Appendix 1

Delivering the Mayor's Transport Strategy 2021/22

June 2022

MAYOR OF LONDON

TRANSPORT FOR LONDON
EVERY JOURNEY MATTERS

Contents

Summary

This is the fifth annual progress report summarising the delivery of the Mayor's Transport Strategy and relevant elements of the London Environment Strategy.

The global coronavirus pandemic has had an unprecedented impact on how people travel in London and the longer-term implications of this for the city remain unclear. This report provides an analysis of key travel trends up to spring 2022 and covers the emergence of the Omicron variant and the initial transition of London's recovery towards a 'new normal'.

The pandemic has created uncertainty, challenges and opportunities to advance Mayoral ambitions for transport. Our focus remains on a shift towards active modes that improve Londoners' health, air quality, and reduce road danger and carbon emissions. However, as London emerges from the pandemic, the extent to which people's activities return to pre-pandemic patterns has yet to be fully realised. More people will potentially be working from home and buying goods and services online, potentially accelerating trends that existed before the pandemic. In addition the cost of living is rising, which will also impact when and how often people travel around the capital.

The pandemic also shone a light on inequalities in Londoners' health and intensified the need for transport to underpin an inclusive recovery. The policies embedded in the MTS provide strong direction, but an increased pace of delivery is required to ensure all parts of London can benefit equally. For the first time, this report uses a data-led MTS Tracker to provide a quantified summary of progress across all the key outcome areas over the last decade and compares this to potential trajectories for the next decade. These clearly illustrate where we need to focus our attention to meet Mayoral transport aims.

We will continue to optimise delivery by reviewing progress against the MTS outcomes and reflecting this in the prioritisation of our investment programme and Business Plan. Underpinning all of this, clearly, is the necessity of having stable and sufficient long-term funding. This will benefit not just London, but the entire UK.

1. Purpose and scope

This is the fifth annual progress report summarising the delivery of the Mayor's Transport Strategy (MTS).

The impacts of the global coronavirus pandemic on London and how Londoners travelled present both challenges and opportunities for the delivery of the MTS. This report details changes in travel behaviour since the pandemic, the position on the key outcomes in the MTS and the issues we need to consider as we seek to accelerate the delivery of this strategy.

The Mayor's Transport Strategy

The MTS, published in March 2018, outlines the Mayor's vision for transport in London. The overarching aim of the MTS is to reduce Londoners' dependency on cars and to increase the active, efficient and sustainable (walking, cycling and public transport) mode share of trips in London to an ambitious 80 per cent by 2041.

In addition to the overarching mode share aim, the MTS is focused on achieving nine outcomes under three themes:

Healthy Streets and healthy people

- **Active:** London's streets will be healthy, and more Londoners will travel actively;
- **Safe:** London's streets will be safe and secure;
- **Efficient:** London's streets will be used more efficiently and have less traffic on them; and
- **Green:** London's streets will be clean and green.

A good public transport experience

- **Connected:** The public transport network will meet the needs of a growing London;
- **Accessible:** Public transport will be safe, affordable and accessible to all; and
- **Quality:** Journeys by public transport will be pleasant, fast and reliable.

New homes and jobs

- **Sustainable:** Active, efficient and sustainable travel will be the best option in new developments; and
- **Unlocking:** Transport investment will unlock the delivery of new homes and jobs.

The London Environment Strategy

As Transport for London (TfL) we have a pivotal role in delivering the London Environment Strategy (LES) as published in May 2018. In addition to measures set out in the MTS for environmental improvements to the transport system, including the Ultra Low Emission Zone (ULEZ), we are largely responsible for significant elements within the LES including

responsible procurement, reducing waste, our energy strategy, climate change adaptation, work to accelerate the reduction in CO_2 emissions and delivering an increase in green infrastructure and a net-gain in biodiversity.

The London Plan

The London Plan 2021 is the Spatial Development Strategy for Greater London. It sets out a framework for how London will develop over the next 20-25 years and the Mayor's vision for Good Growth. The London Plan is part of the statutory development plan for London and directly informs decisions on planning applications across the capital. Borough Local Plans should conform with the London Plan to ensure that the planning system for London is consistent with strategic objectives.

The current London Plan has the highest housing target London has ever had, at 52,000 new homes a year. It embeds active, efficient and sustainable travel in London through promoting high-density mixed-use sustainable development with associated public transport investment and a restrictive approach to car parking provision.

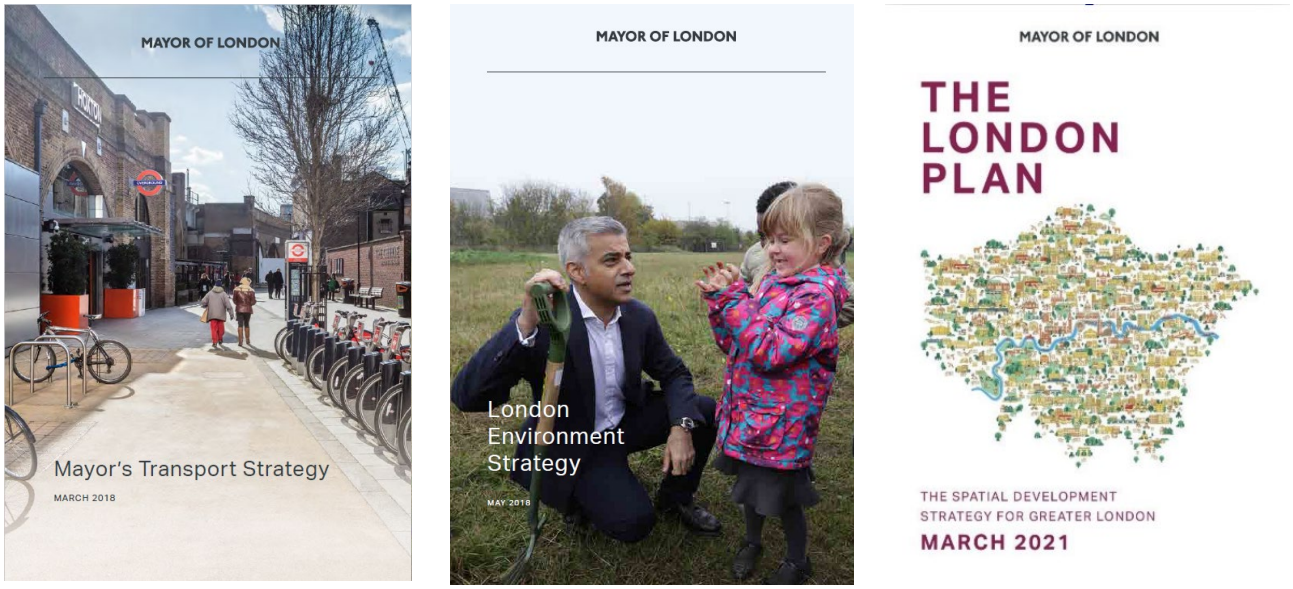

Figure 1. The Mayor's Transport Strategy, London Environment Strategy and the London Plan

TfL Vision & Values

The TfL Annual Scorecard tracks progress against strategic business objectives and has been recently redesigned to align with our new Vision to be a strong, green heartbeat for London. To realise this new Vision, it is important we embed Values which actively support the delivery of the MTS by us and our partners.

Our Vision & Values are aligned to the MTS, including delivering our Vision Zero safety ambitions, our ambitions for decarbonisation and air quality and improving the sustainable mode share of trips in London. Everything we do as a business contributes towards achieving the long-term goals of the MTS, but the practical steps we need to take are now

organised into four Roadmaps – Colleague, Customer, Finance and Green – all underpinned by our foundation of strong day-to-day service delivery.

MTS Tracker

We report progress on delivering each MTS outcome via the Commissioner's reports to the Board, the annual Travel in London report, and this annual MTS update to the Board. We have also embedded many of the MTS outcomes in the TfL Scorecard and Visions & Values. However, we also recognise many of the outcomes are not suitable to tracking in an annual scorecard. Having a detailed, technical, evidence-based assessment of the progress being made towards the MTS outcomes improves transparency and, in March 2021, we committed to the Board that we would develop a separate data-led MTS Tracker. The purpose of this tracker is two-fold; to act as an in-year performance management tool and to provide strategic context for the reporting of projects, initiatives, and programmes across the nine MTS outcomes.

The 12 measures within the MTS Tracker are shown in Table 1.

Table 1. MTS Outcomes and Tracker measures

Outcome	Proposed Measure	MTS 2041 Aim
Mode Share	Percentage of trips undertaken by active, efficient and sustainable modes	80% of trips
Active	% of Londoners doing 20min active travel per day	70% of Londoners
Safe	Number of people killed or seriously injured on London's roads	Zero
	Number of customers killed or seriously injured on TfL services	Zero
Efficient	Number of car trips crossing cordons in central, inner and outer London	3 million (c.30%) fewer daily trips
Green	Average roadside NO_2 concentration in central, inner and outer London	60-70% reduction, equivalent to 94% emissions drop
	All CO_2 emissions from London's transport network	72% reduction – potential for more ambitious aim now
Connected	% of Londoners living within 400 metres of a bus stop	Not directly in MTS, but assumes it is maintained at current high level
Accessible	Additional journey time by step-free routes	50% reduction

Outcome	Proposed Measure	MTS 2041 Aim
Quality	Percentage of rail travelled km in crowding above 2 persons per sq. metre	10-20% reduction
	Average bus speed (within safety and speed limits)	5-15% improvement
New Homes & Jobs	Proportion of population living in PTAL 4 or higher, in Greater London and Opportunity Areas	36% for Greater London 56% for Opportunity Areas (2030)

In our MTS tracker, the progress graph for each outcome illustrates five elements as shown in Figure 2.

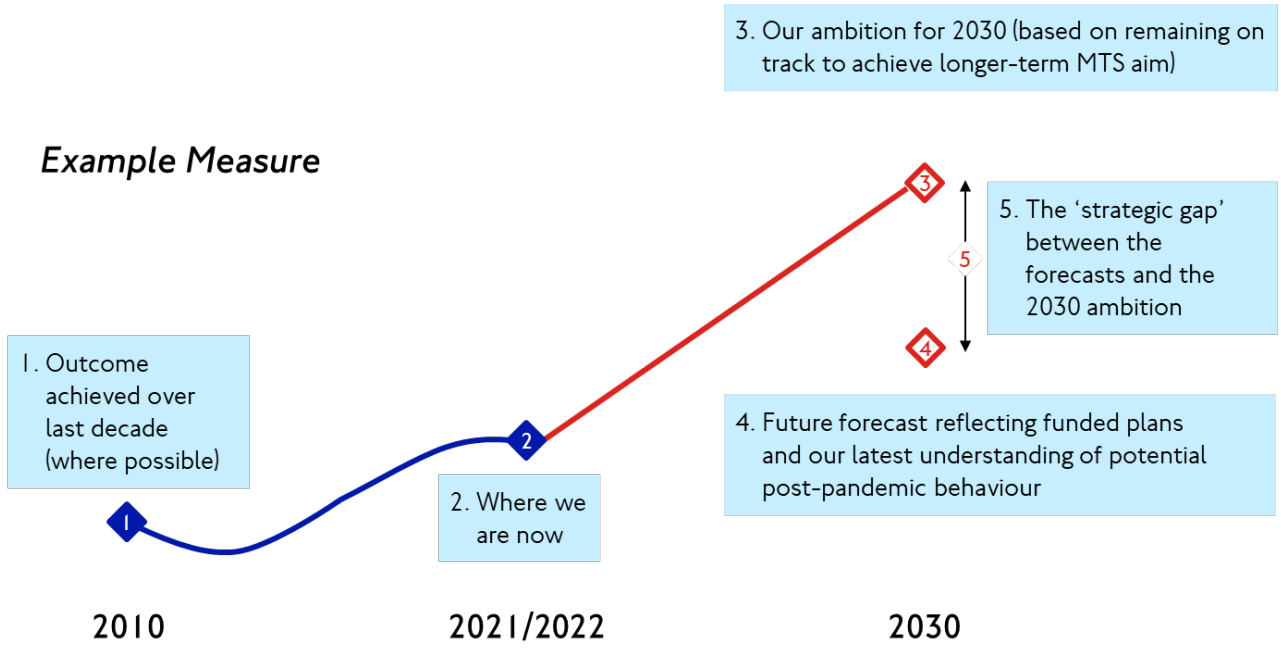

Figure 2. The five elements of the MTS Tracker measure

This MTS annual update covers each of the MTS outcome areas and outlines within section 3 how activities across the previous year have supported our longer-term ambitions. Where a 'strategic gap' has been identified, we discuss future challenges in section 4 and how updated policies or new services, schemes or infrastructure may accelerate the delivery of the MTS.

