

Update on discussions with Public Health England

1. Background

- 1.1.1 The Applicant submitted a draft Statement of Common Ground (SoCG) to Public Health England (PHE) on 21 October 2016. PHE prefers not to use SoCG's and in lieu of this, responded by letter setting out the status of the issues being discussed at that time (dated 14 November 2016 and submitted at Deadline 1 (REP1-075). This was supplemented by an email from PHE to the Applicant (also on 14 November 2016).
- 1.1.2 A meeting between PHE and TfL was held on the 1 December 2016 to work through the remaining concerns and the Applicant sent a follow up email (2 December 2016) setting out the key issues and proposing to formally write to PHE for their agreement on the matters discussed prior to submitting an update to the ExA at Deadline 2. This letter (dated 7 December 2016) is at Appendix A. PHE responded with a letter dated 13 December 2016 (Appendix B), which provides their latest position.
- 1.1.3 PHE's letter of 13 December raises the issue of 'effects on community anxiety/stress' (letter ref 2.3) and requested that "TfL offer to undertake a baseline assessment of community wellbeing of the affected communities before the construction phase using an agreed methodology i.e. the Community Life Survey, ONS 4 Wellbeing question or the short Warwick-Edinburgh Mental Wellbeing (WEMWBS) scale) so that bodies such as the local authorities, PHE or the GLA can undertake further investigations to monitor wellbeing in affected communities'.
- 1.1.4 The Applicant notes the above, which has only been detailed recently, and will provide a response to the ExA in due course.
- 1.1.5 The Applicant's response to the remaining issues under discussion raised in PHE's letter is set out in sections 2 to 5 of this note. Section 6 sets out PHE's concern about air quality (also referred to in their letter) where agreement has not been reached at this time.

2. Active Travel (PHE letter ref 2.1)

PHE remaining issue: *'The issue from a PHE perspective is that a road scheme of this nature and scale is remiss in not accommodating active travel within and through the new river crossing. While TfL state that options for active travel through the tunnel were considered and dismissed, PHE would like TfL to make a commitment to incorporating cycling within the DCO so that cyclists can benefit from shorter, safer travel by means such as allocated spaces and bike racks on the buses that will go through the tunnel. Customer satisfaction surveys^[1] of the Emirates airline suggest that:*

- *travellers do not use the airline on a regular basis, and*
- *the airline is 'something fun to do' and therefore it is unlikely that regular commuters will use it or that cyclists will utilise it to support active travel to cross the river..'*

Applicant response

2.1.1 The Applicant has explained how active travel was considered in the option selection process in their letter dated 7 December 2016 and previous earlier correspondence. The Applicant referred to Chapter 3 and Appendix A of the Case for the Scheme (APP-093) where consideration of pedestrian and cycle use within the tunnel is explained. While active modes may have their own merits, they do not meet the project objectives for the Scheme and do not satisfactorily address the problems of Blackwall Tunnel.

2.1.2 The Applicant has explained that Silvertown Tunnel is not being developed in isolation. Walking and cycling across the river form part of a comprehensive package of improvements proposed by the Mayor which is set out in the Update Report October 2016 (AS-021). The Applicant has also explained by email on the 11 November 2016 that a bus/bike schemes does not form part of the Development Consent Order submission. However, as it states in the Update Report para 2.12 the Applicant is investigating a cycle carrying service. Please also see also FWQ PN 6.5- 6.8 (REP 1-178).

2.1.3 Finally, the Silvertown Tunnel project aims to support and enable more active travel by enhancing existing pedestrian and cycle infrastructure. As a result it will make it easier for more Londoners to make active travel choices. This would be achieved by:

- enhancing the connectivity and experience of using the area by foot or by cycle;
- improving and supporting pedestrian and cycle connections to public transport including cross river connections; and
- improving the connectivity of strategic cycle routes through the area, in particular National Cycle Routes 1 and 13.

2.1.4 The Applicant has set out the plans for walking and cycling at the northern and southern portals in previous responses to PHE. The Design Principles (APP-096), and as amended at Deadline 2, specifically make provision for public realm, cycling and walking. The Design and Access Statement (APP-095) presents a number of specific illustrative design measures for cyclists and pedestrians which demonstrate one way in which these principles could be delivered, utilising the powers contained within the dDCO and TfL's powers as highway authority for the Transport for London Road Network. These include:

Silvertown

- Introduction of a new fully segregated cycle route connecting the Lower Lea Crossing to Tidal Basin Road via the north side of Tidal Basin Road, enabling National Cycle Route 13 to become shorter, more direct and safer;
- the introduction of an off carriageway cycle route north south across Tidal Basin Road and along Dock Road from the Lower Lea Crossing to North Woolwich Road; and
- the introduction of enhanced quality public realm and planting around the extended Tidal Basin Roundabout.

Greenwich

- The replacement of the Boord Street footbridge with a new, wider accessible pedestrian and cycle bridge significantly improving east west connectivity for pedestrians and cyclists across the peninsula; and
- realignment of the Boord Street footbridge to be visible from Millennium Way improving the legibility of the area.

3. Environment (Air Quality) Mitigation Measures (PHE letter ref 2.2)

PHE remaining issue: *'PHE has reviewed the Design Access Statement and Design Principles and was unable to locate specific references to urban greening proposals in the vicinity of the Hoola development but rather details on the generic approach associated with the overall development. In case we have inadvertently missed any relevant information we would be grateful if you could direct us any specific proposals for urban greening in the vicinity of the Hoola building'.*

Applicant response

3.1.1 The Hoola development is directly adjacent to and outside the limits of the scheme. According to the existent 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 here. Other opportunities for landscaping within the limits of the scheme are presented in the General Arrangement drawings (APP-005). It should also be noted that area of land in the centre of Tidal Basin Road and to the east of Silvertown Way is outside of the permanent land take and as such the ecological value of the existing trees will be retained in the final scheme.

