters raised by Interested Parties and the ExA at the Hearing and Action Point 7		<ul style="list-style-type: none"> At the Hearing, Newham queried whether further mitigation measures are required at the Hoola development. Further to the results explained above, the Applicant considers that no further mitigation measures are required. This is explained further in the note at Appendix 5 to this submission. At the Hearing and as ExA Action Point 7 the ExA asked for details of the percentage of the traffic flow (and resultant emissions) emerging at the Hoola Development that would derive from Euro VI buses. The Applicant's response on this point is set out at Appendix 6 of this submission. 	<p>Technical Note on Air Quality at the Hoola Development (Appendix 5 to this submission)</p> <p>Note on Euro VI bus figures at Hoola (Appendix 6 to this submission)</p>
<p>4.8 PHE also state, [REP2-005, paragraph 5.1] that they would encourage any new road or traffic development to consider opportunities to secure improvements in local air quality. Can the Applicant provide its response?</p>			
Agenda Item Response	Stephen Pyatt	<ul style="list-style-type: none"> As set out in the ES and the updates to the Air Quality assessment submitted throughout the Examination, the Scheme results in an overall improvement in air quality, particularly in locations of the poorest air quality. Furthermore, opportunities have been taken to further mitigate the scheme impacts, such as the Euro VI bus commitment. The Monitoring Strategy and Traffic Impacts Mitigation Strategy will also be in place post scheme operation to ensure the impacts of the scheme are assessed and mitigated if required. 	<p>Updated Air Quality and Health Assessment [REP2-041]</p> <p>Chapter 6 – Air Quality [AS-022].</p> <p>Monitoring Strategy Rev 1 [REP1-121]</p> <p>TIMS Rev 1 [REP2-031]</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
<p>Response to matters raised by Interested Parties and the ExA at the Hearing and Action Point 5</p>	<p>Duncan Laxen</p>	<ul style="list-style-type: none"> As the Hearing, the ExA asked, how Euro VI buses can be relied upon to provide a reduction in emissions, given the poor performance of Euro IV and Euro V buses in the real world and recent emissions scandals. The ExA also asked the Applicant to consider whether the glossary definition with the ES for Euro VI buses needed to be updated. The Applicant responded to these points at the Hearing, and this is set out and explained further in Appendix 7 of this submission. At the Hearing and as ExA Action Point 5, the ExA also asked the Applicant to report on the Applicant's trials of alternative fuel vehicles in London. As indicated at the Hearing, the Euro VI standard represents the cleanest double deck bus that is currently commercially available and provides PM & NOx emissions which are more than 95% lower than Euro V. The Applicant has very recently started trialling electric double deck buses, but these are currently limited by range and passenger carrying capacity. Manufacturers are also looking to develop double deck hydrogen buses, but at present none are available to trial. By 2023, it may be possible that zero emission (electric or other technology) double deck buses will be able to meet the service requirements of a London bus, but this will depend on the outcome of trials. The Applicant expects that in two years time it should have sufficient data to inform that decision in respect of electric buses. For these reasons the Applicant has proposed the commitment be to introduce Euro VI or equivalent. 	<p>Note on Reliability of Euro VI Buses Emissions Data and Consideration of Glossary Definition (Appendix 7 to this submission)</p>
<p>4.9 Could the Applicant respond to PHE's negatively worded statement, in relation to the matter on which they are in disagreement, regarding whether a 20mph speed zone couldn't have potential benefits on local air quality?</p>			
	<p>David Rowe Billy Parr</p>	<ul style="list-style-type: none"> The Applicant notes that PHE are satisfied that 20mph speed limit would be inappropriate on these primary traffic routes. The Applicant only has a remit for traffic management on TLRN roads, all other roads 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
Agenda Item Response		<p>fall under the jurisdiction of the London Boroughs.</p> <ul style="list-style-type: none"> • The Applicant considers that a 20mph speed limit can be appropriate in the in the right circumstances (for example, built up urban areas) and where it would not negatively affect traffic flows, however on a Scheme that affects major primary routes, the Applicant does not consider that these are suitable circumstances. • Furthermore, it is not considered, given the no likely significant effects result arising from the Air Quality assessment, the Application does not consider that there is an impact from the Scheme that would warrant such a measure, given the potential traffic effects that could arise. • For example, as the Applicant explained at a meeting with PHE on 19.08.16, as traffic in London is not free flow and generally moving very slowly, it would be difficult to restrict main roads to 20mph because people will reroute causing issue on local roads. • The boroughs do have a rolling programme of 20mph zones which takes into consideration accident rates and local uses, such as schools and the proposed 20mph zones within Greenwich were provided as an example. • The imposition of 20mph speed limits would therefore only be appropriate if the Scheme identified, and was required to mitigate, any significant environmental effects, for example: increased traffic flows, accidents, congestion and air pollution. • The Transport Assessment (APP-086) and Environmental Statement (AS-022) do not identify any such effects and so mitigation (which could include implementation of 20mph zones if appropriate) is not proposed. 	
Response to matters raised by the ExA at the		<ul style="list-style-type: none"> • The ExA asked at the Hearing, and at ExA Action Point 8, for further details on how 20mph zones could be treated and how flow capacity differences at 20 miles per hour (mph) versus 30mph, could interact with the charging scheme promoted by the Applicant. • The Applicant was asked to consider the impacts of higher or lower speed limits for the 	<p>Response to FWQ SE3 [REP1-176 pp 19-22]</p> <p>Charging Policies and Procedures</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
<p>Hearing and Action Point 8</p>		<p>highway capacity and whether this would potentially enable different charges to be adopted.</p> <ul style="list-style-type: none"> • As stated at the Hearing, the Applicant considers that the suggested speed of 30mph is appropriate for the Scheme. This reflects considerations such as maintaining a consistent approach with the existing Blackwall Tunnel to maximise clarity for drivers, and the need to expedite traffic movement. At this assumed speed, the Applicant's modelling (set out for example in the Transport Assessment [APP-086]) suggests that traffic would be effectively free-flowing. • In principle the effective capacity of the Silvertown Tunnel could potentially be increased by adopting a different speed limit. However, it is important to emphasise that user charges play a role which includes – but also goes beyond – the management of demand in relation to the capacity of the Blackwall and Silvertown tunnels themselves. • As set out in the technical note 'Developing the Assessed Case Charges' which was appended to the Applicant's response to FWQ SE3, the Applicant considered a wide range of factors in determining the appropriate charges which support the optimum balance of project objectives, including the impact of different charges on delay at the Blackwall and Silvertown tunnels, user benefits, but also the direct and indirect effects of traffic both on the Blackwall/Silvertown corridor and across the wider network. • As set out in the Charging Policies and Proposals document, it is the full range of these effects that the user charge is ultimately intended to manage in order to best secure the delivery of the Project Objectives. 	<p>[REP1-123]</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
<p>4.10 Is the Applicant proposing to further update Chapter 6 of the ES [AS-022], in the light of the updated Air Quality and Health Assessment [REP2-041] or undertake any further air quality assessment work, in the light of the recent High Court Judgement regarding the inadequacies of the DEFRA Air Quality Plan? Which of the Air Quality documents are to be certified documents?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> As explained in the Applicant's response to the ExA's Rule 17 request (REP1--093), The High Court judgement does not impact on the air quality modelling undertaken as the assessment undertaken in the ES already assumes that the emissions published by Defra are too optimistic and as such the modelled concentrations are adjusted in line with the advice in IAN 170/12. The Applicant does not anticipate reissuing CH6 – Air Quality (AS-022) any further. An update to the air quality assessment has been provided in the form of the Updated Air Quality and Health Assessment (REP2-041) submitted at Deadline 2. The updated assessment submitted at Deadline 2 has been added to Schedule 14 of the draft DCO at Deadline 3 such that it is included in the definition of 'Environmental Statement'. 	<p>Applicant response to Rule 17 request [REP1-03]</p> <p>Draft DCO, Revision 3</p>
<p>4.11 The host boroughs have expressed concerns about the inadequate nature of the air quality assessment and proposed monitoring for air quality.</p> <ul style="list-style-type: none"> <i>Please could the Applicant and the host authorities (including LBTH) provide an update regarding whether there is yet agreement in respect of the assessed case?</i> <i>What are the host borough's views on whether a new Requirement in the dDCO for air quality monitoring and mitigation (along the lines of R26 of the made M4 DCO) would help to overcome their concerns, if the Order was made and the proposed mitigation measures do not work as expected? For ease of reference, R26 of the M4 DCO is attached as Appendix 1.</i> 			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> As discussed at the hearing, there is not yet agreement between the Applicant and the boroughs on the assessed case, due to their concerns with the underlying traffic modelling and sensitivity testing. The Applicant considered that that its monitoring and mitigation methodology, set out in 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>the Monitoring Strategy, Traffic Impacts and Mitigation Strategy, and Charging Policies and Procedure document goes further than the proposed M4 Requirement for the following reasons:</p> <ul style="list-style-type: none"> • The M4 Requirement would take oversight of the mitigation regime away from the boroughs. • The proposed mitigation regime can be considered now as part of the Examination of the Scheme, offering certainty, rather than a 'scheme' to be agreed at a later date. • Under the M4 Requirement, monitoring is only triggered by a change in air quality in excess of 0.4µg/m3 as predicted in the ES, and where annual mean concentrations are above the national air quality objective value. In the case of the Scheme, this would trigger less monitoring locations compared to those contained in the application proposals. • The comprehensive nature of the proposed monitoring and mitigation regime reflects the fact that the Applicant has considered how best to deal with potential air quality effects of the Scheme as part of its application proposals, something the M4 did not do. 	
<p>Response to matters raised by Interested Parties and the ExA at the Hearing</p>		<ul style="list-style-type: none"> • Notwithstanding the above, the Applicant recognises that concerns as to the application approach were expressed by the Panel, the boroughs, Rebecca Moore and the Westcombe Society at the Hearing (particularly in relation to 'hard' environmental triggers, and the need to take account of redistributed traffic) and has thus considered its mitigation and monitoring proposals further for Deadline 3. These considerations are explained further in the 'Applicant's Update' note submitted at Deadline 3. 	<p>Applicant's Update Note (submitted at Deadline 3 Applicant reference 8.59)</p>

