# Mayor's Transport Strategy: Supporting Evidence

# Outcomes Summary Report Addendum

## Executive Summary

### Introduction

The purpose of this addendum is to set out the updated strategic modelling that has been carried out by TfL City Planning to assess the impact and effectiveness of the final Mayor's Transport Strategy.

The draft Mayor's Transport Strategy was published in June 2017 with a supporting evidence base that details the evidence used to develop the Strategy. The *Outcomes Summary Report*[1] was published as part of the evidence base, summarising the strategic modelling carried out to inform the development of the draft MTS and assessing its impacts and effectiveness.

Since publication of the draft MTS, a draft new London Plan and the 2017 TfL Business Plan have been published in December 2017. The strategic modelling has subsequently been updated to use the latest data and be consistent with the draft new London Plan. This document is an addendum to the *Outcomes Summary Report* and sets out the updated strategic modelling that has been carried out to assess the impact and effectiveness of the final MTS.

> **The key conclusion is that, with revised London Plan population and economic growth, the actions identified in the final Mayor's Transport Strategy make a sustainable, active and efficient mode share of 80 per cent achievable.**

### Approach to strategic modelling

TfL's strategic models have been used widely for forecasting the impacts of transport and land use decisions in London and have been comprehensively enhanced and updated for this purpose. The strategic modelling establishes a core reference case as a baseline for transport outcomes with draft new London Plan growth and funded investment, and then assesses the expected outcomes under the MTS Scenario.

### Forecasting assumptions in the core reference case

The core reference case includes population and employment projections from the GLA, along with funded changes to the transport network identified in the 2017 TfL Business Plan and National Rail funded plans. It also includes wider assumptions about policies relating to aspects such as fares, fuel costs and car parking.

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[1] http://content.tfl.gov.uk/mts-outcomes-summary-report.pdf

The GLA has published a new 2016-based population projection with a spatial distribution that reflects the new 2017 Strategic Housing Land Availability Assessment (SHLAA) and a new 2017 long term labour market projection. These GLA projections form the basis of the new draft London Plan, and the core reference case used in the draft MTS has been updated to include these new projections.

In 2041, total GLA population growth is now projected to be 10.8 million compared to the previous projection of 10.5 million, and total London employment is projected to reach 6.9 million compared to the previous projection of 6.7 million.

**The MTS scenario and draft new London Plan growth**

The MTS scenario builds on the core reference case and includes policies and proposals outlined within the MTS. In addition to the current funded programme, the scenario includes Crossrail 2, a London Suburban Metro and other upgrades to the national rail network. It includes delivery of the Deep Tube programme, Bakerloo line extension, station capacity work as well as upgrades and extensions to the DLR, Tramlink and London Overground. It includes developing the bus network to meet future demand, applying the Healthy Streets Approach to London's roads and delivering the full Ultra Low Emission Zone and further policies on vehicle emissions. It also includes indicative traffic reduction measures as required to deliver the Mayor's vision for travel in London.

*Travel demand and mode share*

Travel demand is expected to increase in proportion to the growth in population and employment from around 27 million trips per day in 2015 to around 33 million trips per day in 2041, compared to 32 million trips in the draft MTS.

In the London Plan core reference case, car percentage mode share is expected to fall from 37 per cent of all trips in 2015 to 32 per cent in 2041.The delivery of the MTS would enable demand for travel in London to increase in a more sustainable, active and efficient way, with car percentage mode share forecast to fall to 20 per cent in 2041.

*Traffic congestion and bus speeds*

Overall traffic congestion is expected to increase by 2041 without delivery of the MTS, with average vehicle speeds decreasing across London. In the MTS scenario, fewer cars and shorter journeys mean that speeds are likely to increase across most of London in 2041 compared to 2015. Reallocating road space to meet MTS Healthy Streets objectives could be achieved while reducing delay at a London wide level.

In the MTS scenario, buses benefit from stable or improved speeds for general traffic as well as the reallocation of road space to buses so that bus speeds improve London-wide to 2041.

*Public transport and crowding*

Strong growth in demand for public transport, particularly for rail based modes, is expected between 2015 and 2041. Crowding will worsen without further investment. With the draft MTS scenario there is an even greater growth of passenger kilometres

from 2015 to 2041, however the MTS Scenario schemes would enable crowding on rail services to fall scenario despite rising passenger numbers.

*Emissions*

With the planned Ultra Low Emission Zone in place in 2019 in Central London, together with improvements to vehicular technology, levels of the four key emissions ($CO_2$, $PM_{2.5}$, $PM_{10}$ and $NO_x$) are expected to fall from 2013 to 2041. The MTS scenario, could deliver further significant reductions in the four key emissions.

# Contents

# 1. Core reference case

**Introduction**

The core reference case in the draft MTS is described in Chapter 3 of the *Outcomes Summary Report* published as part of the evidence base, and is summarised below. The core reference case has been updated to include the latest GLA growth projections that form the basis of the draft new London Plan and to be consistent with the 2017 TfL Business Plan. This updated core reference case has been used for future year modelling in the final MTS.

This chapter summarises the forecasting assumptions in the core reference case and the updates to the travel demand and mode share.

**Network forecasting assumptions**

The core reference case includes funded public transport and highway schemes consistent with the 2017 TfL Business Plan. A scheme list is provided in Appendix 1 and a summary of key schemes is provided below:

- Current view of funded National Rail schemes, HLOS programme, Thameslink programme, HS2, West Anglia and Great Western improvements.

- The opening of the Elizabeth Line in 2019, the Northern Line Extension, and Tube upgrades to the Victoria Line and Four-Line Modernisation programme.

- DLR, Trams, London Overground and bus service improvements.

- TfL's Healthy Streets portfolio including cycling infrastructure schemes and the introduction by 2019 of the Central London Ultra Low Emission Zone (ULEZ).

**Economic forecasting assumptions**

Wider assumptions have been made about policies relating to aspects such as fares, fuel costs and car parking, and the key economic assumptions are detailed in Table 1.1.

**Table 1.1    Key forecasting assumptions**

| Assumption | Comments | Source |
|---|---|---|
| Parking supply and charges | Workplace parking supply is expected to decrease from 2015 to 2041 and parking charges are expected to increase significantly reflecting recent trends and expected continued pressure on parking | TfL |
| Car ownership | Car ownership is expected to decrease in line with increasing population densities to an average of 0.29 cars per person in 2041 | TfL |
| Economic assumptions | Highway and public transport economic assumptions are taken from WebTAG[2] December 2015 guidance | DfT |
| Public Transport fares | The Mayor's Fares Freeze applies to TfL fares, with other fares assumed to increase with inflation until 2020. An inflation-linked increase is assumed from 2021. | TfL |

**Planning data forecasting assumptions**

The core reference case described in the draft MTS Outcomes Summary report included the latest GLA projections at the time of publication which was the 2015 round SHLAA capped population projection[3] and the 2016 long term labour market projections[4]. Since publication, the GLA has published a new population projection[5] with a spatial distribution that reflects the new 2017 Strategic Housing Land Availability Assessment (SHLAA)[6] and a new 2017 long term labour market projection[7]. These new GLA projections form the basis of the draft new London Plan, and the core reference case has been updated to include these new projections of population and employment.

Table 1.2 provides detail on the new GLA population and employment projections and comparison to the previous projections included in the core reference case for the draft MTS.

Employment projections are provided for the Central Activities Zone (CAZ) and the North Isle of Dogs (NIOD), the remainder of inner London, and outer London. Population projections are provided for inner and outer London.