4. Crossing Charge (PHE letter ref 2.4)

PHE remaining issue: *‘While TfL have stressed that car ownership is low amongst the current residents around the Blackwall and Silvertown Tunnels and that there will be a net gain by the introduction of more public transport/ buses through the Silvertown Tunnel, PHE is concerned that a charge will represent an inequality to those residents who own a car and are on low incomes PHE would request that TfL considers mitigation options such as exemptions for car owners in existing local communities to both Blackwall and Silvertown Tunnels on the basis that the majority of the traffic will come from outside the boroughs’.*

Applicant response

4.1.1 The Applicant has not assumed a residents discount in the Assessed Case for the reasons set out in the response to FWQ SE2 (REP1-176). In summary:

- there is no evidence that those living closer to the tunnel are more adversely-affected;
- the difficulty of defining a robust boundary; and
- the discount would undermine the Project Objectives, including managing demand and environmental impacts.

4.1.2 In addition, the Regeneration and Development Impact Assessment (Document Reference 7.8, APP-102) identifies that the Scheme could result in 3,700 additional jobs in LB Newham, RB Greenwich and LB Tower Hamlets. The improvements in public transport the Scheme would facilitate would allow more local residents to access jobs. The assessment of wider economic impacts (APP-101) also forecasts a significant boost to the local economy through agglomeration and improvements in competitiveness of over £100m over the Scheme’s assessed period. Removing the blight of chronic and worsening congestion caused by the inadequate capacity of the Blackwall Tunnel is considered to be a major benefit to this part of east London and to the daily experience of its residents.

5. Zoning for 20 mph (PHE letter ref 2.5)

PHE remaining issue: *'PHE note TfL's response which primarily focusses on the implementation 20mph zones, as well as the existing use and planned expansion of these zones in Greenwich. The response does not appear to have considered the role of such zones in Newham. PHE would like to clarify that its request relates to the modelling of 20mph speed limits to assess any potential benefits in terms of air quality, and notes that this could also potentially provide an improved evidence base to inform the Traffic Impact Mitigation Strategy (APP-99) which TfL has proposed to include 'adjustment to speed limits to manage localised congestion, air quality and/or noise impacts' that could be used should it be necessary to regulate the traffic flows and potential effects.'*

Applicant response

- 5.1.1 The Applicant notes that PHE are satisfied that 20mph speed limit would be inappropriate on TLRN routes. The Applicant only has a remit for traffic management on TLRN roads, all other roads fall under the jurisdiction of the London Boroughs. 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 only avenue for the project to impose 20mph limits on local roads would be through the Development Consent Order process. This would only be an option if the Silvertown Tunnel project 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.
- 5.1.2 It should be noted that mitigation is built into the scheme design, as described in Section 6.5 of the ES (AS-022). In the Assessed Case, the user charge has been set at a level which shows the Scheme is not likely to result in a significant impact on local traffic flows or air quality. The Monitoring Strategy (REP1-121) which takes effect some three years prior to Scheme opening, will monitor the effects of the Scheme on a range of areas including road safety. The Monitoring Plan at Appendix A is indicative and will be finalised subject to any further suggestions from STIG prior to implementation. The Traffic Impacts Mitigation Strategy (APP-099) sets out a number of potential mitigation options which include 'adjustment to speed limits to manage localised congestion, air quality and/or noise impacts'

(Page 23) that could be used should it be necessary to regulate the traffic flows and potential effects.

6. Matters in which PHE are in disagreement (PHE letter ref 3.1)

PHE remaining issue: *PHE notes TfL's assessment that the proposed scheme does not result in a significant impact on air quality in accordance with the guidance (Interim Advice Note 174/13). However in light of an overall increase in emissions of air pollutants and a detriment to particular receptors (e.g. Hoola development west tower), PHE continues to encourage consideration, if practicable and cost effective, any opportunities to secure improvements in local air quality (note PHE's response to section 2.2. air quality mitigation measures).*

Applicant response

- 6.1.1 Although the Scheme does not result in a significant impact on air quality in accordance with the guidance (Interim Advice Note 174/13), the Applicant has investigated whether there are any mitigation measures that could be included in the Scheme. This led to a commitment to operating Euro VI or equivalent buses through the Silvertown tunnel. The commitment to Euro VI buses will reduce some of the Scheme's impacts particularly at the receptor which is predicted to experience the largest change (Hoola development west tower). It should be noted that overall, the scheme has a beneficial impact on those receptors with the highest modelled concentrations (particularly around the northern portal of Blackwall Tunnel), i.e. those above the AQS Objective and will therefore contribute to an improvement in air quality within some Air Quality Management Areas and Air Quality Focus Areas. It is the Applicant's view therefore that it has considered whether there are any practice measures that could be included in the Scheme to improve air quality.

Appendix A. TfL Letter to Public Health England



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7th December 2016

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Dear Robie,

Nationally Significant Infrastructure Project Proposed Silvertown Tunnel Update on discussions with Applicant

Thank you for your letter dated 6th November in lieu of a Statement of Common Ground; and the email from Nick Brooke on the 14th November 2016. There have been subsequent discussions and a meeting between PHE and TfL on the 1st December 2016 (draft meeting note sent under separate cover). I am writing to now set out the current position with regard to the Silvertown DCO application.

1. Matters agreed (letter dated 14th November 2016)

We note that agreement is now reached on:

- general approach to assessment;
- method for quantitative assessment of air quality and noise effects on health;
- baseline and operational monitoring:
- using the base year 2012 for modelling;
- cumulative impacts;
- selection of receptors;
- contaminated land;
- impact on air quality at two schools; and
- transport of waste by river.

