

SILVERTOWN TUNNEL

Adjacent river crossings

October 2016

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Silvertown Tunnel

Adjacent river crossings

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1. INTRODUCTION

- 1.1.1 The Silvertown Tunnel scheme (the Scheme) is expected to result in a significant improvement in the performance of the road network in the vicinity of the Blackwall Tunnel, and by providing a new crossing in close proximity to the Blackwall Tunnel would considerably enhance the resilience of the road network in east London. A key element of the scheme is the proposed introduction of user charges at both the Blackwall and Silvertown tunnels to effectively manage demand for the crossings, and as a result the Scheme is not expected to lead to a material change in the number of cross-river trips. In addition, the Scheme includes proposals for cross-river bus service improvements that, in conjunction with the user charges, are expected to increase public transport mode share.
- 1.1.2 The Transport Assessment (Document Reference: 6.5) sets out the expected effects of the Scheme on all east London river crossings, and Appendix E of the Transport Assessment focuses specifically on the impacts on the two adjacent crossings: Rotherhithe Tunnel to the west and the Woolwich Ferry to the east. Appendix E explains that the overall effects of the Scheme on adjacent crossings are expected to be minimal, that any changes in demand seen at the crossings would be small and that the performance of adjacent crossings is included in the proposed traffic monitoring plan for the Scheme.
- 1.1.3 The purpose of this note is to provide further detail on the expected impacts of the Scheme on other east London river crossings, in part to respond to stakeholder concerns and requests for further information on this issue. The note also provides an update on possible mitigation measures should monitoring indicate these are required as a result of the Scheme, such as potential enhancements to the Woolwich Ferry waiting areas. Whilst the work into potential enhancements to the waiting areas has been completed as part of separate workstreams and is not part of the Silvertown Tunnel scheme, it is nonetheless of relevance and hence has been referenced accordingly.
- 1.1.4 Whilst the focus of the note is on the adjacent crossings consideration has also been given to the impacts of the Scheme on Tower Bridge and the Dartford Crossing where appropriate. Overall, the note provides further evidence that the Scheme would not have a significant adverse impact on any of the existing east London river crossings.
- 1.1.5 The note does not consider the impact of the Scheme on potential future crossings, for instance the new crossings that are being considered at

Gallions Reach and Belvedere by TfL and the Lower Thames crossing being considered by Highways England. These potential crossings are less developed than the proposed Silvertown Tunnel scheme, hence where appropriate the future assessments completed for these proposed crossings will take into account Silvertown Tunnel.

- 1.1.6 For ease of reference and to present the additional work completed in context, extracts from Appendix E of the Transport Assessment have been included within this note and supplemented with further information where appropriate.

2. OVERARCHING CONSIDERATIONS AROUND THE IMPACTS OF THE SCHEME ON OTHER CROSSINGS

- 2.1.1 This section of the note presents a number of overarching qualitative considerations around the potential impacts of the Scheme on other river crossings, which point towards the conclusion that the overall effects on other crossings would be minimal. The subsequent section of the note sets out the analysis that has been undertaken using the strategic highway model (RXHAM) in relation to other crossings, which supports and underpins this conclusion.
- 2.1.2 The Silvertown Tunnel scheme would provide additional cross-river capacity and connectivity, thereby benefitting users of the Blackwall and Silvertown tunnels by:
- Reducing congestion;
 - Reducing the frequency of incidents at the Blackwall Tunnel, in particular those incidents caused by over-height vehicles, as the Silvertown Tunnel would provide full dimensional clearance for tall vehicles; and
 - Improving resilience in the event of closures of the Blackwall Tunnel, as users would be able to divert to the Silvertown Tunnel.
- 2.1.3 The implementation of a charge to use the tunnels coupled with enhancements to the bus network would provide TfL with an effective mechanism for managing demand and improving cross-river public transport provision. The charge could be amended to match conditions at the time the Scheme opens or if circumstances change such that the impacts of the Scheme are different from those expected. For instance the charge could potentially be adjusted in future to reduce the impact of the Scheme on adjacent river crossings if demand at adjacent crossings was greater than expected.
- 2.1.4 While the user charging aspect of the Scheme would of course cause some drivers to reconsider their travel options, it is anticipated that the additional financial cost of crossing the river on the A102 corridor would be largely offset by significantly reduced journey times, leading to little change in demand at the aggregate level. Hence it is not expected that the Scheme would have a significant material impact on adjacent river crossings.

- 2.1.5 This also reflects the capacities of the crossings, their position in relation to their typical ‘catchments’, and their connections to the strategic highway networks.
- 2.1.6 Relative to west and central London, there are significant distances between highway river crossings in east London. The distances from the mid-point between the Blackwall and Silvertown Tunnels to other east London crossings are shown in Table 1 below and the principal diversion routes from the Blackwall Tunnel to other crossings are shown in Figure 2-1. The considerable variation in the distances by road is due to the meander of the river.

