SILVERTOWN TUNNEL

Volume 7

7.7 Traffic Impacts Mitigation Strategy

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MAYOR OF LONDON

TRANSPORT FOR LONDON
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Silvertown Tunnel

Traffic Impacts Mitigation Strategy

7.7

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Infrastructure Planning

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

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List of Abbreviations

DCO	Development Consent Order
GLA	Greater London Authority
HGV	Heavy Goods Vehicle
RAG	Red-Amber-Green
SCOOT	Split Cycle Offset Optimisation Technique
STIG	Silvertown Tunnel Implementation Group
TfL	Transport for London
TIMS	Traffic Impacts Mitigation Strategy
TLRN	Transport for London Road Network

Glossary of Terms

Assessed Case	Scenario adopted for assessment of likely effects of the proposed scheme, in the context of central forecasts of transport conditions and with user charges set so as to balance the Scheme's traffic, environmental, socio-economic and financial objectives.
Blackwall Tunnel	An existing 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.
Development Consent Order	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. http://infrastructure.planninginspectorate.gov.uk/help/glossary-of-terms/
Mitigation	Measures including any process, activity, or design to avoid, reduce, remedy or compensate for negative environmental impact or effects of a development.
The Scheme	The construction of a new bored tunnel with cut and cover sections at either end under the River Thames (the Silvertown Tunnel) 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)	A London 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. 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. 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.
The Tunnel, Silvertown Tunnel	Proposed new twin-bore road tunnels under the River Thames from the A1020 in Silvertown to the A102 on Greenwich Peninsula, East London.
User Charging	The charge to be paid by users of the Silvertown Tunnel and Blackwall Tunnel that is to be imposed in order to manage traffic demand and help pay for the Scheme.

1. INTRODUCTION

1.1.1 This Traffic Impacts Mitigation Strategy (TIMS) sets out the process for mitigating any significant adverse localised traffic or traffic-related impacts attributable to the Scheme in operation, should these be identified during the monitoring period of three years (with the potential for this to be extended to five years) after Scheme opening as requiring mitigation. A detailed description of the monitoring period and the timescales associated with this is set out in the Monitoring Strategy (Document Reference 7.6).

1.1.2 In the context of this document, the localised impacts of traffic refer to a wide range of impacts which are a direct result of traffic changes resulting from the Scheme in operation. This not only includes direct impacts such as congestion or delay but also wider traffic related impacts such as road safety, severance, noise and emissions.

1.1.3 As the local and wider road network will change between now and the Scheme opening year, TfL acknowledges that the need for, and the most appropriate type of, mitigations at junctions and elsewhere on the network, may emerge closer to (or after) the time of Scheme opening. Although committed changes to the road (and transport) networks have been taken account of in the Assessed Case, other (as yet uncommitted) changes to the road network are likely to be undertaken in the period between the publication of this strategy and the Scheme opening. These changes will come about as a result of as yet uncommitted land use developments and local highway schemes. An example of such a change is Cycle Superhighway 4 which is proposed to run along the A206 corridor and is in development by TfL, together with the relevant boroughs and other stakeholders.

1.1.4 Therefore, rather than specifying such localised mitigation measures in the DCO application, TfL is committing to monitoring the actual impacts of the Scheme and to the implementation of appropriate mitigation measures which can be delivered under TfL's existing powers where these are shown to be necessary. By assessing the predicted traffic impacts at Scheme opening nearer the time, and monitoring actual impacts thereafter TfL will more accurately be able to identify the scale and location of any adverse impacts and implement effective mitigation where required. It is this approach which is set out in the TIMS (and the Monitoring Strategy (Document Reference 7.6)).

1.1.5 Under this TIMS, the findings of the annual monitoring, carried out in accordance with the Monitoring Strategy (Document Reference 7.6), will be used to identify whether the Scheme in operation is giving rise to adverse traffic and traffic-related impacts on the local road network, such as delays at junctions or deteriorations in journey times that are sufficiently significant to warrant mitigation. The TIMS sets out the processes by which the need for, and type of localised mitigation measures will be determined.