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<p>4.12 Please could the neighbouring authorities (including, but not limited to LB Lewisham, LB Southwark and LB Hackney) provide updates as to whether there is agreement with the Applicant on whether the proposed development would affect their LAQM work towards improving air quality against the EU limit values, and whether there is a way forward in terms of assessing how much more difficult achieving the limit values would be if the proposed development went ahead?</p>			
<p>Agenda Item Response</p>	<p>Stephen Pyatt</p>	<ul style="list-style-type: none"> The Scheme will not affect the local authorities (Lewisham, Southwark and Hackney) AQMAs. The Scheme has a beneficial impact in areas with the poorest air quality and therefore as set out in the Applicant's response to FWQ AQ13, it is the Applicant's position that the Scheme will contribute to improving air quality within some AQMAs/AQFAs. However, further to discussions with these councils, the Applicant has undertaken additional local modelling to predict the impacts at a sample set of receptors along those roads in LBL and LBS with the highest changes in flows as a result of the Scheme. The results of this work are set out at Appendix 8 to this submission. 	<p>Chapter 6 – Air Quality (AS-022].</p> <p>Response to FWQ AQ13 (REP1-151 pp 32-41]</p> <p>Note on additional modelling work in relation to Lewisham and Southwark (Appendix 8 to this submission)</p>
<p>4.13 Do any other IPs have any further updates in relation to air quality assessment and monitoring matters?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> The Applicant considers that the points raised by Westcombe Society (4.11), Rebecca Moore (4.11), East Greenwich Residents' Association (4.2) and Newham (4.7) at this point in the Hearing proceedings have been dealt with above. This response therefore seeks only to deal with the points raised by the Motorcycle Action Group and Friends of the Earth. <p><u>MAG</u></p> <ul style="list-style-type: none"> The Motorcycle Action Group queried whether the Applicant has the obligation to look at 	

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		<p>macro level of emissions for all vehicles, including creation and decommissioning of the vehicles themselves. The Applicant can confirm that the assessment is based on emissions from vehicles operating on the road in the opening year in accordance with the Design Manual for Roads and Bridges (DMRB) guidance and does not look at emissions during the creation and decommissioning of the vehicles themselves.</p> <p><u>Friends of the Earth</u></p> <ul style="list-style-type: none"> • Friends of the Earth made a number of comments, to which the Applicant responds below: <ul style="list-style-type: none"> ▪ It is important to recognise how extreme FoE's position is. ▪ The FoE position expressed at the hearing was that if a project causes any worsenings of air quality above an EU Directive 'limit value' then development consent for that project must be refused. ▪ This point is maintained however small the worsening. So, for example, at the London City Airport planning inquiry (2016), Ms Bates, on behalf of FoE, made this same point where the worsening was so small that the fall in background levels would remove any exceedance within three weeks. ▪ As many roads within London currently have NO₂ levels above the relevant EU 'limit value' of 40µg/m³ the natural corollary of this point is that all further development in London, however small, would have to be refused planning permission, as residents or workers might drive cars on the London road network. ▪ Overall, the Silvertown Tunnel scheme is beneficial in air quality terms, but the FoE position would still require development consent to be refused as a few receptors experience a worsening of NO₂ levels above the 40µg/m³ 'limit value'. Paradoxically, the FoE position results in an overall worsening in air quality by preventing an overall 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>improvement.</p> <ul style="list-style-type: none"> ▪ The Applicant considers that this is not a correct interpretation of the EU Directive. <p>How the EU AQ Directive (2008/50/EC) should be understood</p> <ul style="list-style-type: none"> ▪ It is right that the EU AQ Directive requires member states to achieve compliance with 'limit values' for air quality by the specified dates for each pollutant (article 13). ▪ The Directive also provides a remedy where compliance has not been achieved by the specified date and that is for the Member State to adopt an Air Quality Plan ('AQP') to achieve compliance so that the exceedance period is kept as short as possible (article 23). ▪ The decision of the High Court in ClientEarth (No2) was about whether Defra's new 2015 AQP did achieve compliance within a period that was a short as possible and about Defra's Pollution Climate Mapping ('PCM') model. In short, the High Court made criticisms of the PCM model and found that Defra's AQP for the London agglomeration did not achieve compliance with limit values in a period that was a short as possible. ▪ The extract quoted by Jenny Bates, on behalf of FoE, from the judgement of Mr Justice Garnham that "the Secretary of State must aim to achieve compliance by the soonest date possible" (para 52) must, therefore, be understood in the context of AQPs and article 23. Indeed, the quotation comes is a part of the judgement, starting at para 42, which states that "The first step in addressing this claim has to be determining the proper construction of Article 23." (i.e. the article relating to the Member State's AQP). ▪ Neither the EU AQ Directive (including article 23) nor ClientEarth (no2) says anything about having to refuse individual development control applications where there would be a worsening of an exceedance of a pollutant level about a Directive 'limit value'. 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<ul style="list-style-type: none"> ▪ What can be taken from ClientEarth (No2) is that Defra's 2015 AQP fails to comply with article 23 in that it did not achieve compliance as quickly as possible and that Defra must now produce a further plan (para 95). ▪ Thus it is reasonable to expect that, to the extent that the Silvertown tunnel air quality modelling relied on the 2015 AQP background levels, that modelling will be pessimistic (i.e. it will over-estimate NO₂ levels). This is the point briefly made in the Applicant's response to the Rule 17 request on the Client Earth (No2) case.. <p>The National Networks NPS</p> <ul style="list-style-type: none"> ▪ FoE referred to comments about paragraph 5.13 of the NPSNN made by Richard de Cani, on behalf of TfL, at the House of Commons' Environment Audit Committee's hearings into the Airport Commission's Final Report. Para 5.13 of the NPSNN relate to whether a highway scheme would result in an agglomeration becoming non-compliant in respect of the EU AQ Directive, or would affect the ability of a non-compliant area to achieve compliance. ▪ Mr de Cani's comments were not a challenge to Government policy in that paragraph, but related to the need also to have regard to the approach in Interim Advice Note ('IAN') 175/13. Annex A (p17) of that IAN provides a flow diagram for considering compliance with the EU AQ Directive and TfL's compliance risk assessment in this application has followed the IAN approach and balances improvements and worsenings in air quality. <p>Criticism of Defra's PCM model</p> <ul style="list-style-type: none"> ▪ As made clear in its Rule 17 letter about the ClientEarth (No2) judgement, TfL will not be able to update its compliance risk assessment under IAN 175/13 until Defra has produced its new AQP and published the output of the PCM model for the relevant links within the Silvertown Tunnel modelling area. 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<ul style="list-style-type: none"> ▪ As stated above, however, the High Court's criticism of the (2015) AQP for the London agglomeration was that it did not achieve compliance as quickly as possible. Thus one would expect background NO₂ levels with the new replacement Defra AQP to be lower than those is TfL's compliance risk assessment reported in the ES. <p>Re-assessment prior to scheme opening</p> <ul style="list-style-type: none"> ▪ The Silvertown Tunnel ES contains a full air quality assessment based on forecast vehicle flows at the opening year (now thought to be 2023). TfL has also undertaken to monitor vehicle flows and other environmental data during the period before opening and to update its traffic modelling with a view to helping set the actual user charges closer to the opening date. ▪ Contrary to FoE's assertion otherwise, this is perfectly acceptable in environmental impact assessment ('EIA') terms, as TfL has undertaken a proper EIA for the purposes of the ES. <p><u>Conclusion</u></p> <ul style="list-style-type: none"> • In short, FoE is wrong to suggest that TfL's ES is inadequate and / or that a worsening of air quality levels at some receptors above EU 'limit values' requires development consent to be refused in the context of an overall improvement of air quality as a result of the scheme. 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
5. Geology, soils and contaminated land			
<p>5.1 The draft SoCG between the Applicant and the Environment Agency [REP1-130] states that the following geology, soils and contaminated land matters were still under discussion:-</p> <ul style="list-style-type: none"> • impacts from dewatering and mitigation; and • groundwater level monitoring <p>Please can the EA provide an update regarding whether these matters have been agreed? If agreement has been reached, what does the Applicant propose to do to address these matters in terms of securing the required monitoring and mitigation in the dDCO?</p>			
Agenda Item Response	Elizabeth Jenks	<ul style="list-style-type: none"> • <u>Impacts from dewatering</u>: The Applicant believes that the dewatering assessment, the draft monitoring documents and requirements around monitoring and mitigation are agreed in principle. However, discussions are ongoing regarding the wording of the protective provisions around this topic. Discussions with the EA continue in this regard. • <u>Groundwater Level Monitoring</u>: The Applicant believes that in principle EA are in agreement that groundwater monitoring will be undertaken throughout construction and post construction and are content with the draft Groundwater Monitoring Strategy (appendix F of the COCP (REP02-027)). However, wording of the protective provisions on this matter are still under discussion. • Requirement 5 of dDCO secures mitigation in COCP which requires a Groundwater Monitoring and Verification Plan to be submitted for approval to EA, to be developed with regard to the draft Groundwater Monitoring Strategy. Further detailed mitigation measures regarding Groundwater are outlined within section 9.3 of the COCP (REP02-027) 	<p>Chapter 12 ES Geology and Soils provides assessment [APP-031 and as revised at REP1-105]</p> <p>DCO Revision 3 (submitted at Deadline 3 Applicant Reference 3.1)</p> <p>COCP section 9.3 Groundwater [REP02-027]</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
6. Noise and vibration			
<p>Prior to discussion of the agenda items under this topic, Rupert Thornley Taylor, on behalf of the Applicant, made the following general points as to the noise effects of the Scheme:</p> <ul style="list-style-type: none"> • The Scheme has unusually low noise and vibration effects. There are no significant adverse effects due to noise or vibration. • While the ES identifies a number of dwellings with a moderate adverse significance of effect, these are all in one development, Hoola, which has been constructed in accordance with planning conditions that secure a high quality internal noise environment with or without the Scheme. • These conclusions remain the same even with allowance for uncertainty. It is true that in some locations present day background noise levels are influenced by land uses in the vicinity that will change in the future, but the role of baseline monitoring is actually limited. Measured baseline data is not used in the operational assessment, which compares modelled future noise levels with and without the Scheme. • With regard to modelling of the operational noise effects, the method of traffic noise modelling which is well established in the UK takes account of a wide range of parameters, and it takes a large change in any one of them to cause a material change in the model results. For example, if all other parameters are unchanged, it takes a 26% increase in traffic flow to cause a 1 decibel increase in L10 18 hour (the smallest change in short time noise level that results in a moderate level of significance at a receptor of very high sensitivity) and a 100% increase in traffic volume to cause a 3 dB change (the smallest change in noise level that results in a moderate level of significance at a receptor of high sensitivity). • While measured baseline noise levels are an input to determining the noise assessment thresholds for construction noise, the baselines here will all be re-measured in the pre-construction surveys, and mitigation of construction noise has little dependence on baseline. The provisions of Section 61 of the Control of Pollution Act give local authorities the power to secure the use of best practicable means to reduce noise, whether or not it has been found to be significant in an ES. 			