2. Recent patterns of travel demand

The pandemic significantly affected how people have travelled in and around the capital, and the longer-term implications of this are still being assessed. These changes to travel, albeit temporary, revealed many insights that are relevant to current policy and overall delivery of the MTS. At the time of writing, while all formal pandemic restrictions have been removed, demand on the principal public transport networks remains materially below pre-pandemic levels. It is also becoming clear that some travel behaviours, catalysed by the pandemic, are tending to persist into the post pandemic period, for example hybrid working, more living and working locally, and a range of challenges relating to the increasing cost of living are likely to be factors affecting the pace of the recovery for the foreseeable future.

This presents both challenges and opportunities for our recovery planning. The aims, outcomes, and policies of the MTS – in particular, the need to enable continued mode shift – are essential to avoid a car-led recovery. The MTS continues to shape our response and the boroughs' response to the recovery phase for the transport network.

Impact of coronavirus pandemic travel restrictions

The immediate pandemic impact from March 2020 on travel demand is well known and the key changes for London Underground, bus and traffic levels on the Transport for London major road network (TLRN) are shown by month from March 2020 to April 2022 in Figure 3.

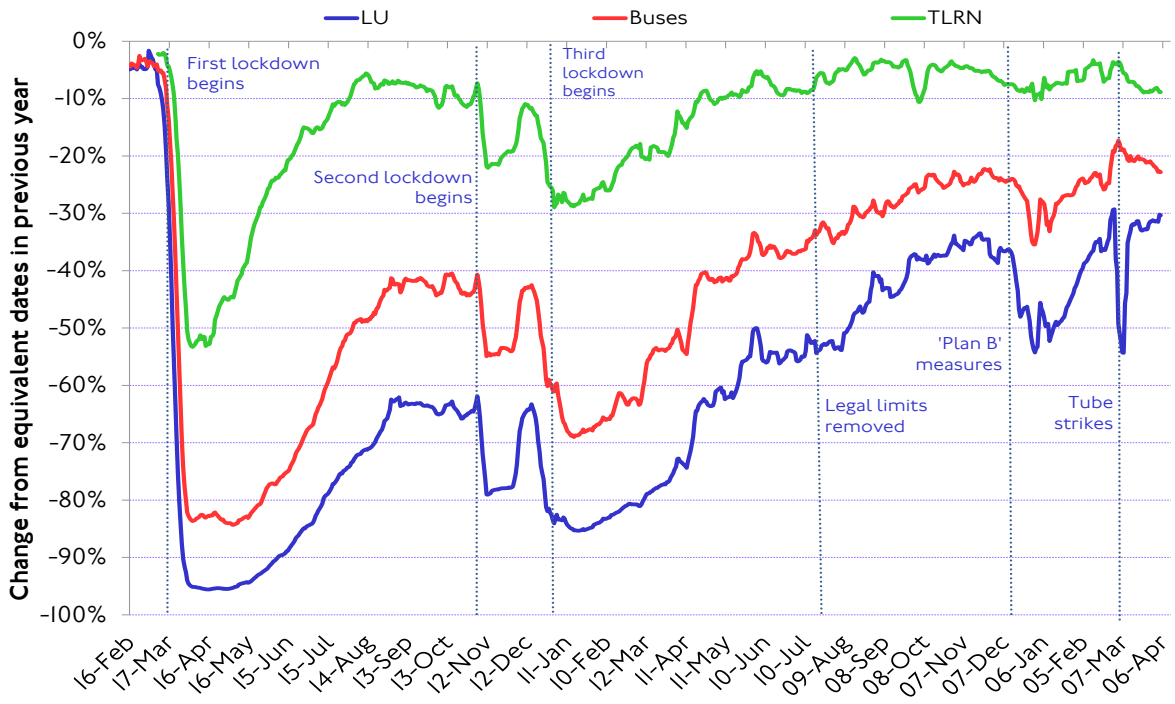

Figure 3. Change in demand on the main transport networks, 7-day moving average. Relative to equivalent period in 2019. Source: TfL.

At the low point, London Underground demand was just four per cent of normal. Bus demand fell to 16 per cent of normal. Major road traffic, however, was relatively more resilient, falling to 47 per cent of normal. The recovery has gone through several phases, often interrupted with further lockdowns and subsequent recoveries. Demand on the bus and London Underground networks had been gradually returning towards pre-pandemic levels from March to November 2021, as restrictions were eased throughout the year. The emergence of the Omicron variant in late November led to re-introduction of certain measures, including working from home, in the government's 'Plan B', although with a proportionally smaller impact on overall demand.

Since 'Plan B' measures ended in January 2022, demand has returned to both the bus and Underground networks, initially at a rapid rate, reaching a high point of 83 per cent on buses and 71 per cent on the Underground (as weekly averages), both the highest levels since early 2020.

National Rail demand, at the UK level, followed a similar pattern to that of London Underground, with a gradual return of passengers during 2021 as restrictions were lifted, reaching 70 per cent of 2019 levels before 'Plan B' measures were introduced in December 2021. The trends seem to indicate that the proportionate recovery of National Rail to, from, and within London is slower than the national pattern. The emerging hybrid working model of two to three 'office days' per week is also at odds with the current National Rail fares structures, which the industry acknowledges is overdue reform.

With the eventual reduction in coronavirus cases, and the bedding in of hybrid working patterns, we expect to see continued gradual growth over the coming months. However, it is clear the recovery still has a way to run before firm judgments can be made about ultimate demand levels, and contemporary conditions are still characterised by great volatility in the external factors affecting travel demand.

Active, efficient and sustainable mode share

During relatively normal years, the overall mode share varies little by quarter. However, with the impact of the pandemic the overall changes in travel demand and mode share have often been significant. We have therefore analysed this every quarter and more detail is supplied in Figure 4.

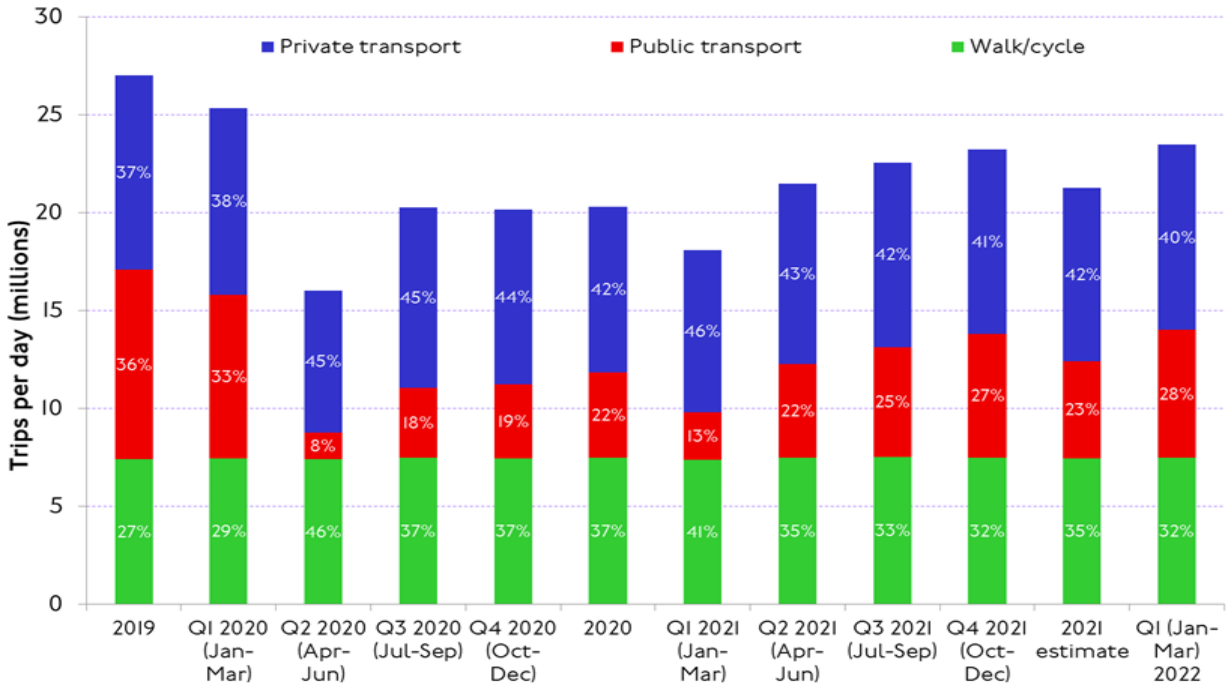

Figure 4. Estimated mode shares, 2019-2022. Source: TfL.

During 2021, public transport mode shares have gradually increased in line with the relaxation of restrictions, rising from 13 percent to 27 per cent of trips over the year, compared to 36 per cent prior to the pandemic.

Walk and cycle mode shares have fallen from 41 per cent to 32 per cent as overall trips by other modes have increased, although total numbers of trips have remained relatively stable with cycling remaining higher than pre-pandemic. Also, as public transport demand has increased it is important to note that such trips involve active travel stages that are not counted separately in this statistic. Cycling flows show a high level of resilience during the pandemic and point towards positive increases in cycling as part of the recovery.

The gradual increase in public transport trips, coupled with high levels of walking and cycling has led to an increase in the active, efficient and sustainable mode share measure, which at 60 per cent in quarter one 2022 is at its highest level since before the pandemic. However, the measure remains three percentage points below pre-pandemic levels in 2019, and it will not return to this level until public transport trips more closely approach their pre-pandemic levels.

The private transport mode share has been decreasing gradually over the last year and stands at 40 per cent in the latest quarter. This is still higher than the pre-pandemic level of 37 per cent.

Focus on: Impact of fuel price rises on private car travel

Fuel prices were relatively stable at the start of 2022, with unleaded petrol prices increasing by around three per cent between the start of January and the end of February, from 144.8 pence per litre to 149.2 pence per litre.

However, following the Russian invasion of Ukraine at the end of February, fuel prices have increased more rapidly, and reached a high of 165.4 pence per litre in the middle of March. Following the reduction in fuel duty by five pence per litre, fuel prices fell, but remain around 12 per cent higher than at the start of the year.

Following the steep rise in fuel prices, traffic flows started to fall, and are currently around 2.5 per cent lower than in early January. However, seasonal factors complicate interpretation. In the last week of March, traffic flows were down by 5.6 per cent compared with the end of February, following an 8.5 per cent rise in unleaded petrol prices over the same period.