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[2] https://www.gov.uk/guidance/transport-analysis-guidance-webtag
[3] https://data.london.gov.uk/dataset/constrained-r2015-shlaa-projection
[4] https://data.london.gov.uk/dataset/long-term-labour-market-projections
[5] https://data.london.gov.uk/dataset/projections
[6] https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/evidence-base
[7] https://data.london.gov.uk/dataset/long-term-labour-market-projections

**Table 1.2    Population and employment distribution and forecast growth**

| Population (millions) | Previous GLA projection | | | London Plan GLA projection | | |
|---|---|---|---|---|---|---|
| | 2015 | 2041 | 2015-2041 (% growth) | 2015 | 2041 | 2015-2041 (% growth) |
| Inner | 3.4 | 4.3 | 24% | 3.5 | 4.4 | 25% |
| Outer | 5.2 | 6.2 | 20% | 5.2 | 6.4 | 23% |
| Total | 8.6 | 10.5 | 22% | 8.7 | 10.8 | 24% |
| Employment (millions) | Previous GLA projection | | | London Plan GLA projection | | |
| | 2015 | 2041 | 2015-2041 (% growth) | 2015 | 2041 | 2015-2041 (% growth) |
| CAZ and NIOD | 2.0 | 2.5 | 24% | 2.1 | 2.7 | 28% |
| Inner (rest of) | 1.3 | 1.7 | 27% | 1.4 | 1.8 | 29% |
| Outer | 2.1 | 2.5 | 16% | 2.1 | 2.5 | 16% |
| Total | 5.5 | 6.7 | 22% | 5.6 | 6.9 | 24% |

Source: Greater London Authority.

Total GLA population growth is greater in the new 2016-based projection reaching a total of 10.8 million in 2041 compared to the previous 2015 round projection with a total of 10.5 million in 2041.

Population distribution in the new projection reflects the new 2017 SHLAA, which better represents the latest Opportunity Area homes capacity compared to the previous SHLAA from 2013 which was used in the previous projection. Inner London 2015-2041 population growth is 1 percentage point greater in the new 2016-based projection (25%), and outer London population growth is 3 percentage points greater in the new projection (23%).

In 2041, total London employment is projected to reach 6.9 million in the new 2017 projection, compared to 6.7 million in the 2016 projection.

The majority of additional employment growth in the new 2017 projection is in the CAZ and NIOD, where 2015-2041 growth is 4 percentage points higher than in the 2016 projection. Outer employment growth in the new 2017 projection remains the same as in the 2016 projection.

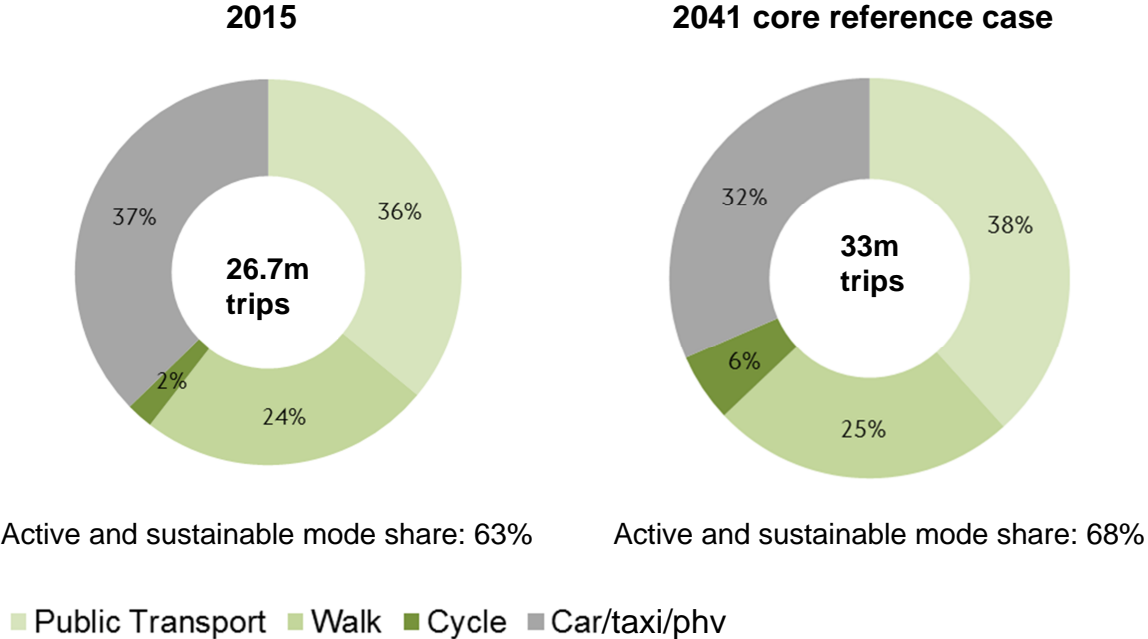**Travel demand and mode share**

*Mode share*

The 2015 mode share estimate for walking, cycling & public transport has been amended from 64 per cent to 63 per cent in the final MTS. The difference is due to taxi trips which were included in this category in the draft MTS mode share, and which have now been included in the car/taxi/phv mode share.

*Travel Demand*

Population and employment are key drivers of travel demand. Travel demand is therefore expected to increase in proportion to the growth in population and employment shown in Table 1.1. Greater growth in population and employment in the draft new London Plan projections means that there are a greater number of total trips in the future compared to previous projections. In the draft MTS core reference case, demand for travel in London was forecast to increase from around 27 million trips per day in 2015 to around 32 million trips per day in 2041. In the updated core reference case, demand for travel is forecast to increase by approximately a further 0.5 million more trips per day, to around 33 million trips per day in 2041.

Mode share and travel demand for 2015 and the 2041 core reference case is shown in Figure 1.1.

**Figure 1.1 Mode share and travel demand in 2015 and 2041 core reference case**

**2015**

**2041 core reference case**



Active and sustainable mode share: 63%

Active and sustainable mode share: 68%

■ Public Transport ■ Walk ■ Cycle ■ Car/taxi/phv

# 2. MTS scenario and draft new London Plan growth

**Introduction**

The MTS scenario is described in Chapter 8 of the *Outcomes Summary Report* published as part of the evidence base, and is summarised below. The core reference case has been updated to include the latest GLA growth projections that form the basis of the draft new London Plan and to be consistent with the 2017 TfL Business Plan. The impact and effectiveness of the MTS scenario has subsequently been assessed against a background of draft new London Plan growth using updated strategic modelling.

This chapter summarises the updated strategic modelling that has been carried out to assess the impact and effectiveness of the final MTS, ensuring consistency with the draft new London Plan and 2017 TfL Business Plan. This chapter reports the updated core reference case and final MTS scenario modelling results, and summarises the differences to those reported in the draft MTS.

**Description of the MTS scenario**

The MTS scenario begins with the contents of the core reference case and then includes policies and proposals outlined within the MTS. A scheme list is provided in Appendix 1. A summary of key schemes beyond the current funded programme is provided below:

- Rail: deliver Crossrail 2, a London Suburban Metro, Elizabeth Line extension east of Abbey Wood and other upgrades to the national rail network.

- Tube: deliver Deep Tube programme, Bakerloo Line extension to Lewisham (and beyond), station capacity programme and step free Tube stations.

- DLR: deliver the DLR upgrades and potential DLR extension from Gallions Reach to Thamesmead.

- Trams: deliver Tram upgrades and potential Tram extension to Sutton.