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
6.1 Further to the Applicant's details of the proposed barriers at Siebert Road [REP2-040], could the Applicant explain why it is not proposing to extend the barriers from Invicta Road westwards towards the B210 Charlton Road to provide mitigation for Invicta School?			
Agenda Item Response	David Rowe Rupert Thornley-Taylor	<ul style="list-style-type: none"> • The location of the proposed barrier is outside of the DMRB detailed study area. However, all identified RXHAM links have been considered as defined within the RXHAM traffic model area. No study has been undertaken outside of the RXHAM traffic model area. • The results of this assessment of links outside of the detailed DMRB study area are presented in the ES (Tables 14.44 and 14.48), and this covers the A102 Blackwall Tunnel Southern Approach. The overall results of all considered links outside of the DMRB study area show: <ul style="list-style-type: none"> • Short term – Neutral, no links with noise change greater than 0.9dB • Long term – Neutral, no links with noise change greater than 2.9dB • Thus, the noise assessment in the ES does not identify a need for mitigation at Seibert Road as a result of the Scheme. • Notwithstanding this, the Applicant has had discussions with Greenwich and has committed to providing an acoustic barrier at Seibert Road to attenuate <u>existing</u> noise from the A102. The barrier is therefore an environmental enhancement, rather than a mitigation measure. • Any noise barrier would be subject to feasibility checks (given the constraints of this location), consultation, and obtaining the necessary consents (i.e. separate from the DCO). Its precise length is therefore not yet determined. • In respect of Invicta School, the indicative report on the barrier submitted at Deadline 2 (REP2-040) did not refer to the School as this had not previously been suggested by RB Greenwich, who has brought forward the suggestion of this barrier. 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
6.2 As these proposed barriers would be outside the Order limits, how is the Applicant proposing to secure their construction?			
Agenda Item Response		<ul style="list-style-type: none"> As the proposed acoustic barrier is located outside of the Order limits, and is not a mitigation for the Scheme itself, it is considered appropriate that this be secured through a legal agreement between TfL and the RB Greenwich, rather than through the DCO itself. 	
6.3 What are RBG's and the Westcombe Society's views on how the barriers at Siebert Road should be secured?			
Response to matters raised by Interested Parties		<ul style="list-style-type: none"> At the Hearing, the Westcombe Society queried whether the proposed barriers would have Air Quality or pollutant benefits. The Applicant has not carried out a detailed review of the air quality impacts of the barriers—as their purpose is to mitigate the existing traffic noise issues in the Seibert Road area. However, its air quality advisors have a broad understanding of studies that have been carried out in different countries and would conclude that there is some evidence that solid barriers can reduce concentrations for receptors behind the barrier. The effectiveness cannot be readily quantified. 	
6.4 Further to the updated air quality and health assessment [REP2-041], have the additional 400 OHVs travelling northbound been considered in the noise assessments? If not why not?			
Agenda Item Response	Rupert Thornley-Taylor	<ul style="list-style-type: none"> The Applicant can confirm that the scenario of 400 additional OHVs was not reported in the ES for the noise assessment. However, this has now been considered in the technical note produced in relation to these vehicles movements that was submitted at Deadline 1 (Appendix K of the Applicant's responses to FWQs on Air Quality [REP1-151]). This note sets out both a short (Table 2) and long (Table 3) term DMRB assessment 	Draft HGV Management Strategy (Appendix K of response to AQ FWQs) [REP1-151 p.1022-1089])

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>within detailed study area including the 400OHV's and as reported in the ES for comparison.</p> <ul style="list-style-type: none"> • In summary, this note sets out that, as would be expected, the addition of 400 extra OHVs onto the network near to Silvertown tunnel generally: <ul style="list-style-type: none"> • Increases the number of receptors showing an increase in noise in both long and short terms • Reduces the number of receptors showing a decrease in noise in both the long and short term • However, despite this, in the short term, the significance of impacts remains the same as the ES case as there are no increases greater than 2.9dB. • This is the same as in the long term, because there are no increases greater than 4.9dB • In summary therefore, the inclusion of the 400 OHV's does not materially change the conclusions of the ES. 	
<p>Response to matters raised by Interested Parties at the Hearing and Action Point 11</p>		<ul style="list-style-type: none"> • As raised by Newham at the Hearing and at ExA Action Point 11, it has been queried whether the same conclusions regarding noise impacts would apply if there were 520 vehicles (i.e. the unadjusted number of OHVs) travelling northbound, and the Applicant was requested to update the analysis underlying Table 2 of the same document could be re-run, and present the results to the Examination. This was based on the suggestion that some OHVs might currently be deterred from using the crossing in both directions due to the presence of the northbound height restriction. • For the detailed reasons previously set out in Section 5 of the Draft HGV Management Strategy (Appendix K of response to AQ FWQs] [REP1-151 p.1022-1089]), the Applicant considers that 400 OHVs (AADT) already represents the 'worst case' assessment and that in practice it is likely that HGV flows on the local highway network 	<p>Draft HGV Management Strategy (Appendix K of response to AQ FWQs] [REP1-151 p.1022-1089])</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>in Silvertown would in fact be much lower due to expected changes to land uses in the area (some of which are a direct result of the Scheme's construction). In the absence of evidence that OHVs are avoiding the Blackwall Tunnel southbound due to the height restriction, the Applicant considers that the assessment already undertaken would more than account for any reassignment of OHVs from other crossings.</p> <ul style="list-style-type: none"> As indicated would be the case at the Hearing, there has been insufficient time to re-run the model to present the data in tabular form by Deadline 3. This will therefore be presented at Deadline 4. 	
<p>6.5 Please can the Applicant respond to LBN's concerns in page 19 of [REP2-011] regarding the lack of photographic and other evidence regarding the location of the noise monitoring stations?</p>			
<p>Agenda Item Response</p>	<p>Rupert Thornley-Taylor</p>	<ul style="list-style-type: none"> Further photographic evidence and observation sheets from all short-term monitoring locations have been included in the revision to Appendix D <i>Additional Noise Survey Data</i> of 'Comments on Borough Local Impact Reports and Written Representations' and submitted at DL2 as (REP2-036). The Applicant recognises that there is no photographic evidence from <u>long term monitoring</u> though additional information about the exact locations of the Sound Level Meter installations is also provided in the same Appendix as Google Street View map. Further detail on noise monitoring in Newham is also included in Appendix A of the same document 'Technical Note: Explanation of Baseline Noise and Vibration Monitoring in Newham' (REP2-036). However, the Applicant considers that, in the context of the Scheme the lack of other photographic evidence regarding these locations does not affect the quality of monitoring to be carried out, as a photograph only shows what is present at the time, and for a long term location it would require continual recording of a 360 degree view to enable identifiable sources responsible for noise events to be located, and that is impracticable. 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<ul style="list-style-type: none"> Whilst it is true that some noise sources present at the time of the survey will not be present, or have been replaced by others, is the opening year. However as explained in the CoCP pre-construction long term monitoring will be undertaken, and the results of past monitoring will not play a part in the application of local authorities' powers to require the use of best practicable means through Sections 60 and 61 of the Control of Pollution Act 1974. 	
Response to matters raised by Interested Parties at the Hearing		<ul style="list-style-type: none"> At the Hearing, Newham requested details of the monitoring regime proposed for the Hoola development, and generally requested stricter controls for noise monitoring and mitigation for the Scheme, such as insulation and rehousing, where necessary. The Applicant is continuing to discuss this issue with Newham, and will be meeting with them soon after Deadline 3 to discuss such controls, and the wording of the CoCP generally. Any changes arising from these discussions will be reflected in the updated CoCP to be submitted at Deadline 4. 	
<p><i>6.6 LBN also raise the concern that the increased number of lorries and buses on the approach roads to and from the Silvertown tunnels would create engine noise as the dominant noise rather than road-tyre interaction. Please can the Applicant explain where in the ES this is considered and assessed?</i></p>			
Agenda Item Response and Action Point 10	Rupert Thornley-Taylor	<ul style="list-style-type: none"> This was considered in the ES, as the noise model was constructed and calculated in accordance with CRTN, as required by paragraph 5.191 of the NNNPS (as confirmed at page 14-4 of the ES. Paragraph 14 (at page 5) of CRTN (enclosed, further to ExA Action Point 10, at Appendix 9 to this submission) (page 5) outlines the relationship between heavy vehicles and speed in its methodology. This relationship is further presented within Chart 4 (page 14) of CRTN which 	CRTN (Appendix 9 to this submission)