2. Matters discussed at the meeting on the 1st December 2016

2.1 Active Travel

PHE remaining issue (email dated 14.11.6): *'PHE London would like to see something more conclusive on the promotion of active travel'*.

Applicant response: at the meeting on the 1.12.16 TfL explained the option selection process and summarised the measures in the submission which support active travel. This included scheme specific measures (e.g. the new Boord Street footbridge); and also measures to ensure the scheme integrates into the existing cycle and pedestrian networks within the vicinity of the tunnel portals at Greenwich and Silvertown. TfL committed to providing a summary of TfL/Mayoral plans for river crossing, which is set out below.

The Silvertown Tunnel Scheme is not being delivered in isolation and significant investment has been made in cross-river travel options in east London in the last 20 years, with the delivery of:

- Jubilee Line Extension to Stratford;
- DLR to Lewisham;
- DLR to Woolwich;
- re-opening of the East London Line and its inclusion in the London Overground network;
- Emirates Air Line; and
- Crossrail (due to open in 2018).

The Mayor's next priorities for river crossings in east London were set out in the Update Report October 2016 (AS-021). This multi-modal approach includes the Silvertown Tunnel Scheme as well as a dedicated pedestrian and cycle bridge between Rotherhithe and Canary Wharf and a DLR at Gallions Reach, and does not preclude the delivery of further road crossings in the future.

The Update Report October 2016 (AS-021) sets out the Mayor's next priorities for river crossings in London, and this includes progressing a pedestrian and cycle bridge between Rotherhithe and Canary Wharf as well as further investigations into a ferry link between North Greenwich and the Isle of Dogs. Neither of these schemes are required to deliver the benefits or mitigate the impacts of the Scheme and are therefore not included in the DCO submission that is the subject of this Examination process and will be progressed through separate planning application process/es.

Next steps: please can PHE confirm there is now agreement on the provision for active travel.

2.2 Environment (Air Quality) Mitigation measures

PHE remaining issue (letter 6.11.16): *'It would be helpful for TfL to confirm their proposals/approach to urban greening in areas surrounding the Hoola building'.*

Applicant response: the Applicant presented the proposals set out in the DAS for greening at Silvertown at the meeting on the 1.12.16. The Applicant sent links to the Design and Access Statement and the Design Principles by email on the 2.12.16. As discussed at the meeting PHE will review the Design Principles and DAS which provide the parameters within which the landscaping and public realm will be developed.

Next steps: please can PHE confirm there is now agreement on proposals for urban greening in the vicinity of the Hoola development.

2.3 Effects on community anxiety/stress

PHE remaining issue (email 14.11.6): *while the air and noise stressors have been assessed, PHE London would like assurance that the combined effect of these stressors on both physical and psychological wellbeing has been assessed.*

Applicant response: this was discussed in depth at the meeting on the 1.12.16. The Applicant tabled a note which is Appendix 1: Stress in Combination attached to this letter. This sets out how in combination effects on stress were addressed in the Health and Equality Impact Assessment (HEqIA). The Applicant also committed to providing a summary of how stress was assessed in the HEqIA. This is Appendix 2 to this letter. Subject to PHE review of these two documents, we believe the assessment of stress has now been agreed.

The only outstanding issue from the meeting was that of monitoring stress levels as a result of scheme operation. It was discussed that it is very difficult to identify a viable mechanism for this with an identifiable study area, methodology, and results that can be quantified and be meaningful. PHE took an action to look into this. PHE stated that this maybe something that would be looked at post DCO approval. Air quality is a big issue for London and therefore this may be a wider topic. It would be useful if PHE could let TfL know whether this is something they would like to pursue as part of this DCO process at the hearing or whether this is a separate issue.

Next Steps: please can PHE confirm that there is now agreement on the assessment of stress in the HEqIA. Please can PHE also advise how they would like to proceed on the issue of monitoring stress.

2.4 Crossing Charge

PHE remaining issue (letter 6.11.16): *'PHE is very concerned with the introduction of a charge to use the existing river crossing, Blackwall Tunnel, which is currently free of any charge. PHE is primarily concerned that the level of the charge may present a greater burden on those in the lower socio-*

economic groups, who use Blackwall Tunnel as a means to access employment, healthcare, etc. and the introduction of the charge may have a 'community severance' effect'.

Applicant response: this issue was discussed at the meeting on the 1.12.16. A response was tabled which is appended at Appendix 3.

Next steps: please can PHE confirm whether there is now agreement on the crossing charge and low income groups.

2.5 Zoning for 20 mph

PHE remaining issue (from email 14.6.16): *PHE first raised this at our meeting on the 09.08.16 and have considered the verbal explanations and written responses provided by TfL since then. However we are still not fully satisfied with the reasoning provided by TfL for not undertaking modelling of a 20mph zone as part of the scheme. PHE would like greater assurance that there will be commitment to model the 20mph zones on appropriate roads. We recognise that this may not be appropriate for major arterial roads however would like TfL to consider appropriate routes where there is proximity to schools and residential areas'.*

Applicant response: this issue was discussed at the meeting on the 1.12.16. A response was tabled which is appended at Appendix 4.

Next steps: please can PHE confirm there is now agreement on the project not monitoring or implementing 20mph zones.