1.2 The Traffic Impacts Mitigation Strategy in context

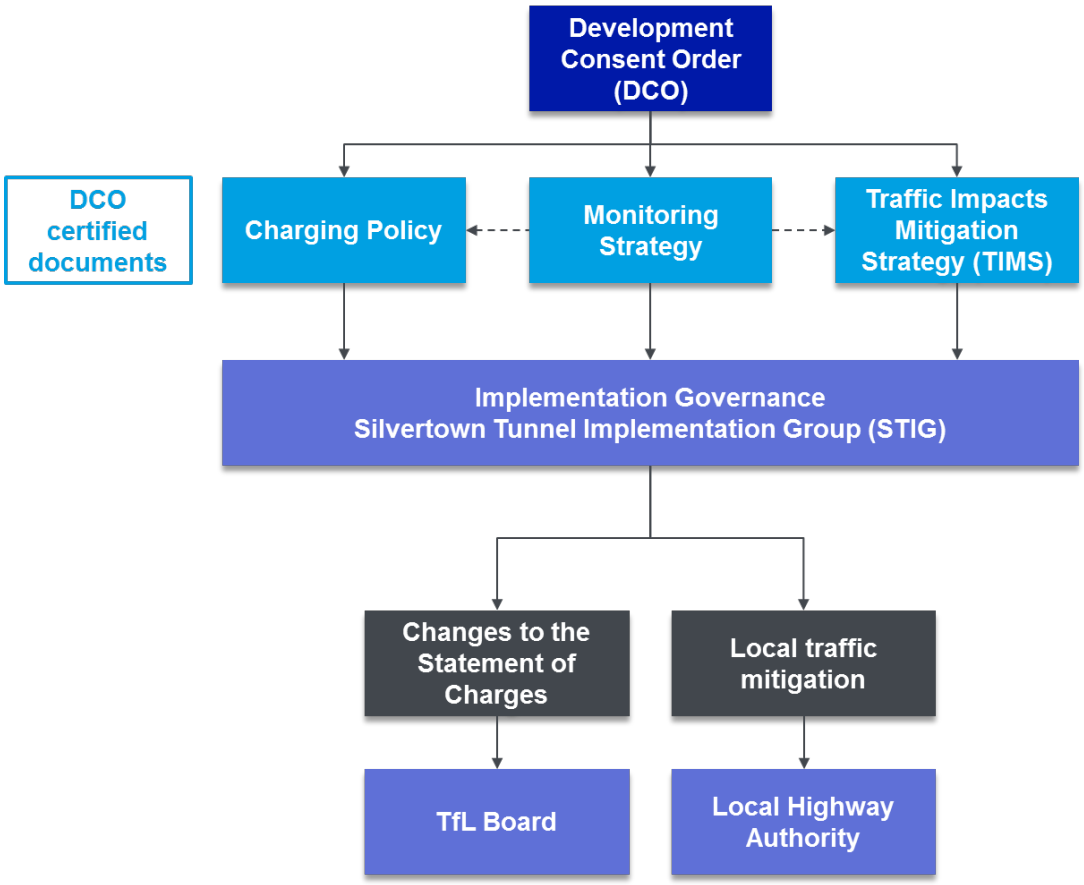
1.2.1 Figure 1-1 sets out the functional relationship between the TIMS, the Monitoring Strategy (Document Reference 7.6) and the Charging Policy (Document Reference 7.11). The DCO contains a requirement for TfL to implement and comply with these three documents.

1.2.2 The main functions of the three documents are as follows:

- **TIMS** – sets out the process for determining and implementing appropriate mitigation for any localised traffic and traffic-related impacts which arise as a result of the Scheme.
- **Monitoring Strategy (Document Reference 7.6)** – sets out the scope of monitoring that TfL proposes to undertake in respect of traffic, air quality and carbon, noise and socio-economic impacts of the operation of the Scheme.
- **Charging Policy (Document Reference 7.11)** –sets out the principles according to which TfL must set and vary the user charges and the procedures that apply when doing so.

1.2.3 A governance process has been established for the implementation of each of these elements. While localised traffic mitigation is to some extent separate from charging, a relationship exists between them and monitoring outcomes may be used to feed into considerations around both localised traffic mitigation and user charging. The governance process therefore provides for one group to which these issues are brought for discussion – the Silvertown Tunnel Implementation Group (STIG). The DCO provides for the establishment of STIG and the role and responsibilities of STIG in relation to the TIMS are described in section 2.

Figure 1-1 Functional relationship between the Charging Policy (Document Reference 7.11), Monitoring Strategy (Document Reference 7.6) and TIMS



1.3 Structure of the Traffic Impacts Mitigation Strategy

1.3.1 Chapter Two – sets out the process for determining the need for and type of mitigation measures, if any, required as a result of the operation of the Scheme, and their subsequent implementation.

1.3.2 Chapter Three – describes the indicative measures that may be implemented to mitigate any adverse traffic and associated impacts.