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		demonstrates visually how the issue of low speed heavy vehicles is accounted for in the prediction methodology.	
<p>6.7 LBN also require further assurances through 3D noise modelling that appropriate noise reductions can be achieved by the barriers. Has the Applicant considered barrier reflection effects and is it proposing to undertake further modelling in relation to the effectiveness of the mitigation, if so when?</p>			
<p>Agenda Item Response</p>	<p>Rupert Thornley-Taylor</p>	<ul style="list-style-type: none"> The Applicant can confirm that it has considered barrier reflection effects, such that additional modelling is not required. This is because the CTRN procedure (under which, as confirmed above, the ES assessment was carried out) does take account of reflections from houses, buildings, noise fences and walls, as set out at paragraph 26.2 (page 19). This has therefore been implemented and incorporated into the model where necessary and appropriate. The noise model is therefore constructed on the basis of reflective barriers in all specified locations. As such the barriers are assumed to have no absorptive qualities in the model as a worst case. 	<p>CRTN (Appendix 9 to this submission)</p>
<p>6.8 Further to the Applicant's response to ExA FWQ NV15 [REP1-166], can the Applicant now provide a scale plan showing the proposed locations of the high friction road surfacing? How would this be secured in the dDCO?</p>			
<p>Agenda Item Response</p>	<p>Rupert Thornley-Taylor Martin Beckett</p>	<ul style="list-style-type: none"> As explained at the Hearing, the need for high friction surfacing arises out of the safety audit process, which itself will be dependent on the detailed design process. As such, the Applicant cannot confirm at this stage where such surfacing would be provided once the detailed design is finalised. However, as set out in the Applicant's response to FWQ NV15, the Applicant has considered potential locations where such surfacing is likely to be required, and these are detailed in that response. An indicative plan of these locations is enclosed at Appendix 10 of this submission. However, the Applicant is aware that the host boroughs are concerned as to the relationship between high friction surfacing and low noise surfacing, and has therefore 	<p>DCO (submitted for Revision 3)</p> <p>Indicative Plans for location of High Friction Surfacing and Low Noise Surfacing (Appendix 10 to this)</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		made amendments to Requirement 12 at Deadline 3 to provide for this.	submission).
Response to matters raised by Interested Parties and the ExA at the Hearing		<ul style="list-style-type: none"> At the Hearing, the ExA asked the Applicant to provide details of the likely technical specification of the low noise surfacing. This is dealt with in the Applicant's response to FWQ NV2. The ExA also questioned whether funding concerns may constrain the quality and extent of low noise surfacing. As set out in the Funding Statement [APP-016] and the Written Summary of Case for the Compulsory Acquisition Hearing [REP2-038], the Scheme, and all commitments made under it are fully funded. As such, these concerns would not arise. 	<p>Response to FWQ NV2 [REP1-166 pp. 14-15.</p> <p>Funding Statement [APP-016]</p> <p>Written Summary of Case for the Compulsory Acquisition Hearing (REP2-038)</p>
<p>6.9 LBN also raise concerns about the use of low noise surfacing to assess noise impacts at the Hoola development, although the surrounding roads (Silvertown Way and the junction from the Silvertown roundabout up to Silvertown Way) are not in the Order limits. How does the Applicant propose to secure the use of low noise surfacing on roads outside the Order limits? Also should the wording of R12(1)(a) be changed so that low noise surfacing is secured across all roads in the DCO area, (currently worded as "any low noise surfacing")?</p>			
Agenda Item Response	Rupert Thornley-Taylor Martin Beckett	<p><u>Outside Order Limits</u></p> <ul style="list-style-type: none"> As expressed at paragraph 14.4.10 of the ES, the Applicant has assumed that, within the scope of the 2036 Do Minimum scenario, on-going maintenance and improvements by TfL and other bodies would ensure that all roads within the network would be resurfaced with a low noise or thin surfacing system. If the assumption was incorrect that low noise surfacing was not placed outside of order 	<p>ES [APP-031 Chapter 14 and paragraph 4.5.7]</p> <p>ES Figure 14.6 [APP-039]</p> <p>Comments on</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>limits in the long term, this would effectively result in fewer decreases in noise and more increases in noise in the long term. However, it would not materially change the conclusions of the ES, as no long term impacts would be greater than 4.9dB which marks the upper limit of a Minor magnitude of change in accordance with the DMRB, which is the same as that reported through the ES. As such, there is no need for this requirement to make provision for low noise surfacing on roads outside the Order Limits.</p> <p><u>Within Order Limits</u></p> <ul style="list-style-type: none"> • As set out in paragraph 14.5.7 and indicatively illustrated in Figure 14.6 of the ES, the Scheme design includes the mitigation measures upon which the assessment is based, including low noise surfacing to be laid on new or altered roads within the Order Limits. • In both the short and the long term noise assessments, if the 1db reduction assumed for the application of low noise surfacing within the Order Limits was not included in the assessment (for example, because of high friction surfacing being placed), this would not change the significance of effect at the Hoola development. This can be seen by reference to the technical note considering the noise implications at the Hoola development submitted as Appendix E to REP1-166 submitted at Deadline 1. The calculations presented within this technical note demonstrate that with the inclusion of the Silvertown scheme the internal noise levels would be acceptable with regard to the planning permission limits for the development granted by the LB Newham. As the removal of the LNS only accounts for the removal of a 1dB correction the predicted internal noise is shown to be sufficiently below the planning permission limit that an increase of this magnitude would have no material influence. • Requirement 12 is drafted such that any operational noise mitigation measures, including the low noise road surfacing, must be in accordance with the mitigation stated in the ES, or otherwise not environmentally worse than that stated in the ES. • Chapter 14 of the ES sets out the basis of the assessment and why no additional mitigation apart from noise barriers is required inside or outside the Order Limits. This is further evidenced by the Noise Mitigation Technical Note set out at Appendix C of the 	<p>Borough LIRs and WRs Appendix C [REP2-036 pp. 33-75]</p> <p>Response to Noise FWQs Appendix E [REP1-166]</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>Applicant's response to the Boroughs' LIR and WRs.</p> <ul style="list-style-type: none"> The Scheme assessment and resultant mitigation measures are therefore not based, and do not demonstrate the need for low noise surfacing needing to be placed on <u>all roads</u> within the DCO, and so this should not be added to the requirement. 	
Response to matters raised by Interested Parties and the ExA at the Hearing		<ul style="list-style-type: none"> At the Hearing, Newham queried whether Requirement 12 should be amended so that all roads within the Order Limits would have low noise surfacing except where a road safety audit required high friction surfacing. As set out above in the response to item 6.8, Requirement 12 of the DCO has been amended at Deadline 3 to clarify the relationship between low noise surfacing and high friction surfacing. 	
6.10 Further to LBN's concerns about how night time construction noise levels were calculated, please can the Applicant clarify why it considers that 23:00-07:00 is a 12 hour period, rather than an 8 hour period?			
Agenda Item Response		<ul style="list-style-type: none"> The Applicant acknowledges that there was a mistake in the FWQ response to NV18 (point 3). This response should have referred to an 8 hour period. The Applicant can confirm that the study is undertaken on the basis of the overnight period being 23:00 – 07:00 as referenced throughout the ES and supporting appendices 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
6.11 The host boroughs (and an Affected Person) support the inclusion of construction working hours being a requirement in the dDCO, despite the Applicant's preference to provide this information in the CoCP. Could the Applicant and the host boroughs now propose the wording for this for DL3?			
Agenda Item Response		<ul style="list-style-type: none"> The Applicant considers that a separate DCO Requirement is not required as working hours are secured in section 2.3 of the CoCP, which is itself secured by Requirement 5 of the draft DCO. 	CoCP [REP2-028 section 2.3]
6.12 The host boroughs wish to see lorry routing as a requirement in the dDCO. Please can the Applicant and host boroughs propose the wording for this for DL3?			
Agenda Item Response		<ul style="list-style-type: none"> The Applicant considers that a separate DCO Requirement is not required as lorry routing will be finalised in conjunction with the host boroughs as part of the Construction Traffic Management Plan required under the CoCP, as set out at paragraph 3.1.7 of the CoCP. That same paragraph suggests the principal routes upon which these routes would be based, but this would be finalised in detailed design with the host boroughs. In the short term, the Applicant will continue to discuss these indicative routes with Newham and London Borough of Tower Hamlets, in light of the general concern expressed at the Hearing as to the current routes suggested. 	CoCP [REP2-028 paragraph 3.1.7]
6.13 Do the host boroughs and other IPs consider that R12 on operational noise mitigation measures should also include the need for the mitigation to be maintained and retained?			
Agenda Item Response		<ul style="list-style-type: none"> The DCO has been amended at Deadline 3 to provide for the operational noise mitigation scheme that is submitted to the relevant planning authority to include details of their retention and maintenance. 	DCO Revision 3 (submitted for Deadline 3)

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
<p>6.14 Further to the Applicant's response to ExA FWQ MR12, stating that a pre-cast tunnel manufacturing plant was not assessed in the ES, (nor was it listed in the envisaged list of plant in response to FWQ NV8), can the Applicant confirm that a pre-cast tunnel manufacturing plant would not form part of the proposed development?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> • The Construction Method Statement clearly identifies that detailed construction and final design will be developed in its final implementation form by the appointed Contractor on the basis of the updated baseline information and known technology, requirements and environment at that stage in time and the process, but within the framework and controls set in the DCO and the CoCP. • Examples of such detailed construction and final design development include the detailed sequences of construction on an element by element basis, choices of supply chain for materials or services, and temporary works arrangements that may be needed to safely, efficiently and effectively construct the works. All of these decisions will be taken in light of the selected Contractor's particular skills and body of knowledge and experience, and in the knowledge of the environmental parameters of the Scheme, informed where appropriate by additional monitoring required by the CoCP. • One of the detailed construction decisions the Contractor will have to take will be to decide whether concrete segments will be manufactured on-site, through a pre-cast concrete tunnel lining manufacturing plant, or off-site. A further detailed construction decision, as foreshadowed by paragraph 4.4.36 of the CMS, will be the selection of TBM and associated processes used for construction of the Silvertown Tunnel, in that a Contractor could choose to use a Slurry TBM rather than an Earth Pressure Balance TBM as was assumed in the CMS. • The Applicant is aware that that these options have not been explicitly addressed in the ES, and appreciates the ExA's concerns as to ensuring such options fall within the parameters of the envelope assessed in the ES. • As such, it has produced two reports, submitted at Deadline 3, which appraise these two options, and confirm that their potential use would fall within that envelope, and thus 	<p>PCC Segment Lining Manufacturing Environmental Appraisal (submitted at Deadline 3 Applicant reference 8.65).</p> <p>Slurry TBM and Treatment Plant Environmental Appraisal (submitted at Deadline 3 Applicant reference 8.66).</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>could form part of the proposed development.</p> <ul style="list-style-type: none"> The reports separately consider the environmental effects of the individual choice in isolation (that is, on-site or off-site segment fabrication and TBM method selection), and also consider the cumulative effects of both selections being made in combination. The assessments reported in these documents demonstrates that the overall effects, with either or both of these options being utilised, fall within the parameters of the Scheme's assessed impacts. 	
6.15 Do any other IPs have updates in relation to noise assessment and noise mitigation proposals?			
		<ul style="list-style-type: none"> No further points were raised by Interested Parties for this agenda item. 	
7. Health, safety and security			
<p>7.1 With reference to RBG's responses to the action points arising from the Accompanied Site Inspection held on 6 December 2016 [REP2-016] and HSE's response to FWQ HSS6 [REP1-080]:-</p> <ul style="list-style-type: none"> <i>please can RBG provide an indication of when the 2012 Brenntag application to vary the Hazardous Substances Consent (HSC) will be determined; and</i> <i>in view of the likely timescale (given by RBG) for the revocation of the HSC for the East Greenwich Gasholder Station (EGGS), as Autumn 2017, could HSE and the Applicant now agree the draft wording for the proposed Grampian style requirement which, should the DCO be made, would prohibit the use of the proposed development until such a time as the HSC(s) are revoked or modified such that HSE no longer advise against the development?</i> 			
Agenda Item Response		<ul style="list-style-type: none"> In acknowledgement of the fact that the Applicant considers that the Secretary of State would be unlikely to approve a 'Grampian' style requirement, the Applicant has been working with the Health and Safety Executive and the Royal Borough of Greenwich to expedite decisions on the Brenntag and EGGS sites, and to agree appropriate wording to be included in the DCO. These discussions are reflected in the draft Statement of 	SoCG with HSE (submitted at Deadline 3 Applicant reference SoCG0023)

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>Common Ground submitted at Deadline 3.</p> <ul style="list-style-type: none"> Further updates on this matter, including proposed wording will be submitted to the Examination in due course once an agreed position has been reached. 	
<p>7.2 With reference to the representations from the City of London (CoL)[REP1-051], London Borough of Southwark (LBS) [REP1-008] and LBN [REP2-011] regarding the LBS and CoL request that Silvertown Tunnel be constructed and operated with Category A designation (that is, there would be no restriction on the transport of dangerous goods), please can the Applicant:-</p> <ul style="list-style-type: none"> confirm whether it is proposing to allow any dangerous goods to be transported through Silvertown Tunnel, should the DCO be made? The ExA notes that the Applicant states that the proposal is to designate Silvertown Tunnel as a Category E tunnel (that is there is an effective restriction on all dangerous goods) [REP2-035, paragraph 3.4.25]; and if not, how would this prohibition of dangerous goods be secured for the lifetime of the development in the dDCO? 			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> The Applicant confirms that it does not intend to allow dangerous goods to be transported through Silvertown Tunnel and it is intended that the Tunnel will be designated as Category E under the Carriage of Dangerous Goods and the Use of Transportable Pressure Equipment Regulations (CDG), 2009. However, the Category E designation will not be secured in the dDCO. The current drafting of the dDCO would enable the Applicant to apply any of the designations (A-E) of the CDG Regulations (2009) to the tunnel. This is because it is the responsibility of the competent authority (the Applicant in the case of Silvertown Tunnel) to assign a tunnel category taking account of tunnel characteristics, risk assessment (including availability and suitability of alternative routes and modes), and traffic management. As these considerations are dynamic and subject to change throughout the lifetime of the development, it would be inappropriate to commit to a Category E classification in the dDCO. 	