3. Matters in which PHE are in disagreement

3.1 Local air quality should not be worsened (letter 6.11.16): *'PHE recognise that the Environmental Statement concludes that there are more receptors that experience a perceptible improvement in air quality compared to deteriorations, despite emissions from the scheme increasing overall. However, TfL have stated that this improvement is not determined as significant under the IAN 523 guidance and hence concludes that the scheme will have "no significant impact" on air quality. Hence, PHE would like to clarify their position as follows: PHE would encourage any new road or traffic development to consider, if practicable and cost effective, opportunities to secure improvements in local air quality'.*

Applicant response: the Applicant has prepared the following response:

Although the Scheme does not result in a significant impact on air quality in accordance with the guidance (Interim Advice Note 174/13), the Applicant has investigated whether there are any mitigation measures that could be included in the Scheme. This led to including the commitment to operating Euro VI or equivalent buses through the Silvertown tunnel. The commitment to Euro VI buses will reduce some of the Scheme's impacts particularly at the receptor which is predicted to experience the largest change (Hoola development west

tower). It should be noted that overall the scheme has a beneficial impact on those receptors with the highest modelled concentrations (particularly around the northern portal of Blackwall Tunnel), i.e. those above the AQS Objective and will therefore contribute to an improvement in air quality within some Air Quality Management Areas and Air Quality Focus Areas. It is the Applicant's view therefore that it has considered whether there are any practice measures that could be included in the Scheme to improve air quality.

Next steps: Please can PHE respond to the above with any outstanding issues.

3.2 Impacts at the Hoola (letter 6.11.16): *'in summary, despite an extensive range of mitigation measures being investigated the current modelling indicates that there is still the potential for residents of the Hoola building to be exposed to significantly increased concentrations of both NO₂ and particulate matter (PM₁₀). PHE understand TfL are planning to undertake further modelling at the Hoola building to take into account additional factors (e.g. the use of new emission factors for Euro VI buses) and look forward to seeing the outcomes of this in due course'*.

Applicant response: Noted.

Next steps: This information will be submitted at Deadline 2.

Should you have any questions or concerns please do not hesitate to contact us.

Yours sincerely



Neil Chester

Consent and Environment Manager
Silvertown Tunnel

Appendix 1: Stress in Combination

Chapter 18 of the HEqIA relates to cumulative health effects of the Scheme, and not only considers the cumulative effects arising from other developments and proposals planned for this part of east London, but also explains what the in-combination effects of a number of different changes resulting from the Scheme might be. In-combination effects primarily relate to those arising from changes in air quality, noise levels and visual intrusion. The in-combination, or synergistic effects of the Scheme in relation to these areas are assessed in Chapter 17 of the Environmental Statement. The HEqIA explains the following:

- overall, the in-combination environmental effects of the Scheme during construction are not significant and that any effects experienced during this phase would be both minor and transient in nature, and adequately addressed by mitigation proposals.;
- during operation, there may be potential for impact interactions between air quality and noise effects specifically in the vicinity of the Hoola development in LB Newham;
- that although those living closest to the tunnel portals and along roads where there may be a change in traffic flows, are likely to be most affected by more than one health pathway, it is not accurate to simply 'add' the different health effects together; and
- a comprehensive range of mitigation measures have been identified for both construction and operation phases of the Scheme.

The HEqIA has assessed the quantitative changes in both air and noise; a quantitative cumulative assessment is not possible to undertake for the reasons outlined above and because, as noted in previous responses, there are many social, environmental, political and economic factors that contribute to individual stress. The in-combination effects of the Scheme on health (which the introductory sections of the HEqIA explain include both physical and psychological well-being) have been assessed qualitatively using professional judgement, taking into account both the fact that no significant adverse effect has been identified and that a comprehensive range of mitigation measures has been included.

Appendix 2: Summary of Assessment of Stress

Community anxiety and stress can arise from both the construction and operational phases of the Silvertown Tunnel project and that this has the potential to adversely impact both the perceived health of local populations and actual physical and mental well-being. It is also noted that there are social, environmental, political and economic factors that contribute to stress and anxiety, making it difficult to define and measure.

The World Health Organisation defines health as a 'state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'; the HEqIA has taken this holistic definition as a starting point for its assessment and ensured that the health determinants considered reflect not only the physical environment but also social and economic circumstances, lifestyle factors and accessibility of services. Tables 2-4 and 2-5 of the HEqIA identify features of the Scheme during construction and operation that have the potential to affect health and providing a framework for assessment. This includes potential outcomes relating to stress and anxiety (for example changes in noise levels during construction potentially resulting in annoyance and sleep disturbance; improved access to work and training during operation potentially resulting in improvements to mental health).

Chapter 5 of the HEqIA provides detailed baseline information, including a description of community networks in the vicinity of the Scheme to the north and south of the River Thames; an analysis of socio-economic, health and equality data; and a summary of baseline data included within the Environmental Statement. As noted earlier, stress and anxiety can be related to many different environmental and other factors. Whilst Section 5.4 of the HEqIA sets out information relating to the local health network and the health of local populations and includes a specific section relating to mental health (paras. 5.4.21 to 5.4.23), stress and anxiety are also features of other topics covered within the baseline chapter (for example crime and fear of crime (para. 5.5.8) and noise (para. 5.5.5)).

The HEqIA assessment section is divided into eight chapters, each of which focuses on a discrete topic rather than a specific health condition. As demonstrated in the reference to Tables 2-4 and 2-5 above, changes in community anxiety and stress is a potential outcome under several different topic headings. The following table highlights how community stress and anxiety has been considered in relation to the different topics throughout the HEqIA.

Active Travel

The links between active travel and mental health are set out in para. 7.2.4, noting that there is evidence that physical activity can be beneficial in a variety of ways, including reducing depressive symptoms and increasing quality of life; there are also links between issues of severance and perceptions of safety with health and well-being.

Construction – para. 7.6.5 notes that the Scheme will not introduce severance within the local community during construction and that where there may be potential for loss of amenity, comprehensive mitigation has been provided such that walking and cycling will not be restricted and access to local community resources (including for example schools and healthcare facilities) will be continued.

