

Transport for London



# Silvertown Tunnel: Social Impact Assessment

Date: October 2014

Version: 1.0

**JACOBS**<sup>®</sup>

Document control

Version Number	Date	Description	Author	Approved
0.1	September 2014	Internal draft	MH	AN
0.2	16 September 2014	Draft for TfL review	MW/KK	AN
0.3	1 October 2014	Draft with amendments following AB comments	MW/KK	AN
1.0	14 October 2014	For Public Consultation	MW/KK	AN

Silvertown Tunnel Social Impact V1.0.Docx

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## EXECUTIVE SUMMARY

1. Transport for London (TfL) is proposing to construct a new bored tunnel under the River Thames between the Greenwich Peninsula and Silvertown (“the Silvertown Tunnel”). This document is an outline report of the initial work on the Social Impact Assessment and forms one of several documents for public consultation starting in October 2014. The non-statutory consultation provides a preliminary opportunity to comment on the scope and methodology of the assessment. There will be a further opportunity to comment when TfL undertakes the statutory pre-application consultation on the proposed application for a Development Consent Order (DCO) for the Silvertown Tunnel in 2015.
2. The Blackwall-Silvertown Crossing project, like all transport interventions, will have social impacts upon travellers using the crossings and people living or working in its vicinity. The purpose of the Social Impact Assessment is to evaluate, and in some cases quantify, these impacts in order that their scale can be evaluated relative to other outcomes.
3. This assessment has been prepared using Department for Transport (DfT) TAG guidance (unit A4.1)<sup>1</sup>.
4. The table below highlights the main conclusions from the assessment – a seven-point scale of beneficial, neutral or adverse is provided and is also presented in the Appraisal Summary Tables (AST) in the Outline Business Case<sup>2</sup>.

### Social Impact Assessment Conclusions

Indicator	Assessment	Conclusion
Accidents	The full accident analysis is reported in the Silvertown Economic Assessment Report, and shows that there is a potential increase of 0.04% in accidents across the study area when Silvertown Tunnel is in place without any mitigation. This very small change is considered to be a neutral impact.	Neutral
Physical Activity	The key impact on physical activity is likely to be a very slight reduction in the use of public transport as users, switch to car. The most recent modelling results show that this effect is so small that it is difficult to differentiate the impact of Silvertown from any general error range in the model, which is strategic in nature.	Neutral

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<sup>1</sup> TAG Unit A4.1, DfT, January 2014 <https://www.gov.uk/government/publications/webtag-tag-unit-a4-1-social-impact-appraisal>

<sup>2</sup> Silvertown Tunnel Outline Business Case, TfL, October 2014

Indicator	Assessment	Conclusion
	<p>Therefore, the current assessment is that the impact is neutral.</p> <p>However, the assessment does not yet take into account the positive effect of increased bus use due to better reliability of existing services and potential new services using the tunnels, and this is likely to mean that the overall impact is neutral or may be positive.</p>	
<b>Security</b>	The Silvertown Tunnel is not expected to have a material impact on security to road users.	Neutral
<b>Severance</b>	There is a neutral impact on the severance issues identified.	Neutral
<b>Journey quality</b>	Improvement in reliability and lack of congestion is expected to reduce driver stress.	Slight beneficial
<b>Option values and non-use values</b>	Not applicable to this highway scheme. (This is typically assessed if the scheme being appraised includes measures that will substantially change the availability of public transport services within the study area. This will be re-evaluated at a later date once changes in the bus network are better defined.)	Not applicable
<b>Accessibility</b>	Positive impacts on the availability and physical accessibility of transport and the cost of transport due to improved existing bus services and potential new bus services, particularly for older or mobility impaired persons who may find interchange at North Greenwich difficult. Negative impacts on cost of travel and travel horizon indicators for some lower income car drivers due to the road user charges planned (see affordability impacts).	Neutral
<b>Personal affordability</b>	No assessment of the impacts of the proposed user charges on lower income groups has yet been completed. An assessment of the distribution of these impacts in terms of geography, journey purpose and time of the day/week will be undertaken for the Full Business Case.	To be reported at Full Business Case stage

