



Application for Development Consent

Application Reference Number: WWO10001

Examining Authority's Second Written Round of Questions and Requests for Information Response from Thames Water

Additional SoCG request - Thames Tideway Tunnel, London Duck Tours and PLA

Doc Ref: **APP64.3**



1 Question: 40.3

Can the Applicant, London Duck Company Limited and PLA provide a SoCG relating to navigational safety at Albert Embankment Foreshore? (The ExA appreciates that there may be limitations in completing this SoCG insofar as it relates to the construction phase).

State of Agreement

A copy of this SoCG has been circulated to PLA and LDT on 07 January 2014.

We have not had the opportunity to incorporate comments further to a scheduled stakeholder meeting on Friday 10 January 2014 discussing this SoCG. This SoCG does not therefore have the benefit of formal stakeholder comments.

This SoCG summarises the continuing discussions between the parties and has been shared with stakeholders, however it has not been possible to incorporate the latest comments from stakeholders into the submitted SoCG, although this will be done in due course. We are continuing to engage with the identified parties and will provide final signed versions of this SoCG for 12 February 2014 deadline.

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1.2 Introduction

- 1.2.1 London Duck Tours' (LDT) amphibious 'Duck' vehicles (Duck: An amphibious landing craft vessel used in WWII for the D-day landings and now converted for commercial use. Duck derives from the military code sign DUKW) primarily navigate the stretch of the River Thames between Vauxhall and Westminster Bridges, although the operational licence is between Teddington and Poplar. The vehicles enter and exit the river at Lacks Dock which will be within the proposed Albert Embankment foreshore site Limits of Land to be Acquired or Used (LLAU).
- 1.2.2 The Port of London Authority (PLA) is the statutory harbour authority for the tidal Thames ('the river') between Teddington and the Thames Estuary. Its statutory functions include responsibility for navigational safety and controlling vessel movements.
- 1.2.3 Thames Water's (TWUL) proposed works for the Thames Tideway Tunnel at the Albert Embankment Foreshore Site will affect LDT's use of Lacks Dock as LDT's access to the river will cross the proposed working area.
- 1.2.4 This SoCG relates to issues of Navigational Safety at Albert Embankment foreshore that the parties either agree or have not been able to resolve. The parties to this SoCG are PLA, LDT and TWUL.
- 1.2.5 LDT has a 15-year lease (which commenced in December 2009) at Lacks Dock and granted by the Duchy of Cornwall (plot nos. 38, 38a, 40).
- 1.2.6 LDT is concerned about its continued use of the slipway while construction works are taking place on the foreshore. LDT is not currently using the slipway following a recent health and safety incident on the river, and it is not known how long that situation will continue.

1.3 Nature of Engagement

- 1.3.1 TWUL has been in discussion with LDT for three years about access over and shared use of Lacks Dock. Contact has been maintained to date with discussions on-going and a further meeting scheduled for 10 January 2014 to jointly develop outstanding issues.
- 1.3.2 Meetings between TWUL and LDT have included an initial meeting on 5 October 2010 with the Managing Director of LDT, Mr John Bigos, where he stated his support for the project (but with specific concerns over the use of Lacks Dock), on 18 January 2012 and on 16 May 2013 with Mr John Bigos and Mr Alistair Bigos.
- 1.3.3 TWUL has been in discussions and held meetings with PLA to discuss Navigational risk assessment on a monthly basis from November 2011 to the submission of the Navigational Issues and Preliminary Risk Assessment in the DCO in February 2013. Meetings have been held on outstanding issues routinely since submission.

1.4 Impacts of the Project upon LDT operations

- 1.4.1 The preliminary navigational risk assessment carried out by Thames Water, based exclusively upon terms of reference by TWUL, for the Albert Embankment Foreshore site has identified the following potential navigational issues relating to the project's interaction with LDT vehicles:
- a. When entering the water from Lacks Dock, the temporary and permanent works could obstruct the Duck master's view of traffic on the river increasing the risk of a collision between a Duck and a vessel or man powered craft transitting the area.
 - b. TWUL will be using barges during the temporary works. The increased vessel traffic in close proximity to Lacks Dock poses a new navigational risk, and again increases the risk of a collision between a Duck and TWUL construction traffic.
 - c. It is reported that DUKW vehicles sometimes lose propulsion in the water and could therefore drift onto the project's permanent or temporary structures. LDT has stated that due to reduced distances, reaction time for anchor deployment is reduced. LDT has experimented with shortened anchor lines previously, this has counter intuitively reduced the efficiency of anchors.
 - d. The shape and location of the temporary and permanent works site could lead to a change in river flow. When the Ducks enter the water the flow of the river could move them beam-on toward Vauxhall Bridge. If this occurred the potential for a river incident would be increased as a result of the Ducks having limited power, limited manoeuvrability and a low freeboard.
- 1.4.2 The following additional risks and issues with respect to interaction with LDT vehicles have also been identified:

- a. There is a risk of collision between site vehicles and plant crossing the slipway (moving materials between the shaft site and the interception chamber site) and the LDT vehicles moving down the slipway. It should be noted that at high tide there will be no construction vehicles on the foreshore and this risk is therefore intermittent with the tide.
- b. The changes in river flow, river traffic, and subsequently sedimentation will affect the soft terrain on and around the slipway. This increases the risk of the Ducks being unable to use, or becoming beached upon, the slipway due to unsuitable ground conditions. i.e. the slipway having fatigue failures under new river forces, or the slipway becoming buried in soft silt.
- c. The Lacks Dock slipway is constructed on soft foundations and as such has a safe operating limited of 10 metric tonnes. Overloading will result in permanent deformation of the slipway.
- d. The change in river flow could have an effect on the amount of debris, refuse, and drift wood in and around Lacks Dock. LDT has stated that its vehicles are very susceptible to damage from such sources due to the shape of their hulls.

1.5 Mitigation Measures

- 1.5.1 The project has undertaken preliminary navigational risk assessments to identify the key navigational issues at each of its sites. Meetings with LDT have been used to inform the navigational risk assessment process to the submission of the *navigational issues and preliminary risk assessment for Albert Embankment Foreshore* (Doc Ref.: 7.20.03). TWUL continue to engage with LDT alongside the PLA in the project's navigational risk assessment process throughout design development and into construction.
- 1.5.2 The Code of Construction Practice Part B (Doc ref: 7.19.2, Section 5, p. 3) states that access for LDT would be maintained at all times unless agreed otherwise. Thames Water's proposals for shared use of the access and slipway include marshals, a safety boat, a lookout on the temporary construction site, and shared traffic control on the access road.
- 1.5.3 The following are mitigation measures that have been embedded in the design by the project to reduce the risks identified in relation to interaction with LDT vehicles:
 - a. The in-river footprint of the temporary and permanent works site has been minimised so that intrusion into the river can be kept as small as reasonably practicable. This reduces the extent that the works site would extend into the river and therefore would reduce the likely impact on existing river users.
 - b. A change was made to the shape of the permanent shaft structure, following the phase two public consultation, to round off the corner of the permanent structure, to improve sight lines for users of Lacks Dock.

- c. Segregated access is allowed for along the Lacks Dock access road in the DCO drawings, although there would still be potential for conflict at the entrance off Albert Embankment and as the Duck enters the river.
- d. Piled protection dolphins have been provided around the terraced interception structure to prevent LDT vehicles drifting onto the partly submerged structure and capsizing in the event of engine failure.
- e. Fluvial modelling was carried out to assess changes in current speed and direction across the end of the Lacks Dock slipway. This modelling has not included analysis of turbulence or river debris. At the current time separate river turbulence and river debris analyses have not been undertaken. However, assessment on the reduction in sewage derived litter at ALBEF (that is contained within ES Volume 10 Section 14.6.) identifies that the tonnage of sewage derived litter from the CSO can be expected to reduce by approximately 95%, from approximately 74t to approximately 3.5t, in the Typical Year once in the operational phase.
- f. The corners of the temporary cofferdam were rounded as a result of the fluvial modelling studies to reduce impact on localised currents.
- g. Constraints were placed on the working areas within the river, as identified on the zones of foreshore working drawing, to minimise the activity that would be required in close proximity to the authorised channel.

1.5.4 The Black and Veatch Interpretive Scour Report in the Environmental Statement (Doc ref: 6.2, Vol 3, Appendix L.4, Figure 11-3, p. 55) shows that along the length of the Lacks Dock slipway, it is predicted that river velocities may be slower than they are at present. It is therefore possible that accretion may occur along the slipway. It is also predicted in the Interpretive Scour Report (para. 11.2.6, p. 55) that scour around the cofferdam to the north of the slipway may be in the order of 1.1m deep.

1.5.5 The proposals given in the Scour and accretion monitoring and mitigation strategy for temporary and permanent works in the foreshore (Doc ref: APP03.05.01) would apply also to the Lacks Dock slipway. The whole slipway falls within the survey area that would be monitored before, during and after construction. The slipway is also entirely contained within the Limits of Land to be Acquired or Used (LLAU). Mitigation of any scour or accretion that occurs within those areas would be the responsibility of the contractor during construction. This responsibility would then pass to Thames Water (or the relevant infrastructure owner) during operation. The scour proposals shall be secured by the protective provisions in the Draft DCO in favour of the PLA, Environment Agency (EA) and by condition on the deemed marine license from the Marine Management Organisation (MMO). It is anticipated that these protective provisions and license will be backed up by provisions of a four way agreement between TWUL, PLA, EA and MMO. These will require the river authorities' approval of the scour proposals.