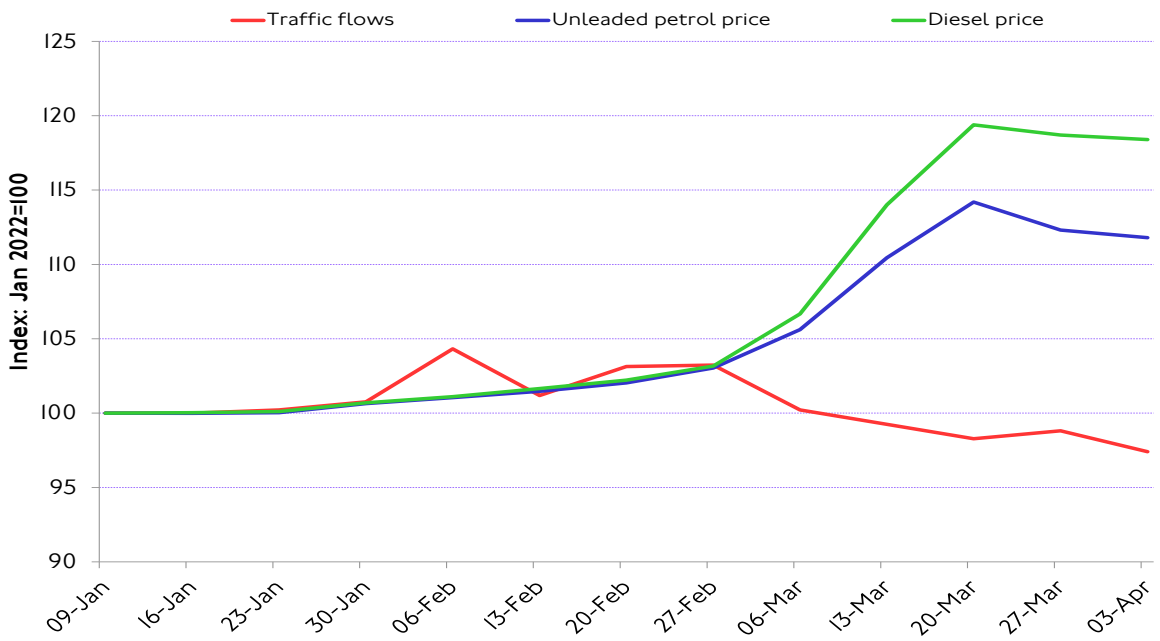

Figure 5. Change in weekly fuel prices and traffic flows, 2022. Source: TfL.

Taking seasonal fluctuations into account, and prior to the reduction in fuel duty, the relative observed reductions in demand were of the order of one to two per cent. The extent to which these reductions persist and intensify will of course depend on how fuel prices move over the coming months, which is not readily predictable.

Travel behaviours

The trends described above reflect new behaviour, by both individuals and businesses, responding initially to formal and informal pandemic restrictions, but more recently reflecting potentially more permanent adaptations to the post-pandemic world. It is crucial that these are understood and that appropriate responses are developed, if adverse

effects on the vitality of London and its transport networks are to be minimised, and if developments that are favourable to the Mayor's transport goals are to be captured. The following illustrates some of these contemporary challenges and opportunities.

The pandemic significantly reduced overall mobility in London. Figure 6 shows the average per person daily trip rate for London residents. Although reducing the need to travel is one way of increasing the efficiency of London's networks and minimising adverse impacts, the scale of pandemic reductions was both unprecedented and, needless to say, necessary but extremely difficult.

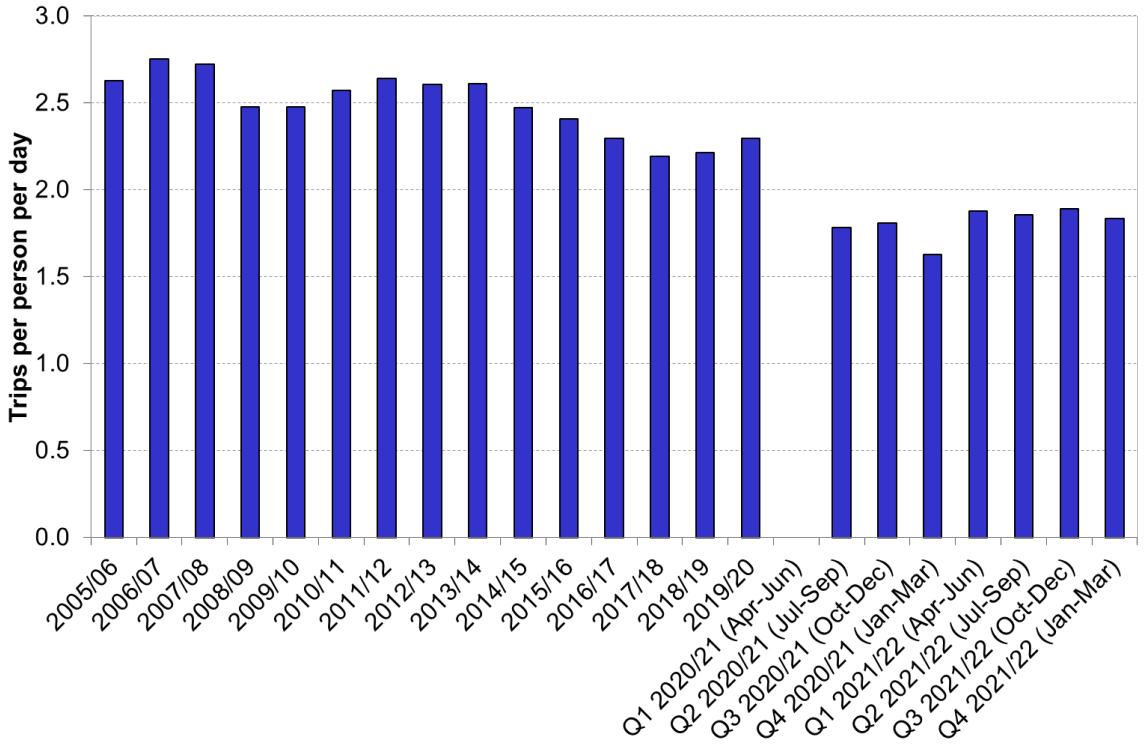

Figure 6. Trip rates (average trips per day) by adult London residents. Note: Q4 2021/22 (Jan-Mar) data is provisional. Source: TfL.

In terms of origin and destination patterns, a key feature of the pandemic was the relatively greater shortfall of travel from, to and within central London, compared to outer London. This nominally reflected the greater number of office-based employment in central London, which for lengthy periods was almost entirely home-based. Concerns of crowded conditions and loss of trips that might usually be 'tagged on' to a work trip, such as a linked trip to a restaurant, were also factors, which remain of concern with hybrid working in the post-pandemic period.

Travel volumes in outer London remained relatively more resilient, as people 'stayed local', reflecting lockdown restrictions, lack of commuting and the availability of local services such as for food shopping. This had an impact on average trip distances, which fell, although perhaps not as significantly as might have been expected overall. Nevertheless, the greater element of 'localism' displayed during the pandemic could be viewed as a positive development, albeit to be achieved in future through choice and not to the detriment of central London.

Changes to people's daily travel, notably reduced commuting, led to changes to the timing of trips, and this remains a feature of concern in the post-pandemic period. Specifically, there is evidence that a pre-pandemic tendency to not commute on Mondays and Fridays has become significantly more entrenched as we enter the post pandemic period, with implications for public transport revenues and operational efficiency. There is also evidence of a more complete demand return at off-peak periods and weekends, which offers scope to embed this 'leisure-led' recovery by cultivating new sources of demand.

Scenario-based planning

The duration and scale of the impacts of the pandemic have created a lot of uncertainty for transport authorities to consider. To help address uncertainty, we developed a scenario-based approach to planning. Traditionally we have used a single Reference Case, which is our best estimate of 'status quo' future demand based on projections of key trends, such as expected population growth. To reflect pandemic uncertainty, we developed five scenarios reflecting the different directions that London's recovery could take up to 2031, using both expert and stakeholder input. Scenarios are 'stories' that reflect a variety of potential futures – they are not expectations or forecasts.

The pandemic demonstrated that it was no longer appropriate to continue solely with a single Reference Case. We therefore developed a Hybrid Forecast, which is to be used alongside the Reference Case. Conceptually, the Hybrid Forecast reflects the emerging evidence of what is likely to be a definitive transport recovery in the aftermath of the pandemic. The evidence at spring 2022 continues to suggest that the Hybrid Forecast remains the most appropriate estimate of the medium-term impacts of the pandemic on travel demand in London. Further details of this work can be found in the Travel in London report 14.[1]

[1] https://content.tfl.gov.uk/travel-in-london-report-14.pdf

3. Delivery over the last year

Healthy Streets & Healthy People

Healthy Streets means creating streets that work for everyone and are accessible, safe and inclusive. Attractive street environments encourage active travel, and a well-planned street network ensures that space for buses is prioritised, with high-quality public transport connections that provide appealing alternatives to car use.

Reducing Londoners' dependency on cars will be an essential component in realising all these benefits. Although London had made real progress pre-pandemic in encouraging people to switch from using the car to active, efficient and sustainable alternatives, many more car journeys could still be made in other ways.

Mode Share

A central outcome of the MTS is for 80 per cent of all trips made in London to be by active, efficient and sustainable modes by 2041. Figure 7 shows that as we recover from the pandemic we need to reverse the car-led trend of the pandemic and reinstate passenger confidence in travel by public transport (among other initiatives) to meet our mode share aims. .

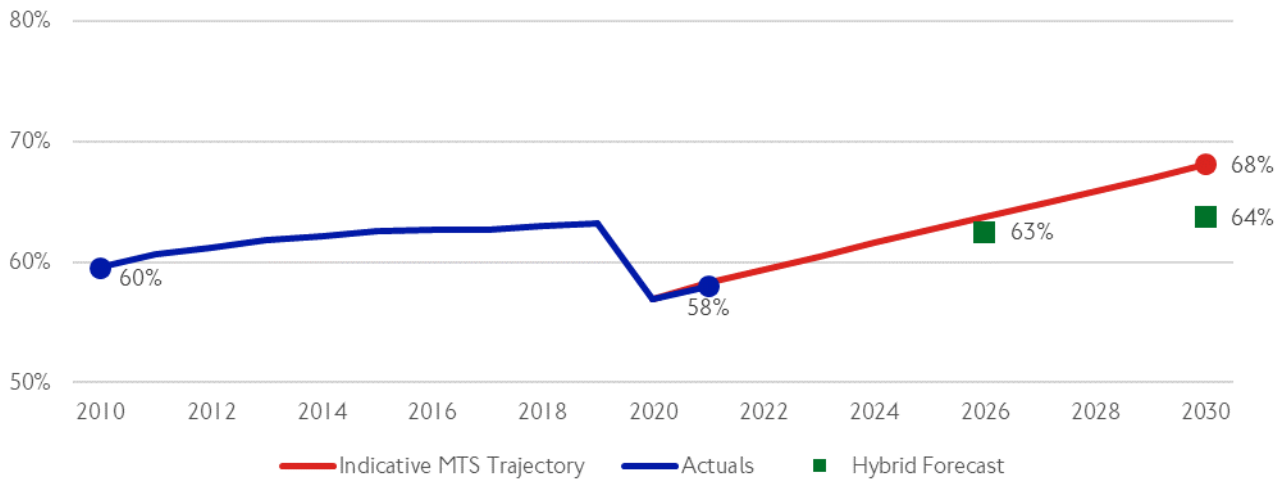

Figure 7. MTS Tracker for Mode Share: Proportion of trips made by active, efficient and sustainable modes. Source: TfL.

There are four other outcomes related to this Mayoral priority area:

- **Active –** London's streets will be healthy and more Londoners will travel actively
- **Safe –** London's streets will be safe and secure
- **Efficient –** London's streets will be used more efficiently and have less traffic
  Green – London's streets will be clean and green

Active

A priority within the MTS is to increase the proportion of Londoners who travel actively so that, by 2041, all Londoners will achieve the minimum requirement of 20 minutes of active travel each day that is needed to stay healthy. This will deliver significant health and wellbeing benefits for Londoners and contribute to the Mayor's mode share aim.

In 2021, 35 per cent of Londoners achieved 20 minutes of active travel, a decrease of seven percentage points on 2019 (Figure 8). This decline comes despite recent TfL data showing a large increase in the proportion of journeys made on foot and by cycle during the pandemic as a consequence of the impact on overall travel. The overall decline can partly be attributed to reduced trip rates, particularly public transport which almost always includes an active stage, as well as trips being shorter as people 'stayed local' following government advice.