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8. Marine ecology			
8.1 MMO's response to FWQ ME1 [REP1-046] considers that as only 2 samples out of 10 stations were obtained from the sub-tidal grab survey, some further sampling may be required to obtain a more accurate characterisation of the marine ecology of the area. Please can the Applicant advise when this additional sampling would be carried out and how would the results be disseminated?			
Agenda Item Response	Natalie Frost	<ul style="list-style-type: none"> • The Applicant has agreed with the MMO and their specialist advisors, Cefas that the original survey specification carried out by the Applicant was appropriate and had been agreed with Cefas specialists at that time. • As set out in the Applicant's response to the MMO's written representation ('WR') on this point (REP2-044), the species and benthic assemblages recorded in the area were considered typical of communities recorded in the inner Thames Estuary. No marine species or habitats which are considered nationally scarce or rare were recorded within the survey area. • Notwithstanding this, the MMO has considered that they would like further benthic data to be collected in order to re-confirm the assessment findings prior to construction. This will require a further benthic survey prior to construction of the jetty or the dredging to ensure no protected species are present. • The Applicant is discussing the scope of benthic surveys required pre construction to address MMO's concerns. A technical note outlining the proposal is currently being drafted by marine specialists and will be circulated to MMO for approval. The DML and COCP will be amended once agreed. 	<p>Chapter 10 Marine Ecology of ES [APP-031]</p> <p>Comments on IP response to FWQ ME1 [REP2-034 pp 218-219]</p> <p>Applicant response to MMO Written Representation [REP2-044 Response to WR.MMO.1, pp 31-34]</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
<p>8.2 With reference to NE's answer to FWQ ME2 [REP1-063], please can NE, the MMO and the Applicant provide an update regarding the Thames Estuary recommended Marine Conservation Zone (rMCZ) and whether there is agreement in respect of whether potential impacts on the proposed features of the rMCZ have or have not been considered in the submitted ES? If not, is there a need to carry out a further assessment?</p>			
<p>Agenda Item Response</p>	<p>Natalie Frost</p>	<ul style="list-style-type: none"> • The Scheme Order Limits fall within the boundary of the recommended MCZ (not designated as MCZ). However, as the MCZ is not recommended, MMO guidance recognises that a formal MCZ assessment is not required. • All features have, however, been fully considered within the assessments provided in the ES. This includes the habitat and species features as cited within the rMCZ, as explained in the Applicant's response to FWQ ME2. • As set out in that response, even if the level of importance assigned to these features changed to high (which would reflect an importance of being internationally designated), this would not materially change outputs of assessments presented in ES. • This position was agreed verbally by the MMO at the Hearing. • Discussions are ongoing between the Applicant and NE on this matter, and an update will be provided to the Examination in due course. 	<p>Response to FWQ ME2 [REP1-152 pp 7-8]</p>
<p>8.3 NE state in their answer to ME2 that, "TfL have agreed with NE that the rMCZ will be equally weighted throughout the planning examination". However, the Applicant's response to ME2 states [REP1-152], "It is therefore considered that little or no weight can be given to it". Please can NE and the Applicant explain whether these varying views are now resolved?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> • Discussions are ongoing between the Applicant and NE on this matter, and an update will be provided to the Examination in due course. 	
<p>8.4 With reference to NE's answer to FWQ ME7, please can NE and the Applicant provide an update regarding the agreement of the inclusion of the required mitigation for marine ecology interests in the deemed marine licence (DML), (Schedule 12 of the dDCO)?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> • An updated DML was submitted at Deadline 1 by the Applicant dealing with controls for effects on marine ecology. • Discussions are ongoing with NE as to their role within this framework, and an update 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		will be provided to the Examination in due course.	
8.5 Please can the Applicant confirm whether the location of the proposed temporary jetty is the only location where piling would be required?			
Agenda Item Response	Ian Gee	<ul style="list-style-type: none"> The temporary jetty (if selected by the Contractor) and associated marine piling necessary, would be constructed in the foreshore of the river Thames, in a limited and designated area. No other marine piling is proposed by the Applicant. Details of envisaged terrestrial piling are set out in the Construction Method Statement [APP-046]. 	Construction Method Statement [APP-046].
8.6 Further to the Applicant's response to FWQ ME7(b), which avoided providing the information that the ExA had requested in that question: please can the Applicant now confirm the techniques, duration and hours of working for piling at each proposed piling location, including providing a map showing the location at each piling site? The EA had previously asked for a piling method statement to be secured in the dDCO [RR-299] and repeated this in its WR [REP1-060], RBG state that they consider that this should be secured through Requirement 5 [REP1-003]; the MMO also require a piling method statement in the DML [REP1-046]. Please can the Applicant now add a piling method statement to Requirement 5(3) for approval by the LPAs and EA and/or as a condition within the updated DML for the MMO/EA to approve?			
Agenda Item and Action Point 12 Response	Ian Gee	<ul style="list-style-type: none"> As requested by the ExA as ExA Action Point 12, the Applicant is able to provide working hours, construction method, piling location for the <u>reference design</u> of the (single) proposed jetty piling site. This is provided at Appendix 11 to this submission. However, the Applicant cannot commit that the jetty will be configured exactly as it is described in the Construction Method Statement [APP-046] (although it will be situated only within the controlled works area), nor that it will be supported on piled foundations in the precise arrangement indicated. However, the revised version of the Code of Construction Practice submitted at Deadline 2 contained mitigation regulating any piling activities undertaken by the Applicant, taking on board comments received from interested parties, including the Environment Agency. Therefore, no separate requirement is considered necessary. Compliance with the Code of Construction Practice is secured by requirement 5 of the 	Indicative Details of Piling (Appendix 11 to this submission) CoCP [REP2-027 Chapter 8] DCO Revision 3 (submitted at Deadline 3 Applicant Reference 3.1)

