

Date: 8 March 2017

Item: Silvertown Tunnel

This paper will be considered in public

1 Summary

1001/ST-PJ482C		Silvertown Tunnel			
	Existing Financial Authority	Estimated Final Cost (EFC)	Existing Project Authority	Additional Authority Requested	Total Authority
TfL direct costs	£134.0m	£149.0m*	£50.5m	£0m	£50.5m

* Includes £13m of costs to be met by the DBFOM contractor (see paper on Part 2 of the agenda)

Authority Approval: This paper seeks to update the Programme Investment Committee on the procurement process for the Silvertown Tunnel, the next stage of which is issuing the tender documents to shortlisted bidders. The Committee is asked to note the paper and progress towards securing the Development Consent Order (DCO) for the necessary powers to construct operate and maintain the Silvertown Tunnel, including the associated use and compulsory acquisition of land and the application of user charges at both Silvertown and Blackwall Tunnels.

Outputs and Schedule: The Silvertown Tunnel will provide a new Thames crossing, connecting the A102 to the south with the A1020 Lower Lea Crossing to the north. The scheme is designed to relieve congestion at Blackwall Tunnel and improve network reliability and resilience, as well as enabling a step change in the provision of cross river buses services and supporting planned economic growth in east and south-east London.

- 1.1 A paper containing exempt information is included on Part 2 of the agenda. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

2 Recommendations

- 2.1 **The Committee is asked to note the paper and the related paper on Part 2 of the agenda and endorse the continuation of the competitive procurement process and the issuing of the tender documents to the shortlisted bidders for the contract to design, build, finance, undertake some aspects of operation and maintain the Silvertown Tunnel.**

3 Background

- 3.1 The Silvertown Tunnel project has been developed to address the significant issues of traffic congestion and unreliability at the Blackwall Tunnel and the consequential effects these have on travel, the environment, the economy and growth across the wider east and south east London area. The main issues are:
- (a) the Blackwall Tunnel is one of the most severely congested roads in London. In the peak periods, queues routinely stretch back up to two miles, adding around 20 minutes to journey times (it is estimated that some one million hours are wasted each year in queuing for the Blackwall Tunnel, equating to an equivalent cost of c.£10m of people's time);
 - (b) journey times for trips through the tunnel are more unpredictable than anywhere else on the Transport for London Road Network (TLRN), and despite ongoing efforts, each year there are around 1,000 closures (far more than on comparable tunnels, even accounting for its heavy usage). Many of these closures have significant ramifications for the performance of the wider road network across east and south east London;
 - (c) in the event of prolonged closures, rerouted drivers are forced to distant crossing points, which are themselves lacking in capacity, often along unsuitable routes, causing widespread disruption;
 - (d) the current restricted height clearances in the northbound Blackwall Tunnel and the unreliable journey times mean that only one, single decker, bus service, the 108, is available for cross river bus connections between east and south east London; and
 - (e) the area surrounding the Blackwall Tunnel is subject to enormous change with major employment and population growth taking place across the Isle of Dogs, Royal Docks, Greenwich Peninsula and Lea Valley. At present the Blackwall Tunnel provides the only crossing of the river by road that serves these development areas. With the scale of growth taking place, there will be increasing pressure placed on the Blackwall Tunnel, which will exacerbate the issues identified above.
- 3.2 Due to the significance of London as an economic driver nationally, this decrease in the efficiency of London's transport system can reasonably be expected to have a consequential detrimental impact nationally.
- 3.3 The Silvertown Tunnel project would:
- (a) significantly contribute to eliminating congestion at the Blackwall Tunnel;
 - (b) significantly reduce the number of unplanned closures at Blackwall, in particular closures caused by vehicles which are too tall for the tunnel;
 - (c) ensure the cross river road network is more resilient to incidents at Blackwall by providing a nearby alternative route;
 - (d) enable the provision of new cross river bus links, transforming bus services and significantly increasing the proportion of cross river trips made by public transport (details of the indicative future bus network are provided in Appendix 1);