Operation – para. 7.8.2 notes that the Scheme has a positive impact on accessibility, effectively eliminating the severe congestion which currently routinely affects the Blackwall Tunnel, thus affecting people's quality of life. Para. 7.8.6 identifies the improvements that the Scheme would introduce to the pedestrian and cycle networks within the vicinity of the tunnel portals. Paras. 7.8.8 to 7.8.9 refer to the specific mitigation measures that have been identified for locations where a potential impact on severance or amenity could occur, which could otherwise have the potential to affect access to local community resources and thereby disrupt local life. Para. 7.10.6 notes that the combined effect of improved pedestrian and cycle connectivity together with a small shift from car to public transport in the wider area would result in a small increase in active travel as a result of the Scheme, making a small contribution to improvements in mental health.

Accessibility

Accessibility affects how people live, socialise, access services and employment, and therefore has a direct link with health and well-being. Paras. 8.2.1 to 8.2.4 explain the links between accessibility and health, including the anxiety and stress caused by accessing healthcare, services and amenities for various vulnerable groups. Other issues relate to stresses caused by lack of availability of transport options (for example increased costs of travel, of lack of access to a car) as well as driver stress caused by congestion, fear of potential accidents and route uncertainty.

Construction – para. 8.4.1 notes that access to schools, healthcare and community facilities or private properties will not be affected by road closures or diversions. Further, public transport routes will remain open during construction. Lack of access, in the form of social exclusion, which may have a corresponding negative effect on mental health and well-being, is therefore not considered likely to happen as a result of the Scheme. Para. 8.4.5 notes that increased levels of driver stress may be experienced by vehicle travellers during construction of the Scheme, but that the significance of effect is assessed as negligible in the ES. Detailed measures to manage traffic where roads are temporarily affected by construction works are set out in the Construction Environment Management Plan (CEMP) and Construction Traffic Management Plans for each of the two worksites (Greenwich and Silvertown). Para. 8.6.1 identifies that construction works will be well publicised through community engagement.

Operation – para. 8.8.1 notes that vehicle travellers undertaking north-south journeys across the River Thames would benefit from reduced journey times and greater journey time reliability as a direct result of the Scheme. Para. 8.8.5 highlights that the Scheme will enable the provision of improved bus services that could serve the communities north and south of the River Thames. Para. 8.10.1 states that driver stress levels in the immediate vicinity of the tunnel would improve. Para. 8.10.5 explains that whilst the introduction of the user charge would have

a direct impact on the affordability of travel by car for some users, communities adjust over time and it is likely that people will gradually change the services and facilities they access.

Access to healthcare is covered in paras. 8.10.9 to 8.10.12. Stress and anxiety as a result of difficulties accessing healthcare is widely accepted. The assessment considers the impact of the Scheme on cross-river trips for healthcare purposes; of the total number of people using NHS services, the number of cross-river referrals, who are unable to use public transport and are unable to use an alternative river crossing, is likely to be low. Further, an NHS Reimbursement Scheme for eligible patient journeys is proposed for the Silvertown Tunnel Scheme.

Para. 8.10.21 identifies that accessibility improvements as a result of the Scheme will improve people's ability to access healthcare, education and social networks locally and more widely to district and regional centres, which will have an indirect effect on health (and stress and anxiety in particular).

Access to work and training

Links between mental health and access to work and training are established in paras. 9.2.1 and 9.2.2.

Construction – para. 9.6.3 states that, through the provision of construction employment opportunities, the project will have a positive impact on mental health and general well-being as a result of improved lifestyles, income and feelings of self-worth. Mitigation measures include TfL's commitment for 25% of non-specialist jobs to be local (from within the three host boroughs), together with proposals for apprenticeship positions and local contracting opportunities. Although there are a number of job losses predicted as a result of land-take for the Scheme, these are relatively few in number and identified mitigation includes proposals to use the Jobcentre Plus 'Rapid Response Service' to minimise the impact of redundancies.

Operation – para 9.8.8 notes that the expansion of cross-river bus services would improve accessibility to employment opportunities for non-care users. Para 9.10.1 identifies that increased employment will provide benefits for mental health and general well-being, including psychological benefits for vulnerable groups as a result of change in employment status (from unemployment to employment).

Noise

The links between noise and health are explained in paras. 10.2.1 to 10.2.6. Specific health issues relate to annoyance and sleep disturbance. Para. 10.2.3 notes that noise is an influential source of stress and that stress has been suggested as a possible mechanism through which noise may affect both mental and physical health. Para. 10.2.5 also notes that vibrations as a result of construction activity can be a source of anxiety as well as annoyance, disturbing sleep, work or leisure activities.

Construction – para 10.4.2 notes that day-time construction noise levels are predicted to be below the relevant ABC category at all residential receptors within 300m throughout the construction period and therefore not considered to be significant. Limited construction activities will occur during the night-time period. A wide range of noise mitigation measures have been identified and are set out in the Code of Construction Practice, including best practice working practices, effective communication with local residents and monitoring at key sensitive receptors.

Operation – para. 10.9.1 explains that a quantitative assessment has been undertaken to consider the relationship between noise and health for annoyance, sleep disturbance and cardiovascular health effects. Para. 10.9.2 notes that the relationship between noise and mental health has not been assessed quantitatively as the scientific evidence is less conclusive, however in terms of community anxiety and stress, the assessment of annoyance and sleep disturbance is considered to be appropriate.

Table 10-7 identifies that the Scheme will have both beneficial and adverse effects on health according to where there are improvements or deteriorations in noise levels; the number of residents affected by adverse changes in noise levels (i.e. more people becoming highly annoyed or highly sleep disturbed) has been assessed as 'low' and the effect of the Scheme on the health of the population due to changes in noise levels is not considered to be significant.

Air Quality

The potential effects of air quality changes on health and well-being have been raised as a significant concern by stakeholders; accordingly the HEqIA includes an assessment which quantifies changes in population exposure to air pollution and further quantifies mortality rates resulting from these changes.

