




SILVERTOWN TUNNEL

SUPPORTING TECHNICAL DOCUMENTATION

PRELIMINARY SOCIAL IMPACTS APPRAISAL

October 2015

This report focuses on local residents and covers social factors that are not already considered as part of economic or environmental impact assessments. It assesses the social impacts of changes the Scheme could bring about relating to: accidents, physical activity, security, severance, journey quality, accessibility and personal affordability. This report forms part of the Preliminary Outline Business Case.



This report forms part of a suite of documents that support the statutory public consultation for Silvertown Tunnel in October – November 2015. This document should be read in conjunction with other documents in the suite that provide evidential inputs and/or rely on outputs or findings.

The suite of documents with brief descriptions is listed below:-

- **Preliminary Case for the Scheme**
 - Preliminary Monitoring and Mitigation Strategy
- **Preliminary Charging Report**
- **Preliminary Transport Assessment**
- **Preliminary Design and Access Statement**
- **Preliminary Engineering Report**
- **Preliminary Maps, Plans and Drawings**
- **Preliminary Environmental Information Report (PEIR)**
 - Preliminary Non Technical Summary
 - Preliminary Code of Construction Practice
 - Preliminary Site Waste Management Plan
 - Preliminary Energy Statement
- **Preliminary Sustainability Statement**
- **Preliminary Equality Impact Assessment**
- **Preliminary Health Impact Assessment**
- **Preliminary Outline Business Case**
 - Preliminary Distributional Impacts Appraisal
 - Preliminary Social Impacts Appraisal
 - Preliminary Economic Assessment Report
 - Preliminary Regeneration and Development Impact Assessment

SILVERTOWN TUNNEL

Preliminary Social Impacts Appraisal

October 2015



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Silvertown Tunnel

Preliminary Social Impacts Appraisal



Planning Act 2008

Infrastructure Planning

The Infrastructure Planning (Applications: Prescribed Forms and Procedure)
Regulations 2009

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List of Abbreviations

BAME	Black, Asian and Minority Ethnic
COBA-LT	Cost and Benefit to Accidents - Light Touch
DCO	Development Consent Order
DfT	Department for Transport
DI	Distributional Impacts
DLR	Docklands Light Railway
DMRB	Design Manual for Roads and Bridges
EAL	Emirates Air Line
EAR	Economic Assessment Report
EIA	Environmental Impact Assessment
ELHAM	East London Highway Assignment Model
EqIA	Equality Impact Assessment
FALP	Further Alterations to the London Plan
HGV	Heavy Goods Vehicle
HIA	Health Impact Assessment
IoD	Index of Deprivation
IoMD	Index of Multiple Deprivation
LAD	Local Authority District
LB	London Borough
LTDS	London Travel Demand Survey
MTS	Mayor's Transport Strategy
OBC	Outline Business Case
ONS	Office for National Statistics
PT	Public Transport
RB	Royal Borough
RXHAM	River Crossings Highway Assignment Model
TA	Transport Assessment
TAG	Transport Assessment Guidance
TfL	Transport for London
TUBA	Transport User Benefit Appraisal

Glossary of Terms

Term	Explanation
Assessed Case	The basis on which all assessment and modelling has been carried out
Blackwall Tunnel	<p>A road tunnel underneath the River Thames in east London, linking the London Borough of Tower Hamlets with the Royal Borough of Greenwich, comprising two bores each with two lanes of traffic.</p> <p>The tunnel was originally opened as a single bore in 1897, as a major transport project to improve commerce and trade in London's east end. By the 1930s, capacity was becoming inadequate, and consequently, a second bore opened in 1967, handling southbound traffic while the earlier 19th century tunnel handled northbound.</p>
Department for Transport (DfT)	The government department responsible for the English transport network and a limited number of transport matters in Scotland, Wales and Northern Ireland that have not been devolved.
Detailed Design	Design that delivers the required outcomes and is used as the basis of a contract for delivery of the physical outputs
Development Consent Order (DCO)	<p>This is a statutory order which provides consent for the project and means that a range of other consents, such as planning permission and listed building consent, will not be required. A DCO can also include provisions authorising the compulsory acquisition of land or of interests in or rights over land which is the subject of an application.</p> <p>http://infrastructure.planninginspectorate.gov.uk/help/glossary-of-terms/</p>
Docklands Light Railway (DLR)	An automated light metro system serving the Docklands and east London area. The DLR is operated under concession awarded by Transport for London to KeolisAmey Docklands, a joint venture between transport operator Keolis and infrastructure specialists Amey plc
Emirates Air Line (EAL)	A cable car service across the River Thames in east London, linking the Greenwich peninsula to the Royal Victoria Dock. The service is managed by TfL, and is part of the TfL transport network
Heavy Goods Vehicle (HGV)	European Union term for any vehicle with a gross combination mass of over 3500kg
The O2	A large entertainment district on the Greenwich peninsular, including an indoor arena, cinema, bars and restaurants. It is built largely within the former Millennium Dome

Term	Explanation
The Scheme	The construction of a new bored tunnel under the River Thames between the Greenwich peninsula and Silvertown, as well as necessary alterations to the connecting road network and the introduction of user charging at both Silvertown and Blackwall tunnels
Transport for London (TfL)	<p>A local government body responsible for most aspects of the transport system in Greater London. Its role is to implement transport strategy and to manage transport services across London.</p> <p>These services include: buses, the Underground network, Docklands Light Railway, Overground and Trams. TfL also runs Santander Cycles, London River Services, Victoria Coach Station and the Emirates Air Line.</p> <p>As well as controlling a 580km network of main roads and the city's 6,000 traffic lights, TfL regulates London's private hire vehicles and the Congestion Charge scheme.</p>
The Tunnel, Silvertown Tunnel	A new bored tunnel under the River Thames between the Greenwich peninsula and Silvertown
Woolwich Ferry	<p>The Woolwich Ferry links Woolwich (Royal Borough of Greenwich) and North Woolwich (London Borough of Newham). It also links two ends of the inner London orbital road routes; the North Circular and South Circular.</p> <p>It runs every 5-10 minutes throughout the day, from Monday to Friday and every 15 minutes on Saturdays and Sundays. It carries pedestrians, cyclists, cars, vans and lorries. The ferry is operated by Briggs Marine and Environmental on behalf of TfL.</p>

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SUMMARY

Introduction

1. Transport for London (TfL) is proposing to construct a new highway tunnel under the River Thames between the Greenwich Peninsula and Silvertown ('the Silvertown Tunnel', 'The Scheme'). This document reports the Social Impact Appraisal and is one of several documents prepared for the statutory consultation in 2015 prior to the proposed application for a Development Consent Order (DCO) for the Silvertown Tunnel. It builds on the initial Social Impact Appraisal document prepared for public consultation that took place in October 2014. This report forms part of the Outline Business Case (OBC) and will be finalised and submitted with the DCO application.
2. The Scheme, 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 Appraisal is to evaluate, and in some cases quantify, these impacts in order that they can be considered relative to other outcomes.