- (e) reduce the environmental impact of current traffic congestion on some of London's most polluted roads; and
 - (f) support population and economic growth by enabling more reliable journeys, improving access to new markets and keeping traffic moving in east and south east London.
- 3.4 The scheme would consist of a twin bore road tunnel providing a new connection between the Greenwich Peninsula and the Lower Lea Crossing in the Royal Docks area. There would be two traffic lanes in each direction with one lane reserved for buses, coaches and HGVs (vehicles of height up to 5 metres). New junctions will be built to link the tunnels into the existing road network, and new portal buildings to house the equipment necessary to operate the tunnels. A plan showing the location of the scheme and visuals are provided as Appendix 2.
- 3.5 To ensure that traffic levels are managed and that the benefits of the scheme are locked-in for the longer term, a user charge is necessary at both Silvertown and Blackwall tunnels. The user charge will also help pay for the new tunnel. The Mayor's Transport Strategy (MTS) sets out the commitment to a new road crossing at Silvertown (MTS 39) and the circumstances in which the Mayor may consider introducing road user charging. Charges to support specific infrastructure improvements, such as river crossings, are specifically referenced (MTS 130). Chapter 6 of the London Plan sets out the need for river crossings in east London including "a new road-based tunnel crossing between the Greenwich Peninsula and Silvertown" (section 6.20).
- 3.6 The then Secretary of State for Transport designated the scheme a Nationally Significant Infrastructure Project in 2012. This means that TfL must apply for powers to build the scheme through a DCO application.
- 3.7 The DCO process is used to provide the necessary consent for projects which have been classified as nationally significant. This means that separate applications for a range of other consents, such as planning permission and listed building consent, will not be required. The DCO will also include provisions authorising the compulsory acquisition of land or of interests in or rights over land and the introduction of user charging at the Silvertown Tunnel and Blackwall Tunnel.
- 3.8 In May 2016, the Mayor initiated a review of the Silvertown Tunnel and other proposed east London river crossings. The review involved consideration of a range of evidence relating to:
- (a) availability of crossings in east London;
 - (b) current performance of crossings in east London;
 - (c) current and future demand for crossings in east London;
 - (d) public transport operations and opportunities;
 - (e) specific views expressed by stakeholders through previous consultations, engagement events, meetings and surveys with businesses. This included view expressed by London boroughs on the current state of the cross-river transport network, as well as calls for new crossings in specific locations;

- (f) air quality including consideration of current air quality levels, future forecasts and the forecast impact of different schemes;
- (g) supporting the economy, new jobs and homes;
- (h) public realm, walking and cycling, including consideration of how to improve connections across the river, as well as to key destinations either side, such as employment areas and public transport interchanges;
- (i) benefits and disbenefits of different crossing options; and
- (j) costs, affordability and deliverability.

3.9 The outcome of the Mayoral Review was announced on 4 October 2016, confirming support for the Silvertown Tunnel, with enhancements to make it greener and more public transport focused. The review also confirmed support for a new pedestrian/cycle crossing between Rotherhithe and Canary Wharf, a DLR crossing at Gallions Reach and assessment of a Barking Riverside-Abbey Wood London Overground extension and assessment of a North Greenwich–Isle of Dogs ferry.

4 The Development Consent Order (DCO) Application

- 4.1 The Silvertown Tunnel DCO application will be determined by the Secretary of State for Transport. The decision will follow the six month examination, which commenced on 11 October 2016. The examination is led by a panel of examiners, known as the Examining Authority, that are appointed by the Planning Inspectorate. The Planning Act 2008 prescribes that, in deciding the application, the Secretary of State must have regard to the National Networks National Policy Statement (NNNPS), the Local Impact Reports prepared by the boroughs and Greater London Authority (GLA), and any other matters that are important and relevant.
- 4.2 The NNNPS acknowledges that there is a critical need to improve the national networks to address road congestion, to facilitate safe and reliable journeys, and to provide a transport network that is capable of stimulating and supporting economic growth. It also acknowledges that there is an equally important need to ensure improvements have minimal impact on the environment, are well designed and improve safety.
- 4.3 Unlike other consents processes, the DCO timetable is fixed and cannot be delayed. The key dates for the decision are as follows:
- (a) 11 October 2016 to 11 April 2017: Examination into the Silvertown Tunnel DCO application;
 - (b) by 11 July 2017: Examining Authority submits its recommendation to the Secretary of State for Transport (note: the Examining Authority's recommendation is not shared with TfL or other parties); and
 - (c) by 11 October 2017: Secretary of State for Transport publically confirms if the Silvertown DCO is granted.