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2. NEED FOR AND TYPES OF MITIGATION

2.1 Introduction

2.1.1 The TIMS provides a procedural protocol for the consideration by TfL of the need for the implementation of traffic and traffic-related mitigation measures arising from the Scheme in operation and the form that any such mitigation measures should take. In implementing this strategy TfL shall have regard to the outputs of the Monitoring Strategy (Document Reference 7.6).

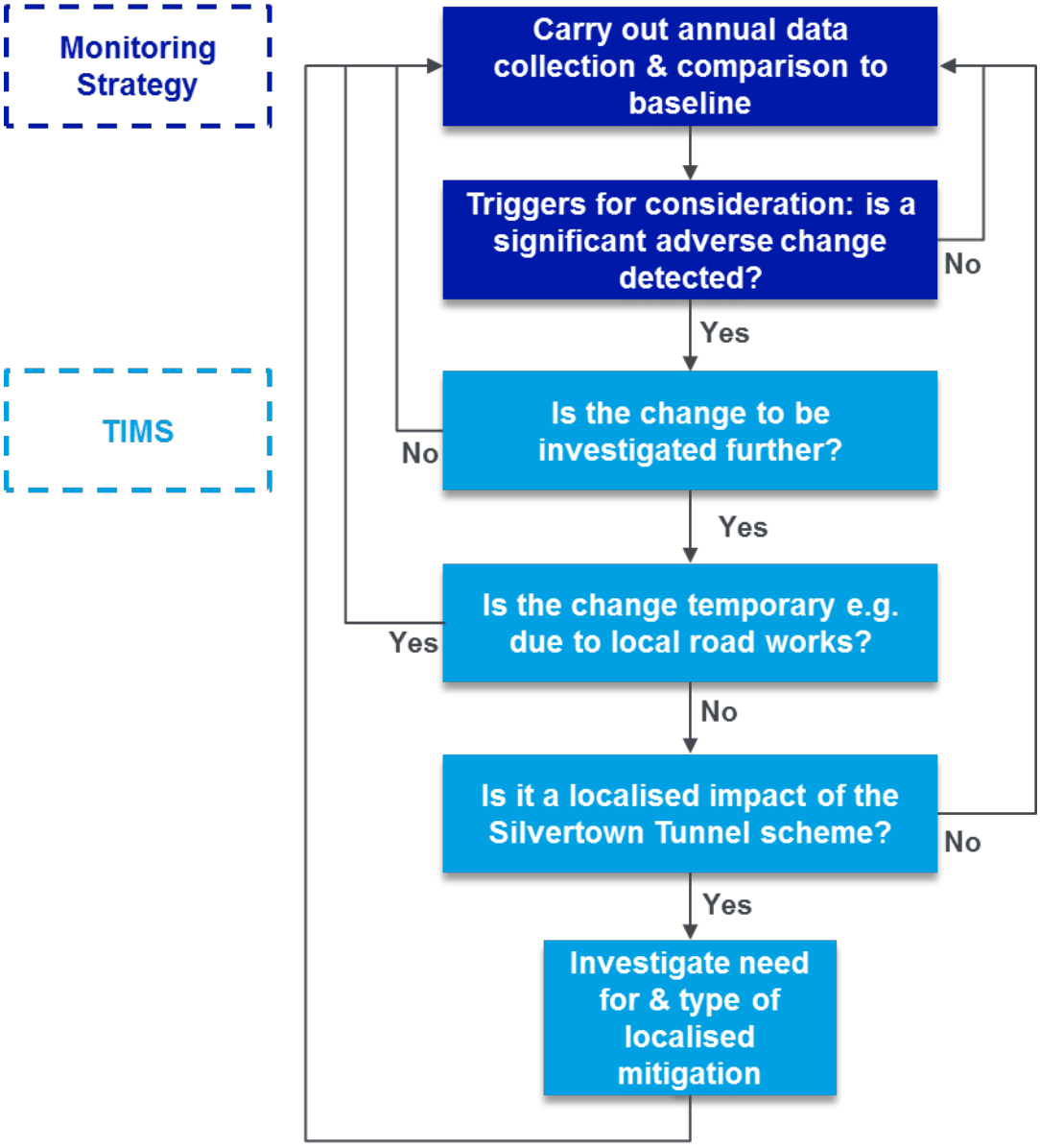
2.1.2 The STIG shall be consulted by TfL prior to action being taking to implement the TIMS and TfL shall have regard to any response received from the group before any mitigation measures to be taken are determined and implemented. STIG is made up of representatives from local boroughs, other key stakeholders and TfL.