Assessment

3. The Social Impacts Appraisal covers social factors that are not already considered as part of economic or environmental impacts, namely:
 - accidents;
 - physical activity;
 - security;
 - severance;
 - journey quality;
 - option and non-use values;
 - accessibility; and
 - personal affordability.
4. This assessment has been prepared in line with Department for Transport (DfT) TAG guidance (Unit A4.1).

Conclusions

5. The table below highlights the main conclusions from the assessment based on a seven-point scale of beneficial, neutral or adverse impacts. It forms part of the Appraisal Summary Table (AST) in the Outline Business Case (OBC).

Indicator	Assessment	Conclusion
Accidents	There will be a slight reduction in accidents due to the Scheme.	Slight beneficial
Physical activity	No provision for active modes is included in the Scheme reference tunnel design. A small mode shift from car to public transport will lead to a small increase in physical activity	Slight beneficial
Security	The Silvertown Tunnel is not expected to have a material impact on security for road users.	Neutral
Severance	There is a neutral impact on the existing severance issues identified.	Neutral
Journey quality	Improvements in reliability and reduction in congestion are expected to reduce driver stress.	Large beneficial
Option values and non-use values	TfL have tested the impacts of two new bus routes and four enhanced bus routes, with 12,000 households situated within 100m of the route alignments.	Moderate beneficial
Accessibility	There is a positive net impact on public transport accessibility as a result of improved resilience and reliability and enhanced services.	Moderate beneficial
Personal affordability	The Scheme would result in increases to car user charges, mainly affecting people on medium or high incomes. Some public transport users may benefit from new bus services that offer cheaper options than are currently available, particularly lower income groups. The monetary value of time savings, which (including reliability) are greater than the user charges, are not included in this assessment.	Neutral

1. Introduction

1.1 Background

1.1.1 Transport for London (TfL) is proposing to construct a new highway tunnel under the River Thames between the Greenwich Peninsula and Silvertown ('the Silvertown Tunnel' 'the Scheme'). This document reports the Social Impact Appraisal and is one of several documents prepared for the statutory consultation in 2015 prior to the proposed application for a Development Consent Order (DCO) for the Silvertown Tunnel. It builds on the initial Social Impact Appraisal document prepared for public consultation that took place in October 2014. This report forms part of the Outline Business Case (OBC) and will be finalised and submitted with the DCO application.

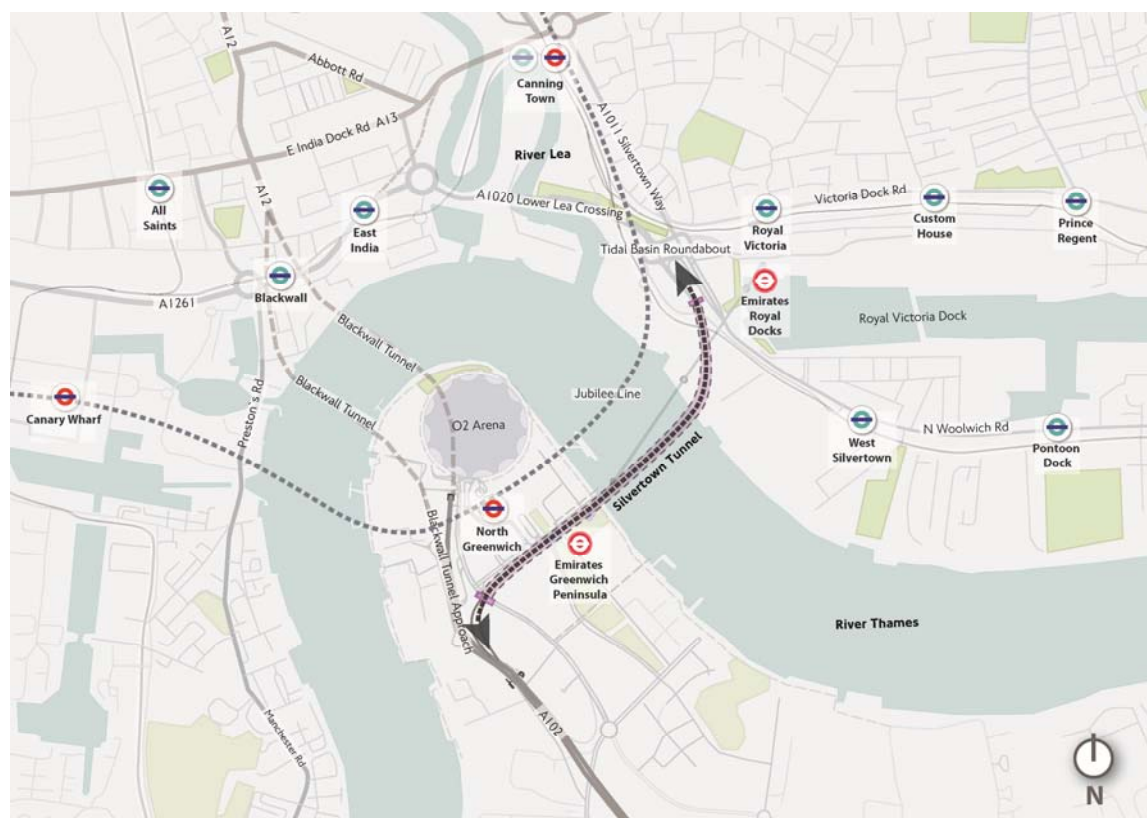
1.1.2 Scheme objectives were identified with reference to the need for the Scheme, also drawing from the National Policy Statement for National Networks, Mayoral policy as defined in the London Plan and Mayor's Transport Strategy (MTS), and scheme development work undertaken to-date. The following scheme objectives have been adopted:

- 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 economic and population growth, in particular in east and southeast London by providing improved cross-river transport links;
- PO4: to integrate with local and strategic land use policies;
- PO5: to minimise any adverse impacts of any proposals on communities, health, safety and the environment;
- PO6: to ensure where possible that any proposals are acceptable in principle to key stakeholders, including affected boroughs; and
- PO7: to achieve value for money and, through road user charging, to manage congestion.

1.1.3 The scheme would comprise a new dual two-lane connection between the A102 Blackwall Tunnel Approach on Greenwich Peninsula (London

Borough of Greenwich) and the Tidal Basin Roundabout junction on the A1020 Lower Lea Crossing/Silvertown Way (London Borough of Newham) by means of twin tunnel bores under the River Thames and associated approach roads as shown in Figure 1.1. The tunnel would be approximately 1.4km long. The Boord Street footbridge over the A102 would be replaced with a pedestrian and cycle bridge.