- 1.5.6 The following are further mitigation measures that are considered necessary:
- a. Meetings between Thames Water and LDT to cover the best timeframes for cofferdam construction.
 - b. Continuing use by LDT vehicles of their fitted Thames Automatic Identification System (AIS), which offers the Duck master visibility of what is on the river. Project vessels would be equipped with AIS. However, this will not affect river traffic outside of TWUL or LDT control i.e. man powered or private pleasure craft, and commercial vessels less than 50gt or 40m in length, as these are not required to have AIS installed, all of which may have line of sight issues with Lacks Dock.
 - c. The master will need to positively identify that he is not going to obstruct other river users before making his approach to the river from the slipway. The PLA could not countenance the master of a DUKW vessel committing to entering the river on the reliance solely of its Automatic Identification System (AIS).
 - d. Continuing use by LDT vehicles of their Very High Frequency (VHF) communications system which allows contact with the Thames Vessel Traffic Service (VTS) and other vessels in the area. Project vessels would also use VHF.
 - e. Provision of a temporary 'watchman's hut' for use by LDT during the construction phases of the project. There are a number of operational and responsibility issues associated with providing such a facility. Procedures will need to be written, taking into account overall lines of responsibility and stakeholder operating requirements. The temporary watchman's hut would house the Thames AIS display equipment and communication equipment for a dedicated river lookout. The lookout would be in communication with the following marine co-ordination staff:
 - i Thames Barrier Navigation Centre (TBNC – operators of the Thames VTS)
 - ii LDT vessels
 - iii LDT control centre
 - iv Other vessels in vicinity of the site, including project vessels.
 - f. A safety boat, with towing capability, would be available on site to provide rescue cover.
 - g. Control of project vehicle movements across the foreshore between the northern and southern sites to avoid conflict with LDT vehicle movements, which can be at least 92 movements per day during the peak season(1 Duck every 6 minutes), and could be as many as 132 movements per day once the project is under construction (1 every 4

minutes). Control measures could include the provision of traffic signals for project vehicles to prioritise movements and avoid conflict, as well as measures to reduce the number of project movements across the foreshore such as pumping concrete to the southern site from the northern site and moving materials outside of LDT operational hours.

- h. The detailed design of the temporary and permanent structures would include the provision of ladders, safety grab chains and other lifesaving equipment around the work site to aid emergency egress from the river, in accordance with the PLA's guidance document 'Review of Lifesaving Provisions Along the River Thames'.
- i. Liaison and dialogue would be necessary between the project site staff and LDT, with early notification given of any large scale plant movement that would be likely to have an impact on LDT operations and communication regarding timing and frequency of barge movements to and from the site.
- j. Emergency response exercises and training would be carried out jointly between the project and LDT, in collaboration with the PLA and emergency services.

1.6 Agreed position

- 1.6.1 LDT need to maintain clear lines of sight in order to access and egress the water safely. Once DUKWs drive onto the slipway at Lacks Dock they are committed to entering the water. This is because there are no turning points other than the river and it is unacceptable to reverse onto Albert Embankment which is a TfL Red Route. Upon exiting the water the vehicle is committed at the point it crosses the main shipping channel.
- 1.6.2 There would be reduced visibility for vehicles entering and exiting the water at Lacks Dock, particularly during the construction phase but also on completion. This potentially creates an issue for the master in that they may be making decisions without full knowledge.
- 1.6.3 There would be potential for conflict between project construction traffic and LDT vehicles and this would need to be managed.
- 1.6.4 There will be changes to river flows in the vicinity of Lacks Dock due to the cofferdam and permanent structures and this was advised in a meeting on 18 January 2012 by TWUL to LDT. Fluvial modelling carried out by TWUL predicts that the changes are broadly a reduction in river velocity close to Lacks Dock and in line with Arch 5 of Vauxhall Bridge and an increase in river velocity towards the centre of the river. The largest increases in velocity are not on the route of the LDT vessels. These changes in velocity are not considered to pose any issues to LDT given the combination of their magnitude and location.
- 1.6.5 Any damage caused to the Lacks Dock slipway would need to be repaired by the project.