- London Overground: deliver network-wide frequency upgrades, strategic interchanges, Barking Riverside extension and potentially other London Overground extensions

- Buses: develop the bus network to meet existing and future demand and deliver the bus priority network and Low Emission Bus Zones.

- Streets: implement the Healthy Streets Approach to deliver improved streets and priority for walking and cycling, deliver Silvertown Tunnel and associated bus improvements including at least 20 buses per hour in the first year.

- Environment: deliver the full Ultra Low Emission Zone, including London wide Low Emission Zone and inner London ULEZ, and policies on vehicle emissions set out in chapter 3 of the draft MTS.

- Traffic reduction: indicative measures including changes to residential and workplace parking, changes to the way road use is paid for and freight demand measures as required to deliver the Mayor's vision for travel in London.

Figure 2.1 shows the overall impact of the rail schemes on capacity. They would deliver an almost 90 per cent increase in capacity to Central London in the morning peak.

**Figure 2.1    Morning peak rail and Underground capacity improvements to Central London, 2015 to 2041 in the MTS scenario**
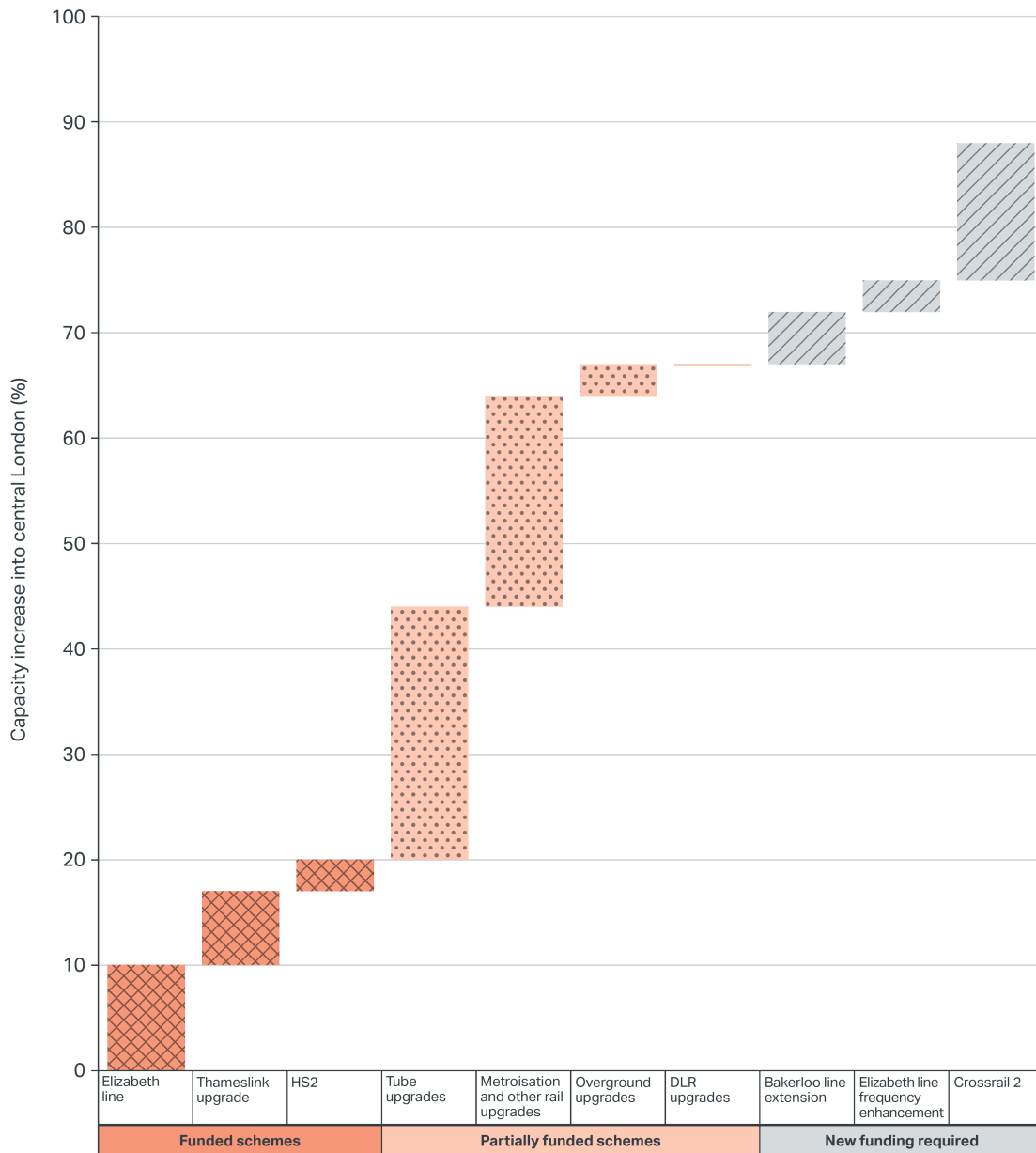
The MTS package modelling in the draft MTS Outcomes Summary report has demonstrated that traffic reduction measures are likely to be necessary, in the longer term, to achieve the Mayor's vision of an 80 per cent mode share for walking, cycling and public transport in 2041. However, the approach to achieving this is illustrative of the required impact and should not be taken as an indication of specific proposals or scheme designs. The trajectory of the implementation reflects shorter term measures in the draft MTS such as air quality improvement and car reduction strategies and the desire to be more ambitious in reducing car ownership within new developments. Other traffic reduction measures and changes to the way road use is paid for are considered in the longer term. Table 2.1 provides a summary of measures tested.

**Table 2.1    Summary traffic reduction measures included in the MTS scenario**

| Policy type | Description |
|---|---|
| Parking supply and charging | Further increases in parking charges, limits on free commuter parking or a work place parking levy |
| Car ownership and residential parking | Measures to accelerate the rate of car ownership reduction resulting in a quarter of a million fewer cars owned in London |
| Changes to the way road use is paid for | This has been assessed with an indicative distance-based road user charge in the longer term |
| Freight demand management | Measures to limit the growth of freight traffic, so that HGV traffic does not rise and van traffic grows only in line with population |

**Travel demand and mode share**

The delivery of the MTS would enable travel in London to increase, in line with expectations from draft new London Plan population and economic growth, by at least 5 million trips per day to 33 million in 2041 in a sustainable way. Within this increase, car percentage mode share is forecast to fall to from 37 per cent of all trips in 2015 to 33 per cent in 2021. There would be further reductions to 26 per cent in 2031, and finally 20 per cent in 2041. This is summarised in Figure 2.2.

Greater growth in population and employment in the draft new London Plan projections means that there are a greater number of total trips in the future compared to previous projections as reported in the draft MTS *Outcomes Summary Report*.

If the MTS is delivered, the revised draft new London Plan population and economic growth can be achieved with sustainable transport outcomes. The draft new London Plan and MTS make a sustainable, active and efficient mode share of 80 per cent achievable.