Table 1: Approximate distances from Blackwall/Silvertown Tunnels to other crossings

Distance	Tower Bridge	Rotherhithe Tunnel	Woolwich Ferry	Dartford Crossing
As the crow flies	5.5km	3.5km	4.0km	18km
By road – north of the river	6km	3.5km	7km	26km
By road – south of the river	10km	8km	6km	25km

Figure 2-1: Diversion routes from the Blackwall Tunnel to other crossings

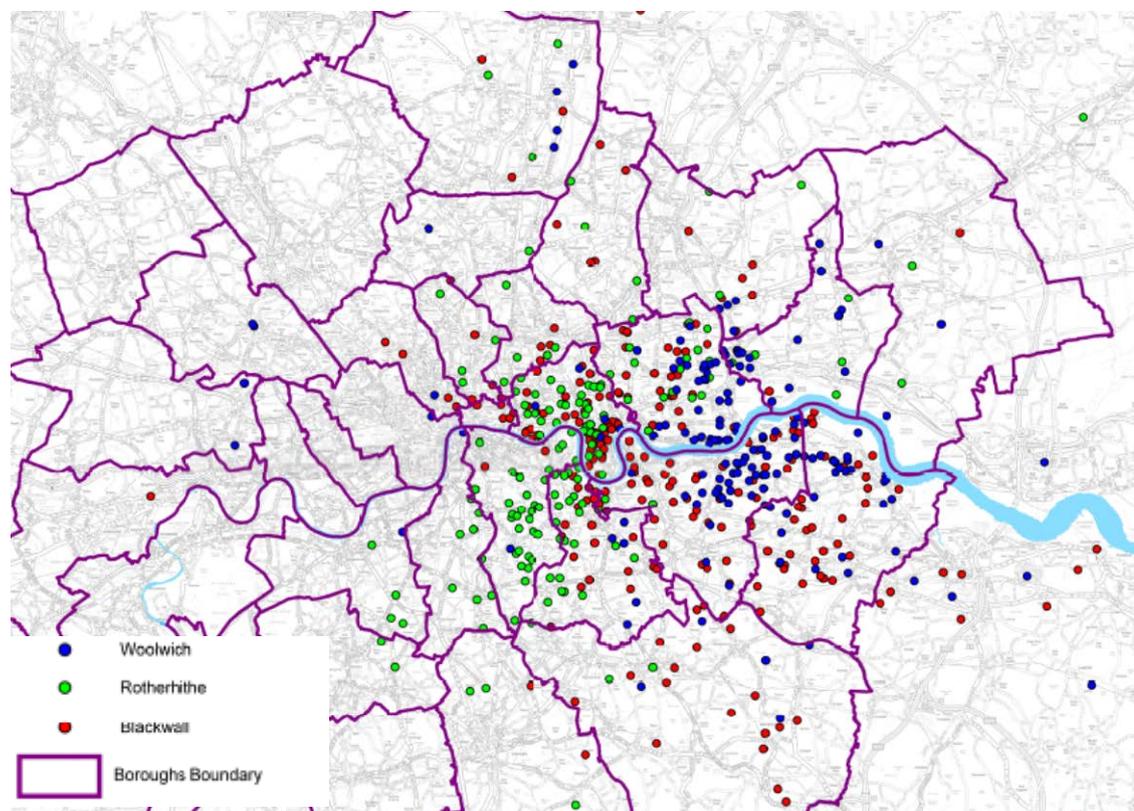


- 2.1.7 Highway routes between the Blackwall Tunnel and Tower Bridge, Rotherhithe Tunnel and the Woolwich Ferry are of limited capacity, and these routes are typically congested in peak times, meaning that routing cross-river trips that are best served by Blackwall or Silvertown tunnels via these crossings would typically incur considerable additional journey time compared to the option of using the Blackwall or Silvertown tunnels.
- 2.1.8 The two adjacent crossings are of significantly lower capacity – the Blackwall and Silvertown tunnels would have a combined capacity of approximately 5,000 PCUs per hour per direction, while the capacity of the Rotherhithe Tunnel is around 25% of this and the capacity of the Woolwich Ferry is much lower, below 5%. Both of the adjacent crossings operate at or close to capacity in peak times, hence there is little available capacity to accommodate new trips and any new trips that were made would incur additional delay.
- 2.1.9 Tower Bridge has a similar capacity to Rotherhithe Tunnel, but carries a higher proportion of freight vehicles, taxis and buses/coaches and is also congested at peak times. Restrictions on large vehicles also apply at Tower Bridge and Rotherhithe Tunnel; at Tower Bridge an 18 tonne weight limit is in place whilst at Rotherhithe Tunnel there is a width restriction of 1.98m.
- 2.1.10 Whilst Dartford Crossing has a notably higher capacity than Blackwall Tunnel, forming a key link on the M25 orbital motorway, it too has little spare capacity at peak times. Indeed, successive studies have identified the need for additional crossing capacity at Dartford and Highways England is currently examining options for a new Lower Thames crossing near the existing Dartford Crossing¹.
- 2.1.11 The geographic distance between the crossings also means they serve different catchment areas, albeit there is clearly a degree of overlap between them. Figure 2-1 below shows the origins and destinations of existing users of the Rotherhithe Tunnel, Blackwall Tunnel and Woolwich Ferry for northbound trips, based on 2012 surveys. Analysis of the origin and destination data suggests that the Blackwall Tunnel has a large catchment area with origins and destinations spread over a wide area, reflecting its high capacity and direct connections to several major routes. The Rotherhithe Tunnel has a smaller catchment area with a bias of trips from the south-west

¹ Further information on the Lower Thames Crossing scheme is available at www.lower-thames-crossing.co.uk

to the north-east, while the Woolwich Ferry has a much more local catchment, with a bias to the east.

Figure 2-2: Origins and destinations for northbound trips



2.1.12 Given the journey times associated with use of the adjacent crossings and their limited capacity (particularly the Woolwich Ferry), at the aggregate level it is considered that the charge incurred by Blackwall/Silvertown Tunnel users would be offset by quicker and more reliable journey times. While there will clearly be variance in users' values of time, for most users a diversion to an un-charged Rotherhithe Tunnel or Woolwich Ferry would not be worthwhile when the additional trip length and journey time are factored in.