Construction – para. 11.4.3 states that, with the incorporation of appropriate mitigation into the Scheme, there would be no significant air quality effects as a result of construction dust emissions. The Code of Construction Practice sets the framework within which the Contractor will manage and construct the Scheme; the objective is to ensure that the public are kept fully informed of the works throughout the construction process and that concerns of local residents are addressed to ensure that stress through construction activity is kept to a minimum.

Operation – para 11.10.8 states that the assessment has shown that the health impacts attributable to likely changes in air quality resulting from the operation of the Scheme, in terms of the metrics considered, are expected to be negligible for the population studies (a total of 111,044 people over 344 Output Areas). Para. 11.8.12 and 11.8.13 note that it is important that the air quality effects of the Scheme in operation are monitored and understood on a continuing basis and a Monitoring Strategy has been produced and submitted accordingly, helping to ensure that stress potentially caused by a 'perceived threat' from air pollution changes would be minimised.

Social Capital

Chapter 12 of the HEqIA considers how the Scheme may affect social capital in terms of social networks, social participation and community severance, all of which have an important link with community anxiety, stress and mental health. Paras. 12.2.1 to 12.2.7 explain the links between social and capital and health, including for example the impacts of psychosocial environments on health and evidence of protective effects for mental health in particular of large, diverse social networks.

Construction – para. 12.6.1 states that local and vulnerable populations are not considered to experience any significant adverse effects on health and well-being as a result of changes to social capital during Scheme construction. Para. 12.6.4 considers impacts of Scheme construction on feelings of personal security, noting that any effects would be of short duration and temporary. Para. 12.6.5 considers how people might feel about living in the area during the construction period, and explains how the local community would be supported through the works, thus helping mitigate anxiety and stress.

Operation – para. 12.10.7 explains that most people are likely to continue to make cross river journeys as part of their social links and networks, despite the user charge. It also suggests that new links and networks will be established on either side of the River Thames, as people adjust to the charge. Para. 12.10.8 identifies that range of factors that affect the dynamics of communities. Paras. 12.10.15 to 12.10.18 consider the impact of the Scheme on resident satisfaction and quality of life, noting that this can affect mental health and well-being. The section states that quality of life would be improved as a result of various elements of the Scheme (enhanced pedestrian and cycle provision, improvements to the urban realm, reductions in road traffic noise and improvements to people's journey experience) which would result in beneficial changes to social capital.

Appendix 3: Crossing Charge - Socioeconomic effects

The Applicant has assessed the impact of the Scheme on low, medium and high income users using the outputs of the transport model.

The modelling demonstrates that there is likely to be some redistribution of trips by low income users from the Blackwall Tunnel to other crossings, including the Rotherhithe Tunnel and Dartford Crossing under the Assessed Case. This is because the time saving benefits of reduced congestion that are facilitated by the Scheme are lower than the cost of user charges for some low income users, and so they decide to make their trip by an alternative crossing. The result of this is that, whilst there will be many low income highway users that benefit from the Scheme, the net impact on low income highway users is slightly negative in the early years of the Scheme. As set out in Table 3.2 of the Distributional Impacts Appraisal, low income groups will see user benefits worth £0.2m, net of user charges in 2021, whilst medium and high income groups combined will see user benefits worth £0.9m in the same year.

Table 3.3 of the Distributional Impacts Appraisal shows that, by 2031, net benefits for low income highway users will be positive, at £0.2m, although still below the £2.1m for medium and high income users combined.

However, it is very important to note that the Scheme is not just about highway access. The Scheme will also facilitate a major new cross-river bus corridor for East London which cannot operate at present due to high levels of congestion and poor reliability at the Blackwall Tunnel. This is particularly important given the low levels of car ownership within the area of East London that the tunnel will serve. As set out in the table below, over half of households do not have access to a car in Newham and Tower Hamlets, which rises to 70% for households with incomes of less than £20k. The step change in cross-river public transport connectivity that the new bus services will provide will help these low income households to access more jobs and services than they can do at present.

Borough	All households (Census 2011)	Households with income under £20k (LTDS 2012/13 - 2014/15)
Lewisham	48%	68%
Newham	52%	69%
Tower Hamlets	63%	71%
Greenwich	42%	55%

The new bus services will provide time saving benefits which make up half of the Scheme's total user benefits. Because buses are typically used more frequently by low income groups, **low income groups will therefore gain more user benefits than any other group as a result of the Scheme.** This is set out in Table 3.7 of the Distributional Impacts Assessment, which shows that low income groups will see total benefits, net of user charges, worth £12.2m in 2021, compared to just £5.1m for medium and high income groups combined.

The Applicant has also mapped the distribution of net benefits of the Scheme, including benefits from public transport, according to income deprivation quintile. The results of this are shown in the table below and demonstrate that a greater share of the net benefits accrue to those in the lowest income deprivation quintile.

	Income deprivation quintile (1 = most deprived)				
	1	2	3	4	5
Share of net user benefits	38%	35%	11%	7%	9%

Share of population	33%	35%	15%	9%	7%
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The scheme is therefore highly beneficial for low income user groups because user charges, which medium and high income users pay a greater share of, enable a step change in cross-river public transport, which benefit low income residents disproportionately.

Appendix 4: 20mph Zones

We note that PHE are satisfied that 20mph would be inappropriate on TLRN routes. TfL only have a remit for management of TLRN roads, all other roads fall under the jurisdiction of the London Boroughs. The boroughs do have a rolling programme of 20mph zones which takes into consideration accident rates and local uses, such as schools. Greenwich Millennium Village will be designated at 20mph in 2017. The following link shows the current and planned 20mph zones in Greenwich

http://www.royalgreenwich.gov.uk/downloads/file/2810/map_of_current_and_planned_20mph_zones_in_greenwich

The only avenue for the project to impose 20mph limits on local roads would be through the Development Consent Order process. This requires the Silvertown Tunnel project to identify and mitigate any significant environmental effects, for example: increased traffic flows, accidents, congestion and air pollution. The Transport Assessment [doc ref TRO 10021] and Environmental Statement [AS-022] did not identify any such effects on local roads and so mitigation (which could include implementation of 20mph zones) is not/and cannot be proposed.