**Figure 2.2 Mode share and travel demand (number of trips) with MTS scenario**



Legend: Public Transport ■ Walk ■ Cycle ■ Car/taxi/phv
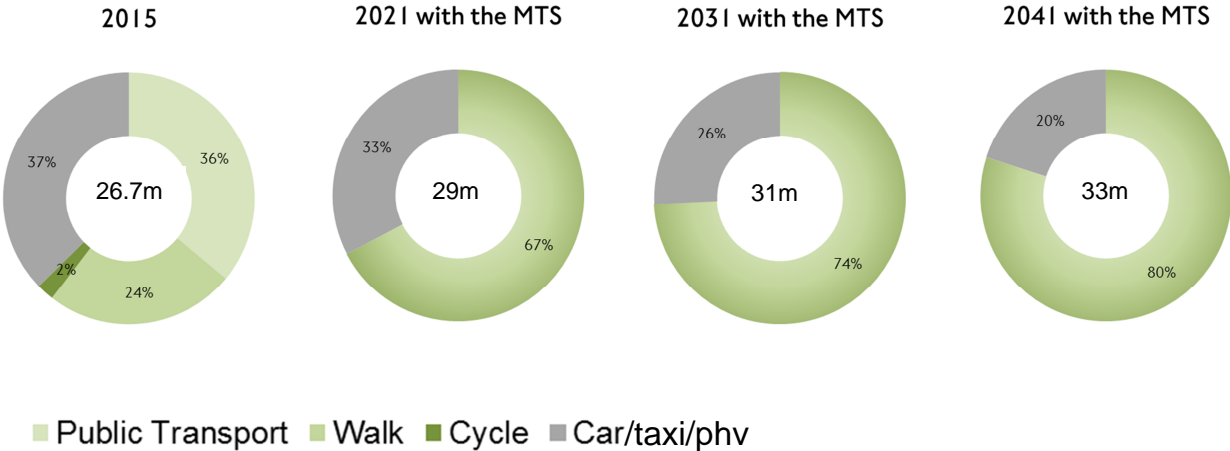
**Traffic and congestion**

In the core reference case, road traffic volumes are expected to grow modestly, at a rate slower than population growth. Traffic volumes are expected to fall in Central London by 4% as a result of reduced highway capacity and increased sustainable and active transport use, with growth concentrated in outer London (9% increase in traffic volumes) where there are fewer public transport options and car ownership and use is less constrained. Growth here is primarily driven by a rising population and growth in van traffic, which is forecast to form an increasing proportion of total motorised traffic.

The measures proposed by the final MTS deliver significant decreases in traffic in the morning peak, as shown in Figure 2.3. The greatest change is in inner London - a 27 per cent reduction. London-wide, the reduction in traffic in the morning peak is 14 per cent.

**Figure 2.3 Percentage change in morning peak vehicle kilometres, 2015 to 2041 in the core reference case and MTS scenario.**
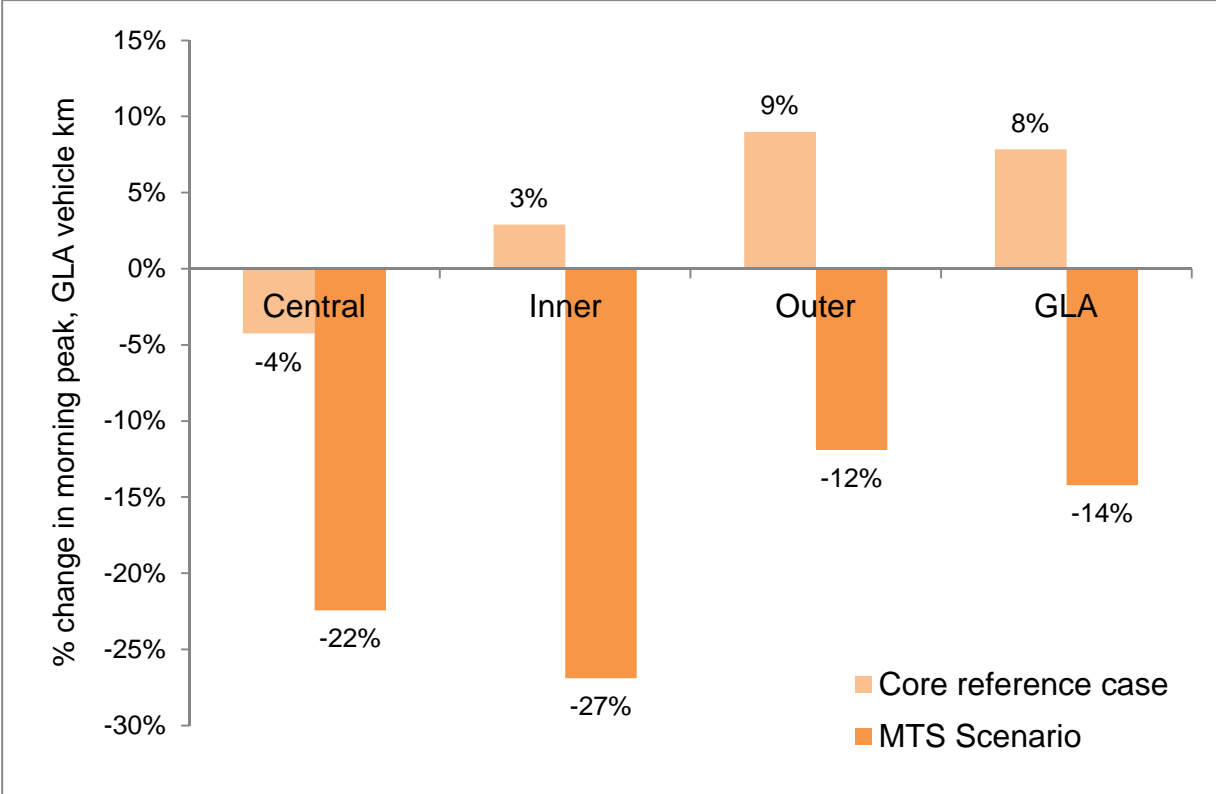


Highway capacity for general traffic in 2041 is lower in the core reference case compared to 2015 as a result of a range of changes, including growth in cycling, pedestrian priority and public realm schemes, which remove capacity for general road traffic. This, combined with increases in population and employment, means that congestion is expected to increase by 2041. Overall vehicle speeds in the core reference case are expected to decrease by up to 24 per cent in Central London from 2015 levels (Figure 2.4), with average vehicle speeds decreasing across London.

In the MTS scenario, fewer cars and shorter journeys mean that speeds are expected to increase across most of London, as shown in Figure 2.4. In Central London, very high levels of road space reallocation to sustainable and active modes means that speeds for general traffic slow, in inner London speeds remain around the same as now, and in outer London, average speeds rise from 28 to 30 kilometres per hour in the morning peak. In effect, reallocating road space to meet Healthy Streets objectives could be achieved while reducing delay at a London wide level.