Figure 1.1 Silvertown Tunnel location plan

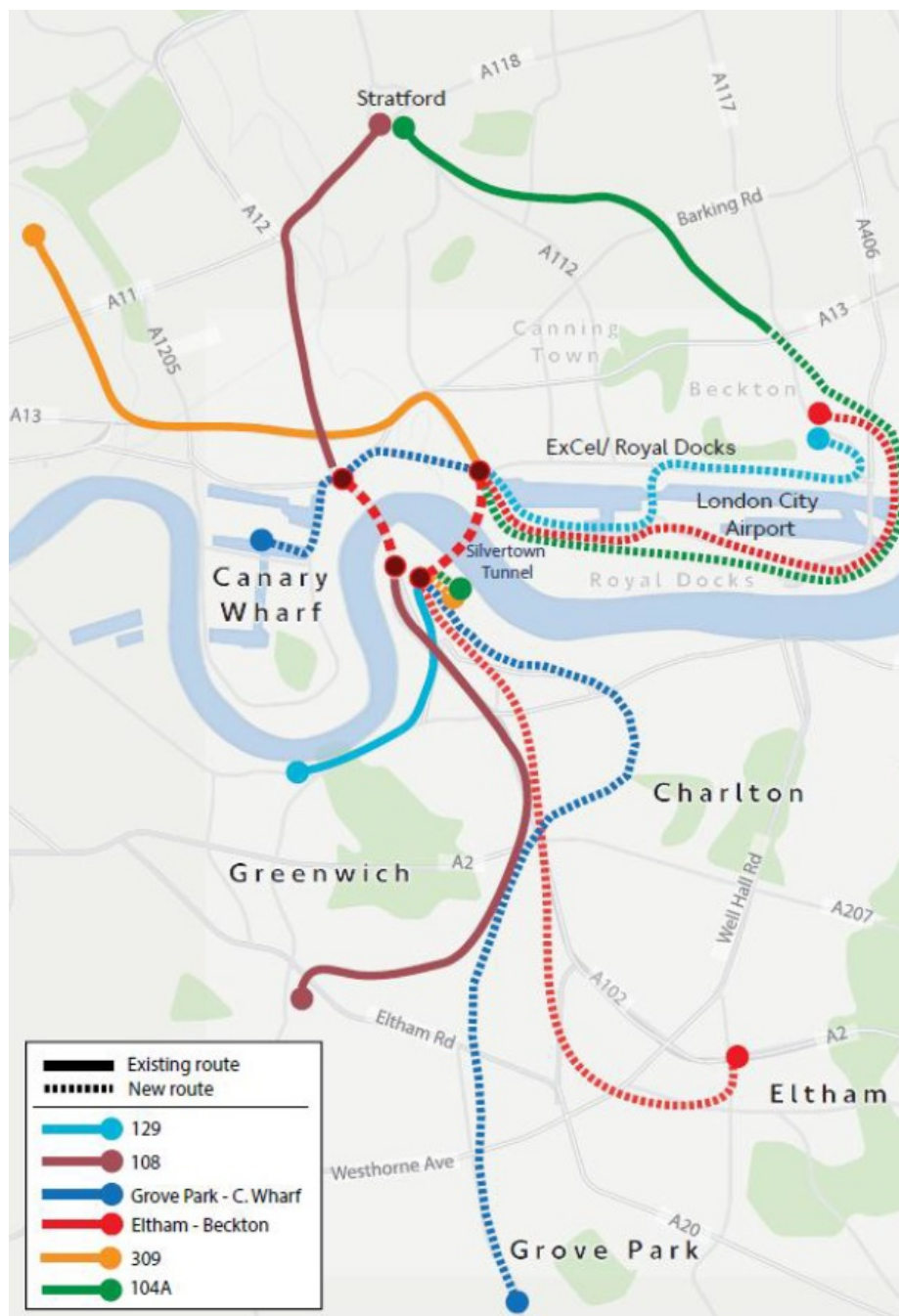


- 1.1.4 New buildings would be located close to each portal to house the plant and equipment necessary to operate the tunnel, including ventilation equipment.
- 1.1.5 The introduction of free-flow user charging on both the Blackwall and Silvertown Tunnels would play a fundamental part in managing traffic demand. It would also support the financing of the construction and operation of the Silvertown Tunnel.
- 1.1.6 Main construction works would likely commence in 2018 and would last approximately 4 years with the new tunnel opening in 2022/23.
- 1.1.7 The Scheme would create opportunities for new cross-river bus services to improve public transport links between south-east and east London, notably the growing employment areas in the Royal Docks and Canary

Wharf. The Silvertown Tunnel is designed to accommodate double-deck buses, thus providing operational flexibility for the bus routes that could be extended across the Thames, as well as greater capacity.

- 1.1.8 It is currently proposed that one lane in each direction through the tunnel bores would be reserved for buses and Heavy Goods Vehicles (HGVs) which would further enhance reliability and reduce bus journey times. This configuration has the potential, over time, to deliver in excess of 60 buses per hour in each direction.
- 1.1.9 However, since the Silvertown Tunnel has an assumed opening date of 2022/23, any plans for the bus network at this time can only be indicative and for the purpose of assessing operational feasibility. Services would be finalised around two years before opening, but for assessment purposes TfL has identified two potential new services and enhancements to four existing services (predominantly though cross-river extensions), shown in Figure 1.2.

Figure 1.2 Proposed Scheme enhanced bus routes



1.2 Purpose of this report

1.2.1 The Scheme, like all transport interventions, would have social impacts upon travellers using the crossings and people living or working in its vicinity.

1.2.2 The Social Impacts Appraisal focuses on local residents and covers social factors that are not already considered as part of economic or environmental impacts, namely:

- accidents;
- physical activity;
- security;
- severance;
- journey quality;
- option and non-use values;
- accessibility; and
- personal affordability.

1.2.3 This document is the full Social Impact Appraisal, prepared at the statutory consultation stage. It should be read in conjunction with the Health Impact Assessment¹ (HIA), Equality Impact Assessment² (EqIA) and Distributional Impacts Appraisal³ (DI).

1.3 Scope of the Social Impact Appraisal

1.3.1 This appraisal has been prepared with reference to Department for Transport (DfT) Transport Analysis Guidance (TAG) (unit A4.1). This highlights the issues covered within this assessment.

Table 1.1 Scope of assessment

Indicator	Assessment
Accidents	An assessment of the change in accident risk has been undertaken using COBA-LT ⁴ , and a summary of the findings is presented in this document. The full analysis is reported in the Silvertown Tunnel Economic Assessment Report (EAR) ⁵ .

¹ Silvertown Tunnel Preliminary Health Impact Assessment, TfL, September 2015

² Silvertown Tunnel Preliminary Equality Impact Assessment, TfL, September 2015

³ Silvertown Tunnel Preliminary Distributional Impacts Appraisal, TfL, September 2015

⁴ Cost and Benefit to Accidents - Light Touch, a DfT programme to estimate accident benefits.