## 1. Introduction

- 1.1. Transport for London (TfL) is proposing to construct a new tunnel under the River Thames between the Greenwich Peninsula and Silvertown (“the Silvertown Tunnel”). This document is an outline report of the initial work on the Social Impact Assessment and forms one of several documents for public consultation starting in October 2014. The non-statutory consultation provides an opportunity to comment on the scope and methodology of the Social Impact Assessment prior to its completion for any Development Consent Order (DCO) submission.
- 1.2. The project objectives of the Silvertown Crossing are:
  - PO1: To improve the resilience of the river crossings in the highway network in east and southeast London to cope with planned and unplanned events and incidents.
  - PO2: To improve the road network performance of the Blackwall Tunnel and its approach roads.
  - PO3: To support growth in east and southeast London by providing improved cross-river transport links for business and services (including public transport).
  - PO4: To integrate with local and strategic land use policies.
  - PO5: To minimise any adverse impacts of any proposals on health, safety and the environment.
  - PO6: To ensure where possible that any proposals are acceptable in principle to key stakeholders, including affected boroughs.
  - PO7: To achieve value for money.
- 1.3. The Silvertown Tunnel scheme is made up of a new tunnel running between the Blackwall Tunnel Southern Approach on the Greenwich Peninsula to the Tidal Basin roundabout in the Royal Docks area. This tunnel scheme forms the central case as modelled and assessed within this report. Key elements of the central case are:
  - twin tunnels creating a dual two-lane connection;
  - user charging to manage demand for the Blackwall and Silvertown Tunnels and their approach routes;
  - replacement of the Woolwich ferry with a new charged ferry with 30% additional capacity; and
  - full dimensional clearance in the Silvertown Tunnel providing unrestricted access to all vehicle types including double-decker buses and goods vehicles.
- 1.4. The Outline Business Case (OBC) considers the social impacts of the preferred option, a bored tunnel.
- 1.5. The full Social Impact Assessment will inform the Health Impact Assessment (HIA) and Equality Impact Assessment (EQIA) at the statutory consultation stage.

## Scope of the Social Impact Assessment

- 1.6. The Blackwall-Silvertown Crossing project, like all transport interventions, will have social impacts upon travellers using the crossings and people living or working in its vicinity. The purpose of the Social Impact Assessment is to evaluate, and in some cases quantify, these impacts in order that their scale can be evaluated relative to other outcomes.
- 1.7. This assessment has been prepared in line with the Department for Transport (DfT) TAG guidance (unit A4.1)<sup>3</sup>. Table I-1 highlights the issues covered within this assessment.

**Table I-1 Social Impact Assessment scope**

Indicator	Assessment
Accidents	An assessment of the change in accident risk has been undertaken using COBALT, and a summary of the findings is presented in this document. The full analysis is reported in the Silvertown Economic Assessment Report <sup>4</sup> .
Physical Activity	TfL has stated within its Health Action Plan <sup>5</sup> that the physical activity impacts of all schemes should be evaluated. While the scheme is likely to have only a small impact on physical activity, a worst case impact is proposed to be quantified and monetised in order to provide a sense of the potential scale of disbenefits.
Security	A qualitative assessment has been undertaken.
Severance	A qualitative assessment has been undertaken.
Journey quality	Due to the specific network resilience objective of the scheme, the reliability impacts of the Blackwall-Silvertown Crossing have been quantified in detail as part of the appraisal. The remaining impacts are assessed qualitatively.
Option values and non-use values	Not applicable
Accessibility	A qualitative assessment has been undertaken.
Personal affordability	A qualitative assessment has been undertaken.