**Figure 2.4 Change in London wide morning peak vehicle speed, 2015 to 2041.**
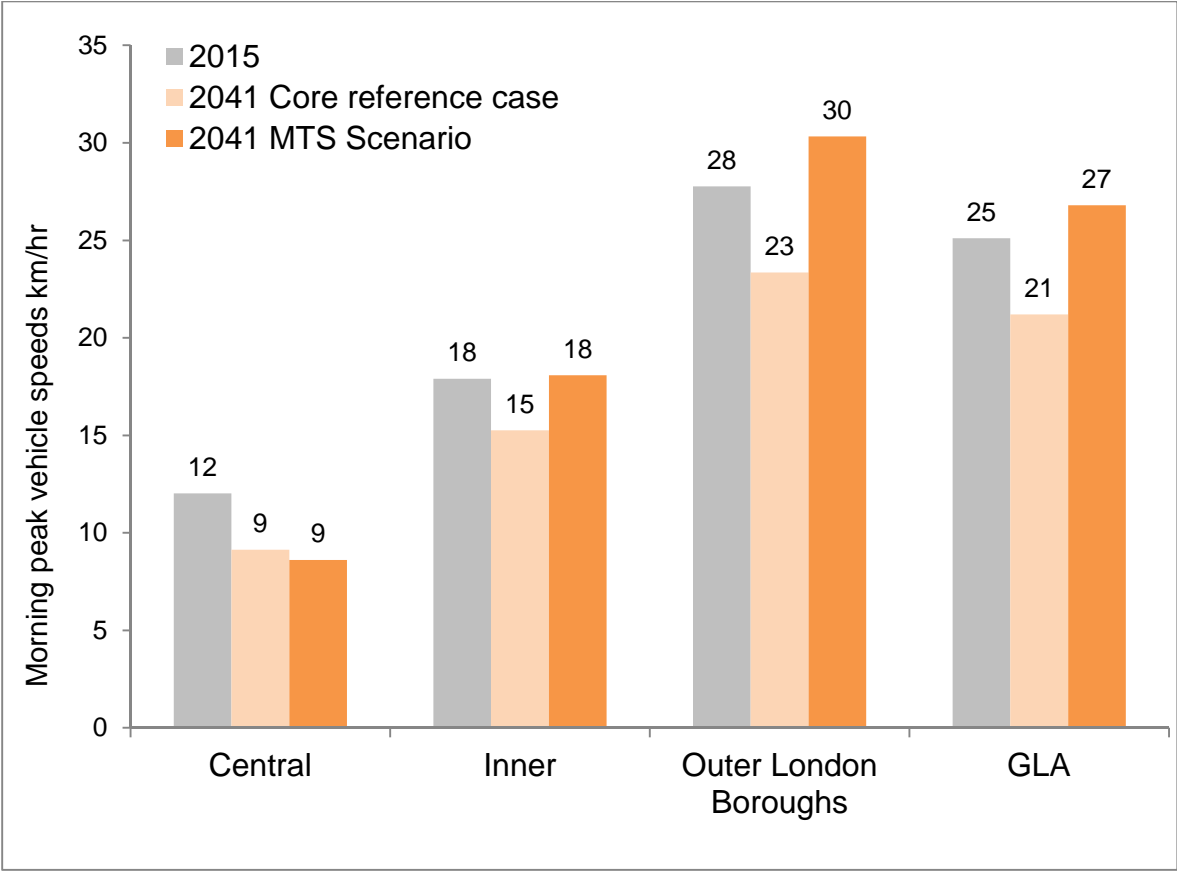


Traffic and congestion modelling in this updated core reference case and MTS scenario show similar results to those reported in the draft MTS *Outcomes Summary Report*.
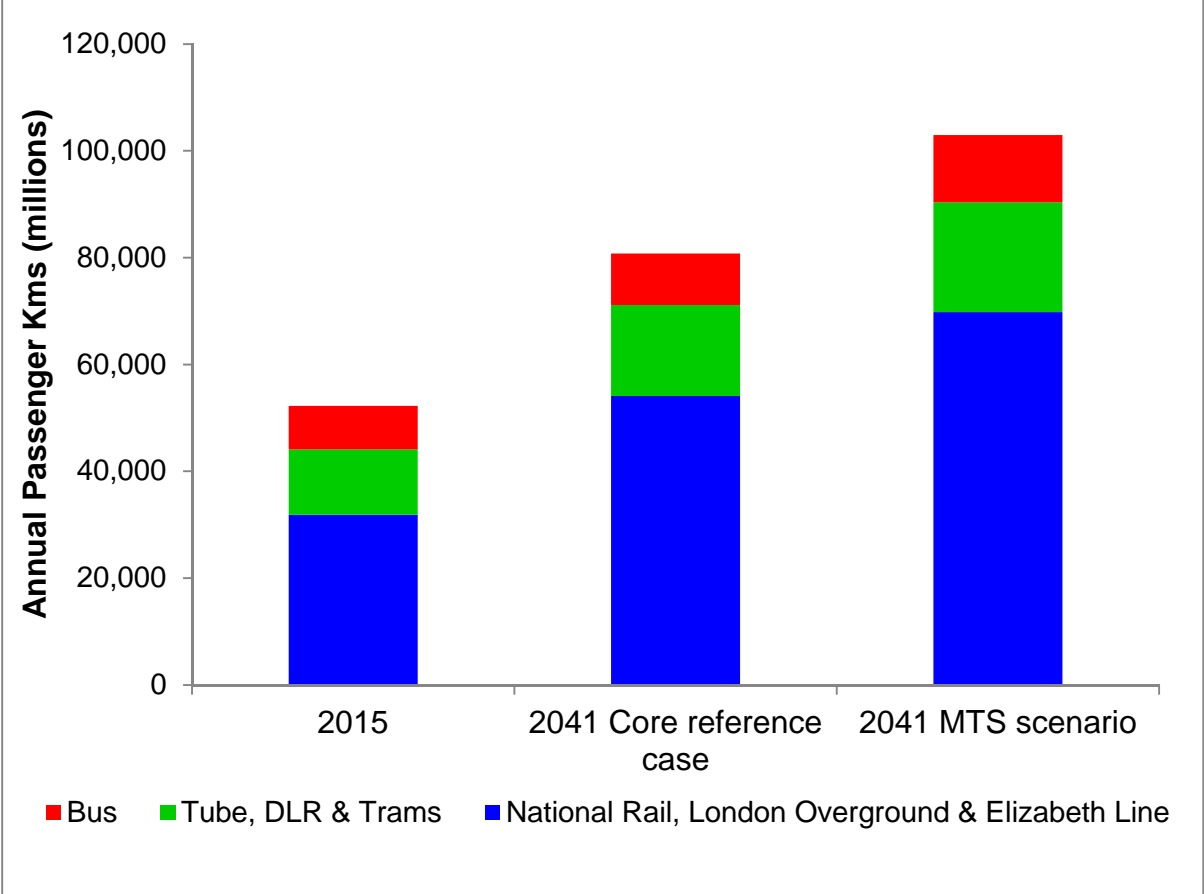
## Public transport use

Strong growth in demand for public transport, particularly for rail based modes, is expected between 2015 and 2041. The core reference case shows a 57% increase in rail and Underground passenger kilometres in London between 2015 and 2041, resulting from draft new London Plan growth and supported by extra capacity on the networks such as the opening of the Elizabeth Line.  Under current plans, bus patronage growth is forecast to be lower than rail growth, reflecting the expected impact of new rail capacity in Central London on bus demand.

The change in annual passenger kilometres by rail, bus and Tube from 2015 to 2041 in the London Plan core reference case and with the MTS scenario is shown in Figure 2.5. There is a near doubling of passenger kilometres from 2015 to 2041 in the MTS scenario as both infrastructure improvements and traffic reduction measures encourage more people to use public transport. The greatest increase is in rail from just over 30 billion passenger kilometres each year in 2015 to approximately 70 billion passenger kilometres in 2041. This is due to the planned introduction of the Elizabeth Line, Crossrail 2 and the London Suburban Metro. Tube passenger kilometres increase significantly due to the planned introduction of the deep Tube upgrades and the Bakerloo Line extension. Note that these forecasts assume higher mode shift from car to public transport than to active modes; in reality, the

implementation of the Healthy Streets Approach may lead to a greater shift to active modes than forecast, reducing public transport passenger kilometres somewhat and also bringing crowding benefits.