2.1.3 The STIG's role includes reviewing the annual monitoring reports produced under the Monitoring Strategy (Document Reference 7.6) and making recommendations as to the need for and form of mitigation, if any, required arising under operation of the TIMS.

2.2 Determining the need for mitigation

2.2.1 The process to determine the need for the introduction of localised mitigation measures to recommend to TfL for support and then for implementation by the relevant highway authority is summarised in Figure 2-1. Each element is described in greater detail below.

Figure 2-1 Process to determine the need for and mitigation



2.2.2 **Annual data collection and baseline comparison –** TfL will publish annual monitoring reports in accordance with the Monitoring Strategy (Document Reference 7.6) and for presenting these to STIG for review and consideration. In the period of three years prior to Scheme opening TfL will collect relevant traffic data relating to the Silvertown Tunnel on an annual basis. This data will set the comparison baseline constituting the 'without scheme' network.

2.2.3 **Triggers for consideration –** STIG will review the annual monitoring reports produced by TfL to identify whether a significant level of change in traffic conditions compared to the baseline has been demonstrated. A traffic light rating system based on a red-amber-green (RAG) summary of the annual monitoring report locations will be adopted to identify the 'trigger points' to be considered further by STIG.

- Metrics and locations marked 'red' must be considered by STIG.
- Metrics and locations marked 'amber' may be considered by STIG if the group deems this necessary.
- Metrics and locations marked 'green' do not have to be considered by STIG.

2.2.4 In making a decision on any further investigation of any adverse effects detected, TfL must have regard to STIG's recommendations.

2.2.5 **Temporary nature of change –** In determining whether any change in traffic conditions from the baseline is to be investigated further, TfL shall first decide whether the change is temporary, for example caused by local construction or road works. If this is the case, long-term mitigation will not be required and the temporary impacts would be managed by traffic management measures. Monitoring the effects of the Scheme at the relevant location would continue on an annual basis as provided for in the Monitoring Strategy (Document Reference 7.6).

2.2.6 **Scheme effect –** If it is identified that the traffic or related adverse impact is of a more permanent nature, it will need to be established whether the change is the result of the Scheme. This will be achieved by comparison of observed patterns e.g. of overall travel trends and traffic levels to control group data collected specifically for this purpose. This includes specifically selected control sites and overall London-wide and sub-regional data in order to understand the Scheme's effects.[1] If the change or impact cannot be attributed to the Scheme in operation, mitigation does not need to be considered under this strategy.

2.2.7 **Need for localised mitigation –** If STIG were reasonably to conclude that adverse impacts were solely or largely attributable to the Scheme, and

[1] Further information on this process is set out in the Monitoring Strategy (Document Reference 7.6)

where mitigation by other committed developments and committed interventions by TfL, the boroughs or required of developers were not sufficient in mitigating the impact, TfL will consider the need for mitigation measures.

2.3 Determining the type of mitigation and implementation of mitigation

2.3.1 Where it is determined that localised traffic mitigation measures are required, TfL will make a preliminary decision as to the form of mitigation and the programme for its implementation. Its preliminary decision will be presented to the STIG for consideration and recommendation.

2.3.2 Any mitigation measures proposed by TfL must meet the tests set out in Figure 2-2. STIG may make recommendations throughout this process which TfL must have regard to when making its final decision as the type of mitigation to be implemented by the relevant highway authority.