<sup>3</sup> TAG Unit A4.1, DfT, January 2014

<sup>4</sup> Silvertown Tunnel Economic Assessment Report, TfL, October 2014

<sup>5</sup> Improving the Health of Londoners: Health Action Plan, TfL, February 2014

### ***Impacts on local residents***

- 1.8. It is acknowledged that the introduction of a new tunnel at Silvertown is likely to have the greatest impact on residents local to the scheme. As the project develops, the analysis in this document will be extended to particularly consider the social impact of the scheme on local residents.

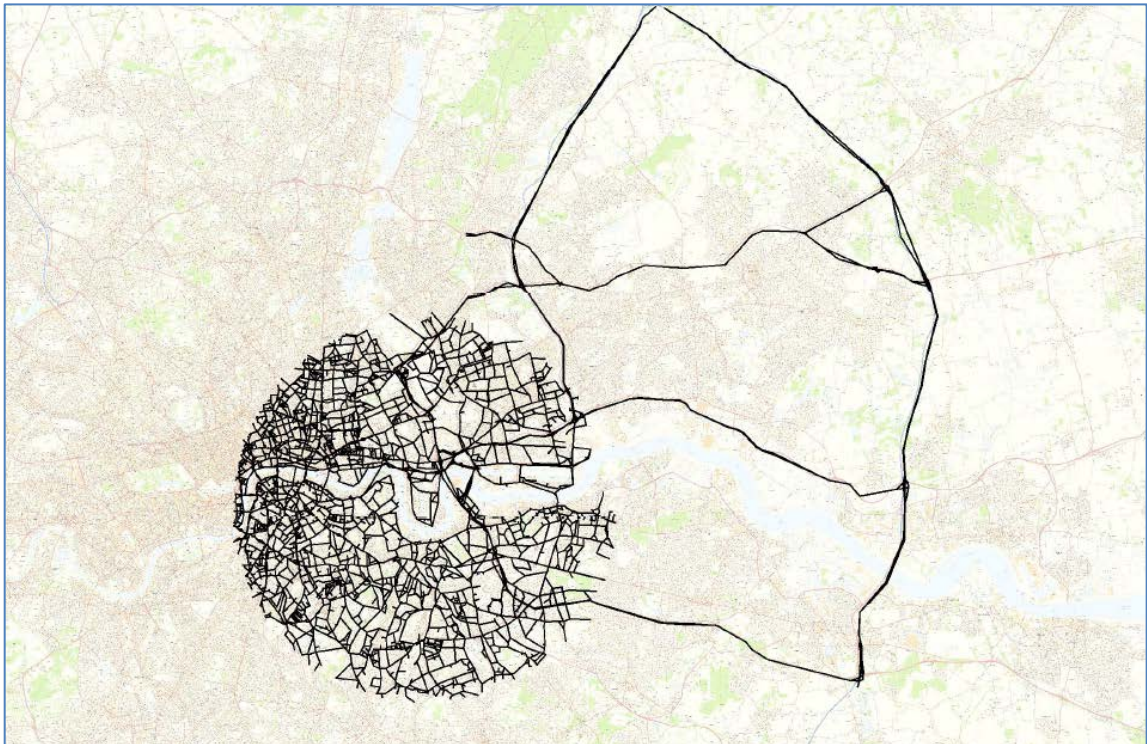


## 2. Accident impacts

### *Introduction*

- 2.1. The accident analysis has been carried out using COBALT<sup>6</sup>, and is reported in full in the Silvertown Tunnel Economic Assessment Report<sup>7</sup>.
- 2.2. COBALT assesses the safety aspects of road schemes using detailed inputs of road links and road junctions that would be impacted by the scheme. The assessment is based on a comparison of accidents by severity and associated costs across an identified network in 'Without-Scheme' and 'With-Scheme' forecasts, using details of link and junction characteristics, relevant local accident rates and costs and forecast traffic volumes by link and junction.
- 2.3. COBALT analysis was undertaken on the study area shown in Figure 2-1.

**Figure 2-1 – COBALT study area**



- 2.4. The study area was selected to cover the majority of the links where traffic flows are forecast to change by 5% or more following the opening of the Silvertown Tunnel<sup>8</sup>.