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>DCO.</p> <ul style="list-style-type: none"> A separate piling method statement is not required as the dDML contained in Schedule 12 to the dDCO was amended at Deadline 1 to include an obligation, at licence condition 4, that the Applicant must submit a construction method statement prior to any licensed activity commencing. The Applicant would be required to therefore submit details of any proposed piling activities in the river under this condition for approval. The Applicant understands from discussions with EA, and their statements at the Hearing, that the EA are content to be named as a consultee under this condition of the DML (which the Applicant understands the MMO to be content with), and do not require a piling method statement to be secured elsewhere separately. The Applicant has made this amendment to the dDML at Deadline 3. 	
<p>8.7 The updated ES chapter on marine ecology [REP1-104], paragraph 10.5.1 states, inter-alia that:</p> <ul style="list-style-type: none"> any planned (non-emergency) dredging work must avoid the months of June to August (inclusive); and percussive piling would be limited to November-March (inclusive), unless otherwise agreed with the MMO, PLA and EA. <p>Whilst the ExA has concerns about the use of the tailpiece “unless otherwise agreed with the MMO, PLA and EA”, especially as the EA state that it is a specific prohibition to avoid noise and vibration affecting key fish spawning and migrating periods, where in the draft DCO are these matters secured?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> Paragraph 8.1.3 of the CoCP was updated at Deadline 2 to provide for no dredging from June – August inclusive without Environment Agency approval. No separate requirement is therefore needed. Paragraph 8.1.1 of the CoCP was updated at Deadline 2 to provide for percussive piling to be limited to November – March inclusive unless otherwise agreed with the MMO, PLA and EA. No separate requirement is therefore needed. The Applicant acknowledges that, as discussed at the Hearing, the ExA is concerned, in respect of dredging, piling, scour protection, and decommissioning of the jetty, as to the repetition of environmental controls within the CoCP, DML, and the protective provisions 	<p>CoCP [REP2-027 paragraphs 8.1.1 and 8.1.3]</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>for the benefit of the EA and the PLA, and subsequent variations to plans and consents under those documents.</p> <ul style="list-style-type: none"> The Applicant is continuing to discuss these concerns with the relevant bodies, and will make a submission at Deadline 4 to clarify these matters. 	
<p>8.8 The MMO [REP1-046] state that there are major concerns regarding the potential behavioural impacts for fish from impact piling which have not been adequately addressed. How is the Applicant proposing to resolve this matter?</p>			
<p>Agenda Item Response</p>	<p>Natalie Frost</p>	<ul style="list-style-type: none"> The Applicant's position on this matter is set out in its response to the MMO's WR (REP2-044). This position has been further discussed with the MMO and their advisers Cefas, including a review of the literature, and the MMO has indicated to the Applicant, and at the Hearing, that it is content with this position. 	<p>Comments on Written Representations - Statutory Bodies [REP2-044 pp. 37-39].</p>
<p>8.9 The MMO [REP1-046] state that major concerns remain in respect of coastal process matters regarding:-</p> <ul style="list-style-type: none"> the cumulative impacts of the scheme with other developments nearby (eg the redevelopment of the Learmouth Peninsular and the Greenwich Peninsular) with regard to sediment transport which need to be considered; further mitigation measures to limit re-suspension from dredging and eventually also from disposal are required; and whilst the MMO considers that these can be addressed through a Waste Disposal Strategy and the CEMP, the Applicant is requested to provide an update on whether these matters have now been considered and addressed in update Examination documents? If so, where? 			
<p>Agenda Item Response</p>	<p>Oliver Way</p>	<ul style="list-style-type: none"> The Applicant's position on this matter is set out in its response to the MMO's WR (REP2-044). The Applicant has had discussions with MMO to understand their concerns on coastal process issues and is undertaking a number of agreed actions such as model re-runs. The Applicant understands that MMO and Cefas are considering the Applicant's responses to all other matters. 	<p>Comments on Written Representations - Statutory Bodies [REP2-044 pp. 37-39]</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
<p>8.10 The draft SoCG between the Applicant and the Environment Agency [REP1-130] stated that the following marine ecology matters were still under discussion:-</p> <ul style="list-style-type: none"> • <i>potential effects of light disturbance and mitigation;</i> • <i>potential effects of dredging and mitigation;</i> • <i>potential effects of piling and mitigation; and</i> • <i>overall approach to mitigation.</i> <p>Please can the Applicant and EA provide an update regarding whether these matters have been agreed, and if so, what does the Applicant propose to do to address these matters in terms of securing mitigation in the dDCO?</p>			
<p>Agenda Item Response</p>	<p>Elizabeth Jenks</p>	<ul style="list-style-type: none"> • The Applicant and EA have come to agreement regarding light disturbance and mitigation, effects of dredging and mitigation, and overall approach to mitigation, and this will be expressed in the next iteration of the Statement of Common Ground submitted at Deadline 3. • The Applicant and the EA agree in principle regarding piling and mitigation. The details of the protective provisions to secure this are still being considered, in light of other controls in the DML and CoCP. 	<p>CoCP [REP2-027 Chapter 8]</p>
<p>8.11 Further to the EA's WR [REP1-060] section 4.0, have the measures required to minimise any harmful effects on fish now been secured in the dDCO or CoCP or subsidiary plans or schemes, to the satisfaction of the EA?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> • The CoCP was amended at Deadline 2 to incorporate that any dredging within the months of June, July and August shall only be undertaken with the approval of the Environment Agency. • Wider controls on the effect of jetty construction, decommissioning and dredging are a matter of continued discussion with the EA, as set out above. 	<p>CoCP [REP2-027 paragraph 8.1.3]</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
9. Habitat Regulations Assessment			
9.1 With reference to NE's answer to the ExA's FWQ HRA3 [REP1-063], and the draft SoCG [REP1-128], please can NE and the Applicant provide an update on whether there is agreement regarding the impacts upon the rMCZ in relation to contaminants, lagoon worm, sea-slugs, seahorses and migrating smelt?			
Agenda Item Response	Natalie Frost	<ul style="list-style-type: none"> The Applicant considers that it is first important to note that impacts upon the rMCZ should not be considered under a Habitats Regulation Assessment. The Marine and Coastal Access Act 2009 allows for the creation of Marine Conservation Zones (MCZs). Marine Conservation Zones are national protected sites and do not comprise the network of Natura Sites 2000. Notwithstanding this, the potential effects of the mobilisation of contaminants (such as during construction and dredging) upon migrating European smelt which is a cited feature of the rMCZ has been considered within the Chapter 10 Marine Ecology (APP-031). In summary, the strong tidal flows in the area will rapidly disperse contaminants and therefore significant elevations in water column contamination are not expected. The potential for accidental spillages will be negligible during construction through following established industry guidance and protocols as set out in the CoCP (section 15.3) Therefore, the magnitude of change is considered to be minor. Given that the probability of occurrence is also low, the overall exposure within the rMCZ is assessed as negligible. Furthermore, the mobile nature of migratory fish species generally allows avoidance of areas of adverse conditions and are unlikely to significantly affect a population provided such conditions are temporary. Therefore, although migratory European smelt has a high nature conservation importance, the significance of the effects of any likely release of contaminants as a result of the construction of the Scheme or by the transportation of materials to site on this species is considered to be Negligible. NE has confirmed with their Marine team that no effects are anticipated on downstream 	<p>ES Chapter 10 [APP-031] CoCP [REP2-027 Section 15.3]</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		sites. This was agreed on the 9 th of January 2017 and is included in the latest version of the SoCG which is submitted at Deadline 3.	
9.2 Further to NE's response to HRA2 [REP1-063], is there agreement between the Applicant and NE regarding the use of the two local authority Local Plan HRA screening assessments and their omission of the in-combination effects arising from the proposed development in them? Is further HRA screening required?			
Agenda Item Response		<ul style="list-style-type: none"> The Applicant has responded on this point in its comments on NE's response to FWQ HRA2 (REP2-034), where it reconfirmed its view that no further HRA screening is required by the Applicant. NE agreed on the 9th of January 2017 that the response provide in FWQ HRA2 (REP2-034) is acceptable. This agreement is included in the latest version of the SoCG which will be submitted at Deadline 3. 	<p>Comments on IP responses to FWQs [REP2-034 pp 224-226]</p> <p>Updated SoCG with NE (submitted at Deadline 3 Applicant reference SoCG001)</p>
10. Dredging and navigation			
10.1 The MMO's response to FWQ DN6 [REP1-046] states that the co-ordinates of the area to be dredged must be provided in the Licensed Activities section of the DML. Please can the Applicant and the MMO now agree the co-ordinates to be inserted into that section of the DML?			
Agenda Item Response		<ul style="list-style-type: none"> As suggested at the Hearing, the Applicant has submitted at Deadline 3 two revised sheets of the works plans, showing co-ordinate reference points for the entire area of the river Thames in the Order limits, reflecting where activities can take place under the dDCO. The co-ordinates for these reference points will be included in the dDML contained in the revised dDCO submitted at Deadline 3. 	<p>DCO Revision 3 (submitted at Deadline 3 Applicant Reference 3.1)</p> <p>Revised Works Plans (submitted at Deadline 3 Applicant reference 2.5)</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
<p>10.2 The MMO's response to DN8 (regarding scour protection for the temporary jetty) identifies a need for the Applicant to provide a method statement for approval of any aspects of the proposed development that may need a marine licence, as a condition of the DML. Please can the Applicant and MMO provide an update as to whether agreement is reached on these matters and the required method statement will be included in the next edition of the dDCO?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> The DML was revised and submitted at deadline 1 to include a new condition (4) for the Applicant to submit a construction method statement for approval before any licensed activities are commenced. As indicated at the Hearing, the MMO are content with this drafting. 	<p>DCO Revision 3 (submitted at Deadline 3 Applicant Reference 3.1)</p>
<p>10.3 The EA's response to FWQ DN8 [REP1-061] states that the Applicant had recently provided a draft technical note assessment on jetty pile scour in the near-shore to the EA, whilst the PLA [REP2-074] considers that avoiding any archaeological interests (by preservation in situ), is the best solution to avoid the need for scour protection.</p> <ul style="list-style-type: none"> can the Applicant confirm whether the technical note will be submitted to the Examination; and is there now agreement between EA, PLA and the Applicant on whether there is a need for scour protection in relation to tidal flood defences? 			
<p>Agenda Item Response</p>	<p>Elizabeth Jenks</p>	<ul style="list-style-type: none"> The technical note on scour protection has been reviewed by the EA, and the Applicant is seeking to take their comments into account. As such, there is not yet agreement on this matter. A revision of the note has been provided to the PLA and the EA, and discussions are on-going with them. The latest draft of this note can be found at Appendix 12 to this submission. 	<p>Note on Scour Protection in the Near-Shore (Appendix 12 to this submission)</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<ul style="list-style-type: none"> The Applicant notes that the EA and PLA will be able to impose or require any scour protection or scour prevention controls on any marine activities through their respective protective provisions. 	
<p>10.4 The dDCO, [REP2-022] schedule 12, condition 10(1) (removal of temporary structures) includes the need for all equipment, temporary structures, waste and debris within 6 weeks of the completion of those activities, unless otherwise agreed in writing by the MMO (emphasis added by the ExA). Given the guidance on drafting DCO's in PINS Advice Note 15 on Drafting DCOs¹, regarding tailpieces, is the MMO satisfied with this wording?</p>			
<p>Agenda Item Response</p>		<ul style="list-style-type: none"> The Applicant acknowledges the contents of the guidance referred to by the ExA and, as is evident from the dDCO drafting, tailpieces are generally absent. However, Advice Note 15 does provide that there are exceptions to this general rule and the Applicant submits this is one such justified exception. As well as the potential for a longer time period being required (for example, due to extreme weather), as part of the Applicant's discussions with the PLA and owners of the land adjoining the proposed location of the temporary jetty, it is apparent that there is support for a jetty to remain in that location following completion of the development authorised by the DCO. As is set out in Work No. 20 (as amended to 20A and 20B at Deadline 3), the Applicant is only applying for a temporary jetty and is not seeking the powers for a permanent jetty under the DCO. Therefore, should the landowners wish to keep a jetty in that location, they would need to bring it up to a permanent standard and seek any additional consents required to retain the jetty on a permanent basis (including any planning permission, river works licence or marine licence). These would not be covered by the dDCO (including the dDML, as this would only authorise a temporary jetty) – the Applicant is alive to the fact that a permanent jetty was not assessed in the ES and it does not form part of the Applicant's proposals. However, without the tailpiece in the dDML, there would be no flexibility for the jetty to remain as the Applicant would be under an absolute obligation to remove the jetty without any subsequent amendment to the dDML, which would be an administrative and 	<p>DCO Revision 3 (submitted at Deadline 3 Applicant Reference 3.1)</p>

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>financial burden. However, the tailpiece would not amend the scheme applied for by the Applicant, it would simply unlock potential development in the future, subject to necessary consents.</p> <ul style="list-style-type: none"> At all times, proposals to retain the jetty would be subject to the MMO agreeing it – the base position is that the jetty (should it be constructed) will be removed, but there is an opportunity for it to remain should the MMO agree. It is understood from the Hearing that the MMO are in agreement with this position. 	
<p>10.5 Similarly the draft wording of the DML condition 10(2) requires the temporary structures constructed under Works 20 to be removed 'as soon as reasonably practicable' after that work has ceased, 'unless otherwise agreed in writing by the MMO' (emphasis added by the ExA). Given the need for clarity and enforceability in DCO requirements and DML conditions, does the MMO consider:- that the use of these terms is acceptable; and as currently worded they would achieve the objective of ensuring that decommissioning and clearing the temporary jetty and other temporary works is expedited quickly?</p>			
Agenda Item Response		<ul style="list-style-type: none"> The same logic as for item 10.4 also applies here. Whilst paragraph 10(2) applies specifically to the jetty, paragraph 10(1) could also potentially include jetty related works not specified. 	
<p>10.6 Further to the EA's WR [REP1-060], can the Applicant now confirm agreement to the need for a requirement in Schedule 2 of the dDCO which states that no dredging is to take place during the months of June, July and August; if dredging is essential during these months, the EA's approval would be required to ensure that suitable mitigation is in place, including water quality monitoring or the use of low impact dredging techniques?</p>			
Agenda Item Response		<ul style="list-style-type: none"> Paragraph 8.1.3 of the CoCP was updated at Deadline 2 to provide for no dredging from June – August inclusive without Environment Agency approval. No separate requirement is therefore needed. If the Environment Agency considered that any other control conditions (such as monitoring) were required further to the detailed design, they would be able to do so through the Protective Provisions which are currently being discussed between the parties. 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
Response to matters raised by Interested Parties and the ExA at the Hearing		<ul style="list-style-type: none"> As noted above at item 8.7, further to the concerns raised by the ExA, the EA and PLA at the Hearing and the Issue Specific Hearing on the DCO, the Applicant is considering the allocation of controls of this matter with the relevant bodies, and will make further submissions at Deadline 4 on this point. 	
<p><i>10.7 The MMO [REP1-046] has asked for a condition to be included in the DML regarding the Written Scheme of Archaeology for any archaeological work needed offshore (in relation to the proposed jetty and dredging). Could the Applicant and MMO provide an update on this matter and confirm that the wording will be agreed and it will be included in the next revision of the dDCO?</i></p>			
Agenda Item Response		<ul style="list-style-type: none"> As set out in the Applicant's response to FWQ HT.3, the dDML would ensure that any scour protection measures are also included in a method statement for approval by the MMO, due to scour protection being listed in Work 20 as part of the authorised development, and thus being a licensable activity. The MMO will not need to approve the WSI, as they will have methodology approval for any scour protection activities through the dDML. However, any scour protection measures in the WSI will have to reflect what is approved by the MMO. As such, the Applicant will liaise with both Historic England in respect of the WSI and the MMO in respect of the DML in developing any scour protection measures, if they are proven necessary. As set out at item 8.7, this is another matter in which the Applicant is reviewing the provisions of the CoCP, DML and protective provisions. 	Response to FWQ DN.8 [REP1-169 pp 20-21 and HT.3 REP1-175 p. 9]