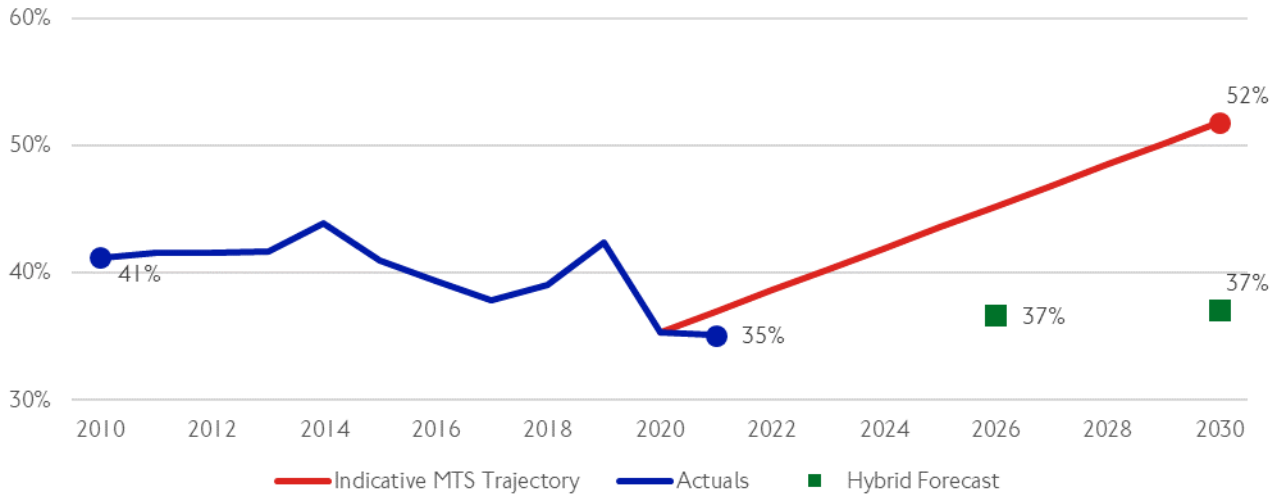

Figure 8. MTS Tracker for Active: Proportion of Londoners aged 20 and over who achieve 20 minutes of active travel per day, observed 2010 - 2020, forecast to 2030 (Hybrid) and MTS target trajectory. Source: TfL.

There is significant variation on this metric across the capital and Figure 9 sets out the data by borough. In general, activity levels are higher in inner London, where densities are higher and there is more opportunity to include active travel in a daily routine. Three outer London boroughs are highlighted where significant investment in walking and cycling infrastructure has enabled an increase in the level of active travel in these boroughs.

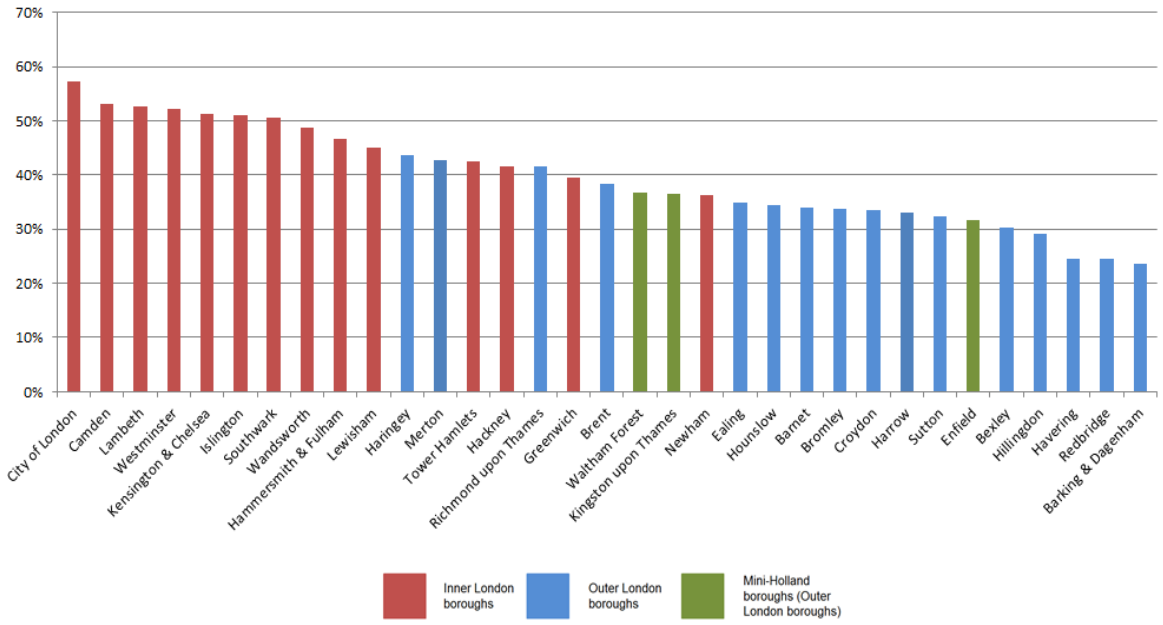

Figure 9. Proportion of Londoners aged 20 and over who achieve 20 minutes of active travel per day, observed 2016/17 – 2018/19 by borough. Source: TfL.

Healthy streets investment to support active travel

Low Traffic Neighbourhoods (LTNs) and School Streets are two key programmes we have used to support more active travel during the pandemic. To date, more than 100 LTN schemes have been delivered across London, making it safer and easier for residents and families to get around their local area on foot and by bike.

Focus on: Impact of Low Traffic Neighbourhoods on active travel

LTNs seek to remove through traffic from a local area to create street environments that are safer and more pleasant for people to walk, cycle and access public transport, while retaining vehicle access for residents and essential services. This is not a new concept, however the pace of delivery across the capital has increased significantly over the last two years.

LTNs have interconnected impacts but evidence suggests that these are largely positive and most benefits become apparent in the longer term. LTNs implemented in London have been shown to increase active travel levels of local communities and can play an important role in helping Londoners become more physically active during the recovery phases of the pandemic and beyond.

Data from the Waltham Forest LTNs provides the best long-term evidence on the impacts on active travel in London. Residents here increased their walking and cycling relative to people living elsewhere in outer London (by 115 minutes per week for walking and 20 minutes per week for cycling after three years).

People living in non-car owning households in London have been shown to be two to three times more likely to travel actively.[2] Levels of car or van ownership decreased in the Waltham Forest LTN by seven per cent after three years (relative to a control group).

Data from TfL commissioned surveys in Figure 10, also shows increased active travel levels as a result of LTN implementation. LTNs also support our ambition towards Vision Zero and have been shown to reduce collisions inside LTNs with no increase in collisions on boundary roads which should encourage more active travel.

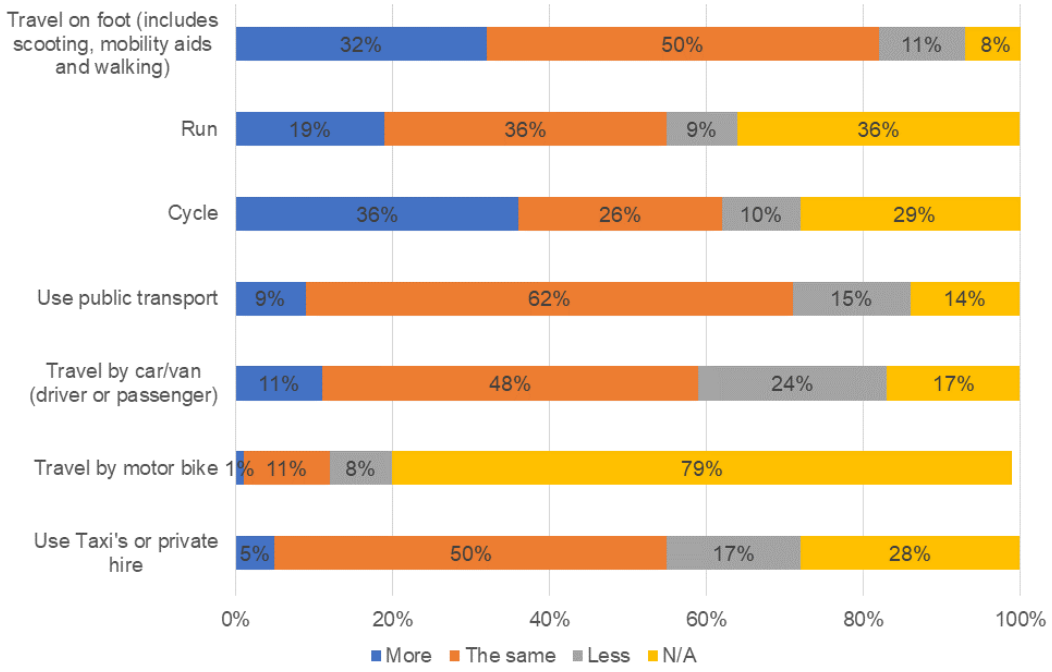

Figure 10. Percentage of respondents who report that the LTN had encouraged them to change their travel behaviour, September 2020. Source: TfL.

Pan-London analysis conducted by the University of Westminster using police data showed the traffic-related injuries within LTNs reduced by half in comparison to the background trend, with no statistically significant change in injuries on LTN boundary roads. Another study specific to the borough of Waltham Forest saw reductions of 70 per cent in road traffic injury risk per trip on roads within LTNs for pedestrians, cyclists, and car occupants, with no negative impact on collisions on LTN boundary roads. LTN implementation can be controversial, although pan-London support for LTNs outweighs opposition. Our Customer Pulse survey (Jul-Aug 2021) revealed that 44 per cent of Londoners agree with the creation of LTNs in London, while 23 per cent opposed.

[2] Fairnie G.A., Wilby D., & Saunders L. (2016) Active travel in London: The role of travel survey data in describing population physical activity. Journal of Transport & Health, Volume 3, Issue 2, Pages 161-172

In addition, over 400 School Streets have been introduced across the capital since the start of the pandemic – 372 funded with support by us and the Greater London Authority (GLA). Including pre-pandemic delivery, that brings us to more than 500 School Streets in place across London. In 2021/22 delivery was largely focussed on adapting and improving original schemes and learning lessons from the rapidly rolled-out London Streetspace Plan schemes of 2020. As of 2021/22, approximately 20 per cent of primary schools now have a School Street and four per cent of Londoners live in a new Low Traffic Neighborhood.

Figure 11. School Streets in London Boroughs of Redbridge (left) and Southwark (right). Source: TfL.

Our focus on schools means that we have already exceeded one of the two key targets in our Walking Action Plan – to increase the proportion of trips to primary schools made by walking to 57 per cent by 2024. Our latest estimates indicate that 58 per cent of primary school children reported walking as their main mode of transport (2017-2019). We have now set a new stretch target of 60 per cent of primary school children walking to school by 2026.

Cycling infrastructure

For cycling, our investment has led to the highest, safest and most inclusive levels of cycling on record. Significant expansion of the cycle network means that 20 per cent of Londoners now live within 400 metres of our Cycleways network – see Figure 12. This means we are making good progress against one of the two key targets in our Cycling Action Plan – to increase the proportion of Londoners living within 400 metres of the London-wide cycle network to 28 per cent by 2024.

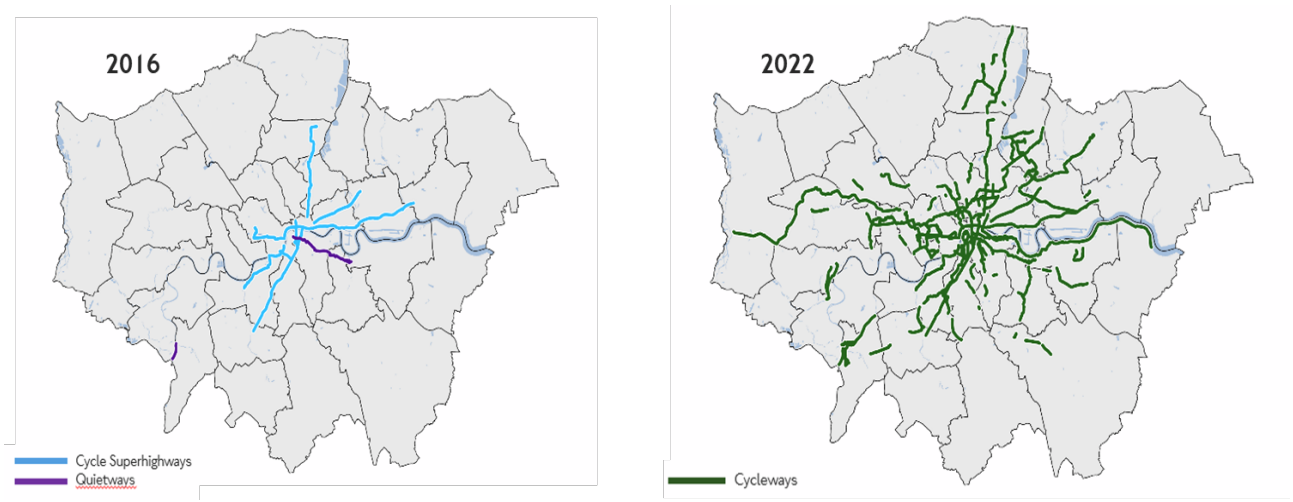

Figure 12. Expansion of the cycle network 2016-2022. Source: TfL.