⁵ Silvertown Tunnel Preliminary Economic Assessment Report, TfL, September 2015

Indicator	Assessment
Physical activity	TfL has stated within its Health Action Plan ⁶ that the physical activity impacts of all schemes should be evaluated. The Scheme does not include walking or cycling measures. However, an estimate has been made of the likely physical activity impacts arising from mode shift.
Security	A qualitative assessment has been undertaken.
Severance	A qualitative assessment has been undertaken.
Journey quality	A qualitative assessment has been undertaken.
Option and non-use values	A qualitative assessment has been undertaken.
Accessibility	A qualitative assessment has been undertaken.
Personal affordability	A quantitative assessment has been undertaken.

1.3.2 The Social Impacts Appraisal links closely with the Distributional Impacts (DI) Appraisal which looks at the extent to which different groups in society are affected by the Scheme's impacts. Some of the indicators in the Social Impacts Appraisal are also key DI indicators, as shown in Table 1.2.

Table 1.2 Social impact indicators assessed in the DI Appraisal

Indicator	Assessed in Distributional Impacts Appraisal
Accidents	✓
Physical activity	
Security	✓
Severance	✓
Journey quality	
Option and non-use values	
Accessibility	✓
Personal affordability	✓

⁶ Improving the Health of Londoners: Health Action Plan, TfL, February 2014

2. Accidents

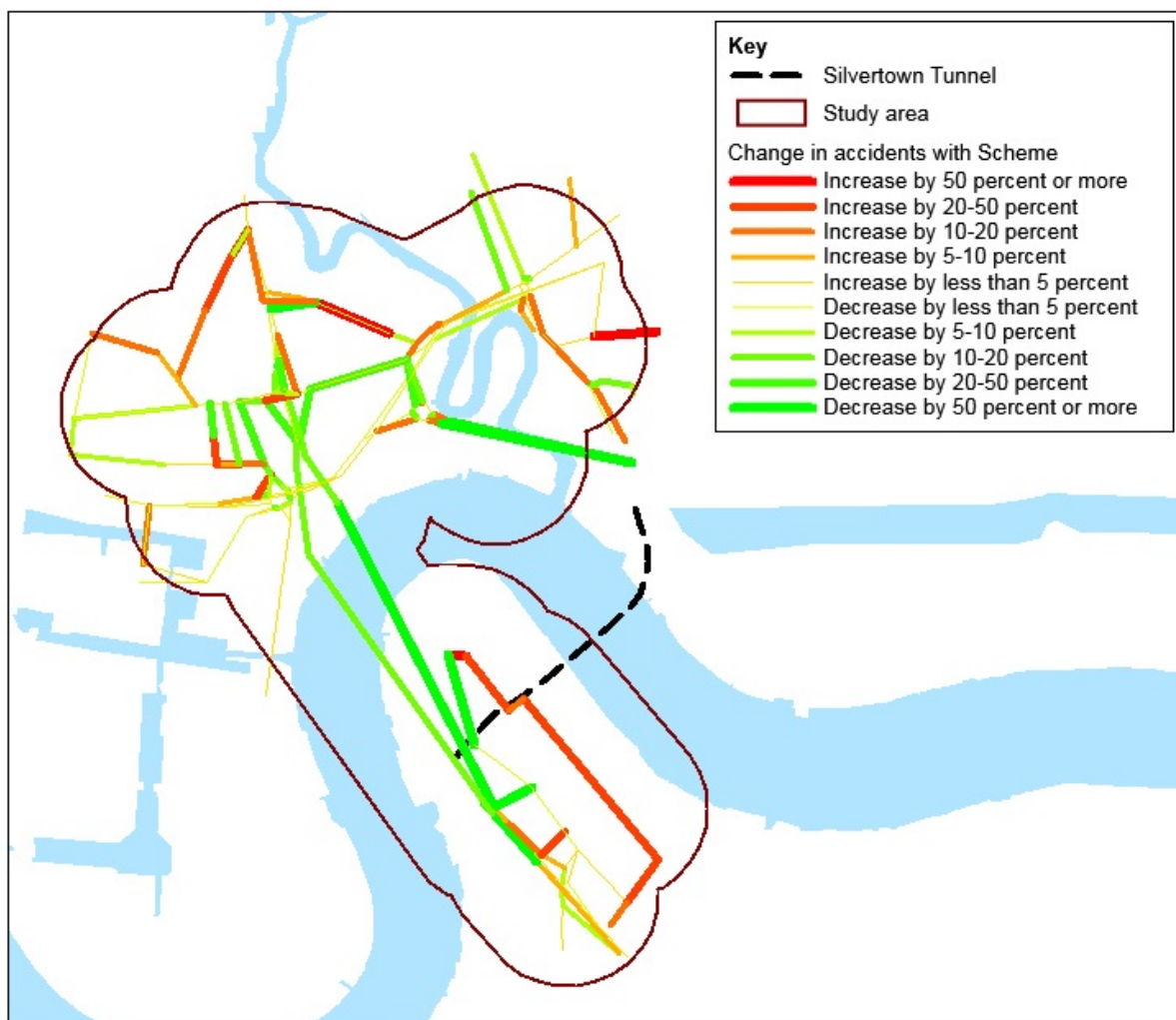
2.1 Introduction

- 2.1.1 New transport schemes may result in an increase or decrease in the risk of individuals being killed or injured in an accident.
- 2.1.2 Currently there are significant numbers of accidents related to traffic queueing and merging on the approaches to the Blackwall Tunnel. The Scheme includes road layout measures which would be expected to reduce the extent of merging and result in a corresponding decrease in related accidents. These improvements have not been quantified in relation to accident reductions.
- 2.1.3 At a more general level the Scheme may also change the volume of traffic using different roads, and hence the number and type of accidents. Consequently accident analysis has been carried out using COBA-LT, which is the DfT's accident analysis spreadsheet tool. COBA-LT assesses the safety aspects of road schemes using detailed inputs of road links 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 characteristics, relevant local accident rates and costs and forecast traffic volumes by link.
- 2.1.4 The full analysis is reported in the Silvertown Tunnel Economic Assessment Report (EAR). Summary analysis applicable to the Social Impacts Appraisal is reported below.

2.2 Study area

- 2.2.1 Figure 2.1 shows the study area. This is the same study area used in the Distributional Impact report.

Figure 2.1 Accident analysis study area



2.3 Assessment

2.3.1 The analysis takes into account the change in traffic volumes due to the introduction of the additional tunnel at Silvertown. Table 2.1 shows the forecast change in accidents.

Table 2.1 Change in total accidents within the study area

Without scheme	With scheme	Accidents saved by scheme	% change in accidents
6,590	6,550	-40	-0.6%

2.3.2 Overall, the Scheme is estimated to decrease accidents around the study area by a total of 40 over 60 years.

2.3.3 The Scheme is forecast to result in a slight decrease in accidents across the study area over 60 years so the accidents impacts have therefore been assessed as slight beneficial.