2.1.13 Users that do opt to divert to the adjacent crossings are expected to be offset to some degree by users that choose to divert from the adjacent crossings to the Blackwall and Silvertown Tunnels on the basis that the quicker journey time and improved reliability are deemed to outweigh the charge incurred. In addition, overweight vehicles (above 4.0m in height)

would have a new choice of routing via the A102 as the Silvertown Tunnel would provide full dimensional clearance².

- 2.1.14 By providing an alternative crossing with full dimensional clearance adjacent to the Blackwall Tunnel, the Silvertown Tunnel scheme would represent a much more convenient route for users in the event of a closure of the Blackwall Tunnel. When there are incidents and closures at the Blackwall Tunnel at present, other crossings experience significantly increased demand and user delay as users seek to divert to alternative routes which are some distance away and are themselves already congested at peak times. This is particularly the case during major incidents (for instance a tunnel closure in excess of a few minutes occurring in peak periods) when impacts can be severe.
- 2.1.15 The severe impacts that a major closure of the Blackwall Tunnel can have on the east and south-east London highway network is set out in the Impacts of a major closure of the Blackwall Tunnel technical note (Document Reference: ST150030-PLN-ZZZ-ZZ-TEN-ZZ-0806). Appendix D of the Transport Assessment also includes an example of an incident which occurred at the Blackwall Tunnel during the AM peak period and caused widespread delay across the highway network, including on the approaches to Dartford Crossing, as users re-routed to other crossings.
- 2.1.16 Overall therefore, based on the considerations described above, demand for the adjacent crossings is not expected to change considerably as a result of the Silvertown Tunnel scheme. The Scheme would also considerably reduce the likelihood of other crossings being impacted by incidents and closures at the Blackwall Tunnel. The next section of this note sets out the modelling analysis that has been undertaken which supports these conclusions.

² It is proposed that the dangerous goods restriction category in place at the Blackwall Tunnel (Category E) will also apply at the Silvertown Tunnel. Consequently there is not expected to be a material affect on the routing of vehicles carrying dangerous goods at other crossings. Further information can be found in the Dangerous Goods technical note (Document Reference: ST150030-PLN-ZZZ-ZZ-TEN-ZZ-0855).

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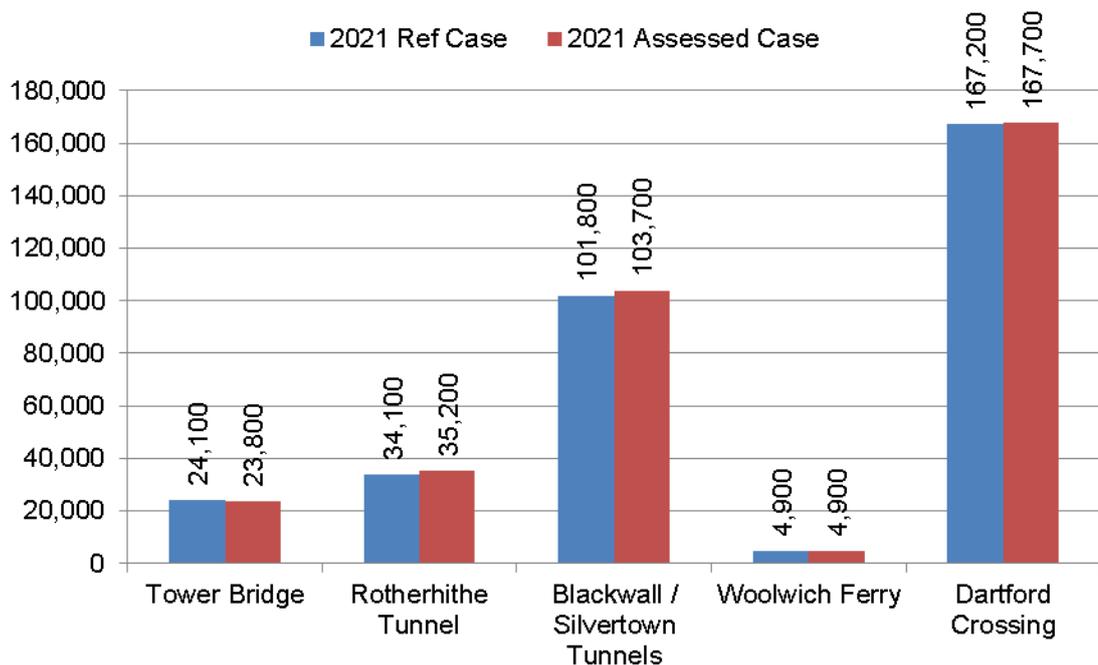
3. STRATEGIC HIGHWAY MODELLING OUTPUTS

3.1.1 The outputs from the strategic highway model (RXHAM) illustrate the modest scale of potential changes in traffic flow and demand at the other east London river crossings as a result of the Silvertown Tunnel scheme, lending support to the conclusion derived from the qualitative assessment set out in section 2 that the overall effects of the Scheme on other crossings would be limited.

3.2 Changes in traffic flow at other crossings

3.2.1 Forecast weekday traffic flows at east London river crossings in the 2021 Reference Case and Assessed Case are shown in Figure 3-1 below, based on RXHAM outputs converted into Average Annual Weekday Traffic (AAWT) using a standard methodology described in the Environmental Statement (Document Reference: 6.1).

Figure 3-1: AAWT actual flow by river crossing (vehicles, both directions), 2021 Assessed Case (with scheme) and Reference Case (without scheme)



3.2.2 It can be seen from Figure 3-1 that, over the course of a day, the most notable change in traffic flows is seen at the Blackwall and Silvertown Tunnels and change in forecast flows at other crossings as a result of the Scheme is minimal. At Tower Bridge weekday traffic flow is expected to decrease marginally by 300 vehicles (1.2%), whilst small increases of 900 vehicles (2.7%) and 500 vehicles (0.3%) are forecast at Rotherhithe Tunnel and Dartford Crossing respectively. At Woolwich Ferry traffic flow is not

expected to change over the course of the day. As explained below, where increases in traffic flow are forecast these typically occur at times when there is available capacity.