To support more people cycling as part of our Cycle Parking Implementation Plan, together with London boroughs we have delivered more than 5,000 cycle parking spaces in the past two years, split across residential cycle hangars, on-street parking in town centres, cycle parking at schools and London Underground stations.

Our Santander Cycle Hire scheme continues to go from strength to strength, with 11.9 million hires taking place in 2021/22, (Figure 13). The scheme has also recorded six record breaking months in a row – from September 2021 to February 2022 – showing there appears to be a sustained increase in demand.

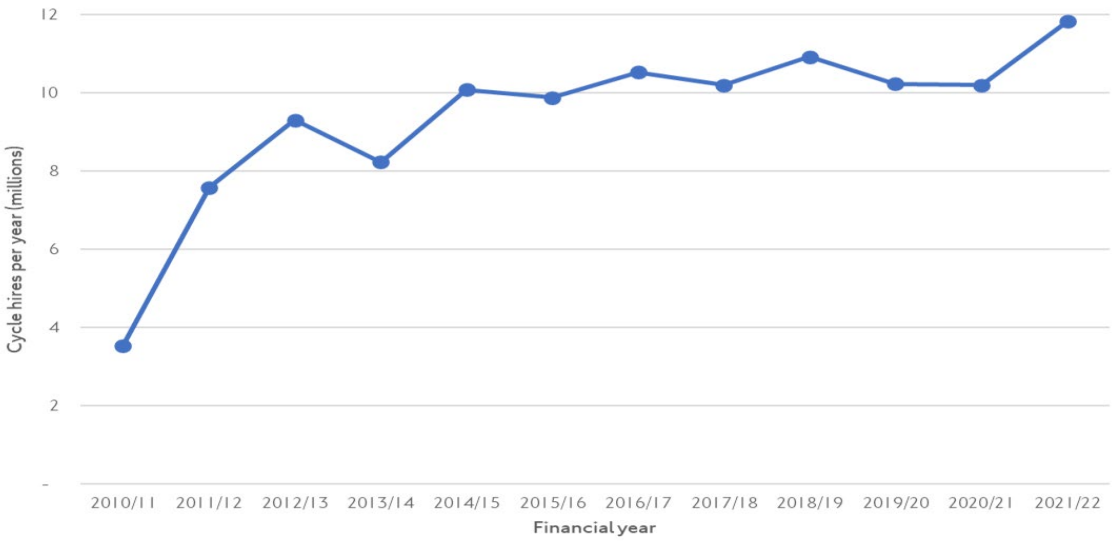

Figure 13. Number of Santander Cycle hires per year. Source: TfL.

The diversity of cyclists is also increasing, and long-term trends in who cycles have changed, with participation becoming more representative of Londoners. Data from 2020/21 showed for the first time that Black, Asian and minority ethnic communities were just as likely to cycle than white Londoners. Furthermore, 20 per cent of non-cyclists are also looking to take up cycling. However, personal safety across all backgrounds is an

issue with 82 per cent of non-cyclists worried about road safety and collisions. Furthermore, personal safety was a bigger concern for women, Asian and mixed ethnicity Londoners, with 73 per cent of women citing it as a concern. Our future plans around infrastructure, supporting measures, behaviour change, and marketing will aim to improve safety for all and target this new wider cycling market.

Looking at the shorter term, our active travel delivery plans are adapting to behaviours resulting from the pandemic, which include less commuting, fewer total trips, shorter distances, more leisure walking and cycling, and more trips within inner and outer London.

Our future plans for walking and cycling, subject to adequate funding, include:

- Supporting borough delivery of Low Traffic Neighbourhoods and School Streets;
- Helping to reach the new stretch target for walking to school, including in 2022 we will publish best practice guidance for borough delivery of School Streets;
- Doubling the number of gold-accredited STARS schools from 500 to 1,000 by 2024;
- Building on the increase in leisure walking by publishing a Leisure Walking Plan;
- Publishing an updated Cycling Action Plan with a renewed focus on: diversifying cycling, facing up to the climate emergency, tackling inequalities, including physical and mental health disparities and supporting London's recovery from the pandemic and long-term role as a global city;
- Building on our record-breaking Santander Cycle Hire scheme; together with Santander we will continue to work on upgrades and improvements for the scheme this year;
- We are working to expand the Santander Cycle Hire scheme to new areas of London and are working closely with Southwark Council to add eight new docking stations across the borough;
- Together with Santander we are also helping to break down the barriers that stop some people from cycling, including fitness, age and journey length by introducing around 500 electric bikes into the scheme from this summer; and
- We are working with the NHS to encourage more people to build healthier travel options into their daily lives, to help reduce the risk of developing chronic diseases.

Focus on: E-Scooter trials

On 7 June 2021, in collaboration with London Councils, London Boroughs and the three operators Dott, Lime and TIER, we launched the London E-Scooter Rental Trial. The trial has expanded significantly over the 11 months since launch, with the number of vehicles available to hire increasing from 600 to 4,010 and the number of participating boroughs doubling from five to ten. Over one million trips have been made to date and the busiest month for the trial was October, as people returned to offices. There are now more than 480 designated parking locations across the trial area, with plans to expand this number over the coming year to further increase parking density.

London's trial is one of 32 authorised by the Department for Transport (DfT) around the UK. The trials are gathering data that will be used to inform any changes to the legal status of e-scooters that Government may choose to introduce in the coming years. During 2022, the trial will further explore how e-scooters contribute to London's

transport mix, reduce carbon emissions and enable a sustainable recovery from the pandemic.

The rental vehicles in London have high safety standards that go beyond the national standards, including a speed limit of 12.5mph, larger wheels and lights that are always on throughout any rental. The trial is highlighting the disconnect between the robust safety standards and vehicle specifications of trial e-scooters and private e-scooters that are currently completely unregulated and therefore not built to any minimum safety standards. Private e-scooters remain illegal for use on roads, pavements, and cycle lanes. We have worked with the police to deal with the illegal use of e-scooters through education and enforcement.

We have been working alongside other transport authorities across the UK to establish recommendations for the powers that transport authorities will need if e-scooters are legalised. Consideration has also been given to what standards should be set nationally for e-scooter construction and use.

Safe: Vision Zero for road danger

The aim of Vision Zero is the elimination of all deaths and serious injuries on London's streets by 2041. Every death or serious injury on our streets is devastating, bringing heartache and tragedy to all those involved. Vision Zero challenges us to think differently about the safety of our streets and how we design our road system. While nearly always unintended, road collisions result from choices made by individuals, organisations and society and all too often cause death and serious injury. Our response must be to create a safe road system, with every component working together – safe speeds, safe streets, safe vehicles and safe behaviours – so that we can reduce road danger and protect Londoners from harm. A reduction in general traffic is fundamental to enabling the delivery of Vision Zero and is discussed in greater detail within section 4 of this report.

In November 2021, we published the Vision Zero Action Plan progress report[3] to mark the fact we are halfway through the timespan covered by the original 2018 Vision Zero Action Plan. This document supplements the 2018 plan and reaffirms our commitment to Vision Zero, celebrating what has been achieved across London, while also sharing the latest insight and understanding.

The Mayor's Vision Zero objective is to reduce road deaths and serious injuries by 65 per cent by 2022 (against the 2005-09 baseline), 70 per cent by 2030 (against the 2010-14 baseline) and for all deaths and serious injuries from road collisions to be eliminated from London's streets by 2041. This is the foundation of the city we want to build that is inclusive to all, responds to the climate crisis and is a great place to live. While this is an ambitious goal, we have seen examples that prove it is possible when looking at Oslo and Helsinki's achievement of zero road deaths in 2019.

There is mixed progress on our MTS Tracker for safe; the number of people killed or seriously injured on London's roads. Our provisional 2021 data suggests we have made progress against our interim 2022 target for children (67 per cent reduction) and car

[3] https://content.tfl.gov.uk/vision-zero-action-plan-progress-report-2021.pdf

occupants (74 per cent reduction) and are on track to meet the target for buses (70 per cent reduction). Despite this downward trend, our estimates show a significant strategic gap between our forecasts and indicative trajectory needed to meet the MTS ambition. Continued and targeted investment is therefore crucial to continue our progress on reducing road danger.

Significant progress was made in 2020 in pandemic related conditions on the roads but 2021 saw a partial reversal of this trend and the number of people killed or seriously injured increased compared to 2020 as traffic returned to near normal road conditions. Notwithstanding this, the number of fatalities in 2021, 75, remains below pre-pandemic levels, and the lowest number on record. Overall, this suggests that traffic reduction – removing road risk at source – remains one of the most effective ways of reducing the number of people killed or seriously injured on our roads, the experience of which was shown during the pandemic. Unless improvements are made, we are forecast to significantly miss our interim 2022 aim.

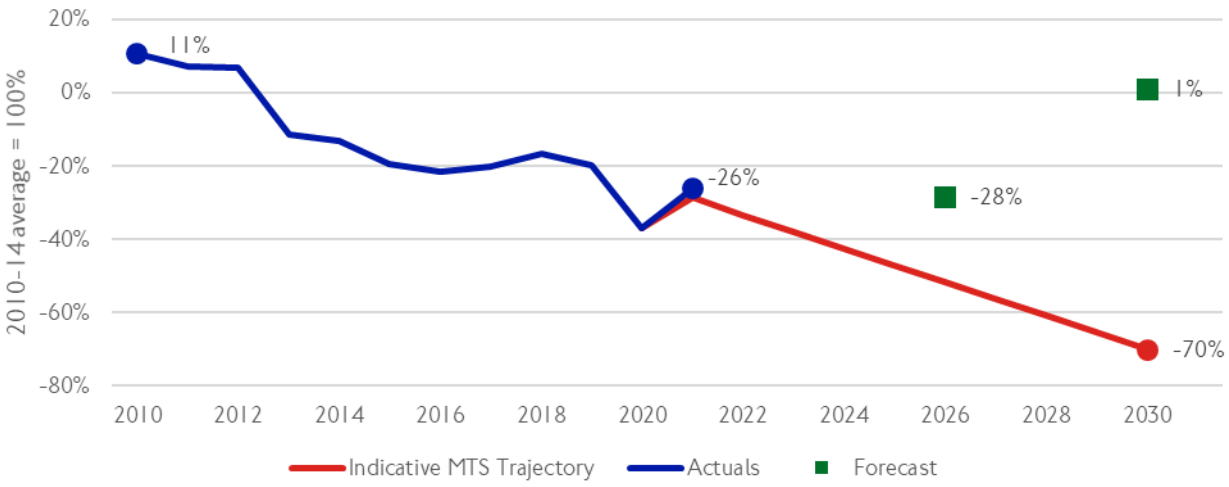

Figure 14. MTS Tracker for Safe: People killed or seriously injured on London's roads. Source: TfL.

Safe streets

The Safer Junctions programme has continued in implementation, targeting locations where the greatest numbers of people have been killed or injured while walking, cycling or riding motorcycles. The 43rd improved junction was completed during the past year.

The junction of Camden Road and Camden Street was one of the most dangerous junctions in London and is used by many people to cross it to access two stations, several schools and a supermarket. 15 people were injured at the junction in the 36-month period to December 2018, including two serious injuries. As part of the Safer Junctions programme, we upgraded the junction to include a new pedestrian crossing over Camden Road, and more space for cyclists and pedestrians around the junction.