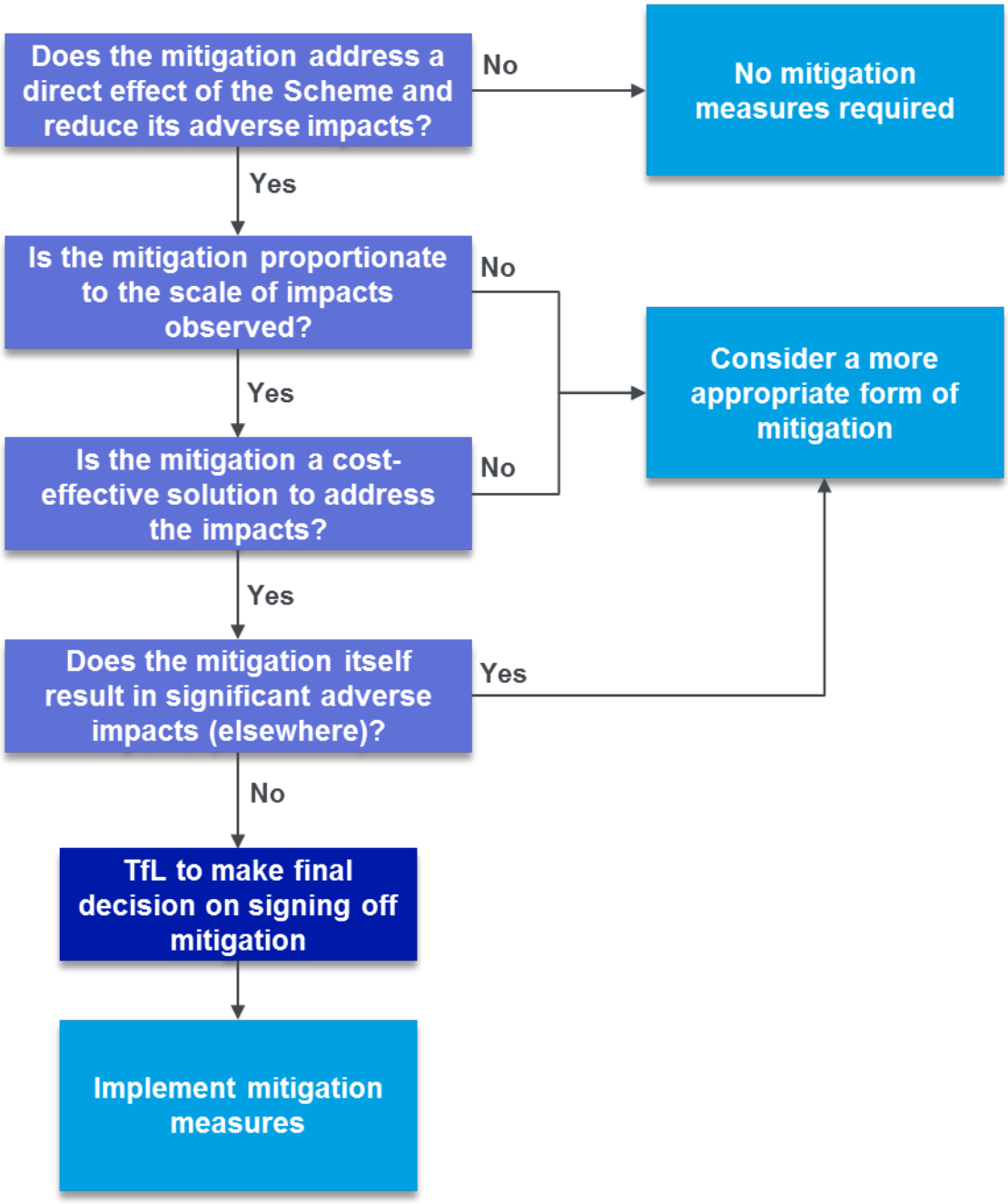
2.3.3 Where it is reasonably concluded that:

- any adverse impacts are solely or largely attributable to the operation of the Scheme;
- the tests set out in Figure 2-2 are met; and
- mitigation by other committed developments and committed interventions by TfL or the local highway authority are not sufficient in mitigating those adverse impacts.

TfL will implement appropriate, reasonable and necessary mitigation measures in discussion with STIG. The final sign off on funding will be the responsibility of TfL.

2.3.4 Where mitigation measures will be located on roads for which the local authority is the highway authority (rather than the Transport for London Road Network (TLRN)), the relevant borough, in its role as the local highway authority, must approve the implementation of the proposed mitigation. If the mitigation is not approved by the relevant borough where required, the borough may choose to implement alternative mitigation or supplementary measures at its own cost, following the usual process of scheme planning, design, consultation and implementation.

Figure 2-2 Process for testing suitability of mitigation measures



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3. INDICATIVE MITIGATION MEASURES

3.1 Introduction

3.1.1 This chapter sets out a range of indicative mitigation measures which are considered appropriate in the light of TfL's network operational experience. It provides an indication of the type and scale of measures that could be implemented to mitigate any adverse traffic impacts that are identified as being caused by the Scheme. It demonstrates that there are a range of measures available that could be implemented within reasonable timescales by TfL and/or the local highway authority under their existing powers to address a variety of traffic and associated impacts.