3.2.3 Further insight on the forecast changes in flow at the two adjacent crossings can be gained by looking at the forecast actual flows for the three modelled time periods by direction, as set out in Table 2.

Table 2: Actual flows (PCUs) at Rotherhithe and Woolwich, 2021 Assessed Case (with Scheme) and Reference Case (without Scheme)

Time of day	Direction	Rotherhithe Tunnel		Woolwich Ferry	
		Reference case	Assessed case	Reference case	Assessed case
AM peak	N/B	1,164	1,210	205	205
	S/B	937	985	182	203
Inter peak	N/B	1,072	1,073	172	180
	S/B	747	846	158	188
PM peak	N/B	1,210	1,210	205	191
	S/B	1,046	1,039	205	205

3.2.4 Looking in more detail at forecast changes in flow at the two adjacent crossings it can be seen that, at peak times, actual flows at the adjacent crossings are expected to remain broadly similar and significant changes in flows are not expected.

3.2.5 At the Rotherhithe Tunnel, in the AM peak hour, flows are expected to rise by around 45 PCUs in both directions (4-5%). In the PM peak hour flows are expected to remain the same in the northbound direction and fall marginally in the southbound direction by around 7 PCUs (-1%).

3.2.6 At the Woolwich Ferry, the change in flows is smaller but this should be considered in the context of the much lower capacity. In the AM peak hour, flows are expected to remain the same in the northbound direction and increase by around 21 PCUs (12%) in the southbound direction. In the PM peak hour flows are forecast to reduce by around 14 PCUs (7%) in the northbound direction and remain the same in the southbound direction.

3.2.7 The biggest change for both crossings is in the southbound direction of the inter peak period, when actual flow is forecast to increase by around 99 PCUs (13%) at the Rotherhithe Tunnel and by around 30 PCUs (19%) at the Woolwich Ferry. In both cases the crossings are not operating at full capacity

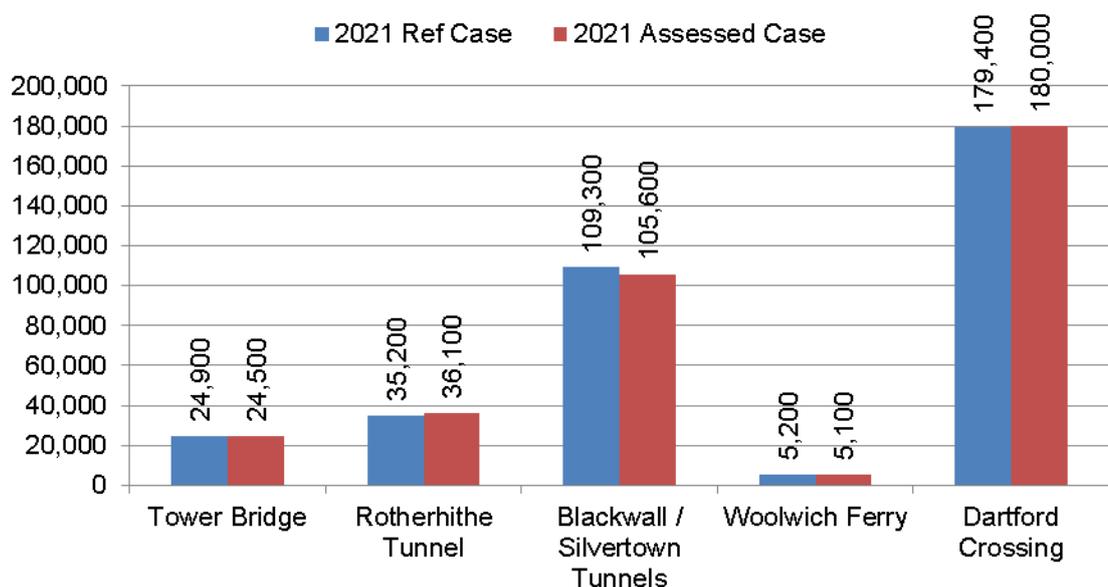
in the Reference Case and are able to accommodate an increase in demand during this period.

3.3 Demand at other crossings

3.3.1 In busy periods, actual traffic flows at the adjacent crossings are effectively 'capped' by the crossing capacities (with the maximum hourly capacities per direction being around 1,200 PCUs at the Rotherhithe Tunnel and 200 PCUs at the Woolwich Ferry). Where demand to use a crossing exceeds its capacity, queues begin to form (thereby increasing delay), and for this reason it is also useful to consider the demand at the adjacent crossings – that is, the total volume of traffic seeking to use them in any given modelled time period. A fuller explanation of demand flow from RXHAM can be found in Figure 1-4 of the Transport Assessment (Document Reference: 6.5).

3.3.2 Looking first at forecast weekday demand, again based on RXHAM outputs converted to AAWT, the changes in demand flow at east London river crossings are shown in Figure 3-2 below.

Figure 3-2: AAWT demand flow by river crossing (vehicles, both directions), 2021 Assessed Case (with Scheme) and Reference Case (without Scheme)



3.3.3 Again the most notable change in demand can be seen at the Blackwall and Silvertown Tunnels, and changes at all other crossings are generally minimal. Marginal reductions in AAWT demand are evident at Tower Bridge (-400 vehicles, -1.6%) and the Woolwich Ferry (- 100 vehicles, -1.9%). Small increases in AAWT demand are seen at the Rotherhithe Tunnel (+900 vehicles, +2.6%) and the Dartford Crossing (+600 vehicles, +0.3%).