These schemes have helped to reduce collisions by 23 per cent overall, and by 30 per cent for vulnerable road users. The number of injuries of all severities to people motorcycling fell by an average of 18 per cent, 17 per cent to people walking and 45 per cent to people cycling.

We have continued to design the pipeline of improvements to Safer Junctions and at other high-risk locations on the network, with plans in development to complete a further ten junctions by 2024. These will be delivered as quickly as funding allows. We will also continue to deliver a prioritised programme of new pedestrian crossings, including at high-risk junctions where there are none currently.

Safe speeds

Lowering the speed of vehicles in London is key to reducing both the likelihood of a collision occurring and the severity of the outcome. By working with London's boroughs, nearly half of London's roads now have a 20mph speed limit.

To date we have introduced a 20mph speed limit on 100km of the TLRN, and 19 of the 33 London Boroughs (including the City of London) have committed to a 20mph default limit.

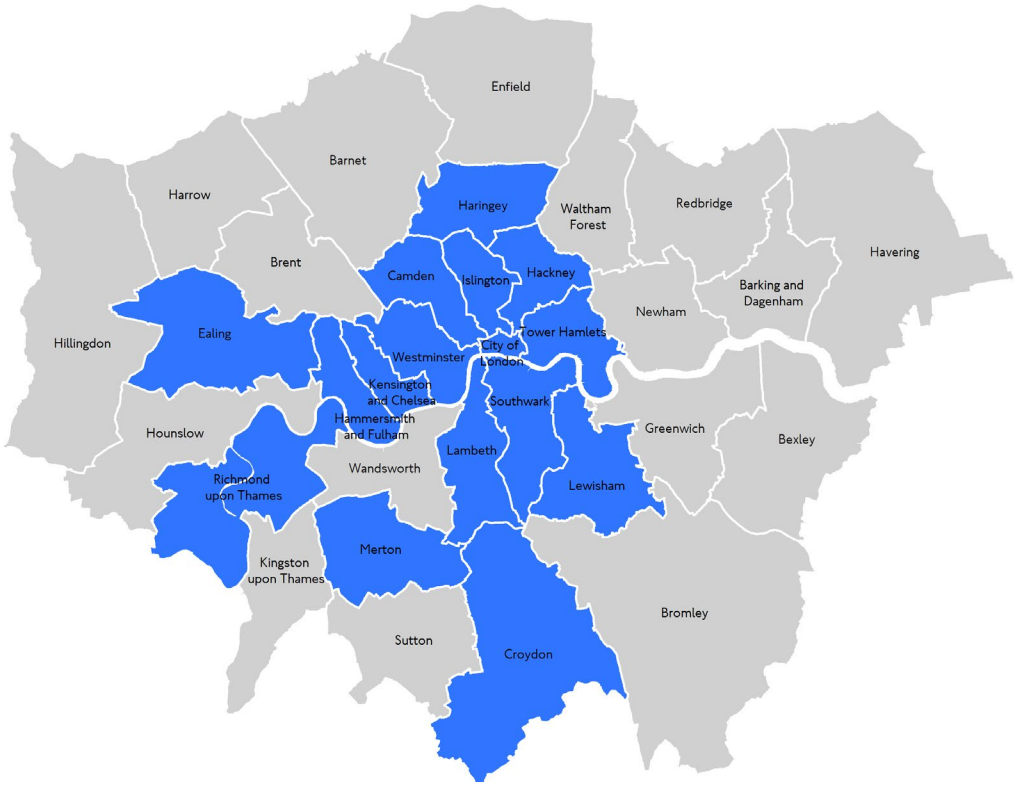

Figure 15. London Boroughs (in blue) with over 75 per cent coverage of 20mph limits on all roads with speed limits. Source: TfL.

In 2021/22, we reduced the speed limit on over 30km of the TLRN, including a new 20mph speed limit on A3220 Battersea Bridge and A3212 Chelsea Embankment. There is a further 17km in detailed design, and the programme is set up to continue in 2022, subject to funding. We aim to accelerate the delivery of our 20mph speed limit programme so by 2024 220km of the TLRN will be a 20mph zone.

In order to ensure compliance in 2021/22 we retrofitted 360 of our car and van fleet with mandatory Intelligent Speed Assistance (ISA) systems. We are closely monitoring the performance of these units and will share results with Government as part of case-making for improved vehicle safety regulation in the UK.

Safe buses

We continue to apply the Bus Safety Standard (BSS) to new vehicles joining the fleet. The number of buses meeting the BSS specification continues to climb, currently standing at approximately 776 buses (roughly nine per cent of the bus fleet).

The BSS safety measures include ISA technology which limits buses speed to the posted speed limit. The retrofit rollout of ISA to existing vehicles in the fleet began in summer 2021. To date, around 730 vehicles have been retrofitted, and a further 470 are due to be retrofitted by the end of August 2022.

Other measures include Camera Monitoring Systems that aim to reduce blind spots, with 680 buses fitted to date, and an Acoustic Vehicle Alerting System (AVAS) for quiet-running buses, with 634 buses fitted to date. In addition, we have further developed the AVAS Urban Bus Sound to change in response to ambient noise levels using pre-determined levels which are combined with the TfL Digital Speed Limit Map to allow geolocation of the bus. For example, the volume increases when travelling through busy areas and reduces when travelling through quiet residential areas.

Our Bus Safety Programme will continue to drive major safety improvements, helping us reach our target of no one being killed on or by a bus by 2030. The number of people killed or seriously injured in or by a bus fell by 37 per cent to 132 people between 2019 and 2020, which is the lowest number on record. This is 78 per cent down on the 2005-09 baseline. This means that we have met our 2022 target two years early. However, this achievement should be considered in light of the changes to travel patterns, fewer bus journeys and bus patronage as a result of coronavirus pandemic travel restrictions. The injury risk rate for injuries arising from collisions involving buses has risen during 2021, so it is unlikely that this reduction in casualties will be maintained from 2021 as London continues to recover from the effects of the pandemic.

The MTS sets an interim ambition to 2022 of a 65 per cent reduction against the 2005-09 baseline. In 2021, we achieved a 44 per cent reduction against that baseline. The MTS 2030 ambition is for a 70 per cent reduction from the 2010-14 baseline. In 2021, we achieved a 26 percent reduction against that baseline.

A safe public transport network

Across our public transport network, the number of customers killed or seriously injured increased by 83 per cent between 2020/21 and 2021/22. This increase should be considered in light of changes to travel patterns which resulted in fewer passengers travelling on our network from the beginning of 2020/21 as a result of coronavirus pandemic travel restrictions. While total deaths and serious injuries increased in 2021/22 as pandemic restrictions eased, the number of customer deaths and serious injuries per million passenger journeys decreased from 2020/21 and remain more than 70 percent below the 2005-05 average baseline (the MTS target is 70 percent below baseline) for the second year in a row.

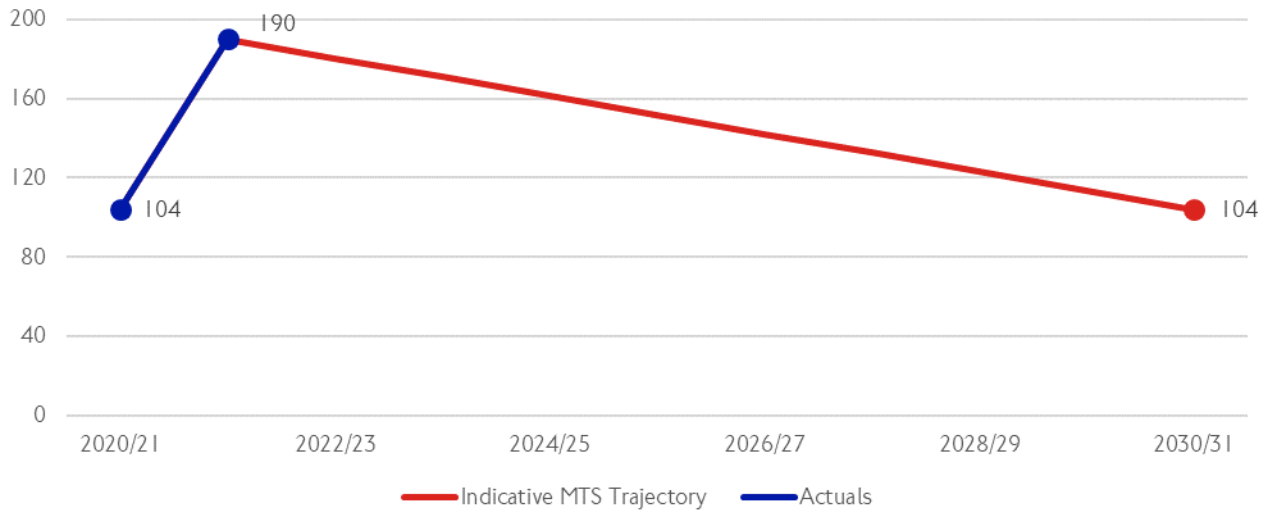

Figure 16. MTS Tracker for Safe: Customers killed or seriously injured on TfL services. Source: TfL.

Safe heavy goods vehicles

In September 2016, the Mayor committed us to develop the world's first Direct Vision Standard (DVS) for HGVs. Since launching enforcement on 1 March 2021, DVS has required all HGVs over 12 tonnes (Gross Vehicle Weight) to hold a Safety Permit, based upon the star rating from 0-star (lowest) to 5-star (highest). These ratings correspond with the amount of visibility available to the driver directly from the cab windows.

To date, we have issued more than 191,000 permits, including more than 4,000 to 5-star vehicles, which provide the highest levels of direct vision. The majority of vehicles, around 112,000, are rated 0-star and to obtain a permit they need to have the full range of safe systems fitted, improving protection for people walking, cycling or riding e-scooters or motorcycles and saving lives.

During the first year of enforcement, average daily compliance was 94 per cent. Early safety data shows that the vital lorry safety scheme, which reduces lethal blind spots, is already helping to save lives and prevent life-changing injuries.

Safe behaviours

The Metropolitan Police Service (MPS) undertakes a wide range of activity to reduce road danger and prevent harm to all road users. The MPS prioritises its enforcement on the offences that cause the greatest risk and harm. This includes speeding, mobile phone offences, driving under the influence of drugs and alcohol, red light offences, careless or dangerous driving, driving without a licence or in an uninsured vehicle or driving while disqualified. In 2021/22, the MPS enforced 608,223 road traffic offences and this was 44 per cent higher than the previous year.

In line with our commitments in the Vision Zero Action Plan progress report, we have been working with the MPS to increase the level of police enforcement to tackle speeding and the harm it causes. The MPS enforced 476,685 speeding offences in 2021/22, an increase of 72 per cent on the previous year. Around half of all speeding offences enforced are in 20 and 30mph limits.

As part of this work, we recently introduced new mobile safety cameras (five lasercam devices) to complement police roadside enforcement activity and the fixed safety camera network. This enables us to be more responsive to local community concerns and emerging issues.

Efficient use of street space

An efficient street network is crucial for London. Individuals and businesses rely on the capital's streets to get them where they need to go and to bring them the things they need, such as deliveries. Streets are also the places where London's public life plays out, forming 80 per cent of London's public space.

Creating an efficient street network, with less congestion, reliable movement of people and goods, and which supports vibrant town centres and places, is therefore fundamental to London's economic performance and quality of life.

The only long-term, sustainable way to achieve this is through reducing the volume of motorised traffic in London. The MTS sets goals for overall traffic levels to fall by 10-15 per cent between 2015 and 2041 and to reduce morning peak freight transport in central London by ten per cent by 2026 (compared to 2016 levels).

Practically, this means taking action in a range of areas including:

- Prioritising the most efficient modes of transport, such as walking, cycling and buses, in the way we plan and operate our streets;
- Encouraging take up of efficient ways of moving and managing freight; and
- Exploring ways of managing demand for road space, such as kerbside management and road user charging.