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<sup>6</sup> Cost and Benefit to Accidents – Light Touch, DfT. COBALT User Guide Version 2013.02, DfT, December 2013

<sup>7</sup> Silvertown Tunnel Outline Economic Assessment Report, TfL, September 2014

<sup>8</sup> Based on SATURN highway assignment modelling in ELHAM, 2021 AM peak.

## **Assessment**

- 2.5. Initial work on the COBA-LT analysis indicates that the overall study area shows an increase in accident costs of £6,556,000 for the defined area of 11,321 links over 60 years – this is a 0.04% change from the 'without scheme' total, well within the margin of error of the model used.
- 2.6. However, this initial estimate does not yet take into account the fact that much of the change in traffic volumes is due to the reduction in existing queueing rather than additional traffic volumes, and that there are significant numbers of accidents related to the existing queueing/merging points at Blackwall Tunnel, which will be reduced by the scheme. Future work will clarify these changes and identify any mitigation necessary, but for the initial estimate the conservative assumption of an increase in cost has been applied.
- 2.7. In the assessment for the Full Business Case, further analysis will be undertaken on any social impact of these accident estimates.

## 3. Physical activity impacts

### *Introduction*

- 3.1. TAG Unit A4.1 states that “physical inactivity is a primary contributor to a broad range of chronic diseases such as coronary heart disease, stroke, diabetes and some cancers”. It is recognised that transport and the physical environment of our cities both play a major role in the amount of physical activity that people do on a day-to-day basis.
- 3.2. TfL published its Health Action Plan in 2014. In one of the ten key actions identified, TfL states that “we will evaluate the health impacts of our programmes”. It is therefore appropriate that the physical activity impacts of all of the proposed schemes in the River Crossings programme are assessed. A separate Health Impact Assessment has been prepared.

### *Assessment*

- 3.3. The Blackwall Tunnel is not available for use by pedestrians and cyclists. The proposed Silvertown Tunnel will not accommodate active travel modes either, and as a result its introduction will not lead to a major change in walking and cycling activity.
- 3.4. However, levels of active travel could be affected by two factors:
  - There is currently considerable severance in the pedestrian and cycling networks around the proposed Silvertown Tunnel portals. One project requirement of the Silvertown Crossing is to ensure that the impact on walking and cycling networks is neutral or positive if possible (except construction impacts that will be negative). This could result in net increases in physical activity among local residents and employees. However, some improvements may be delivered through adjacent development rather than as a result of the tunnel works itself. As a conservative assumption these impacts are therefore excluded.
  - A considerable proportion of physical activity in London relates to walking to access public transport (see TfL Health Action Plan). Any mode shift from public transport to car use as a result of the tunnel would lead to a small decrease in physical activity. This impact is considered below.
- 3.5. Strategic transport modelling work undertaken using LoRDM estimates the proportion of trips by car, public transport and active travel modes. Tables 3-1 and 3-2 show the net change in public transport trips in the three host boroughs as a result of the Blackwall-Silvertown Crossing. The net impact of the crossing scheme itself is a very small shift from public transport to car use. Since there is no walking and cycling provision in the Silvertown Tunnel, no change in the active mode trips is estimated.
- 3.6. It should be noted that LoRDM does not take into account the increase in reliability expected for the existing bus service (route 108) and TfL has as yet not made final decisions on new bus services that will be provided through the tunnels – these measures are both expected to increase public transport use and associated physical activity and counteract any small shift in mode share from public transport to car.