2.4 Distributional impacts

2.4.1 The distributional impacts of accidents have been assessed separately in the Distributional Impacts Appraisal report. The DI assessment focuses on the same study area as the Social Impact assessment.

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3. Physical activity

3.1 Introduction

- 3.1.1 It is recognised that transport and the physical environment of cities both play a major role in the amount of physical activity that people do on a day-to-day basis.
- 3.1.2 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*”. Assessment of the physical activity impacts forms part of the separate Health Impact Assessment (HIA).
- 3.1.3 The Blackwall Tunnel is not available for use by pedestrians and cyclists. The proposed Silvertown Tunnel would also not accommodate active travel modes. There is existing crossing provision for cyclists and pedestrians via the Emirates Air Line and the walking network in this area is expected to change significantly before the proposed tunnel opening year as a result of several major developments. The Transport Assessment⁷ (TA) provides further details of the walking and cycling provision in the area of the Scheme.

3.2 Assessment

- 3.2.1 The Scheme itself could affect levels of active travel in two ways:
- There is currently considerable severance in the existing pedestrian and cycling networks around the proposed Silvertown Tunnel portals (see Chapter 5). One project requirement of the Silvertown Tunnel is to ensure that the impact on walking and cycling networks is neutral or positive if possible (apart from construction impacts which may 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 have therefore been 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. Conversely a mode

⁷ Silvertown Tunnel Preliminary Transport Assessment Report, TfL, September 2015

shift to public transport from car due to improved bus services would lead to a small increase in physical activity. This impact is considered below.

3.2.2 Since there is no walking and cycling provision through the Silvertown Tunnel included in the Scheme, a substantial change in active mode trips is not expected.

Strategic transport modelling work undertaken using TfL’s London Regional Demand Model (LoRDM) estimates the change in the proportion of trips by car, public transport and active travel modes.

3.2.3 Table 3.1 and Table 3.2 show the estimated net change in car and public transport trips in the Royal Borough (RB) of Greenwich, London Borough (LB) of Newham and LB Tower Hamlets as a result of the Scheme. The enhancements of existing bus services and additional services 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 Trips with origins in the Scheme host boroughs, 12-hour total

	2021 reference case		2021 assessed case		Net change in trips	
	Car trips	PT trips	Car trips	PT trips	Car trips	PT trips
RB Greenwich	352,200	216,600	351,100	218,300	-1,100 (-0.3%)	1,700 (0.8%)
LB Newham	295,100	334,200	294,800	338,000	-300 (-0.1%)	3,800 (1.1%)
LB Tower Hamlets	241,400	424,200	242,000	424,600	600 (0.2%)	400 (0.1%)
Subtotal	888,700	975,000	887,900	980,900	-800 (-0.1%)	5,900 (0.6%)

Table 3.2 Trips with destinations in Scheme host boroughs, 12-hour total

	2021 reference case		2021 assessed case		Net change in trips	
	Car trips	PT trips	Car trips	PT trips	Car trips	PT trips
RB Greenwich	349,000	45,900	347,800	46,400	-1,200 (-0.3%)	500 (1.0%)
LB Newham	291,000	71,500	290,800	72,300	-200 (-0.1%)	800 (1.1%)
LB Tower Hamlets	255,500	199,400	256,100	199,500	500 (0.2%)	100 (0.0%)
Subtotal	895,500	316,800	894,700	318,200	-900 (-0.1%)	1,400 (0.4%)

- 3.2.4 The expected net impact of the Scheme across the three host boroughs is therefore a small decrease in car trips and a small increase in public transport trips.
- 3.2.5 Although the Scheme does not include any plans that directly affect pedestrian or cycle connections, the tables above indicate that there would be a small mode shift from car to public transport. Therefore the physical activity impact of the Scheme has been assessed as slight beneficial.

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4. Security

4.1 Introduction

4.1.1 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.

4.1.2 The security impacts of a transport intervention also affect its health impacts, which are explored fully in the separate HIA.

4.2 Assessment

4.2.1 While road users are typically more vulnerable to crime while vehicles are standing or slow-moving, there is no evidence that the A102 Blackwall Tunnel Approach is susceptible to crime.

4.2.2 There are significant numbers of other users at all times of the day and indeed the level of congestion precludes obvious escape routes.

4.2.3 The Scheme is not expected to have any material impact on security issues in the area. Some elements of the highway works to link the tunnel to the existing road network might 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.

4.2.4 The key security indicators have been appraised with and without the Scheme, as shown in Table 4.1.

Table 4.1 Changes to key security indicators

Security indicator	Relative importance	Scheme impact
Site perimeters, entrances and exits	Medium	Neutral
Formal surveillance	Medium	Neutral
Informal surveillance	Medium	Neutral
Landscaping	Medium	Neutral
Lighting and visibility	High	Neutral
Emergency call	Low	Neutral

4.2.5 Proposed improvements to local bus services would also have minor positive impacts on security as a result of improved reliability.

4.2.6 In conclusion, the Scheme is not expected to have a material impact on security and therefore the security impacts assessment is neutral.

4.3 Distributional impacts

4.3.1 The distributional impacts of security have been assessed in the separate Distributional Impacts Assessment report.

5. Severance

5.1 Introduction

5.1.1 The severance impacts of a transport scheme indicate the extent to which the scheme impedes residents' access to local community facilities and services. TAG guidance (Unit A4.1) requires an assessment of those using non-motorised modes, particularly pedestrians.

5.1.2 The Scheme provides new road and public transport links across one of London's largest physical barriers – the River Thames, and in the broadest sense 'severance' of communities would be reduced. However since it does not include any additional pedestrian cross-river provision this element is not considered in this section. This report describes elsewhere how improved cross-river public transport services would be expected to reduce the 'severance' effect of the river on local communities.

5.1.3 This assessment is only concerned with the effects on non-road-users. It considers both physical barriers and perceived barriers, such as the need to take a detour to reach a safe place to cross a busy road. Severance is classed as severe if it results in people reorganising their activities to avoid making pedestrian journeys.

5.1.4 Assessment of severance in this context focuses on two key questions:

- Does the scheme infrastructure cause or remove a physical barrier to residents?
- Do changes in traffic flows resulting from the scheme cause or remove a barrier to residents?

5.2 Assessment

5.2.1 Assessment of severance impacts concerns the extent of any changes in severance as a result of the Scheme infrastructure or changes in traffic flow.

5.2.2 One of the requirements for the Scheme is to ensure that all walking routes in the vicinity of the tunnel portals are re-instated or are replaced with direct, safe and comfortable alternative routes. Following consultation with LB Newham and the GLA, the reference design makes specific or passive provision for improved pedestrian and cycle connections at the northern portal. More detail on this is provided in the TA.