5 Stakeholder Engagement

- 5.1 Three non-statutory and one statutory consultations on the scheme have been held, the most recent of which took place between October and December 2015. TfL has sought to address the issues that have arisen from the consultations in the development of the scheme and in the DCO application that was submitted for the project in April 2016.
- 5.2 Since the DCO application was made, TfL has developed a Statement of Common Ground with all key stakeholders (such as the London Boroughs, Environment Agency, Port of London Authority, Highways Agency, Marine Maritime Organisation, Greater London Authority, Historic England, Public Health England, Heath & Safety Executive, land owners and developers). The purpose of these documents is to keep a live record of the matters of interest to stakeholders concerning the scheme and how TfL is addressing these issues.

6 User Charging

- 6.1 User charging is an integral component of the Silvertown scheme, needed to manage traffic demand, lock-in the benefits of the project in the longer term and fund the cost. The charge is essential in order to meet the Government policy test for new roads by ensuring that overall traffic demand is managed to levels that ensure no significant adverse effects on air quality and other environmental factors.
- 6.2 The level of the user charge would be set by the Mayor much closer to scheme opening (which is forecast for June 2023). However, to enable stakeholders to form a view on the scheme, and to inform the assessment of traffic and environmental effects, as well as the scheme's business case, a set of user charges have been developed, known as the 'Assessed Case' charges.
- 6.3 If the user charges are set too high, it will lead to a significant displacement of trips onto other river crossings, pushing additional traffic onto local roads and undermining the case for the scheme. If the charges are set too low, it will generate too much additional traffic leading to congested conditions that would undermine the reliability and resilience benefits. The objective therefore has been to develop charges that meet the Government's policy tests, as well as helping to meet the cost of delivering the project.
- 6.4 It is proposed that user charges will be applied at Silvertown and Blackwall Tunnels seven days per week, but every night there would be a free period between 10pm and 6am, which mirrors the arrangements at the Dartford Crossing. This would provide an opportunity for freight vehicles to travel at night – something that would offer wider benefits in terms of congestion relief. Charges would be higher in the peak period and by peak direction to address the times when congestion is most severe. Off peak prices and counter peak flows would be less. As with Congestion Charging, users would be encouraged to have an account to access lower charges and non-account holders would pay higher charges.
- 6.5 Certain exemptions and discounts would be applied for users of the tunnel and set closer to the time of opening. For example, emergency services and local TfL bus

services would be exempt and an appropriate discount strategy would be set to encourage a greater take up of low emission vehicles.

- 6.6 The table below sets out the charge levels applied in the ‘Assessed Case’. Information is also provided on how these compare to the charges at Dartford. Although not fixed, these represent TfL’s best estimate at the current time of the charges that are necessary to meet the tests set out in the Government’s NNNPS in respect of traffic, environmental and economic objectives, against which the DCO submission is being assessed.

	Blackwall and Silvertown Charges per single crossing			
Vehicle type	Every day 10pm – 6am	Weekday Peak prices (£) Northbound: 6am- 10am Southbound: 4pm-7pm	All other times on weekdays and weekends between 6am and 10pm (£)	Dartford charge (per trip for account holders) 6am to 10pm (£)
Cars and small vans	No charge	3.00	1.00	1.67
Large vans and minibuses	No charge	5.00	1.65	2.63
HGVs	No charge	7.50	4.00	5.19

All figures are in 2015 prices.

- 6.7 As part of the sensitivity analysis for the DCO submission TfL has assessed the impacts of higher or lower growth in population, jobs and car ownership and the consequential changes that would be required to the user charges to ensure the scheme still meets its traffic, environmental and economic objectives. The sensitivity analysis demonstrates that the user charges are able to effectively respond to potential changes in circumstances.

7 Business Case

- 7.1 An outline business case for the scheme has been produced in accordance with the Department of Transport’s (DfT’s) Business Case Guidance, as required for nationally significant infrastructure projects. The DfT Guidance stipulates a five case model to developing a transport business case which considers whether the scheme:
- (a) is supported by a robust case for change that fits with the wider public policy objectives – the ‘strategic case’;
 - (b) demonstrates value for money – the ‘economic case’;
 - (c) is commercially viable – the ‘commercial case’;
 - (d) is financially affordable – the ‘financial case’; and
 - (e) is achievable – the ‘management case’.

7.2 The business case shows that the project represents the best solution for addressing the current problems at Blackwall and the adverse effects these have on the economy and local environment. The project also helps support new cross river bus travel and future sustainable growth. The case for the scheme is summarised in the table below.