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
11. Surface water, Flood Risk Assessment and Water Framework Directive Assessment			
<p>11.1 The draft SoCG between the Applicant and the EA [REP1-130] states that the following surface water matters were still under discussion:-</p> <ul style="list-style-type: none"> • Flood Risk Assessment; • Drainage design parameters; • River wall baseline condition; and • River wall responsibility. <p>a. Please can the Applicant and EA provide an update regarding whether these matters have been agreed; and b. if so, what does the Applicant propose to do to address these matters in terms of securing mitigation in the dDCO; and c. Should the EA be consulted on the surface water drainage scheme required pursuant to R8?</p>			
<p>Agenda Item Response</p>	<p>Elizabeth Jenks</p>	<ul style="list-style-type: none"> • The topic of Drainage Design Parameters will be removed from the next iteration of the SoCG submitted to the Examination following discussion with the EA who advised they are no longer responsible for surface water drainage matters, this issue now falls to the Local Authorities. • The next iteration of the SOCG will also affect that the river wall baseline condition is now agreed but that river wall responsibility is still under discussion. • In respect of the detailed surface water drainage design, further to discussions with the EA, and their submissions at the Hearing, the Applicant believes that the EA do not wish to be consulted, and as such do not propose to add them to the drafting of this requirement. • The Applicant proposes that these measures and their interaction with the EA should, in principle, will be secured by way of the protective provisions for the benefit of the Environment Agency. Discussions on these provisions are on-going. 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
<p>11.2 The draft SoCG between the Applicant and the EA [REP1-130] states that the following Water Framework Assessment (WFA) matters were still under discussion:-</p> <ul style="list-style-type: none"> • Calculation of contribution of sediment to water column contaminant concentrations; • Evidence and further assessment; and • CEFAS analyses. 			
Agenda Item Response	Elizabeth Jenks	<ul style="list-style-type: none"> • As discussed at the Hearing, these matters are all now agreed with the EA. 	
<p>11.3 The draft SoCG between the Applicant and the EA [REP1-130] stated that the following flood risk matters were still under discussion:-</p> <p><input type="checkbox"/> <i>flood defences (river wall surveys);</i></p> <p><input type="checkbox"/> <i>construction impacts on the flood defences;</i></p> <p><input type="checkbox"/> <i>hydrodynamic modelling.</i></p> <p>Please can the Applicant and EA:-</p> <p>a. provide an update regarding whether these matters have been agreed; and</p> <p>b. if so, how does the Applicant propose to address these matters in terms of securing mitigation in the dDCO?</p> <p>c. The EA's WR [REP1-060] paragraph 1.4 states that if the DCO is granted, evidence showing that construction activities would not impact on the structural integrity of any affected flood defences needs to be provided for the EA's approval prior to any work commencing. How does the Applicant propose to secure this matter within the dDCO?</p>			
Agenda Item Response	Elizabeth Jenks	<p>A</p> <ul style="list-style-type: none"> • Flood defences (river wall surveys): Under discussion. The Applicant is currently drafting a technical note regarding feasibility and concepts of future raising of the wall and discussing the protective provisions with the EA to close out this issue. • Construction impacts on the flood defences: wording of the protective provisions are currently under discussion to close out this issue. A condition requiring condition survey, a monitoring, and mitigation plan has been proposed and is acceptable in principle to both the Applicant and EA. • Hydrodynamic modelling: Please see item 10.2 above. 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		<p>B</p> <ul style="list-style-type: none"> The protective provisions of the EA within the dDCO will secure mitigation and further surveys/plans to be developed for approval by EA during the detailed design phase. <p>C</p> <ul style="list-style-type: none"> The Applicant proposes that these measures, in principle, will be secured by way of the protective provisions for the benefit of the Environment Agency. 	
<p>11.4 Please could the EA/Applicant provide an update regarding the agreement of protective provisions especially in relation to the potential obligation on TfL for maintaining/rebuilding/strengthening river walls and raising tidal flood defences? Would these matters be better placed in articles and/or requirements, as they are mitigation required for the scheme?</p>			
<p>Agenda Item Response</p>	<p>Elizabeth Jenks</p>	<ul style="list-style-type: none"> The Applicant has, in early January 2017, received comments on the protective provisions from the Environment Agency - discussions on this topic are on-going. The points raised by the ExA form part of these discussions. 	
<p>11.5 Further to EA's WR [REP1-060], in the "what if" scenario of TfL being unable to demonstrate to the EA's satisfaction that the construction work proposed in Zone 12 would not adversely affect the river wall, what is the Applicant proposing in terms of ensuring that the construction of the development could proceed, whilst giving the EA the comfort that it needs regarding river wall integrity, should the DCO be made?</p>			
<p>Agenda Item Response</p>	<p>Elizabeth Jenks</p>	<ul style="list-style-type: none"> As discussed at 11.3 above, the Applicant is currently drafting a technical note to outline feasibility, concepts and costs of future raising of the wall above the proposed tunnel based on the reference design. The Applicant is also discussing the protective provisions with the EA to ensure sufficient condition surveys, monitoring and mitigation and information to demonstrate the authorised works will not damage the flood defence or prevent it being raised or replaced in the future are included as requirements for the EA to approve during detailed 	

ExA's Agenda and Action Point Item	Witness	Summary of the Applicant's Oral Submissions made in the hearing	Relevant document references
		design.	
<p>11.6 Further to the EA's WR [REP1-060], sections 2.0 and 3.0, has the Applicant now accepted the need to add two further requirements to the dDCO:-</p> <p><input type="checkbox"/> for the provision of a WFD assessment at the jetty decommissioning stage; and</p> <p><input type="checkbox"/> to secure further ground investigations, any necessary remediation work and a verification report confirming that any contamination risks have been addressed? Please could these be included in the next revision to the dDCO?</p>			
<p>Agenda Item Response</p>	<p>Elizabeth Jenks</p>	<p><u>WFD Assessment</u></p> <ul style="list-style-type: none"> As set out in the Applicant's response to FWQ DC.106 (section on WFD assessment, and section on Decommissioning), a requirement is not needed to secure any new WFD assessment at the jetty decommissioning stage. This is because control over the decommissioning of the jetty is controlled variously through the DML and the protective provisions with the Environment Agency and the PLA. In respect of the EA specifically, the protective provisions currently contained in the dDCO require the Applicant to seek approval for the plans of any works which could affect the 'flow, purity or quality of water in any watercourse', or the 'conservation, distribution or use of water resources', which would include decommissioning of the jetty. In giving approval for such plans, the EA can impose any conditions 'for the protection of any water resources'. This could include a requirement for a new WFD assessment, if considered necessary at the time (although the Applicant does not consider this necessary). Without knowing the exact detailed design of the jetty (if it is constructed), it is not appropriate now to require such an assessment. <p><u>Contaminated Land</u></p> <ul style="list-style-type: none"> There are numerous controls on contaminated land within the Code of Construction Practice, such that including them as a requirement is unnecessary. These measures will either form part of the Construction Material Management Plan (approved by the relevant local authority) or the CEMP, which will be consulted on with bodies such as the Environment Agency. 	<p>Response to FWQ DC106 [REP1-177 pp 162-165]</p> <p>DCO Revision 3 (submitted at Deadline 3 Applicant Reference 3.1)</p> <p>CoCP [REP2-027 Chapter 9]</p>

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11.7 Has the draft groundwater monitoring strategy discussed in the EA's WR, at paragraph 3.0 been submitted to the Examination, or is it the one that will be attached as Appendix F of the updated CoCP [REP1-028]? Could the Applicant confirm whether the draft groundwater monitoring strategy is the same document as the Groundwater Monitoring and Verification Plan required pursuant to R5(3)(h)? If not how do the two documents differ, why are they both needed and when will they be submitted to the Examination?			
Agenda Item Response		<ul style="list-style-type: none"> The draft Groundwater Monitoring Strategy attached as Appendix F to the updated CoCP is not the same document as the Groundwater Monitoring and Verification Plan ('GVMP'). The Groundwater Monitoring Strategy is general and written to a level of detail commensurate with the current stage of the Scheme's development. The GMVP will be specific as it will be developed cognisant of the baseline monitoring data and the Applicant's detailed design and construction methodology. The Groundwater Monitoring Strategy sets out the strategy for monitoring groundwater for the Silvertown Tunnel. It details the requirements of what detail needs to be included in the GMVP and provides a scope for baseline groundwater monitoring (which will be undertaken prior to development of the GVMP). Full details of what will be included in the GVMP can be found in the Groundwater Monitoring Strategy. As an example, the GVMP will include contingency actions (which must be agreed between the Applicant's Contractor and the EA) – such contingency actions are only relevant during the construction phase and will be dependent on the construction methodology. 	<p>CoCP [REP2-027 Appendix F]</p> <p>CoCP [REP2-027 paragraphs 9.3.9 – 9.3.11]</p> <p>Response to FWQ GS.10 [REP1-155 p.30]</p>
11.8 Why is the FRA not listed as a certified document in the dDCO?			
Agenda Item Response		<ul style="list-style-type: none"> The FRA forms part of the Environmental Statement (appendix 16.A). It is proposed that the entirety of the ES is certified (as reflected in the definition in article 2(1) and the list in schedule 14 to the DCO, which states the ES, including all figures and appendices, is to 	<p>DCO Revision 3 (submitted at Deadline 3 Applicant</p>