**Table 3-1 Morning peak hour trips with an origin in Greenwich, Newham and Tower Hamlets**

	2021 reference case trips		2021 central case trips		Net change in trips	
	Car	PT	Car	PT	Car	PT
LB Greenwich	29,687	21,723	29,716	21,648	+29 (+0.1%)	-75 (-0.4%)
LB Newham	22,389	26,863	22,337	26,916	-52 (-0.2%)	+53 (+0.2%)
LB Tower Hamlets	15,557	25,534	15,553	25,555	-4 (-0.03%)	+21 (+0.08%)
<b>Subtotal</b>	<b>67,633</b>	<b>74,120</b>	<b>67,606</b>	<b>74,119</b>	<b>+27 (+0.4%)</b>	<b>-1 (-0.001%)</b>

**Table 3-2 Morning peak hour trips with a destination in Greenwich, Newham and Tower Hamlets**

	2021 reference case trips		2021 central case trips		Net change in trips	
	Car	PT	Car	PT	Car	PT
LB Greenwich	27,865	10,185	27,708	10,250	-157 (-0.5%)	+65 (+0.6%)
LB Newham	22,701	16,858	22,796	16,815	+95 (+0.4%)	-43 (-0.3%)
LB Tower Hamlets	21,791	55,275	21,906	55,212	+115 (+0.5%)	-63 (-0.1%)
<b>Subtotal</b>	<b>72,357</b>	<b>82,318</b>	<b>72,410</b>	<b>82,278</b>	<b>+53 (+0.07%)</b>	<b>-40 (-0.05%)</b>

- 3.7. The changes in mode share described in the tables above are so small and within the model's margin of error that it is difficult to quantify the effects of Silvertown Tunnel on physical activity at this stage. Therefore, the impact is considered to be neutral.
- 3.8. This assessment will be reviewed in the Full Business Case.

## 4. Security impacts

### *Introduction*

- 4.1. Transport interventions can impact upon the personal security of transport users or other persons. The principal security impacts on road users relate to situations where they are required to leave their vehicle (e.g. car parks) or where they are forced to stop or travel at low speeds. For freight users, security impacts relate to both the security of drivers and goods carried.

### *Assessment*

- 4.2. The Silvertown Tunnel is not expected to have any material impact on security issues in the area. While road users are typically more vulnerable to crime while vehicles are standing or slow-moving, there is no evidence that the Blackwall Tunnel Approach is dangerous. There are significant numbers of other users at all times of the day and indeed the level of congestion precludes obvious escape routes.
- 4.3. Some elements of the highway works to link the tunnel to the existing road network may affect the level of natural surveillance affecting the personal security of pedestrians in the area. However, development adjacent to the crossing is likely to have a greater impact on security than the tunnel itself.
- 4.4. The assessment at this stage is therefore neutral.

## 5. Severance impacts

### Introduction

- 5.1. Community severance is defined in TAG unit 4.1 as “the separation of residents from facilities and services they use within their community caused by substantial changes in transport infrastructure or by changes in traffic flows.” Severance is caused where vehicle flows “significantly impede pedestrian movement or where infrastructure presents a physical barrier to movement.”

### Assessment

- 5.2. There are several neighbourhoods located at either side of the Silvertown Tunnel that currently suffer from levels of severance that can be classed as severe. The TAG A4.1 definition of severe severance is where “people are likely to be deterred from making pedestrian journeys to an extent sufficient to induce a reorganisation of their activities. In some cases, this could lead to a change in the location of centres of activity or to a permanent loss of access to certain facilities for a particular community. Those who do make journeys on foot will experience considerable hindrance.”

**Table 5-1 Severance classification by area**

	Reference case	With Silvertown Tunnel scheme
<b>Greenwich Peninsula West</b>	<b>Severe</b> There is very little pedestrian access across the A102 Blackwall Tunnel Approach. The western side of the peninsula includes industrial premises on Tunnel Avenue that employees could reach on foot from North Greenwich station via the Boord Street footbridge. The residential communities around Blackwall Lane are geographically close to facilities on the Greenwich Peninsula but have better pedestrian and cycling access to Greenwich town centre.	<b>Severe</b> No change after replacement of the existing Boord Street footbridge.
<b>Silvertown</b>	<b>Severe</b> The existing residential communities living around Silvertown have limited pedestrian access to facilities in nearby neighbourhoods. While they have good access to the Excel Centre via the pedestrian bridge, there are poor pedestrian links to Canning Town due to the DLR/Crossrail alignment and long span of the Silvertown Way flyover.	<b>Severe</b> No change to pedestrian access at Tidal Basin roundabout, although signalisation will provide improved crossing facilities.
<b>Aberfeldy / Leamouth</b>	<b>Severe</b> Both the Aberfeldy residential area around Abbott Road and the employment zone around Saffron	<b>Severe</b> Work to determine changes in traffic