- 1.6.6 LDT currently pay rent to use the Lacks Dock access and slipway, and is liable for this rent regardless of its ability to trade at the slipway (meeting 8 November 2012). If the project prevents LDT from using the slipway during the construction period, the project would be expected to compensate LDT. The compensation payable was discussed in a meeting on 16 May 2013 where the project outlined the basis of compensation payable under the statutory code. Various heads of compensation were explained, including the value of land taken, the nature of temporary and permanent losses that could be claimed, and compensation for business extinguishment.
- 1.6.7 As the slipway is LDT's only current viable access to the river, prevention from using the slipway is the equivalent to being 'unable to trade'. It is noted that LDT has a seasonal turnover. Thames Water would be expected to compensate LDT for this loss of opportunity on a turnover basis. The rationale behind a turnover structure is that LDT smooth income over a year to cover losses in the winter. Losses in high season could not be absorbed in a profit compensation calculation during low season. TWUL acknowledges the complexity in loss of trade calculations.
- 1.6.8 At the meeting of 8 November 2012, LDT stated that although the permanent shaft structure in front of Camelford House would reduce visibility for LDT vehicles from the existing condition, it considers that measures could be put in place to make the permanent works safe, and that the key areas of concern are with the temporary works. This position was reiterated in the meeting on 16 May 2013.
- 1.6.9 Use of alternative river access is LDT's preferred option to maintain their uninterrupted river access. LDT has suggested that an alternative slipway should be sought for the construction period to give Thames Water full use of Lacks Dock Slipway during the construction period, with LDT returning to Lacks Dock at the end of the construction period.
- 1.6.10 The project has stated that an alternative slipway would need to be identified and promoted by LDT outside of the DCO. LDT are currently investigating this. If studies prove an alternative site is feasible and rational, TWUL would provide assistance to progress such a proposal.
- 1.6.11 LDT proposes within its written representation, that its operations are relocated during the construction of the works at Albert Embankment Foreshore to either Queenhithe Dock (the preferred alternative) or three alternative sites in the vicinity of the existing operations at Lacks Dock. A number of these schemes do not appear to be located within the Limits of Land to be Acquired or Used and are not therefore within the DCO's purview.
- 1.6.12 As detailed in their WR submitted to ExA on 02 December 2013, the PLA has not held any discussions with London Duck Tours over a relocated slipway at Queenhithe and would note that there are a number of issues that require resolution but from initial assessment does not consider that it is an appropriate location for a new slipway. This reach is significantly more congested than the river surrounding Lacks Dock and the PLA does

not believe that it is suitable for slow moving DUKW craft. The alternatives in the vicinity of Lacks Dock appear to the PLA to be preferable in terms of navigational safety, although it is clear that further work need to be undertaken if any of these alternatives are to be progressed.

1.7 Matters not agreed

- 1.7.1 LDT believe that the project should replace the existing slipway. The project believes that it would need to be strengthened at the lower end where the construction vehicles would be crossing it, but there is not necessarily justification for replacing the upper half of the slipway. LDT believe that there would be issues with connecting a rigid slipway to the existing flexible 'armorflex' block slipway. Thames Water accepts that if heavy equipment is required to be delivered via the slipway, the slipway will need to be replaced with a strengthened design throughout its length due to its 10 tonne weight limit.
- 1.7.2 LDT accepted in good faith, but without evidential support, that the shaft could not be sited in front of Vauxhall Bridge in a meeting on 8 November 2012. LDT however wishes to maintain that, in its opinion, the most environmentally friendly, cost effective, and most suitable solution is for the shaft to be on foreshore in front of Vauxhall Bridge.
- 1.7.3 The navigational risk assessment that has been prepared is a preliminary risk assessment aimed at identifying the key hazards and embedding mitigation measures into the design wherever possible. It reflects the level of design development at this stage of the process, which is for the application for Development Consent. The Contractor would be required to submit detailed method statements and risk assessments to the PLA in consultation with LDT for approval before they start work. LDT believe that it would be better to carry out detailed risk assessments now so that the risks of alternative / additional mitigation measures that may be discovered at a later stage are minimised. Thames Water consider that until the Contractor and the marine works and river transport sub-contractors appointed and the final design, temporary works and construction methods are known it is not appropriate to develop the current risk assessment further at this time.
- 1.7.4 LDT consider that the preliminary navigational risk assessments are flawed because they do not take into account accident statistics and Marine Accident and Investigation Branch (MAIB) reports. They believe that the frequency or severity of accidents and reportable and non-reportable incidents would be negatively affected by increased traffic. This excludes any additional risks that would be created by construction and therefore LDT feels that the resultant level of risk could be unacceptable. TWUL note that construction work will be segregated from LDT therefore the increase in risk due to construction should not be material.
- 1.7.5 LDT see the crossing of vehicles at the bottom of the slipway as a key area of concern. At the meeting on 8 November 2012, Mr John Bigos restated that he felt that the concept of a cross roads at the end of the

slipway was not something he could support citing the GLA's opposition to a shared access at the top of the slipway from their phase two public consultation response. He stated that the idea created hazards which were left outside of human control and he felt that the risk assessment was flawed to suggest these could be mitigated.