3.3.4 The changes across all river crossings shown above are consistent with the outputs from the LoRDM demand model, which forecasts a small reduction in 24-hour cross-river highway trips and an increase in public transport trips across the modelled area in the 2021 Assessed Case. This is because although the Silvertown Tunnel introduces additional capacity the demand response to this capacity increase is managed through the introduction of a user charge. In addition there are proposals for cross-river bus services which, in conjunction with the user charge, are expected to increase public transport mode share (albeit the user charge will have the greatest impact in influencing demand). Consequently the scheme is not forecasted to generate 'new' trips; rather some trips are redistributed in response to the scheme.

3.3.5 Figure 3-3 and Figure 3-4 illustrate the changes in demand crossing on the two adjacent crossings for the three modelled time periods, by direction.

Figure 3-3: Demand flows (PCUs) at the Rotherhithe Tunnel, 2021 Assessed Case (with Scheme) and Reference Case (without Scheme)

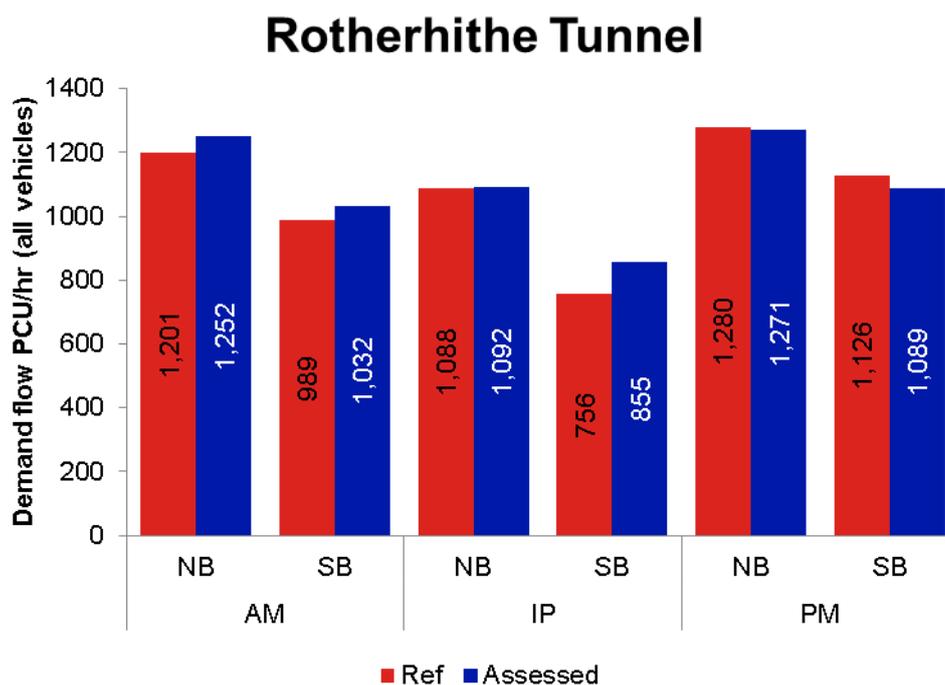
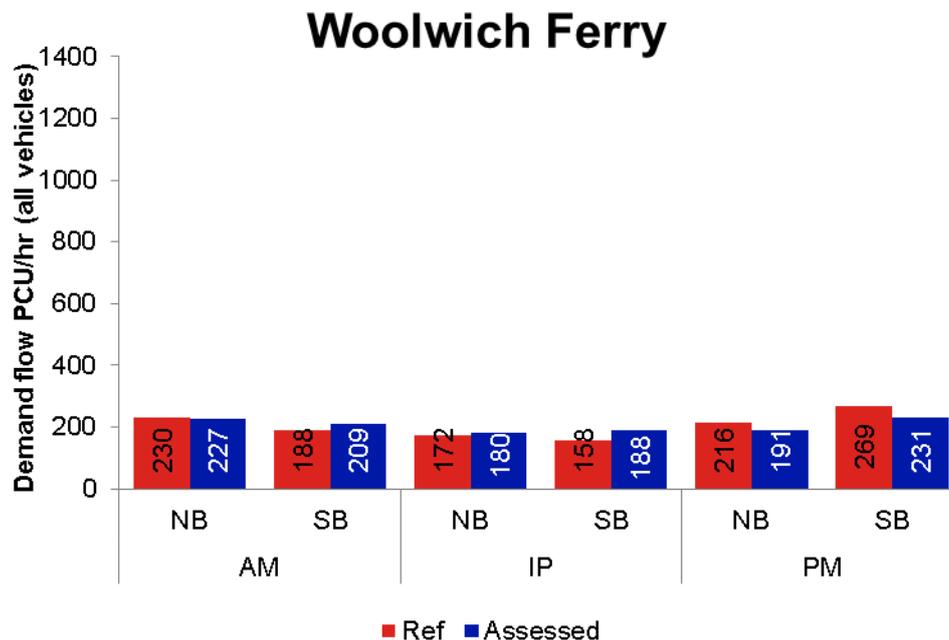


Figure 3-4: Demand flows (PCUs) at the Woolwich Ferry, 2021 Assessed Case (with Scheme) and Reference Case (without Scheme)



3.3.6 The figures show, as with actual flows, the changes in demand at the adjacent crossings are generally minimal as a result of the Silvertown Tunnel scheme. At the Rotherhithe Tunnel, there would be a marginal reduction in demand during the busiest modelled period (northbound direction in the PM peak hour). The same applies to the two busiest modelled periods at the Woolwich Ferry (northbound direction in the AM peak hour and southbound direction in the PM peak hour). This reflects the pronounced improvements in conditions at the Blackwall and Silvertown tunnels, encouraging drivers to route through these crossings.