Planning and managing efficient streets

Sustainable modes such as walking, cycling and buses take up significantly less space than cars, making them the most efficient ways to move people on London's streets. By prioritising space for these modes on our streets, we can make the most efficient use of London's limited road space. Initiatives in 2021/22 included:

- Rolling out Healthy Streets schemes to reallocate more road space to space-efficient modes of transport, such as new bus lanes and cycle lanes. Further detail can be found in the 'Active' and 'Quality' sections of this report;
- Delivering the Healthy Streets Signals Programme to prioritise sustainable modes at traffic signals on the TLRN and borough roads. By making changes to signals at key junctions, we have achieved savings of 12,592 hours every day for people walking, cycling and using the bus. This includes savings of almost 8,800 hours every day for bus passengers and reducing pedestrian wait time at 53 sites identified by community stakeholders;
- Investing in the Surface Intelligence Transport System (SITS), a suite of projects focused on future-proofing London's road network control systems and ensuring we make optimal use of data to support the real-time management of London's streets; and

- Ensuring planned and unplanned disruptions on London's streets are managed and coordinated in line with the MTS. We co-ordinate around 50,000 sets of roadworks each year on the TLRN, working closely with utility companies, event organisers and boroughs to ensure the least disruption to customers, and sustainable modes remain attractive and accessible choices.

Supporting efficient ways of moving freight

As London grows, so will the demand for freight, servicing and deliveries. Accommodating this efficiently means finding new and innovative ways to move freight in London. This will lead to reduced numbers of vans and lorries on London's streets, preserving space for goods and services that need to be moved by these vehicles.

Before the pandemic, we were making good progress towards our aim of reducing morning peak freight transport in central London by ten per cent by 2026. The pandemic had a marked effect on freight levels in central London: by early 2021, the reduction in the number of freight vehicles was more than 20 per cent against the 2016 baseline, well in excess of the target. As restrictions were released the number of freight vehicles started to increase but remained around 15 per cent below 2016 levels since October 2021.

The challenge now is to maintain these levels as demand picks back up, while continuing efforts to reduce motorised freight trips in inner and outer London. Initiatives to support efficient ways of moving freight in 2021/22 included:

- Our Network Management Directorate is leading on pilot projects to investigate how we can support reliable and efficient freight trips on the TLRN at appropriate locations and times of day, using traffic signal strategies and in real-time in our Network Management Control Centre. Seven pilots are currently underway, in partnership with DHL Express. These will help to inform our network operating strategy;
- We also investigating how technology and data can help to reduce the high number of bridge strikes and over-height vehicles in tunnels in Greater London, which impact the efficiency and safety of London's road network;
- Continuing to support the use of the river Thames and London's waterways in major construction projects such as the Northern Line Extension, which transported 300,000 tonnes of excavated material by barge removing an estimated 20,000 lorry journeys;
- Working with Network Rail to produce a Rail Freight Strategy for London, setting out how we will work with partners to move freight from road to rail;
- Rolling out 'click and collect' lockers on our premises consolidates deliveries, reduces freight kilometres driven due to missed deliveries, reduces emissions, and provides our customers and local communities with a more sustainable parcel facility. As of March 2022, 52 InPost and 30 Amazon lockers were in place at our car parks. Surveys are being planned across bus, Underground, London Overground and our land parcels for further rollout; and
- We continue to work with London Councils to reform the London Lorry Control Scheme. A pilot scheme is expected to go ahead by December 2022 on altering the London Lorry Control Scheme hours along with alterations to the excluded route network.

Managing demand for road space

Three quarters of congestion is caused by demand for road space exceeding supply. Creating efficient streets will therefore require measures to manage demand for London's limited road space. Progress on this includes:

- Following a public consultation between July and October 2021, we made changes to the Congestion Charge to ensure that it remains effective in the long term, superseding the temporary changes introduced in June 2020. These changes include a daily charge of £15, operating every day of the week; charging hours of between 7am-6pm weekdays and noon to 6pm at weekends; re-opening of the 90 per cent Residents' Discount to eligible applicants; and removal of the Auto Pay discount;
- The Mayor has now asked us to start exploring how a new kind of integrated road user charging system could be implemented to improve air quality, address climate change and reduce congestion. Further detail is set out in the 'Green' section of this report; and
- In 2020/21, we worked with the LB Lambeth to launch an 18-month trial of paid for parking on a section of the TLRN. While the trial was disrupted by the pandemic, we are now seeking to build on this by exploring further ways of managing demand for kerbside access on the TLRN.

Tracking progress against our aims

The MTS Tracker for the efficient outcome monitors reductions in car use. The MTS aims for a 15 per cent reduction in car use by 2030. Cordon counts have been used as the metric for the MTS Tracker (Figure 17). These show the number of cars counted passing the central, inner and Greater London boundaries on a daily basis. The trends they show are sufficiently indicative of trends for car trips in central, inner and outer London respectively.[4]

The Tracker shows that levels of car use in London have remained relatively stable over the past decade, with a slight increase in outer London and slight decreases in inner and central London. This can be seen as a positive achievement, given that London saw significant growth over that time period, resulting in roughly two million additional trips made every day.

However, the MTS Tracker also illustrates the scale of the challenge ahead. Without action, traffic levels in central and outer London are both forecast to rise, and while traffic in inner London will likely continue to decrease it will remain well in excess of the trajectory.

[4] At the time of writing 2019 data was the latest available

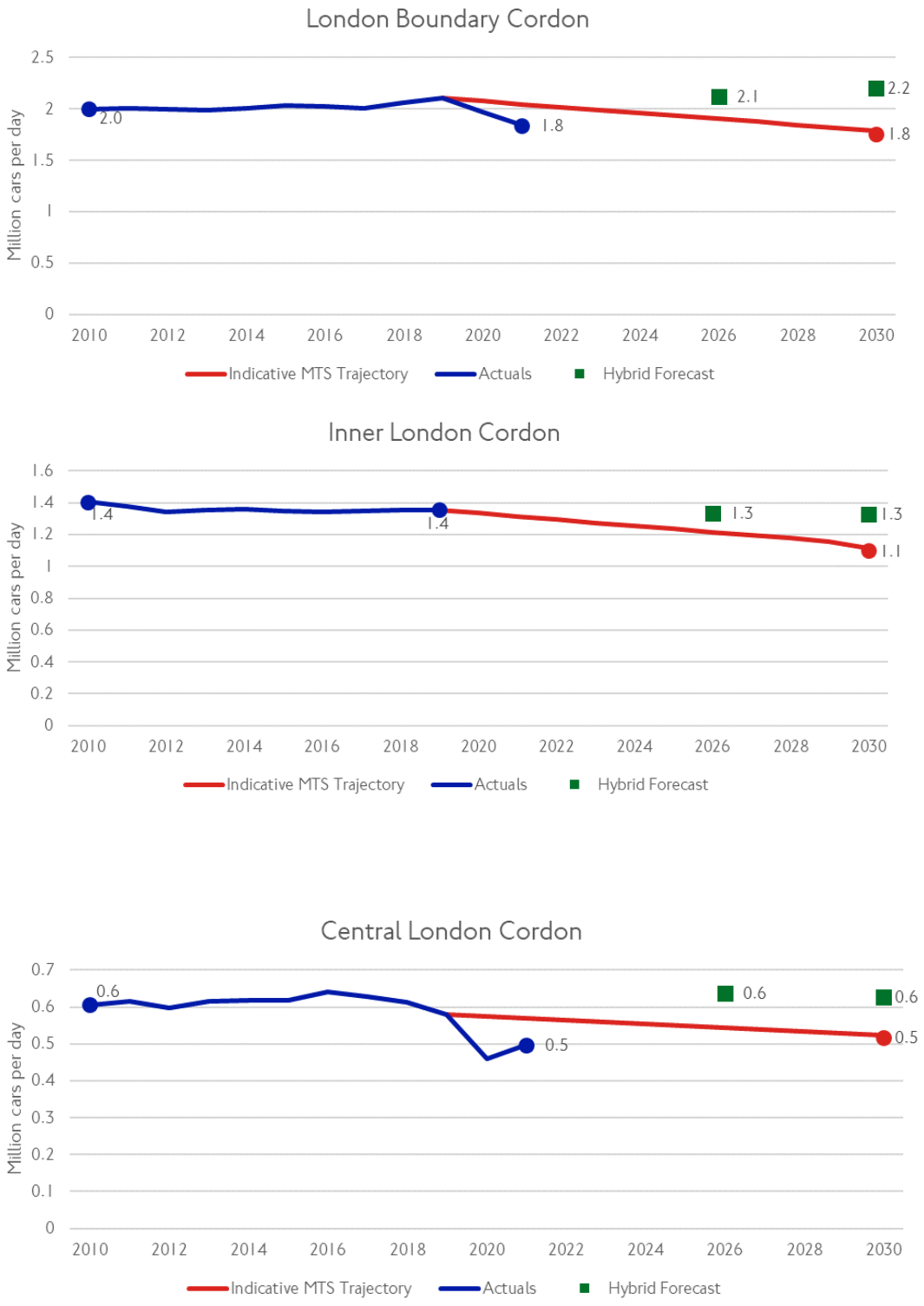

Figure 17. MTS tracker for Efficient: number of vehicles counted crossing Greater London, inner London and central London cordons, most recent data post pandemic. Note: Collection of inner cordon data was suspended during the pandemic and will restart in 2022. Source: TfL.

We therefore need to reduce levels of traffic, and this means going further with our initiatives.

In 2022/23, subject to funding, we will work with boroughs to reallocate more road space to sustainable modes through investment in Healthy Streets and continue delivery of our signals retiming programme with a new target of 15,000 hours saved every day for people walking, cycling and using buses. We will continue to manage the network efficiently and work with the freight industry to support new ways of moving goods and services, including looking for opportunities to boost cycle freight. We will also continue to explore ways to manage demand for London's limited road space, so that our streets can be efficient and reliable for everyone who needs to use them. In May 2022, we launched a consultation to ask the public and stakeholders for their views on the future of road user charging.

Green

Activities relating to the Green outcome are being delivered in conjunction with the LES. The MTS and the LES aim to clean London's air and decrease emissions from vehicles by encouraging active travel whilst switching the remaining vehicles, from petrol and diesel, to zero emission at the tail pipe, such as electric power.

Improving air quality

Improvements in London's air quality continue as a result of the Mayor's air quality programme. The new London Atmospheric Emissions Inventory (LAEI) was released in December 2021, providing an update to previous iterations and a new 2019 baseline, which includes the impacts of the operation of the central ULEZ launched in April 2019. The LAEI update and additional research show:

- A more than 90 per cent reduction in the number of Londoners living in areas exceeding legal limits for nitrogen dioxide (NO_2) between 2016 and 2019;
- A near doubling of major roads in London which now meet NO_2 legal limits, from 46 per cent in 2016 to 84 per cent in 2019; and
- A 19 per cent reduction in $PM_{2.5}$ across the whole of the city since 2016, with 1.2 million Londoners now living in areas meeting the World Health Organization (WHO) interim guideline of 10µgm3, up from zero in 2016.

While significant progress has been made (Figure 18), with a substantial reduction in the number of Londoners living in areas exceeding legal limits for NO_2, tens of thousands of Londoners still breathe illegally polluted air and all Londoners live in areas exceeding the recently updated WHO recommended guideline for $PM_{2.5}$, which is much tighter than the national legal standard. Research shows that those exposed to the worst air pollution are more likely to be deprived Londoners and from Black, Asian and minority ethnic communities.