	Avenue are inward-looking neighbourhoods enclosed by busy roads with limited pedestrian routes to other nearby neighbourhoods.	flows under way but no major changes to pedestrian crossings currently planned.
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- 5.3. The Silvertown Tunnel has no material impact on the severance issues described above and the assessment for severance is thus neutral.
- 5.4. Note that Table 5-1 focuses on the impacts of the Silvertown Tunnel project itself. It does not include any development impacts that may reduce severance in these areas. For example, the Greenwich Peninsula West masterplan includes indicative proposals to improve the alignment and the nature of the crossings over the A102.

## 6. Journey quality impacts

### Introduction

- 6.1. TAG Unit A4.1 defines journey quality as “a measure of the real and perceived physical and social environment experienced while travelling”. The main journey quality impacts will be experienced by existing users of the Blackwall Tunnel, some of whom will switch to the Silvertown Tunnel.
- 6.2. There could also be journey quality impacts on users of local roads (pedestrians, cyclists and drivers) as a result of significant changes in traffic flows or the design of the tunnel approach infrastructure. Work is ongoing to identify the local roads that will be most affected by Blackwall-Silvertown Crossing.

### Assessment

- 6.3. TAG Unit A4.1 identifies three main categories of journey quality impact, as described in Table 6-1.

Table 6-1 Journey Quality Impact Assessment

Journey Quality Category	Impact Assessment
Traveller care (cleanliness, facilities, information)	The scheme will have no material impact on this aspect of journey quality.
Traveller's views	There will be no material difference in the views (or lack of them) experienced by drivers in the Silvertown Tunnel, in comparison to those in the Blackwall Tunnel.
Traveller stress (frustration, fear of accidents and route uncertainty)	<p>The reliability benefits of the scheme are quantified in the OBC and Economic Assessment Report (EAR)<sup>9</sup> for Silvertown. The improved certainty of journey time is likely to reduce driver stress.</p> <p>The reduction in incidents currently occurring in the Blackwall Tunnel will also have a strong positive impact on drivers' perception of safety. The Blackwall Tunnel northbound bore is currently a very stressful environment for drivers due to its geometry, height restrictions and the need to pay attention to large vehicles on the tight corners. The availability of a tunnel with more comfortable driving conditions and the transfer of larger vehicles from Blackwall to the safer Silvertown Tunnel will reduce this stress.</p>

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<sup>9</sup> Silvertown Tunnel Economic Assessment Report, TfL, October 2014



- 6.4. Reduced congestion and improvement in journey reliability is expected to have a slight beneficial effect on journey quality.

## 7. Accessibility impacts

### *Introduction*

7.1. The term accessibility can have different meanings in different contexts. The wider connectivity improvements generated by the Blackwall-Silvertown Crossing are discussed within the OBC. However, there are more localised accessibility impacts that affect the social wellbeing of people in the local area, and these are the principal impacts assessed in this chapter.

### *Assessment*

7.2. TAG unit A4.1 makes references to five key barriers cited in from ‘Making the Connections’ (Social Exclusion Unit, 2003), which can form the basis of the accessibility impact assessment. These barriers are described and assessed in Table 7-1.