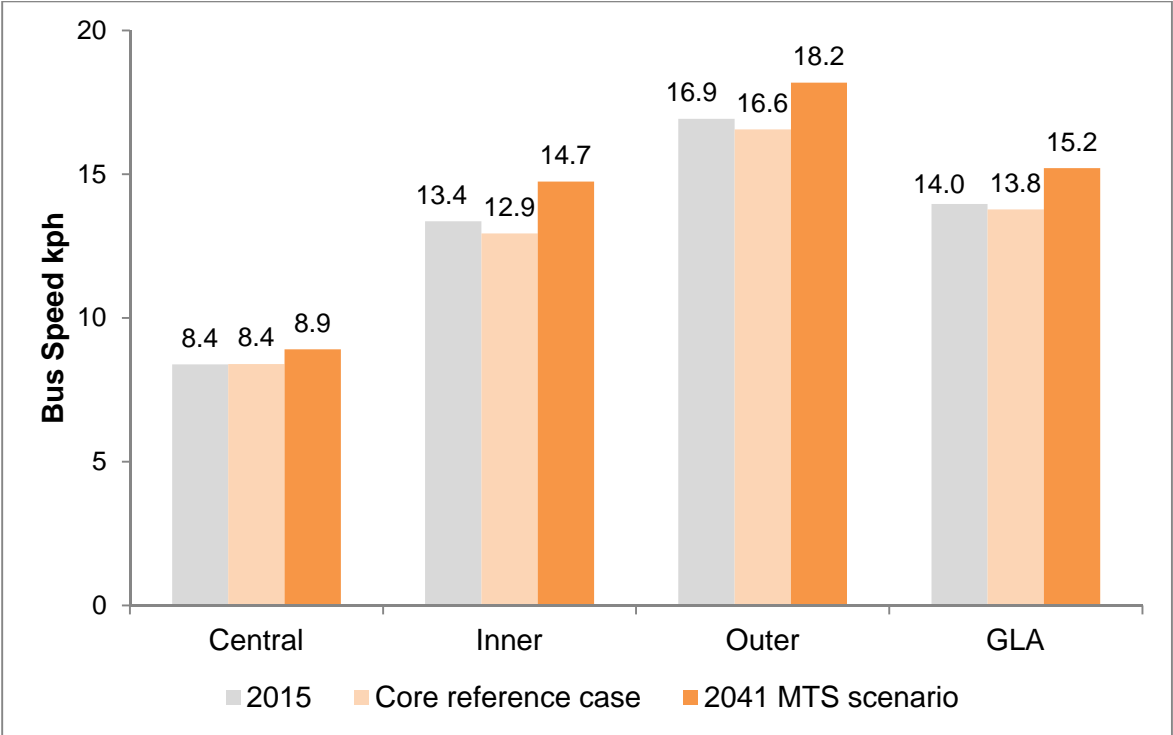**Figure 2.5 Change in annual passenger kilometres (millions), 2015 to 2041.**



Public transport modelled usage in this updated core reference case and MTS scenario show similar results to those reported in the draft MTS *Outcomes Summary Report*.

**Bus speeds**

The change in bus speeds from 2015 to 2041 is shown in Figure 2.6. In the core reference case road traffic slows from 2015 to 2041 with a detrimental effect on bus speeds. Unmitigated, planned changes to the road network in Central London would reduce general traffic and bus speeds. London wide bus speeds are projected to reduce from an average of 14.0 kilometres per hour in 2015 to 13.8 kilometres per hour by 2041 in the core reference case.

In the MTS scenario, buses benefit from stable or improved speeds for general traffic as well as the reallocation of road space to buses so that bus speeds improve London-wide to 2041. Despite slowing speeds for general traffic, bus speeds improve in Central London due to the reallocation of road space to buses. London wide bus speeds are expected to increase from 13.8 kilometres per hour in 2015 to over 15 kilometres per hour in 2041 in the MTS scenario.

**Figure 2.6 12 hour London-wide bus speeds.**



Modelled bus speeds in this updated core reference case and MTS scenario show similar results to those reported in the draft MTS *Outcomes Summary Report*. The bus speeds in this MTS scenario are slightly slower than in the draft MTS, but are still improved relative to 2015 and the core reference case.

## Crowding on rail and Underground

Demand for rail services will continue to rise after completion of the currently funded investment programme. Demand for public transport is projected to rise faster than supply from 2021 in the core reference case. Therefore crowding will worsen without further investment. Table 2.2 shows that, from 2015 to 2041, passenger kilometres travelled in severely crowded conditions (defined as links with more than 4 passengers standing per square metre) are expected to increase in the core reference case from 33% to 45% on rail and Underground. Figure 2.7 shows expected crowding levels in 2041 with funded investment and highlights that much of the Tube and rail network would experience crowding such that it would be effectively full throughout the entire morning peak.

Crowding on rail services drops as a result of the MTS scenario, with the proportion of public transport passenger kilometres travelled on crowded links in the morning peak reducing from 33 per cent of the total in 2015 to 29 per cent in 2041. This means that, for an average journey, passengers will experience less crowding, as shown in Table 2.2. If more trips were made by active modes than in the core forecast, and fewer by public transport, crowding would be reduced further.

**Table 2.2    Proportion of passenger kilometres on links with more than 4 passengers standing per square metre in the morning peak.**

| Mode | 2015 | 2041 core ref case | 2041 MTS scenario |
|---|---|---|---|
| All rail and Underground | 33% | 45% | 29% |
| National Rail, London Overground, Elizabeth Line | 29% | 39% | 28% |
| Tube & DLR | 41% | 56% | 31% |

The modelled proportion of crowded passenger kilometres in this updated core reference case and MTS scenario is greater than reported in the draft MTS. This is due to the increased travel demand from the greater growth in population and employment in the draft new London Plan projections, however the MTS scenario still shows a significant decrease in the proportion of crowded kilometres.

Figures 2.7 and 2.8 show forecast crowding on National Rail, Tube, DLR, London Overground and Trams in the morning peak in 2041 for the core reference case and the MTS scenario. Small differences in crowding compared to the draft MTS results are due to increases in the draft new London Plan population and employment growth, and differences in the distribution of growth across London.