1.7.6 It was suggested that TWUL and LDT "swap" accesses if the proposal for access between Camelford House and Tintagel House was considered the primary access for Thames Water. That is, Thames Water should use Lacks Dock to access the construction site and LDT should use a new access and draw dock created between Tintagel House and Camelford House. This way Thames Water would have full access to Lacks Dock and LDT would enter and exit away from the temporary works, thus eliminating risks associated with the vehicle crossroads and construction barges. Following construction, the temporary access between Camelford House and Tintagel House would be reinstated, and LDT would revert back to using the slipway at Lacks Dock, as existing. The occupiers of Vauxhall Cross have objected to the use of Lacks Dock by Thames Water for all construction vehicle access to the main construction site in response to Thames Water's public consultation. Given that the option proposed by LDT involves the use of Lacks Dock by all construction vehicles, Thames Water considers it likely that the occupiers of Vauxhall Cross would object to this proposal.

1.7.7 The lack of suitably qualified masters and crews to implement the submitted Transport Strategy and the related issue of "moonlighting" resulting in health and safety implications and commercial implications for existing river operators was noted in the LDT written representation. LDT requested the PLA act to reduce "moonlighting" and the enforcement of working hours and furthermore that the required number of suitably qualified personnel estimated by TWUL does not include those required to man safety boats – an additional figure of 80 is cited within LDTs written representation.

As noted in their WR of 2 December 2013, the PLA concurs with TWUL and LDT that trained personnel need to be available and was pleased to note that TWUL has recognised that it, together with the provision of barges, tugs and other vessels, is fundamental to the successful delivery of the Transport Strategy and hence the scheme itself. The PLA will continue to work with TWUL on this issue and is sure that the river operators will also contribute positively to training. The PLA comment, in relation to the specific issues raised by LDT that "moonlighting" is a contractual issue between employee and employer and not a matter for the PLA, and that limits on working hours more generally are for the Maritime and Coastguard Agency to monitor and enforce.

In relation to the manning of safety boats, vessels of less than 13.7 metres in length, as most safety boats are, do not require crew members to hold a Boat Master's Licence. More widely held alternatives are acceptable and available. For this reason, the PLA does not recognise the additional

number of required personnel cited by LDT as necessary to the delivery of the Transport Strategy.

- 1.7.8 LDT object that the permanent works remove the ability to ground a Duck outside the authorised channel in an emergency situation. The PLA takes the view that rather than looking for the removal or changes in the location of the works, the essential requirement is for the removal at source of the circumstances that caused a DUKW vessel to ground so ensuring that the incident does not arise in the first place.
- 1.7.9 The PLA remains in discussion with the TWUL over navigation issues raised by London Duck Tours at this site and believes that appropriate safeguards can be included in the Protective Provisions in favour of the PLA. The PLA also trusts that the Applicant will engage positively with the operator.

1.8 Ongoing and further assessment of risk

- 1.8.1 As set-out in the PLA written representation:
'[ultimately] it is for the PLA as navigation authority, following the submission and consideration of a detailed risk assessment, to determine ... appropriate mitigation measures to maintain navigational safety'.
- 1.8.2 The final details of the scheme has not been finalised and, until it is, Thames Water will not be able to finalise and submit detailed risk assessments to PLA as part of their detailed applications. This includes the final permanent works designs, temporary works designs and construction methodology. TWUL will engage positively with LDT to advise these further detailed risk assessments.
- 1.8.3 Only once the PLA has had the opportunity to consider those detailed risk assessments will the PLA be in a position to confirm any appropriate mitigation measures to maintain navigational safety.
- 1.8.4 The PLA remains in discussion with TWUL over navigation issues raised by LDT and believes that appropriate safeguards can be included in the Protective Provisions in favour of the PLA such that the PLA can ensure that it maintains the right to make appropriate navigational safety determinations in due course.
- 1.8.5 The PLA is the appropriate body to consider navigational safety concerns raised by river users following specific applications, supported by detailed risk assessments, and it is for the PLA to approve these submissions.
- 1.8.6 Detailed construction risk assessments will also be produced as the detailed designs develop and these will further consider construction / public interfaces.

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