DfT Business Case Requirement	Summary of Silvertown Tunnel Outline Business Case (OBC)
The strategic case	There is a clear and robust case for a new tunnel at Silvertown to address the current traffic congestion and unreliability and to cater for the needs of future economic growth. The 'strategic case' is closely aligned with national, London-wide and local policy objectives, with a particular reference to the London Plan and Mayor's Transport Strategy.
The economic case	The scheme has a Net Present Value (NPV) of £967m to £1,225m (the latter when reliability benefits are included). These values increase significantly if London values of time are used in the appraisal with the net user benefits rising by some £600m to £700m (the latter for the adjusted estimates). This represents a very good economic outcome and very high value for money.
The commercial case	The scheme is commercially viable. The Outline Business Case sets out the procurement and commercial structure, the proposed allocation of risk and payment mechanisms for the project.
The financial case	The scheme is financially affordable. The majority of the project would be delivered through a Design, Build, Finance, Operate and Maintain (DBFOM), with the finance repaid during the operating period of the DBFOM concession and the user charging income offsetting the majority of these costs.
The management case	The project can be efficiently delivered, with clear governance, process and project controls in place for the next stages of development of the scheme.

8 Procurement

8.1 The Silvertown Tunnel will be procured through a Design, Build, Finance, Operate and Maintain (DBFOM) contract. This means the DBFOM Project Company (Project Co) will be responsible for raising the finance and designing, building and maintaining the Silvertown Tunnel including the associated equipment for a 30 year period (c.five years for design and construction and c.25 years for maintenance). TfL will be responsible for delivering and operating the user charging, which will also apply at the Blackwall Tunnel. TfL will therefore retain the demand risk in respect of user charging income, whilst the majority of the

construction, maintenance and availability risks for the Silvertown Tunnel will be passed to the Project Co. This will reduce the risk to TfL of tunnelling activity, which is of particular relevance for this project. The Silvertown scheme requires the construction of very large (12.5m diameter) twin bore tunnels close to the river bed in challenging ground conditions. The site also has significant issues, including contaminated land due to previous industrial uses and unknown ordnance that could include unexploded bombs.

- 8.2 A further benefit of a DBFOM contract is that the Project Co only gets paid when the tunnel is open, thereby ensuring there is a very strong incentive for the Project Co to deliver to time (or early) and budget. The payment mechanism developed by TfL also contains strong incentives to maximise asset availability when it matters most, which not only reduces inconvenience for users but also minimises the impact of lost revenue on TfL and ensures the Project Co adopts a whole life approach.
- 8.3 For the above reasons TfL considers the use of a DBFOM contract is the most appropriate delivery method for the Silvertown Tunnel. This also ensures that the scheme can be categorised as 'off balance sheet' and as a consequence it is not competing for funding against other TfL Business Plan priorities.
- 8.4 A 'PF2' type contract is being used in line with the HM Treasury's guidance 'A new approach to public private partnerships' as published in December 2012. This form of contract is now generally accepted by contractors, financiers and the equity markets for use as the base contract in the majority of DBFOM projects. TfL has also undertaken market engagement that has confirmed the approach to structuring the contract and scope of the works is endorsed by a large number of bidders.
- 8.5 The procurement process is being run in parallel with the DCO, so as to ensure TfL is ready to award the contract to a successful bidder once the Secretary of State's decision on the DCO application is confirmed. This will help ensure the benefits of the Silvertown Tunnel are realised as early as practical, as well as minimising cost increases due to inflation and enabling the land required for construction of the tunnel to be released without delay once the works are complete.
- 8.6 A Prior Information Notice (PIN) advising of the proposed procurement was issued in March 2016 to ensure market awareness of the upcoming requirements. An Industry Day with prospective bidding consortia was held in May 2016. TfL then paused the procurement process whilst the Mayoral Review was underway (see paragraphs 3.8 and 3.9) and then issued the Official Journal of the European Union (OJEU) notice and Pre-Qualification Questionnaire (PQQ) on 4 October 2016. Submissions from seven bidding consortia were received by the deadline of 12 December 2016. Submissions are being assessed in terms of:
 - (a) General experience;
 - (b) Design;
 - (c) Construction;
 - (d) Capability;
 - (e) Operations and maintenance;

- (f) Health & safety;
- (g) Quality management;
- (h) Environmental management;
- (i) Equality and supplier diversity; and
- (j) Finance and other matters.