5.2.3 On the south side, the reference design for the Silvertown Tunnel makes specific provision for existing, new, and improved pedestrian routes and connections, which would be the subject of ongoing engagement. The pedestrian routes affected during construction at the southern portal, namely Edmund Halley Way and Tunnel Avenue, would be re-instated as walking routes. The Boord Street footbridge would be replaced in approximately the same location.

5.2.4 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. Table 5.1 summarises the current severance issues in these neighbourhoods and how these would be affected by the Scheme infrastructure.

Table 5.1 Neighbourhoods with existing severe severance

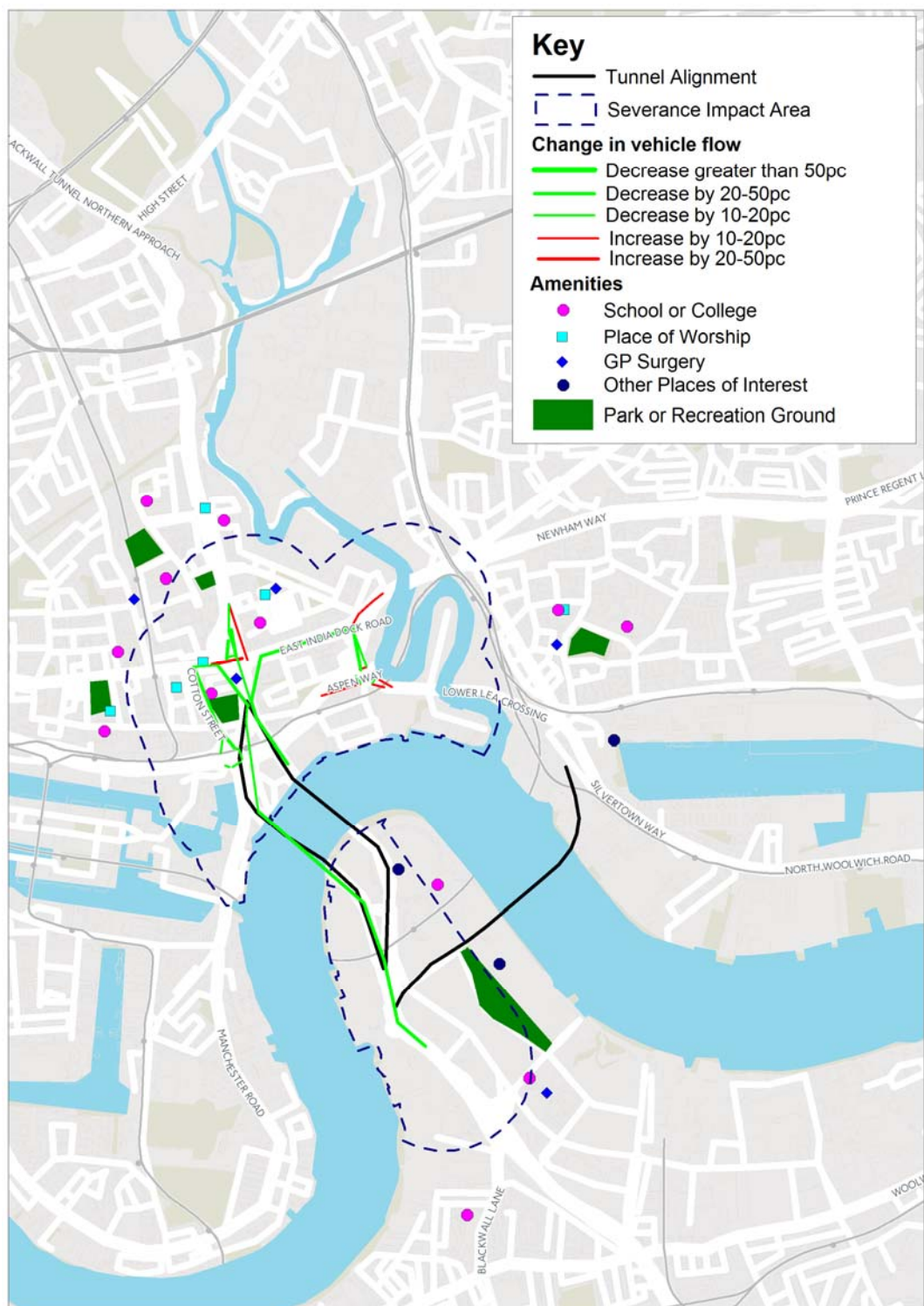
Area	Existing conditions	With Scheme
Greenwich Peninsula West	Severe There is very little pedestrian access across the A102 Blackwall Tunnel Approach. The western side of the peninsula includes industrial premises on Tunnel Avenue that employees can reach on foot from North Greenwich station via the 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.	Severe The pedestrian routes affected during construction at the southern portal, namely Edmund Halley Way and Tunnel Avenue, would be re-instated as walking routes. The Boord Street footbridge would be replaced in approximately the same location
Silvertown	Severe 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.	Moderate The reference design makes specific or passive provision for improved pedestrian and cycle connections at the northern portal
Aberfeldy / Leamouth	Severe Both the Aberfeldy residential area around Abbott Road and the employment zone around Saffron Avenue are inward-looking neighbourhoods enclosed by busy roads with limited pedestrian routes to other nearby neighbourhoods.	Severe No major changes to pedestrian crossings currently planned.

5.2.5 The Scheme does not include any plans to change pedestrian access, other than reinstating current access at the end of construction, and provision for improved pedestrian and cycle connections at the north and

south portals of the Silvertown Tunnel. Therefore the Scheme would have a neutral impact on severance changes relating to physical infrastructure.

- 5.2.6 The Scheme would result in significant changes in vehicle flows on some sections of roads in nearby areas. Severance impact areas have been defined to cover the walking catchment areas within 400m distance (5 minutes walking) of sections of road affected by greater than 10% changes in vehicle flow as a result of the Scheme. The impact area has been divided into two regions, which coincide with two of the neighbourhoods identified in Table 5.1 as suffering from existing severe severance.

Figure 5.1 Severance analysis impact areas



5.2.7 An assessment has been made of the severance impacts in each area, summarised in Table 5.2.

Table 5.2 Severance assessments by impact area

Impact area	Qualitative Comments	Change in severance
Blackwall and South Bromley	Overall more road links experience decreased vehicle flows than increased vehicle flows. Neighbourhoods in the area already suffer from severe severance due to being cut off by major roads with limited pedestrian access and this would not change under the Scheme.	Neutral
Greenwich Peninsula	Reduced vehicle flow on A102 Blackwall Tunnel Approach would have no material impact on severance although there would be positive impacts from provisions included in the reference scheme design.	Neutral

5.2.8 Both impact areas were assessed as having no changes in severance. Therefore the overall severance impact of the Scheme was assessed as neutral.

5.2.9 Note that this assessment focuses on the impacts of the Silvertown Tunnel project itself. It did not include any development impacts that might reduce severance in the affected areas. For example, the Greenwich Peninsula West masterplan includes indicative proposals to improve the alignment and the nature of the crossings over the A102 Blackwall Tunnel Approach.