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		be certified) which would thus include the FRA. No standalone certification is required in this context and the definition in Schedule 2 to the DCO makes clear that the FRA forms part of the ES.	Reference 3.1)
12. Heritage and Townscape (visual impact)			
<p><i>12.1 RBG have stated that there must be mitigation provided for the World Heritage Site at Greenwich, including the possibility of implementing user charges at Rotherhithe tunnel, whereas the Applicant considers that it is more appropriate to determine the precise requirements for mitigation closer to the time of opening, their forecasts show that there would be little impact at Rotherhithe tunnel and local roads in and around Greenwich town centre are not expected to experience a significant change in traffic levels. Please could RBG and the Applicant provide an update regarding whether there is agreement on this matter?</i></p>			
Agenda Item Response	Jennifer Wylie	<ul style="list-style-type: none"> • A technical note on this matter was submitted at Deadline 2 outlining the potential for impacts to the WHS. This note draws together evidence from the traffic, air quality and noise assessments to consider if the outstanding universal value of the WHS would be affected by the scheme. The technical notes explains that traffic changes in Greenwich Town Centre are minimal (para 3.2.1), therefore there will be no effect on the OUV of the WHS from changes in traffic flow. • While no impact is predicted, TfL is committing to undertaking a refreshed assessment of Scheme impacts prior to opening and to monitoring the actual impacts of the Scheme once operational. Should the refreshed assessment or the monitoring reveal a material adverse impact as a result of the Scheme, the Applicant is committing to implement mitigation to address this (in the case of mitigation identified by the refreshed assessment, this would be implemented prior to Scheme opening). • A range of potential mitigation measures could be implemented, including the indicative mitigation measures listed in section 3 of TIMS (which includes changes to signal timings and junction geometries, traffic management measures, banned and prioritised movements and changes to speed limits). The implementation of a user charge at Rotherhithe Tunnel could represent a potential mitigation measure if the refreshed 	<p>Appendix B – ‘Summary of Traffic Impacts on the Greenwich Maritime world Heritage Site’ of ‘Comments on Borough Local Impact Reports and Written Representations’ [REP2-036 pp 19-32]</p> <p>TIMS [REP2-031]</p>

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		assessment or monitoring indicated it to be necessary (and subject to a full consideration of the impacts said user charge would have), but this is not considered likely. Furthermore, a proposal to implement a user charge at Rotherhithe would need to be supported by strong evidence that this was required.	
12.2 Where in the ES is the visual impact of the proposed concrete batching plant and the black top plant assessed? The ES [APP-031], paragraph 15.6.1 describes construction activities associated with the scheme, including the “creation of compounds” but does not appear to include the assessment of such potentially large, prominent structures?			
Agenda Item and Action Point 13 Response	Robert Kitch	<ul style="list-style-type: none"> As noted above in response to agenda item 3.4, there will be no black top plant for this Scheme; therefore no assessment is included in the ES. Reference to the concrete batching plant is stated in the ES in Appendix 4: Construction Method Statement (APP-046), paragraph 4.3.3; “<i>The plant and equipment envisaged necessary for construction of the Scheme has been scheduled in Table A 1 in 0. This list in conjunction with the construction programme and this narrative has been used in the assessment of the environmental impacts and traffic impact of the Scheme</i>”. Further information on the batching plant is provided in CMS paragraph 4.4.42, which states: “<i>Batching/grout plant to the north of this temporary storage space is a 1,100m² area of the site for site batching activities. This area lies immediately to the east of the TBM launch chamber and approach cut-and-cover tunnels. Material batched in this area will be used for the annular grouting on the segmentally lined tunnels, where batched grout will be remixed and delivered to the tunnel face ‘on demand’. The area could, in addition, be used for the erection of a worksite-based concrete batching facility should the supply from existing nearby operational facilities be either discontinued or prove uneconomic.</i>” In carrying out the construction phase visual assessment in Chapter 15, paragraph 15.6.2 and Table 15-7, although the text does not expressly refer to a concrete batching plant, it is evidenced, by reference to CMS paragraph 4.3.3 that the batching plant (as 	ES Appendix 4.A 'Construction Method Statement' [APP-046 paragraphs 4.3.3 and 4.4.42] ES [APP-031 paragraphs 2.3.1 and 15.6.2]

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		<p>an element of the compound) and therefore has been considered when making judgements on the construction visual effects of the Scheme.</p> <ul style="list-style-type: none"> • The findings of the construction visual assessment is further evidenced by the statement in paragraph 15.6.1 townscape effects, which states; <i>“However, with the exception of crane use, these construction activities would generally only be perceived in close proximity and would be of little significance given the existing townscape context of the site is partially defined by existing industrial activities (including material recycling and concrete batching, with associated outside storage of materials)”</i>. • The site context is further evidenced in ES, Chapter 2 – Scheme Context, paragraph 2.3.1 Existing land uses – Silvertown which states: • <i>“The northern tunnel portal and associated highway tie-in is situated in Silvertown to the south of Canning Town in the London Borough of Newham. Transport infrastructure is a dominant feature of the area with the elevated A1020 Silvertown Way/Lower Lea Crossing and the elevated Docklands Light Railway (DLR) Woolwich extension running north-west to south-east and the Jubilee Line and Emirates Air Line (EAL) cable car running north-east to south-west across the River Thames. To the north of Silvertown Way the area predominantly consists of mixed residential and recreational land uses around the perimeter of the Royal Victoria Docks. This contrasts with light industrial and commercial uses to the south of Silvertown Way, which is bounded by a safeguarded wharf known as Thames Wharf. In this area Dock Rd/North Woolwich Road provide local access to a number of businesses including steel and metal suppliers, scrap metal dealers, concrete batching plants, waste recycling and management businesses and an aggregates supplier“</i> • A batching plant maybe considered a large piece of kit in its own right – assuming a collection of 15m high silos, conveyors and hopper, but in the context of the baseline townscape and the composition of the existing view from visual receptors which have a view to the compound, this element would appear as one of a number of elements within the main compound and which would not be considered out of character with the 	

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		existing townscape or visually intrusive in view composition.	
13. Update to EIA Regulations			
13.1 Has the Applicant considered the implications (to the current application) from the proposed changes to EIA legislation that will be within the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, in particular, proposed Regulation 5(3) which will require the identification, description, and assessment of operational effects of the proposed development, and Regulation 21(3)(a) and (b) regarding types of parameters to be monitored and the duration of monitoring?			
Agenda Item and Action Point 12 Response	Caroline Soubry-Smith	<ul style="list-style-type: none"> • The proposed changes have no implications for this application, as the proposed regulations include transitional arrangements for applications where an environmental statement or updated environmental statement has been submitted prior to the commencement of the new Regulations, which means that the 2009 Regulations (as amended) still apply. This is the case for the Scheme, as the Environmental Statement was submitted in 2016, and any updated documentation would be submitted prior to the close of the examination, which is expected to be prior to the commencement of the new proposed Regulations. • Notwithstanding this, Paragraph 1.5.5 of the ES (APP-031) states that “Amendments to the EIA Directive 2011/92/EU have been made, and the Environmental Impact Assessment (EIA) Directive (2014/52/EU) entered into force on 15 May 2014. Although not yet transposed into UK legislation (planned for April 2017), TfL has had regard to the changes made by the new EIA Directive during the assessment of the Scheme. Including the assessment of the impacts on human health, as set out in the Health and Equalities Impact Assessment (Document Reference: 6.8) and Chapter 18 – Summary of Health and Equalities Effects in the ES (Document Reference: 6.1.18). Competent experts have also been used to prepare this ES.” Since the primary purpose of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 is to transpose the amendments to the EIA Directive into UK law, the Applicant considers that appropriate regard has been given to these changes in the submitted documentation. • We note that the proposed Regulation 5(3) requiring the consideration of operational 	<p>ES [APP-031 paragraph 1.5.5]</p> <p>Monitoring Strategy [REP1-121]</p>

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		<p>effects does not stem from the amendments from the EIA Directive, but has been added “for the sake of clarity” (refer to Para 32 of the Environmental Impact Assessment: Technical consultation (regulations on planning and major infrastructure)). In practice, consideration of operational effects (where relevant) is already considered to be an essential part of an Environmental Impact Assessment by EIA practitioners, so this amendment should not have any new implications in practice.</p> <ul style="list-style-type: none"> • For the Silvertown Tunnel project, operational effects of the proposed development are considered throughout the assessments in the ES (APP-031) and subsequent amendments. Each technical chapter of the ES includes a section on Construction Impacts and a section on Operation Impacts, as appropriate, such that operational effects of the development can be clearly identified. • As discussed above, this proposed change is a new requirement which is not set out in the 2009 Regulations (as amended) which apply to this Scheme. It is also noted that the new EIA Directive refers to “the monitoring of significant adverse effects”, whereas the ES for the Scheme (APP-031 and subsequent updates) reports that no significant adverse effects are predicted to occur. • Notwithstanding this, a comprehensive scheme for monitoring has been set out in the Monitoring Strategy (REP1-121), which sets out the scope of monitoring that the Applicant proposes to undertake in respect of traffic, air quality (including carbon), noise and socio-economic impacts of the operation of the Scheme. 	

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14. Document Tracker etc			
14.1 In view of the large number of documents that have been submitted to the Examination by the Applicant, some of which have been updated already, please could the Applicant provide a document tracker list at DL3 and again at DL6 identifying the most recent edition of each ES document including all of the ES Appendices, as well as the schemes, plans and strategies that form part of the CoCP, or contain mitigation for the scheme, giving the document name, version number and previous editions of that document, cross referencing to the Examination library where possible?			
Agenda Item and Action Point 12 Response		<ul style="list-style-type: none"> This has been submitted for Deadline 3 and will be updated at Deadline 6. 	Document Tracker (submitted at Deadline 3 Applicant reference 8.67)
14.2 Please can the Applicant provide a dendrogram at DL3 (and updated at DL6) showing how the various ES documents, appendices, and environmental schemes, assessments, plans and strategies are linked and how they relate to the DCO?			
Agenda Item and Action Point 12 Response		<ul style="list-style-type: none"> A diagram indicating the relationship between these documents has been submitted for Deadline 3 and will be updated at Deadline 6. This represents a high level view of how the various documents link together to control the environmental effects of the Scheme. Further to the discussions at items 4.11 and 8.7, this may require updating at Deadline 4 to reflect on-going discussions as to marine and monitoring and mitigation matters. 	Environmental Documents Structure Chart (submitted at Deadline 3 Applicant reference 8.68).
14.3 Please can the Applicant update the mitigation route map [REP1-126] for DL3 and again at DL6 and include this as a certified document in dDCO, schedule 14?			
Agenda Item and Action Point 12 Response		<ul style="list-style-type: none"> This document has no updates for Deadline 3 compared to Deadline 1. However, given the on-going discussions referenced at agenda item 8.7 and more generally with the EA and PLA over their protective provisions, it is anticipated that this will be able to be updated at Deadline 4, and again at Deadline 6, as requested. The Applicant does not propose to amend Schedule 14 to make reference to the Mitigation Route Map, as this document does not contain the mitigation measures 	

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		<p>themselves, but instead summaries and signposts to where the mitigation measures are secured within the DCO and the documents that are to be certified under this Schedule. It is a reference document, and as such, it is not appropriate for it to be secured.</p>	
<p><i>14.4 Please can the Applicant update the list of other permissions, permits and licences that would be required at DL3 and DL6, identifying the types of environmental permit(s) and protected species licences that are needed?</i></p>			
<p>Agenda Item and Action Point 12 Response</p>		<ul style="list-style-type: none"> This has been submitted for Deadline 3 and will be updated at Deadline 6. 	<p>Consents and Agreements Revision 1 Position Statement (submitted at Deadline 3 Applicant reference 7.10.2)</p>