3.3.7 The figures do indicate some increase in demand for the adjacent crossings at other times, most notably the northbound direction of the AM peak hour at the Rotherhithe Tunnel (increase of around 50 PCUs over the course of the modelled hour). This represents an increase of around 4% and would not be expected to have a significant impact on delay of trip times for this part of the network.

3.3.8 In the inter peak period, when the adjacent crossings are not operating at capacity, the figures show demand would increase marginally at both crossings as a result of the Silvertown Tunnel scheme. This suggests that, due to the deterrence effect of the charge, some Blackwall Tunnel and Silvertown Tunnel users would divert to the adjacent crossings during quieter periods when journey times to use these crossings are at their lowest. This is not expected to have an adverse impact on the highway network or the

crossings themselves as overall demand would be within capacity during these periods.

3.4 Impacts of Blackwall Tunnel closures

- 3.4.1 As explained above the Silvertown Tunnel scheme would help to reduce the likelihood of knock-on delay and disruption to other crossings as a result of incidents and unplanned closures at the Blackwall Tunnel. Whilst the day-to-day resilience benefits of the Scheme (i.e. the reduced likelihood of an incident or unplanned closure of the Blackwall Tunnel) are not captured in the RXHAM modelling outputs for the Assessed Case, the impacts of a short 15-minute closure has been tested using RXHAM and this is summarised in Appendix D of the Transport Assessment. This test shows that, unlike in the Reference Case, a 15-minute closure in the Assessed Case does not significantly increase demand at other crossings.
- 3.4.2 Further work has now also been undertaken into the impacts of a longer closure of the Blackwall Tunnel, and this similarly shows that in the event of a longer one-hour closure most Blackwall Tunnel traffic would divert to Silvertown Tunnel in the Assessed Case.

3.5 Summary of strategic modelling outputs

- 3.5.1 The modelling outputs suggest that traffic flows and demand for other east London river crossings would not change significantly as a result of the Silvertown Tunnel scheme, supporting the qualitative assessment set out in section 2 of this note. Overall, the demand model forecasts a small reduction in the total number of daily cross-river highway trips in 2021 as a result of the Scheme. Looking in detail at the changes in demand by time period for the two adjacent crossings shows that demand could in fact reduce marginally at the times when they are busiest and demand most exceeds their capacity. Changes in all cases are small, with the biggest changes seen outside of the busiest periods. Tests completed looking at the impacts of a Blackwall Tunnel closure show that the adverse impacts of a Blackwall Tunnel closure on other crossings are much reduced with the Silvertown Tunnel scheme in place.

4. MONITORING THE IMPACTS OF THE SCHEME ON OTHER RIVER CROSSINGS AND POTENTIAL MITIGATION

4.1 Proposed approach to monitoring

- 4.1.1 The assessment undertaken to date indicates that the Scheme would not have a material impact on other river crossings. Nonetheless the road network is going to change and evolve between now and the Scheme opening year and TfL acknowledges that a need for mitigation could emerge closer to (or after) the time of Scheme opening.
- 4.1.2 TfL is proposing to commit to future monitoring and implementation of mitigation under existing powers where appropriate by assessing the predicted traffic impacts at Scheme opening, and monitoring actual impacts thereafter to accurately identify the scale and location of adverse impacts to enable implementation of effective mitigation where required. A monitoring programme of traffic and environmental conditions will commence from three years prior to the Scheme opening and shall continue for a minimum of three and up to five years post Scheme opening. This approach is explained in the Monitoring Strategy (Document Reference 7.6) and the Traffic Impacts Mitigation Strategy (Document Reference 7.7).
- 4.1.3 The performance of adjacent river crossings is included in the proposed traffic monitoring plan, as set out in Appendix A of the Monitoring Strategy. This could include the monitoring of traffic flow on the crossings by hour (including vehicle type) and consideration of user delay on the crossing and its approach roads during busy periods³. The Monitoring Strategy is proposed to be a certified document that will be secured as part of the application for a Development Consent Order (DCO), hence monitoring of adjacent crossings would be a statutory requirement for TfL.

4.2 Potential measures to mitigate the impacts of the Scheme on other river crossings

- 4.2.1 There are a number of potential options available if monitoring indicates that the Scheme is having an adverse impact on other river crossings (or in the

³ A set of mitigation triggers are currently being developed.

case of the refreshed assessment undertaken prior to the Scheme opening, *would* have an adverse impact on other crossings).

- 4.2.2 The results from the monitoring of the road network may be used to inform decisions around setting and varying the user charges (this approach is set out in the Charging Policy (Document Reference: 7.11)). If, for instance, the Scheme was found to result in significant re-routeing to and/or delay at other crossings, one form of mitigation could be the potential adjustment of user charges to encourage more users to Blackwall and Silvertown tunnels, although the effects of such a change would need to be carefully considered (for example, the potential to lead to problematic overall increases in traffic at the Blackwall and Silvertown tunnels).
- 4.2.3 In the event of more localised traffic impacts, a range of targeted mitigation measures could be considered. Such mitigation could be implemented on the approaches to river crossings within reasonable timescales, and could for example include:
- Changes to existing signal timings;
 - Minor junction or geometry changes;
 - Traffic management measures; and
 - HGV bans and restrictions on certain vehicle types.
- 4.2.4 In the case of the Woolwich Ferry, there are several additional opportunities for managing any localised traffic impacts should the need arise in future. Recent refurbishment works means the ferry docking areas are in good order and TfL is planning to purchase new boats to replace the current vessels, which will help to ensure the service remains reliable and fit for purpose into the 2020s. TfL is currently developing proposals for new fixed-link crossings to the east of the Woolwich Ferry, at Gallions Reach and Belvedere, and as yet no decision has been taken as to whether the ferry service would continue beyond the opening of new crossings at Gallions Reach and Belvedere.
- 4.2.5 As part of a separate study and not as part of the Silvertown Tunnel scheme TfL has also given consideration to options for enhancing the existing waiting areas on both sides of the river, in order to minimise the impact of the ferry operation on the local highway network. A number of feasible options have been identified including utilisation of technology to assist the allocation of traffic into queuing lanes, the provision of improved access and reconfiguration of the waiting areas. These options could be delivered within the existing highway boundary and represent further measures that could be