5.3 Distributional impacts

5.3.1 The distributional impacts of severance have been assessed in the separate Distributional Impacts Assessment report for all areas identified as having a change in severance.

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6. Journey quality

6.1 Introduction

6.1.1 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 would be experienced by existing users of the Blackwall Tunnel, some of whom would switch to the Silvertown Tunnel.

6.1.2 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.

6.1.3 The River Crossings Residents Survey⁸ provides some evidence of local residents’ perceptions of cross-river travel. For example:

- 43% of respondents gave positive scores for how easy it is to cross the river (24% negative, 17% neutral and 15% did not cross the river);
- The main factor for those who found it difficult to cross the river was congestion: 60% of those who said it was difficult to cross the river cited congestion, 20% cited availability or choice of crossings, 19% cited availability of public transport; and
- 53% agreed that they would benefit from new bus services crossing the river while 29% disagreed

6.2 Assessment

6.2.1 TAG Unit A4.1 identifies three main categories of journey quality impact:

- traveller care (cleanliness, facilities, information);
- travellers’ views; and
- traveller stress (frustration, fear of accidents and route uncertainty).

6.2.2 Table 6.1 shows the assessment of the Scheme in respect of these journey quality impacts.

⁸ River Crossings Residents Survey, TfL, 2015. A survey undertaken of residents living in east London boroughs adjacent to the River Thames.

Table 6.1 Journey quality impacts assessments

Journey quality category	Impact assessment
Traveller care (cleanliness, facilities, information)	The Scheme would have no material impact on this aspect of journey quality.
Traveller's views	There would 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)	The reliability benefits of the Scheme are described in the Silvertown Transport Assessment. The improved certainty of journey time is likely to reduce stress for both drivers and bus passengers. The reduction in incidents currently occurring in the Blackwall Tunnel would also have a strong positive impact on drivers' perceptions. 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 Tunnel to the safer Silvertown Tunnel would reduce this stress. The additional bus provision would provide more certainty and reduce delays and stress for bus passengers.

6.2.3 Bus and highway journey quality would significantly improve with a decrease in traveller stress associated with improvements in journey time reliability and more comfortable driving conditions within the Silvertown Tunnel.

6.2.4 Therefore the overall assessment for journey quality impacts is considered to be large beneficial.

7. Option and non-use values

7.1 Introduction

7.1.1 Option and non-use values are assessed when there is a step change in the availability of transport services in the study area, such the introduction or loss of good quality local bus services.

7.1.2 The values are assessed as beneficial when a service is introduced and as adverse when a service is removed.

7.2 Assessment

7.2.1 As well as improvements to existing services, the TfL proposed to introduce two new cross-river bus services utilising the Silvertown Tunnel, one running between Eltham and Beckton and one running between Grove Park and Canary Wharf. In addition four other routes were enhanced for assessment purposes, providing additional cross river services. Indicative alignments of these routes can be seen in Figure 1.2.

7.2.2 The new bus routes would be located in areas that currently have poor cross-river public transport options. More details on the public transport provision in these areas can be found in the TA.

7.2.3 The new routes are likely to overlap with existing bus services in many locations but would represent a step change in the availability of direct cross-river bus services for some households. Therefore the score for option and non-use values is assessed as moderate beneficial.

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8. Accessibility

8.1 Introduction

- 8.1.1 The term accessibility can have different meanings in different contexts. The wider connectivity improvements generated by the Scheme are discussed in the TA. 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.
- 8.1.2 The focus of this assessment is accessibility by public transport. Details of existing and proposed public transport provision in the local area are provided in the TA.
- 8.1.3 Accessibility is a key distributional impact (DI). Some groups of people are affected more by accessibility issues than others, for example, low-income groups tend to have lower levels of car ownership and high public transport use and can therefore disproportionately benefit from an improvement in public transport availability. The distributional impacts are assessed in the separate Distributional Impacts Appraisal report.

8.2 Assessment

- 8.2.1 TAG unit A4.1 makes reference to five key barriers cited in 'Making the Connections' (Social Exclusion Unit, 2003), which forms the basis of the accessibility impact assessment. Table 8.1 presents a summary assessment of accessibility in the context of these barriers.

Table 8.1 Assessment against barriers to accessibility

Barrier to accessibility	Assessment
The availability and physical accessibility of transport	The Scheme includes improvements to four existing bus routes and additional cross-river bus links, which would be of particular benefit to older or mobility impaired persons who may find interchange at North Greenwich difficult.
Cost of transport	The Scheme would have some negative impacts on lower income car drivers due to the road user charges planned (see Personal Affordability impacts in Chapter 9). There would be a positive impact on some lower income public transport users since new cross-river bus links would reduce the need to interchange to the (more expensive) Underground or Emirates Air Line services.

Barrier to accessibility	Assessment
Services and activities located in inaccessible places	Not applicable (all areas are reasonably accessible).
Safety and security	No significant impacts.
Travel horizons	New cross-river bus links would 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.

8.2.2 The scheme would have a positive net impact on public transport accessibility as a result of improved resilience and reliability and new cross-river bus links, Therefore the Scheme impacts have been assessed as moderate beneficial.

8.3 Distributional impacts

8.3.1 The distributional impacts of accessibility have been assessed in the separate Distributional Impacts Appraisal report.

9. Personal affordability

9.1 Introduction

9.1.1 The introduction of user charging on the Blackwall Tunnel and Silvertown Tunnel would have a direct and tangible impact on the affordability of travel by car for some users.

9.1.2 Personal affordability is a key distributional impact that may affect different groups of people positively or negatively to different extents. For example, lower income groups experience the impacts of travel affordability more strongly than higher income groups.

9.1.3 The Distributional Impacts Report identifies that users would have significant time saving benefits, the monetary value of which are greater than the cost of user charges. However, this section only considers the cost of travel rather than any time saving benefits resulting from the Scheme.

9.2 Assessment

9.2.1 As part of the distributional impacts appraisal a strategic personal affordability review was undertaken to identify aspects of the Scheme that may have positive or negative consequences on key cost areas. The Distributional Impacts Appraisal report provides full details of the assessment of the distributional impacts of personal affordability, which is summarised below.

9.2.2 Two elements of costs were identified as potentially changing for road users as a result of the Scheme:

- car fuel and non-fuel cost (a TUBA⁹ benefit); and
- user charges (a TUBA disbenefit).