8.7 Three bidding consortia that best meet the PQQ requirements based on their prior experience and capability will be shortlisted to proceed to the next stage of the procurement process. The evaluation of the submissions is nearing completion and it is proposed the outcome of the PQQ assessment process be ratified by the Silvertown Project Board on 9 March 2017, whose membership includes the Director of Surface Finance, Director of Surface Projects & Programmes and the Director of Asset Management. The three shortlisted bidding consortia will then be announced shortly after, with letters sent to each of the bidding consortia to confirm the outcome of the process.

8.8 The next stage in the competitive procurement process is the issuing of the tender documents. Towards the end of the competitive process in summer 2018, a report will be submitted to the Committee for the appointment of a preferred bidder.

9 Equality and Diversity

9.1 A Health and Equalities Impact Assessment has been undertaken for the scheme, which was submitted as part of the DCO application. This includes an assessment of the impacts of the Scheme on health and equalities including air quality, noise, road safety, active travel, accessibility, access to jobs, social capital and other matters. In summary, the assessment concludes that there are no significant cumulative effects on health, well being and equalities arising during the scheme construction or operation and that where appropriate mitigation has been incorporated into the scheme. For example, TfL has committed that any new buses using the Silvertown Tunnel will be Euro VI or equivalent.

10 Key milestones

10.1 The key milestones for the DCO decision, appointment of a contractor and the construction of the tunnel are set out in the table below.

Milestone	Target Date
DCO examination	Oct 2016 – April 2017
Pre-qualified bidding consortia announced	Mar 2017
Decision by Secretary of State and cooling-off period	Oct 2017 – Dec 2017
Committee approval to appoint a preferred bidder	June 2018
Financial close	January 2019
Works start on site	April 2019
Silvertown Tunnel opening	June 2023

11 Assurance

- 11.1 The project has recently been the subject of an interim Integrated Assurance Review (IAR) by TfL Project Assurance and the Independent Investment Programme Advisory Group (IIPAG). The External Experts (EE) were GHD who concluded “there are no critical issues...and in the opinion of the EE, this reflects a project that continues to progress well, but with some recommendations to reduce risk to the project and to TfL.” TfL Project Assurance recommend “approval to issue the ITN, subject to the completion of certain recommendations” and the IIPAG advised “The procurement process for this PFI/PPP appears to be well managed and IIPAG sees no reason why the ITN should not be proceed as planned subject to compliance with the internal Governance requirements and the recommendations resulting from this review.” The recommendations arising from the IAR are all being addressed by TfL officers.
- 11.2 TfL also continues to make use of the independent peer review panel of industry experts appointed at TfL’s request by the Institution of Civil Engineers, as well as other key groups such as the TfL Tunnel Design Safety Consultation Group. Benchmarking and good practice is also being adopted for the project based on lessons learned from Crossrail, Thames Tideway Tunnel, Northern Line Extension and Highway’s England schemes that have progressed through the DCO process, notably the A14 and M4.

List of appendices to this paper:

- Appendix 1: Silvertown Indicative Future Cross River Bus Network
Appendix 2: Proposed Layout and Illustrative Plans for the Silvertown Tunnel

List of background papers:

- Mayor’s Transport Strategy
Letter to Mayor of London from the Secretary of State confirming Silvertown Tunnel’s status as a nationally significant infrastructure project
Outline business case
Procurement strategy

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Appendix 1: Silvertown Indicative Future Cross River Bus Network



The step change in cross river bus services shown on the plan reflect those put forward by TfL as part of the Development Consent Order (DCO) application for the scheme. They effectively ‘in fill’ the gaps in rail provision in this part of the London resulting in:

- Service frequency increase from the current 6 buses per hour via the Blackwall Tunnel to an assessed 37.5 buses per hour per direction
- A projected increase from 10% to 30% for proportion of trips made by public transport using Blackwall / Silvertown crossings
- Increased public transport accessibility for key development sites, such as the Royal Docks, Isle of Dogs and Greenwich Peninsula.

Appendix 2: Proposed Layout and Illustrative Plans for the Silvertown Tunnel



Plan showing the proposed Silvertown Tunnel



Illustrative design for southern tunnel portal



Urban realm proposals looking south west towards tunnel portal across Tidal Basin Roundabout