It should be noted that mitigation is built into the scheme design, described in Section 6.5 of the ES [AS-022]. The user charge has been set at a level that ensures the Scheme does not result in a significant impact on local traffic flows or air quality. The Monitoring Strategy [doc ref 7.6 TRO10021] will provide a watching brief on this and the Traffic Impact Mitigation Strategy [doc ref 7.7 TRO10021] sets out a number of mitigation options which include 'adjustment to speed limits to manage localised congestion, air quality and/or noise impacts' (Page 23); that could be used should it be necessary to regulate the traffic flows and potential effects.

Appendix B. Public Health Letter to TfL



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13 December 2016

Dear Neil

**Nationally Significant Infrastructure Project
Proposed Silvertown Tunnel
Update on discussions with Applicant**

Thank you for your letter dated 7th December providing an update on discussions with PHE in regards to the Silvertown DCO application. Your letter details the areas of agreement and also those where further discussions are ongoing and we have responded to the points raised below.

2. Matters discussed at the meeting on the 1st December 2016

2.1 Active Travel

PHE remaining issue (email dated 14.11.16): *'PHE London would like to see something more conclusive on the promotion of active travel'.*

Applicant response: at the meeting on the 1.12.16 TfL explained the option selection process and summarised the measures in the submission which support active travel. This included scheme specific measures (e.g. the new Boord Street footbridge); and also measures to ensure the scheme integrates into the existing cycle and pedestrian networks within the vicinity of the tunnel portals at Greenwich and Silvertown. TfL committed to providing a summary of TfL/Mayoral plans for river crossing, which is set out below.

The Silvertown Tunnel Scheme is not being delivered in isolation and significant investment has been made in cross-river travel options in east London in the last 20 years, with the delivery of:

- Jubilee Line Extension to Stratford;

- DLR to Lewisham;
- DLR to Woolwich;
- re-opening of the East London Line and its inclusion in the London Overground network;
- Emirates Air Line; and
- Crossrail (due to open in 2018).

The Mayor's next priorities for river crossings in east London were set out in the Update Report October 2016 (AS-021). This multi-modal approach includes the Silvertown Tunnel Scheme as well as a dedicated pedestrian and cycle bridge between Rotherhithe and Canary Wharf and a DLR at Gallions Reach, and does not preclude the delivery of further road crossings in the future.

The Update Report October 2016 (AS-021) sets out the Mayor's next priorities for river crossings in London, and this includes progressing a pedestrian and cycle bridge between Rotherhithe and Canary Wharf as well as further investigations into a ferry link between North Greenwich and the Isle of Dogs. Neither of these schemes are required to deliver the benefits or mitigate the impacts of the Scheme and are therefore not included in the DCO submission that is the subject of this Examination process and will be progressed through separate planning application process/es.

Next steps: please can PHE confirm there is now agreement on the provision for active travel.

PHE response:

The issue from a PHE perspective is that a road scheme of this nature and scale is remiss in not accommodating active travel within and through the new river crossing.

While TfL state that options for active travel through the tunnel were considered and dismissed, PHE would like TfL to make a commitment to incorporating cycling within the DCO so that cyclists can benefit from shorter, safer travel by means such as allocated spaces and bike racks on the buses that will go through the tunnel.

Customer satisfaction surveys¹ of the Emirates airline suggest that:

- a) travellers do not use the airline on a regular basis, and
- b) the airline is 'something fun to do' and therefore it is unlikely that regular commuters will use it or that cyclists will utilise it to support active travel to cross the river..

2.2 Environment (Air Quality) Mitigation measures

PHE remaining issue (letter 6.11.16): *'It would be helpful for TfL to confirm their proposals/approach to urban greening in areas surrounding the Hoola building'*.

¹ <https://tfl.gov.uk/corporate/publications-and-reports/emirates-air-line-performance-data#on-this-page-2>

Applicant response: the Applicant presented the proposals set out in the DAS for greening at Silvertown at the meeting on the 1.12.16. The Applicant sent links to the Design and Access Statement and the Design Principles by email on the 2.12.16. As discussed at the meeting PHE will review the Design Principles and DAS which provide the parameters within which the landscaping and public realm will be developed.

Next steps: please can PHE confirm there is now agreement on proposals for urban greening in the vicinity of the Hoola development.

PHE response

PHE has reviewed the Design Access Statement and Design Principles and was unable to locate specific references to urban greening proposals in the vicinity of the Hoola development but rather details on the generic approach associated with the overall development. In case we have inadvertently missed any relevant information we would be grateful if you could direct us any specific proposals for urban greening in the vicinity of the Hoola building.

2.3 Effects on community anxiety/stress

PHE remaining issue (email 14.11.6): *while the air and noise stressors have been assessed, PHE London would like assurance that the combined effect of these stressors on both physical and psychological wellbeing has been assessed.*

Applicant response: this was discussed in depth at the meeting on the 1.12.16. The Applicant tabled a note which is Appendix 1: Stress in Combination attached to this letter. This sets out how in combination effects on stress were addressed in the Health and Equality Impact Assessment (HEqIA). The Applicant also committed to providing a summary of how stress was assessed in the HEqIA. This is Appendix 2 to this letter. Subject to PHE review of these two documents, we believe the assessment of stress has now been agreed.

The only outstanding issue from the meeting was that of monitoring stress levels as a result of scheme operation. It was discussed that it is very difficult to identify a viable mechanism for this with an identifiable study area, methodology, and results that can be quantified and be meaningful. PHE took an action to look into this. PHE stated that this maybe something that would be looked at post DCO approval. Air quality is a big issue for London and therefore this may be a wider topic. It would be useful if PHE could let TfL know whether this is something they would like to pursue as part of this DCO process at the hearing or whether this is a separate issue.