# Figure 2.7    Morning peak crowding on rail and Underground services in London, 2041 core reference case
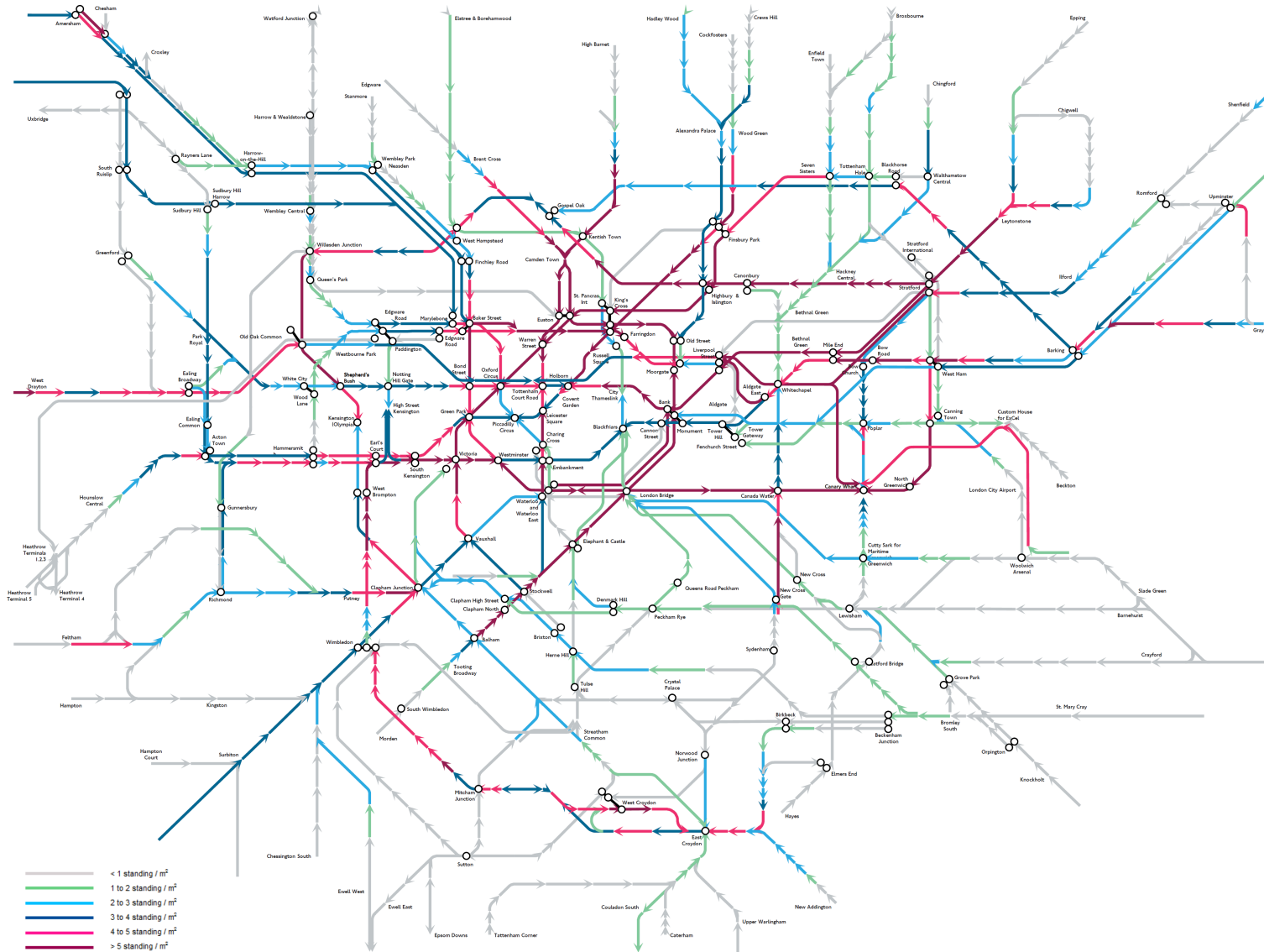


**Legend:**
- < 1 standing / m²
- 1 to 2 standing / m²
- 2 to 3 standing / m²
- 3 to 4 standing / m²
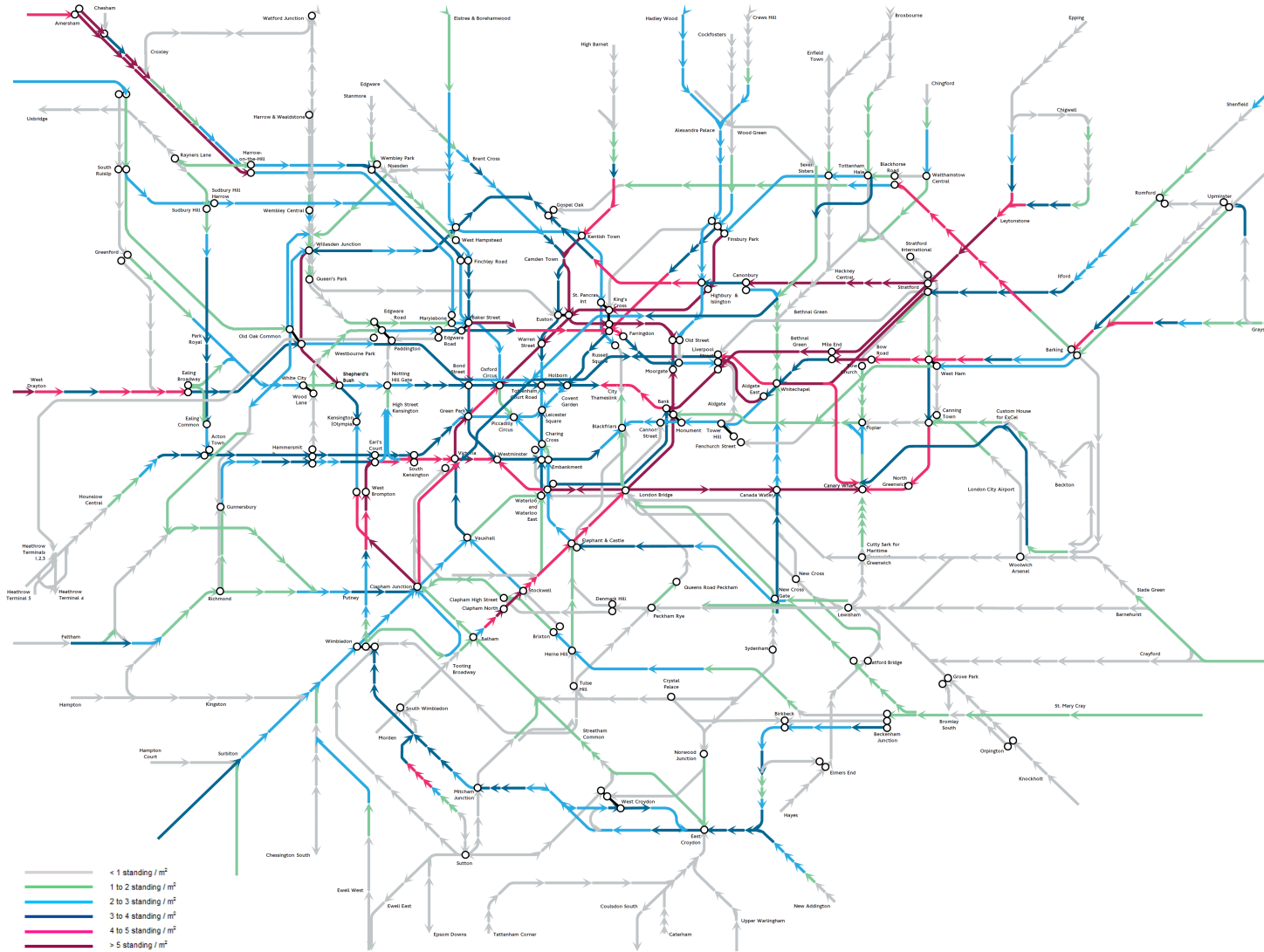- 4 to 5 standing / m²
- > 5 standing / m²

**Figure 2.8    Morning peak crowding on rail and Underground services in London, 2041 with London Plan growth + MTS**

**Emissions and air quality**

Figure 2.9 shows the 2021, 2031 and 2041 road vehicle emissions of the full MTS scenario against the 2013 baseline. Under this scenario, the whole bus fleet becomes electric or hydrogen powered by 2037, and the uptake of ultra-low emission vehicles across all vehicle types is in line with the trajectory required for all road transport to become fully zero emission by 2050.

This could deliver:

- A 72 per cent reduction in $CO_2$ emissions from transport (excluding aviation, 2013 base) in London by 2041, with road and rail transport on a clear trajectory to reach zero carbon by 2050.

- A 94 per cent reduction in road transport $NO_x$ emissions, and compliance with legal limit values for $NO_2$ levels on London's streets.

- A 53 per cent reduction in road transport $PM_{2.5}$ and 45 per cent reduction in road transport $PM_{10}$ emissions.