implemented in future to effectively mitigate any unforeseen localised traffic impacts, if required.

- 4.2.6 Further details on the types of measures that could be implemented on the highway network to mitigate any adverse traffic impacts that are identified as being caused by the Scheme can be found in the Traffic Impacts Mitigation Strategy (Document Reference: 7.7). These measures are not proposed as part of the Scheme nor or deemed to be required in connection with the Scheme, but rather represent potential measures that could be delivered if monitoring indicates that they are required as a result of the Scheme.

4.3 Considerations around charging at the adjacent crossings

- 4.3.1 Consultations on the Silvertown Tunnel scheme elicited concerns over potential impacts on adjacent crossings, and recommendations from some respondents that user charges should be considered at adjacent crossings to help mitigate an anticipated increase in traffic demand there.
- 4.3.2 The evidence assessed in developing the Scheme does not indicate a need for making any changes to the adjacent crossings. As summarised above however, TfL has committed to undertaking a refreshed assessment prior to the Scheme opening, to monitoring the impacts of the Scheme on other river crossings post-opening, and implementing mitigation measures if the refreshed assessment or monitoring reveals this to be necessary. A key aim in doing so is to provide reassurance that mitigation would be possible in the event that it was required.
- 4.3.3 The range of potential mitigation summarised in section 4.2 above would provide TfL with a robust means of addressing an unanticipated adverse impacts on adjacent crossings. In order to implement a user charge at the adjacent crossings as part of the Silvertown Tunnel scheme and through the DCO, clear evidence that this is required would be necessary; in fact the modelling outputs do not indicate a significant increase in demand for the adjacent crossings at peak times nor major adverse impacts on the highway network as a result of the Scheme. Nonetheless, in the unlikely event that future monitoring revealed a significant adverse impact on adjacent crossings that could not be adequately addressed by the mitigation summarised in section 5.2, the implementation of a user charge at these

crossings could represent a potential option available to TfL albeit one which would need to be delivered outside of the Silvertown Tunnel DCO⁴.

4.3.4 Any decision to introduce future charges at another river crossing would require careful examination, irrespective of the introduction of the Silvertown Tunnel scheme. Particular consideration would be needed on the potential for this to trigger the problematic re-routeing of traffic to other crossings. The scope for the re-routeing of traffic from the Blackwall Tunnel as part of the Scheme is limited by the fact that additional cross-river capacity is provided in the form of the Silvertown Tunnel and very substantial reductions in user journey times are achieved. This would likely not be the case at other crossings, and the re-routeing of traffic would be a particular problem at crossings such as Rotherhithe Tunnel that are within close proximity of a convenient, un-charged alternative route (i.e. Tower Bridge). This is demonstrated by initial analysis which can be found in Appendix A of this note.

4.3.5 Overall, TfL considers that there is no case for implementing user charging at either of the adjacent crossings as part of the Silvertown Tunnel scheme and that a range of alternative mitigations exist should the Scheme be deemed to have an adverse impact on adjacent crossings at a late date. The introduction of user charging at adjacent crossings represents a potential option which could be delivered outside of the Silvertown Tunnel DCO, subject to careful consideration of its impacts, but this is not proposed as part of the Scheme.

⁴ The future introduction of user charging at the Rotherhithe Tunnel could potentially be delivered via TfL's existing powers under the GLA Act 1999. In the case of the Woolwich Ferry, a charging scheme with wider objectives which included the approaches to the ferry service could potentially be delivered in the same way. Alternatively, the introduction of a user charge solely on the ferry itself would likely require a repeal of the 1855 Metropolitan Board of Works Act or an amendment to this legislation for instance through a Legislative Reform Order.