Next Steps: please can PHE confirm that there is now agreement on the assessment of stress in the HEqIA. Please can PHE also advise how they would like to proceed on the issue of monitoring stress.

PHE response:

PHE are concerned that there may be a cumulative impact to overall wellbeing for the residents living in close proximity to the Silvertown Tunnel.

PHE would request that TfL offer to undertake a baseline assessment of community wellbeing of the affected communities before the construction phase using an agreed methodology i.e. the Community Life Survey², ONS 4 Wellbeing question³ or the short Warwick-Edinburgh Mental Wellbeing (WEMWBS) scale⁴ so that bodies such as the local authorities, PHE or the GLA can undertake further investigations to monitor wellbeing in affected communities.

2.4 Crossing Charge

PHE remaining issue (letter 6.11.16): *'PHE is very concerned with the introduction of a charge to use the existing river crossing, Blackwall Tunnel, which is currently free of any charge. PHE is primarily concerned that the level of the charge may present a greater burden on those in the lower socio-economic groups, who use Blackwall Tunnel as a means to access employment, healthcare, etc. and the introduction of the charge may have a 'community severance' effect.'*

Applicant response: this issue was discussed at the meeting on the 1.12.16. A response was tabled which is appended at Appendix 3.

Next steps: please can PHE confirm whether there is now agreement on the crossing charge and low income groups.

PHE response:

While TfL have stressed that car ownership is low amongst the current residents around the Blackwall and Silvertown Tunnels and that there will be a net gain by the introduction of more public transport/ buses through the Silvertown Tunnel,

PHE is concerned that a charge will represent an inequality to those residents who own a car and are on low incomes.

PHE would request that TfL considers mitigation options such as exemptions for car owners in existing local communities to both Blackwall and Silvertown

2

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/539111/community_life_survey_consultation_response_final.pdf

3

<https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/measuringnationalwellbeing/2015-09-23>

4

<http://www.cppconsortium.nhs.uk/admin/files/1343987601WEMWBS%20User%20Guide%20Version%201%20June%202008.pdf>

Tunnels on the basis that the majority of the traffic will come from outside the boroughs

2.5 Zoning for 20 mph

PHE remaining issue (from email 14.6.16): *PHE first raised this at our meeting on the 09.08.16 and have considered the verbal explanations and written responses provided by TfL since then. However we are still not fully satisfied with the reasoning provided by TfL for not undertaking modelling of a 20mph zone as part of the scheme. PHE would like greater assurance that there will be commitment to model the 20mph zones on appropriate roads. We recognise that this may not be appropriate for major arterial roads however would like TfL to consider appropriate routes where there is proximity to schools and residential areas’.*

Applicant response: this issue was discussed at the meeting on the 1.12.16. A response was tabled which is appended at Appendix 4.

Next steps: please can PHE confirm there is now agreement on the project not monitoring or implementing 20mph zones.

PHE response

PHE note TfL’s response which primarily focusses on the implementation 20mph zones, as well as the existing use and planned expansion of these zones in Greenwich. The response does not appear to have considered the role of such zones in Newham.

PHE would like to clarify that its request relates to the modelling of 20mph speed limits to assess any potential benefits in terms of air quality, and notes that this could also potentially provide an improved evidence base to inform the Traffic Impact Mitigation Strategy [doc ref 7.7 TRO10021] which TfL has proposed to include ‘*adjustment to speed limits to manage localised congestion, air quality and/or noise impacts’ that could be used should it be necessary to regulate the traffic flows and potential effects.*

1. Matters in which PHE are in disagreement

3.1 Local air quality should not be worsened (letter 6.11.16): *‘PHE recognise that the Environmental Statement concludes that there are more receptors that experience a perceptible improvement in air quality compared to deteriorations, despite emissions from the scheme increasing overall. However, TfL have stated that this improvement is not determined as significant under the IAN 523 guidance and hence concludes that the scheme will have “no significant impact” on air quality. Hence, PHE would like to clarify their position as follows: PHE would encourage any new road or traffic development to consider, if practicable and cost effective, opportunities to secure improvements in local air quality’.*

Applicant response: the Applicant has prepared the following response: Although the Scheme does not result in a significant impact on air quality in accordance with the guidance (Interim Advice Note 174/13), the Applicant has investigated whether there are any mitigation measures that could be included in the Scheme. This led to including the commitment to operating Euro VI or equivalent buses through the Silvertown tunnel. The commitment to Euro VI buses will reduce some of the Scheme's impacts particularly at the receptor which is predicted to experience the largest change (Hoola development west tower). It should be noted that overall the scheme has a beneficial impact on those receptors with the highest modelled concentrations (particularly around the northern portal of Blackwall Tunnel), i.e. those above the AQS Objective and will therefore contribute to an improvement in air quality within some Air Quality Management Areas and Air Quality Focus Areas. It is the Applicant's view therefore that it has considered whether there are any practice measures that could be included in the Scheme to improve air quality.

Next steps: Please can PHE respond to the above with any outstanding issues.

PHE response:

PHE notes TfL's assessment that the proposed scheme does not result in a significant impact on air quality in accordance with the guidance (Interim Advice Note 174/13). However in light of an overall increase in emissions of air pollutants and a detriment to particular receptors (e.g. Hoola development west tower), PHE continues to encourage consideration, if practicable and cost effective, any opportunities to secure improvements in local air quality (note PHE's response to section 2.2. air quality mitigation measures).

I hope these responses are helpful and PHE would be happy to discuss these matters further

Yours sincerely

nsipconsultations@phe.gov.uk

Cc: Amanda Pownall, Transport for London
National Infrastructure Planning Administration