**Figure 2.9    Road vehicle emissions including vehicle emissions policy measures, 2013 to 2040.**
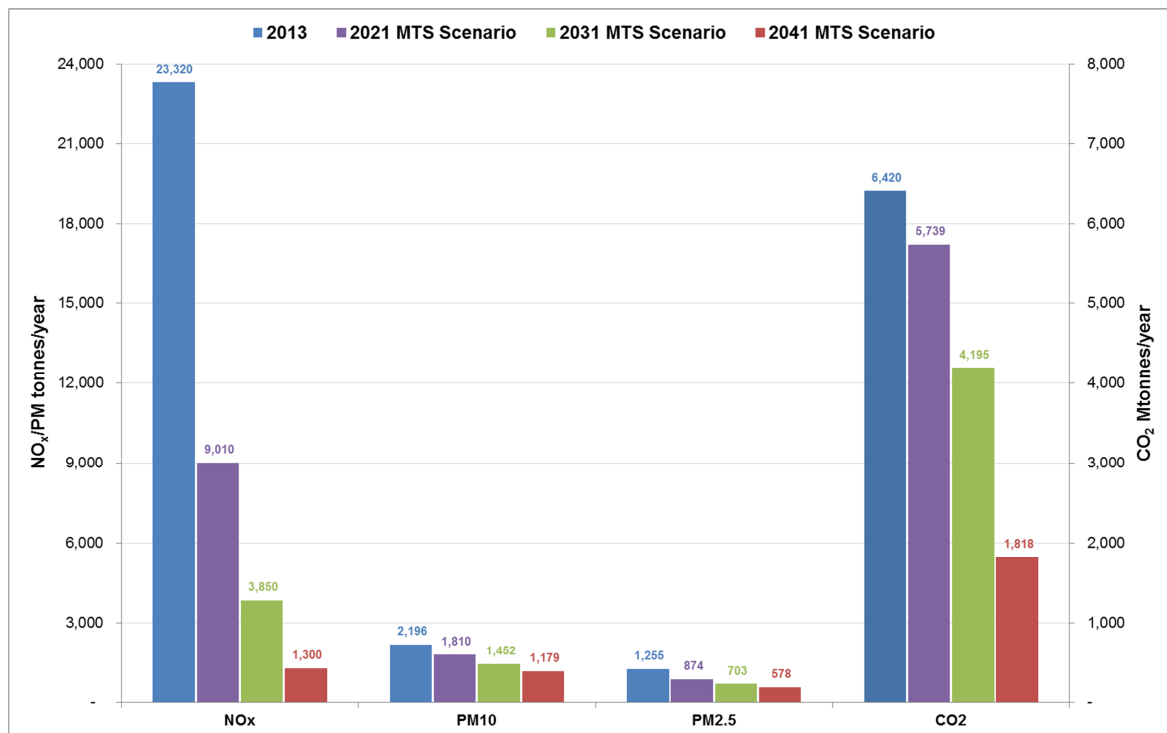
# 3. Conclusion

Since publication of the draft MTS in June 2017, the GLA has published new population and employment projections that form the basis of the draft new London Plan, and TfL have published the latest 2017 Business Plan.

The strategic modelling that was carried out to assess the impact and effectiveness of the draft MTS scenario has therefore been updated to assess the MTS scenario against a core reference case of draft new London Plan growth and schemes consistent with the 2017 TfL Business Plan.

The key impact of these updates is that future travel demand has increased as a result of greater population and employment growth to around 33 million trips per day in 2041. Crowding in the core reference case has also increased in areas where there is greater population and employment growth.

The impact and effectiveness of the MTS scenario relative to the updated core reference case is very similar to the results reported in the draft MTS *Outcomes Summary Report* which formed part of the draft MTS evidence base. The MTS scenario delivers a significant reduction in traffic and congestion, increase in public transport use, and decrease in crowding.

The MTS scenario is expected to result in fewer cars, quicker journey times for cars and buses and enable the reallocation of road space to achieve Healthy Streets.

**The key conclusion is that, with revised London Plan population and economic growth, the actions identified in the final Mayor's Transport Strategy make a sustainable, active and efficient mode share of 80 per cent achievable.**

# Appendix 1: Scheme List

| Scheme | Scenario* |
| --- | --- |
| Elizabeth line | Core reference case |
| TfL Business Plan Tube service improvements to Victoria Line | Core reference case |
| Four-Line Modernisation programme – Metropolitan, District, Hammersmith & City and Circle | Core reference case |
| Northern Line extension to Battersea | Core reference case |
| TfL Business Plan DLR capacity and service improvements including New Train for Docklands | Core reference case |
| TfL Business Plan London Overground capacity and service improvements including Gospel Oak to Barking Line electrification, new trains and increased frequency on North London Line | Core reference case |
| TfL Business Plan Tram service improvements including Dingwall Loop and increased frequency to New Addington | Core reference case |
| TfL Business Plan Bus service improvements including changes to bus routes to improve reliability and reduce congestion and additional services to support residential growth | Core reference case |
| HS2 phase 1 and associated National Rail changes, including mitigation of impacts at street level | Core reference case |
| Thameslink Programme | Core reference case |
| HLOS programme | Core reference case |
| Stratford–Angel Road service | Core reference case |
| Funded improvements to the cycle network | Core reference case |
| Healthy Streets portfolio in TfL Business Plan | Core reference case |
| ULEZ in Central London | Core reference case |
| Elizabeth Line 30 trains per hour | MTS scenario |
| Tram upgrades | MTS scenario |
| Bus priority network | MTS scenario |
| Low Emissions Bus Zones (including bus priority) | MTS scenario |
| Essex Thameside Increased frequency | MTS scenario |
| Watford DCs increased frequency | MTS scenario |
| Great Northern Frequency upgrade | MTS scenario |
| Healthy Streets Approach | MTS scenario |
| Longer term replacement of higher capacity trains on Jubilee and Northern lines | MTS scenario |

| | |
|---|---|
| Deep Tube programme – Piccadilly, Central, Bakerloo and Waterloo & City | MTS scenario |
| DLR upgrades | MTS scenario |
| London Overground frequency upgrades (network-wide) | MTS scenario |
| London Suburban Metro | MTS scenario |
| Brighton Mainline Upgrade (higher frequencies) | MTS scenario |
| West Anglia Main Line 4-tracking | MTS scenario |
| Increased rail capacity (other lines) | MTS scenario |
| Silvertown Tunnel and associated bus services | MTS scenario |
| Crossrail 2 | MTS scenario |
| Bakerloo Line extension to Lewisham and beyond | MTS scenario |
| Elizabeth Line extension east of Abbey Wood | MTS scenario |
| DLR extension from Gallions Reach to Thamesmead | MTS scenario |
| Barking Riverside London Overground Extension[+] | MTS scenario |
| Strategic interchanges at Clapham Junction, Lewisham, Stratford and Old Oak Common | MTS scenario |
| Other London Overground extensions (including Hounslow–Cricklewood/Hendon) | MTS scenario |
| Other new public transport river crossings in East London | MTS scenario |
| Tram extension to Sutton | MTS scenario |
| Develop bus network to meet existing and future demand | MTS scenario |
| HS2 phase 2 | MTS scenario |
| Reduce, re-time and re-mode deliveries and encourage more freight consolidation | MTS scenario |
| Healthy Streets Approach – further measures | MTS scenario |
| Traffic reduction measures | MTS scenario |
| ULEZ in inner London | MTS scenario |
| Longer term changes to the way road use is paid for | MTS scenario |

\* All schemes in the core reference case are also included in the MTS scenario.
[+] Scheme is in the 2017 TfL Business Plan but was not included in the core reference case due to timing of when the modelling work was completed.