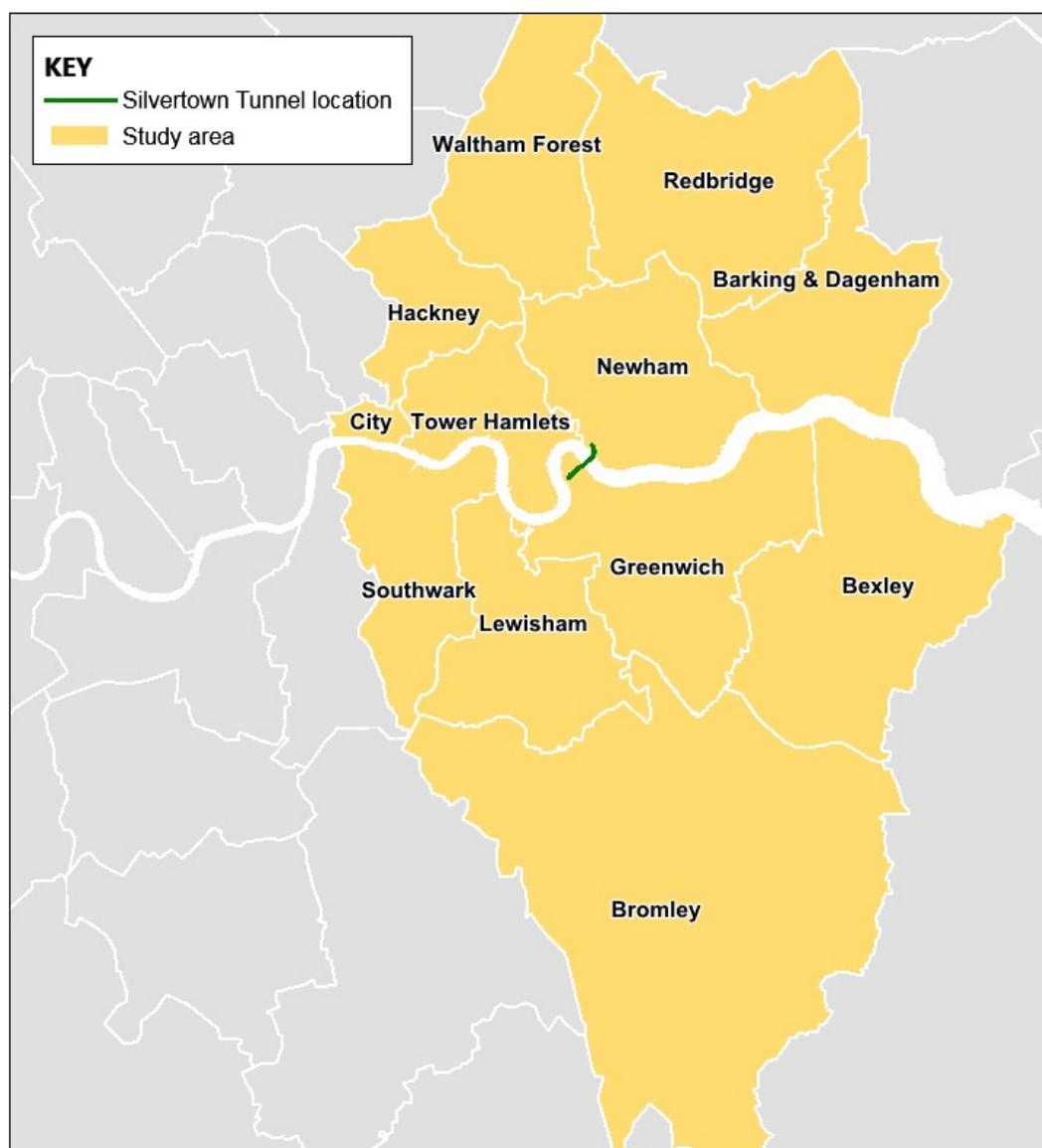
9.2.3 For public transport users, improvements to bus services could mean that some users may save money as a result of being able to undertake certain journeys by bus instead of a more expensive mode.

9.2.4 A detailed distributional impacts appraisal has been undertaken in consideration of the elements identified above.

⁹ Transport User Benefit Appraisal, a DfT programme to estimate transport user benefits.

9.2.5 The study area for the personal affordability assessment is shown in Figure 9.1. It covers the area where most user cost changes would be experienced and includes 12 boroughs in east London. The study area contains a resident population of 2.9m, of which 820,000 live in the three host boroughs.

Figure 9.1 Personal affordability impacts study area



9.2.6 The Scheme would result in a net decrease in car user costs of £1.2m and a net increase in user charges of £10.5m for car users from the study area (in 2021), resulting in a net cost increase of £9.3m. The Distributional Impact Assessment found that the costs impact mainly on high and medium income car users and to a lesser extent on low income car users.

- 9.2.7 Public transport passengers are not required to pay user charges in addition to their fares, or vehicle costs, but the enhanced bus package would result in savings for some transport users who would be able to use buses to take journeys they would otherwise have taken using more expensive modes such as on National Rail or the Underground. This benefit would impact mainly on low income public transport users and, to a lesser extent, on medium and high income users.
- 9.2.8 It has not been possible to assess the effect of changes in public transport fares on personal affordability, as the model used does not provide fare impacts at a sufficient level of detail. However it is likely to be of a smaller order of magnitude than the increase in car user costs.
- 9.2.9 The primary group of interest in the assessment of personal affordability impacts is people on low incomes. User charges have the greatest impact on overall affordability, amounting to a total cost of £10.5m (in 2021) for all users in the study area, however the impact of user charges on people on low incomes is only slight adverse. Public transport mode shift benefits are difficult to quantify but would primarily benefit people on low incomes. The overall assessment of personal affordability is therefore scored as neutral.

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10. Conclusions

10.1 Social Impacts Appraisal

10.1.1 Table 10.1 shows the conclusions of the social impact assessments for each indicator.

Table 10.1 Social Impacts Appraisal conclusions

Indicator	Assessment	Conclusion
Accidents	There would be a slight reduction in accidents due to the Scheme.	Slight beneficial
Physical activity	No provision for active modes is included in the Scheme reference tunnel design. A small mode shift from car to PT would lead to a small increase in physical activity	Slight beneficial
Security	The Silvertown Tunnel is not expected to have a material impact on security to road users.	Neutral
Severance	There is a neutral impact on the existing severance issues identified.	Neutral
Journey quality	Improvements in reliability and reduction in congestion are expected to reduce driver stress.	Large beneficial
Option values and non-use values	TfL have tested the impacts of two new bus routes and four enhanced bus routes, with 12,000 households situated within 100m of the route alignments.	Moderate beneficial
Accessibility	Positive net impact on public transport accessibility as a result of improved resilience and reliability and enhanced services.	Moderate beneficial
Personal affordability	The Scheme would result in increases to car user charges, mainly affecting people on medium or high incomes. Some public transport users may benefit from new bus services that offer cheaper options than are currently available, particularly lower income groups. The monetary value of time savings, which (including reliability) are greater than the user charges, are not included in this assessment.	Neutral

10.1.2 The social impacts of the Scheme are assessed as large beneficial for one indicator (journey quality), moderate beneficial for two indicators (option and non-use values and accessibility) and slight beneficial for two indicators (accidents and physical activity). The remaining indicators are scored as neutral.