3.2 Indicative measures

3.2.1 Table 3-1 sets out a range of potential mitigation measures, the effect that each measure is likely to have and the mechanism for delivering that mitigation measure. Changes to the Silvertown and Blackwall Tunnel user charge are not included as a mitigation measure here, as these are dealt with by the Charging Policy (Document Reference 7.11).

Table 3-1 Indicative mitigation measures and delivery mechanisms

Mitigation	Effect	Delivery
Change in existing signal timings to manage localised congestion, air quality and/or noise impacts.	By re-distributing the length of total green time received by each arm, more green time can be given to the arm experiencing an increase in flow and/or delay in order to smooth the operation of the junction. Where operational, SCOOT will respond automatically to fluctuations in traffic flow through the use of on-street detectors embedded in the road. Changes in signal timings can also serve to reduce severance and improve crossing opportunities for pedestrians and cyclists.	In relation to all roads in London, functions in respect of traffic signals under sections 65, 73, 74 and 75 of the Road Traffic Regulation Act 1984 are vested in TfL. See section 275 Greater London Authority Act 1999.

Mitigation	Effect	Delivery
Introduction of new signals to manage localised congestion, air quality and/or noise impacts.	The introduction of signals at priority junctions, or additional signals at part-signalised junctions can aid in smoothing traffic flow and thereby reduce delay where it is problematic. The introduction of new signals can also serve to reduce severance and improve crossing opportunities for pedestrians and cyclists.	In relation to all roads in London, functions in respect of traffic signals under sections 65, 73, 74 and 75 of the Road Traffic Regulation Act 1984 are vested in TfL. See section 275 Greater London Authority Act 1999.

Mitigation	Effect	Delivery
Minor junction or geometry changes to manage localised congestion, air quality and/or noise impacts.	Minor changes to junctions or links (e.g. small scale widening, changes to turning movements, flare lengths, crossing locations) can add capacity to a link or junction where constraints and hence delay are being experienced. Such changes can also serve to improve road safety at those locations and to reduce severance for pedestrians and cyclists.	Within TfL's or the boroughs' remit where changes are implemented within the existing highway boundary. TfL has power to carry out works within or adjacent to a GLA road for the improvement or maintenance of the highway. The relevant local authority has the same power in relation to any roads for which it is the highway authority.
Traffic management measures to manage localised congestion, air quality and/or noise impacts.	To control and restrict traffic by direction, time of day and/or vehicle class/type to mitigate localised environmental impacts.	TfL's existing powers under the Road Traffic Regulation Act 1984.
Priority measures for different user groups e.g. bus lanes to manage localised congestion, air quality and/or noise impacts.	To improve journey times for particular user groups to ensure they are not adversely affected.	TfL's existing powers under the Road Traffic Regulation Act 1984.

Mitigation	Effect	Delivery
Adjust speed limits to manage localised congestion, air quality and/or noise impacts.	A reduction in speed limit can smooth traffic flows and reduce congestion. A change to speed limits may also influence journey times and consequently traffic flows, potentially leading to localised environmental improvements. Adjusting speed limits can also serve to improve road safety.	TfL's existing powers under the Road Traffic Regulation Act 1984.
Pedestrian (and cyclist) crossings to reduce severance and/or improve road safety.	Where an increase in flow creates severance problems, the introduction of different types of pedestrian crossings can improve crossing opportunities for pedestrians (and cyclists) and improve road safety.	TfL has power to carry out works within or adjacent to a GLA road for the improvement or maintenance of the highway. The relevant local authority has the same power in relation to any roads for which it is the highway authority.

Mitigation	Effect	Delivery
HGV bans to manage localised congestion, air quality and/or noise impacts.	Banning HGVs from using certain roads can help to manage any adverse displacement of HGV traffic and concentrate HGV traffic on strategic routes, able to accommodate these movements.	TfL's existing powers under the Road Traffic Regulation Act 1984.
Noise barriers to manage localised noise impacts.	Noise barriers can be effective in reducing the impact of traffic noise on receptors.	TfL has the power to carry out works within or adjacent to a GLA road for the improvement or maintenance of the highway. The relevant local authority has the same power in relation to any roads for which it is the highway authority.
Low noise surfacing to manage localised noise impacts.	Low noise surfacing can be effective in reducing the impact of traffic noise on receptors.	TfL has the power to carry out works within or adjacent to a GLA road for the improvement or maintenance of the highway. The relevant local authority has the same power in relation to any roads for which it is the highway authority.

3.2.2 Detailed location-specific examples of traffic mitigation measures for the Assessed Case scenario are reported in Appendix C of the Transport Assessment (Document Reference 6.5).