5. SUMMARY

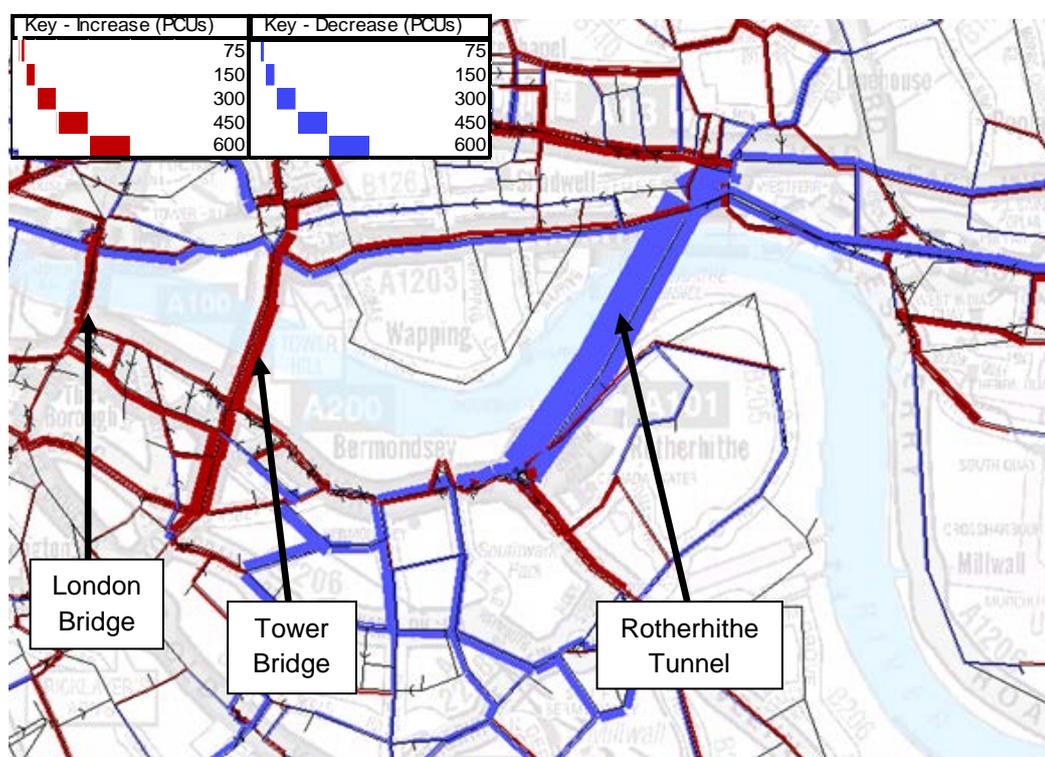
- 5.1.1 The Silvertown Tunnel scheme would provide additional cross-river capacity and connectivity. The implementation of a user charge coupled with enhancements to the bus network would provide TfL with an effective mechanism for managing demand and improving cross-river public transport provision.
- 5.1.2 The Blackwall Tunnel is some distance from other river crossings, with the Rotherhithe Tunnel being some 3.5km to the west and Woolwich Ferry some 4.0km to the east. Dartford Crossing is almost 20km to the east. Whilst some existing Blackwall Tunnel users could opt to divert to other crossings because of the user charge, these are expected to be largely offset by users that choose to divert to Blackwall and Silvertown Tunnels on the basis of the quicker journey times and improved reliability on this corridor. The Scheme would considerably reduce the likelihood of other crossings being impacted by the frequent incidents and closures which affect the Blackwall Tunnel.
- 5.1.3 This is supported by strategic modelling outputs which overall show minimal changes in traffic flow and demand at other crossings. Where changes in demand at other crossings are forecast these changes are generally small and would not be expected to have a material impact on the operation of the crossing, and for these reasons there is not considered to be a need for (or evidence to support) the introduction of a user charge at the adjacent crossings as part of the Scheme.
- 5.1.4 Nonetheless, TfL is proposing to commit to extensive future monitoring both pre- and post-opening of the Scheme, together with a refreshed assessment of potential impacts ahead of Scheme opening. Key areas of assessment will include the performance of adjacent river crossings, and findings could be used to inform decisions around the setting and varying of the user charges. Should refreshed assessment or monitoring identify that the Scheme will have or is having an adverse impact on other river crossings, a range of potential mitigation measures could be considered to address this impact. The introduction of user charging at adjacent crossings, although potentially feasible, is not considered necessary nor proposed as part of the Scheme.

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Appendix A. The potential impacts of implementing a user charge at Rotherhithe Tunnel

- A.1.1 The scope for the re-routeing of traffic from the Blackwall Tunnel to other crossings as part of the Scheme is limited by the fact that additional cross-river capacity is provided in the form of the Silvertown Tunnel and very substantial reductions in user journey times are achieved.
- A.1.2 Implementing a user charge at the adjacent crossings could however trigger the problematic re-routeing of traffic where there is a convenient, un-charged alternative route (as is expected at the adjacent crossings to a limited extent as a result of the Scheme). This is likely to be a particular issue at Rotherhithe Tunnel given the close proximity of Tower Bridge, and is hence an issue that would require careful consideration in making any decision to introduce user charging at this crossing.
- A.1.3 For the purpose of better understanding the potential impacts of introducing a user charge at the Rotherhithe Tunnel, initial analysis has been undertaken using RXHAM. This analysis indicates that the introduction of user charges at Rotherhithe Tunnel would result in a significant re-routeing of traffic away from this crossing towards crossings in central London.
- A.1.4 At Tower Bridge there would be an increased flow of around 250 PCUs (50 northbound and 200 southbound) in the AM peak hour and 200 (50 northbound and 150 southbound) in the PM peak hour. London Bridge would see an increase in flow of around 200 PCUs in the AM peak. The forecast changes in flows in the AM peak in the area around Rotherhithe Tunnel are shown in Figure A - 1 below.

Figure A - 1: Change in AM peak hour traffic flow, 2021, charged Rotherhithe Tunnel vs reference case



- A.1.5 The analysis indicates that user charging at Rotherhithe Tunnel would result in significant re-routing of traffic from this crossing towards central London crossings irrespective of the Silvertown Tunnel scheme.
- A.1.6 While the alternatives to using the Blackwall/Silvertown tunnels and the Woolwich Ferry are relatively poor, the proximity between Rotherhithe Tunnel and Tower Bridge means that Tower Bridge represents a fair alternative for much of the traffic using Rotherhithe Tunnel. Although Tower Bridge is reasonably close to the Rotherhithe Tunnel, it is on a busy boundary road for the Central London Congestion Charging scheme and increasing traffic on that route could be an issue for the operational reliability of this part of the highway network and hence could be an undesirable outcome.