**Table 7-1 Assessment against barriers to accessibility**

<b>Barrier to accessibility</b>	<b>Assessment</b>
<b>The availability and physical accessibility of transport</b>	The Silvertown Tunnel is likely to lead to reliability improvements to the existing Bus Route 108, and TfL is considering additional cross-river bus links, which will be of particular benefit to older or mobility impaired persons who may find interchange at North Greenwich difficult.
<b>Cost of transport</b>	The Blackwall-Silvertown Crossing will have a negative impact on lower income car drivers due to the road user charges planned (see Personal Affordability impacts in Chapter 8).  There will be a positive impact on some lower income public transport users since new cross-river bus links will reduce the need to interchange to the (more expensive) Underground or Emirates Air Line services.
<b>Services and activities located in inaccessible places</b>	Not applicable (all areas are reasonably accessible).
<b>Safety and security</b>	No significant impacts.
<b>Travel horizons</b>	New cross-river bus links will lead to wider travel horizons for residents of some nearby regeneration areas, providing low-cost travel options to access employment and education opportunities on the opposite side of the River Thames.

7.3. While there are going to be improvements to the reliability of public transportation there will be negative impacts on lower income cars meaning that the Silvertown Tunnel will have a neutral net effect on accessibility impacts.

## 8. Personal affordability impacts

## ***Introduction***

- 8.1. The introduction of user charging on the Blackwall-Silvertown Crossing will have a direct and tangible impact on the affordability of travel by car for some users.
- 8.2. Work is currently being undertaken to assess the demand elasticity relative to the change in monetary cost for different tunnel user classes, and benchmark this elasticity against published evidence from other user charging schemes. The strategic transport model includes a breakdown of out-of-work trips into three household income bands.
- 8.3. No assessment of the impacts of the proposed user charges on lower income groups has yet been completed. An assessment of the distribution of these impacts in terms of geography, journey purpose and time of the day/week will be undertaken for the Full Business Case.

## ***Assessment***

- 8.4. This assessment will be completed for Full Business Case.

## 9. Conclusion

9.1. Table 9-1 shows the conclusions against each indicator.

**Table 9-1 Social Impact Assessment conclusion**

Indicator	Assessment	Conclusion
<b>Accidents</b>	The full accident analysis is reported in the Silvertown Economic Assessment Report, and shows that there is a potential increase of 0.05% in accidents across the study area when Silvertown Tunnel is in place without any mitigation. This very small change is considered to be a neutral impact.	Neutral
<b>Physical Activity</b>	<p>The key impact on physical activity is likely to be a very slight reduction in the use of public transport as users, switch to car. The most recent modelling results show that this effect is so small that it is difficult to differentiate the impact of Silvertown from any general error range in the model, which is strategic in nature. Therefore, the current assessment is that the impact is neutral.</p> <p>However, the assessment does not yet take into account the positive effect of increased bus use due to better reliability of existing services and potential new services using the tunnels, and this is likely to mean that the overall impact is neutral or may be positive.</p>	Neutral
<b>Security</b>	The Silvertown Tunnel is not expected to have a material impact on security to road users.	Neutral
<b>Severance</b>	There is a neutral impact on the severance issues identified.	Neutral
<b>Journey quality</b>	Improvement in reliability and lack of congestion is expected to reduce driver stress.	Slight beneficial
<b>Option values and non-use values</b>	Not applicable to this highway scheme. (This is typically assessed if the scheme being appraised includes measures that will substantially change the availability of public transport services within the study area. This will be re-evaluated at a later date once changes in the bus network are better defined.)	Not applicable
<b>Accessibility</b>	Positive impacts on the availability and physical accessibility of transport and the cost of transport due to improved existing bus services and potential new bus services, particularly for older or mobility impaired persons who may find interchange at North Greenwich difficult. Negative impacts on cost of travel and travel horizon indicators for some lower income car drivers due	Neutral

Indicator	Assessment	Conclusion
	to the road user charges planned (see affordability impacts).	
<b>Personal affordability</b>	No assessment of the impacts of the proposed user charges on lower income groups has yet been completed. An assessment of the distribution of these impacts in terms of geography, journey purpose and time of the day/week will be undertaken for the Full Business Case.	To be reported at the Full Business Case stage