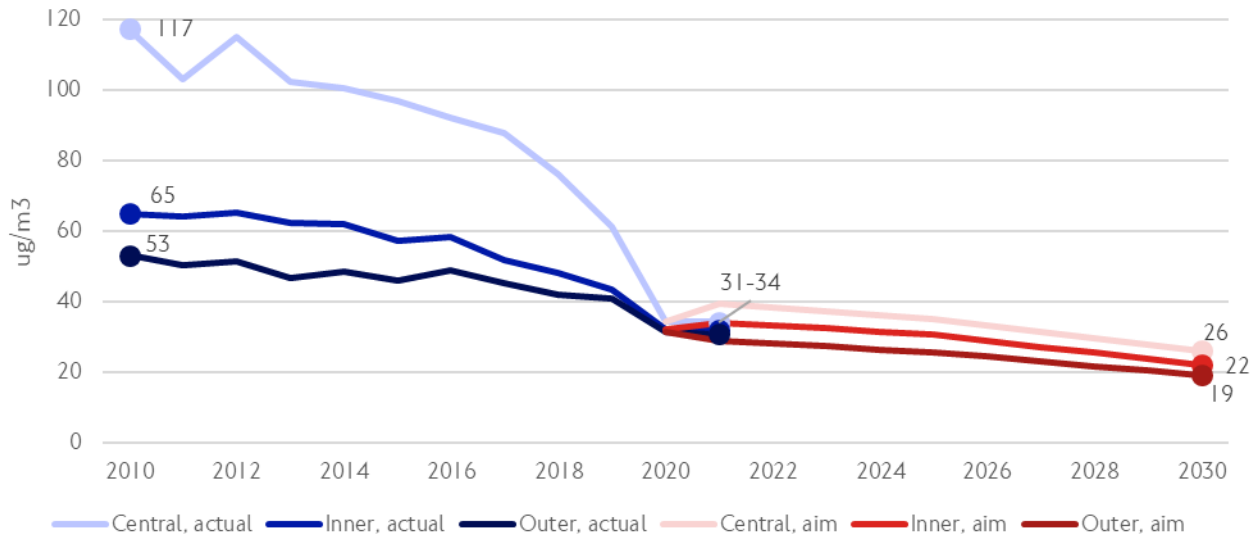

Figure 18. MTS Tracker for Green: roadside NO_2 levels in London. Source: TfL.

New data also shows that nitrogen oxide (NO_x) emissions from road transport reduced at just half the rate in outer London than they did in central and inner London and the percentage reduction in particulate matter was ten times greater in inner and central London than in outer London for PM_{10} and five times greater for $PM_{2.5}$. Recent research also found that the greatest number of deaths attributable to air pollution were in the outer London boroughs, mainly due to the higher proportion of elderly people in these areas who are more vulnerable to the impacts of air pollution.

The London-wide Low Emission Zone (LEZ) standards for heavy vehicles were tightened on 1 March 2021, to match those of ULEZ. Businesses and vehicle operators have responded positively to the tighter standards. By March 2022, London-wide compliance was 96 per cent, compared to only 48 per cent in 2017 when the plans for the tighter LEZ standards were first announced. The LEZ has also had significant benefits outside London, with Environmental Defence Fund analysis[5] finding that cleaner vehicles that passed through the LEZ went on to drive through 95 per cent of the major towns and cities in England and Wales, with a combined population of 18 million people.

In October 2021, we expanded the ULEZ to cover the areas within the North and South Circular roads (Figure 19). The new zone is 18 times larger than before with nearly four million people living in the zone. Measuring 380km^{2,} it covers one quarter of London and is the largest zone of its kind in Europe.

We ran a major awareness campaign (Figure 19) to ensure drivers and businesses were ready for the ULEZ expansion, with our online vehicle checker being used more than 20 million times since 2018. Over a million letters were sent to owners of non-compliant vehicles seen inside the zone.

[5] EDF Europe: Examining the 'reach' of Greater London's Clean Air Zone https://www.globalcleanair.org/files/2021/07/EDF-Europe-Examining-the-reach-of-Greater-Londons-Clean-Air-Zone.pdf

Figure 19. ULEZ Expansion awareness (left) and LEZ Heavy Vehicle Scrappage (right) campaigns. Source: TfL.

Many Londoners took action to prepare for the ULEZ expansion, with 87 per cent of vehicles travelling in the zone meeting the standards in the two weeks before October 2021, compared with 39 per cent in 2017 when the Mayor announced his intention to introduce the schemes . Monitoring of the first month of operation showed that on an average weekday, there were 47,000 fewer non-compliant vehicles detected in the expanded zone, a 37 per cent reduction, and 11,000 fewer vehicles in total. Table 2 sets out the latest compliance data for both ULEZ and LEZ.

Table 2. ULEZ and LEZ compliance levels

Month	Central ULEZ	Expanded ULEZ	LEZ tighter standards
February 2017	39%	39%	48%
March 2021	87%	80%	94%
March 2022	93%		96%

To help Londoners shift to cleaner vehicles and more sustainable modes, the Mayor provided £61m of funding, targeted at small businesses, charities, Londoners on low incomes and disabled Londoners, to help them adapt to ULEZ. This resulted in the removal of over 15,200 polluting vehicles from London's roads. This breaks down to 9,770

cars and motorcycles, 5,250 vans and minibuses and 105 heavy good vehicles and 18 coaches scrapped. A further 12 heavy vehicles were retrofitted to meet the LEZ standard. We are evaluating how people have used the funds obtained through this scheme and we will report on this work later this year.

Despite recent improvements in air quality following the implementation of ULEZ and tightening of LEZ standards, there is a need to go further to reduce transport emissions to protect the health of Londoners, achieve net-zero carbon emissions by 2030 and cut congestion. In September 2021, the WHO updated its guidelines for air pollutants, tightening the recommended levels including for NO_2 and PMs. These guidelines reflect the overwhelming evidence of the health impacts of air pollution, even at low levels.

In March 2022, the Mayor asked us to consult on a new proposal to extend the ULEZ London-wide in 2023, to further tackle air pollution, particularly in outer London. The public consultation was launched in May 2022. The expanded zone would extend to the current LEZ boundary, which covers 96 per cent of Greater London. The ULEZ charge level, operating days and standards would remain the same as the current scheme. We are also consulting on an amendment to the MTS to enable a London-wide ULEZ. In addition to the ULEZ changes, we are consulting on removing the £10 annual registration fee for Auto Pay for ULEZ, LEZ and the Congestion Charge and increasing the penalty charge from £160 to £180 for ULEZ and the Congestion Charge.

Extending the ULEZ London-wide is forecast to:

- Lead to a reduction of around nine per cent NO_x in emissions from cars and vans in outer London;
- Reduce carbon emissions in London by around 23,000 tonnes; and
- Shift 70,000 of the most polluting cars on London's roads to compliant vehicles, with a further reduction in the remaining most polluting cars by 44,000 a day.

The Mayor has also announced he would launch the biggest scrappage scheme feasible to help Londoners on low incomes, disabled Londoners, businesses and charities adapt to the extended ULEZ. The new scrappage scheme would build on the success of the previous scrappage scheme and the details are being developed, informed by the consultation. These proposals for a London-wide ULEZ are subject to consultation and decision by the Mayor.

Net Zero Carbon

The Mayor has called for London to reach net zero carbon emissions by 2030, which is more ambitious than the MTS zero carbon by 2050 commitment. Following this, the GLA commissioned Element Energy to investigate how London might reach this new ambition. Their recently published report sets out the scale of action required to reach net zero by 2030 across all sectors and presents four potential pathways to achieve this goal.

Of the four potential pathways, the Mayor's preferred one is the 'Accelerated Green' scenario. This would require a 27 per cent reduction in car vehicle kilometres relative to 2018, accelerating the MTS pathway by ten years. However, as with the other three pathways, residual emissions remain and will require offsetting.

The MTS Tracker (Figure 20) shows that while we are broadly on track to meet the original MTS aims, we need urgent and large-scale action to meet the accelerated target of net zero carbon by 2030. We are now embarking on our own analysis to specifically look at what it could do to meet net zero carbon by 2030 for London's transport emissions, concentrating on measures within our power and realistically within our means. We have undertaken extensive background research and gathered evidence of the impacts of a number of options and will soon be modelling up to four scenarios to inform how we might adapt or accelerate our plans to reach this goal.

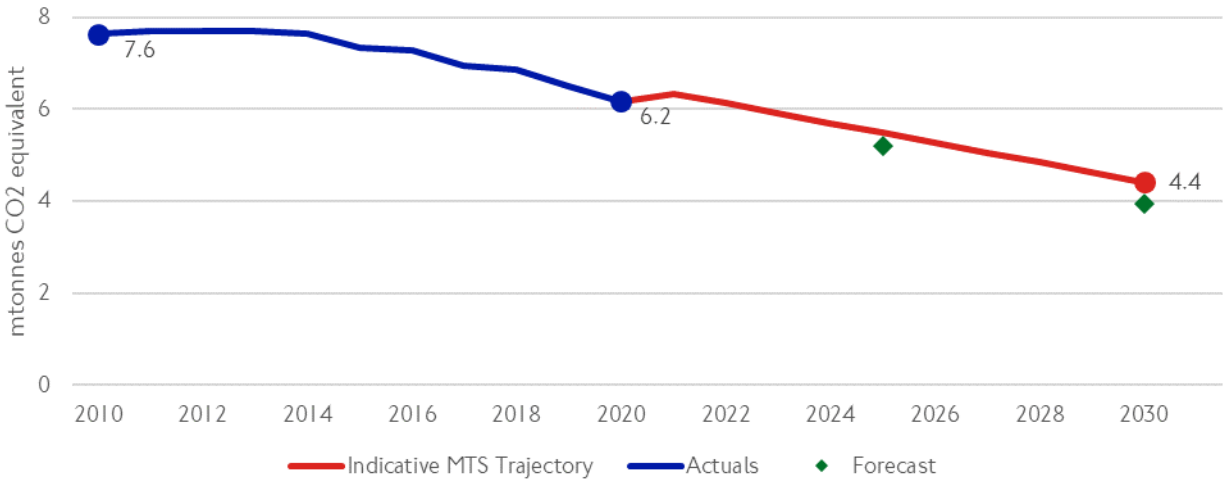

Figure 20. MTS Tracker for Green: CO_2 emissions from all transport. Source: TfL.

Shaping the future of road user charging

The Mayor has asked us to start exploring how a new kind of integrated road user charging system could be implemented to address the critical triple challenges of toxic air pollution, the climate emergency, and traffic congestion. Such a system could replace all existing road user charges – such as the Congestion Charge, LEZ, and ULEZ – with a single, integrated scheme.

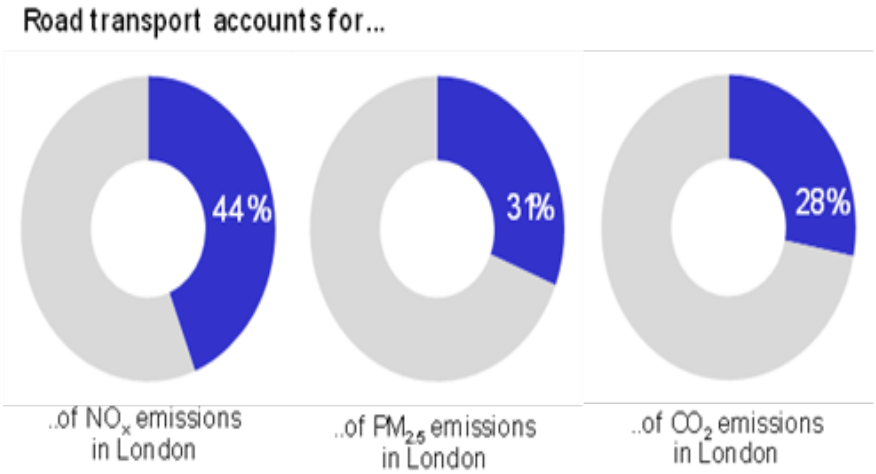

Figure 21. The air quality challenges that a new future road user charging system could address. Source: TfL.

In a potential future scheme, drivers could pay based on distance travelled, with different rates depending on how polluting their vehicles are or where they are driven, in order to better reflect the impact of their journey.

Alongside the consultation on the proposal to extend the ULEZ London-wide, we are also asking the public and stakeholders for their views on the future of road user charging. It should be noted that this is not a formal proposal and if a new scheme were to be developed, it would be subject to further consultation.

Electric vehicles

We continue to see increases in the number of electric vehicles on our roads and they now make up 3 per cent of the registered fleet in London.

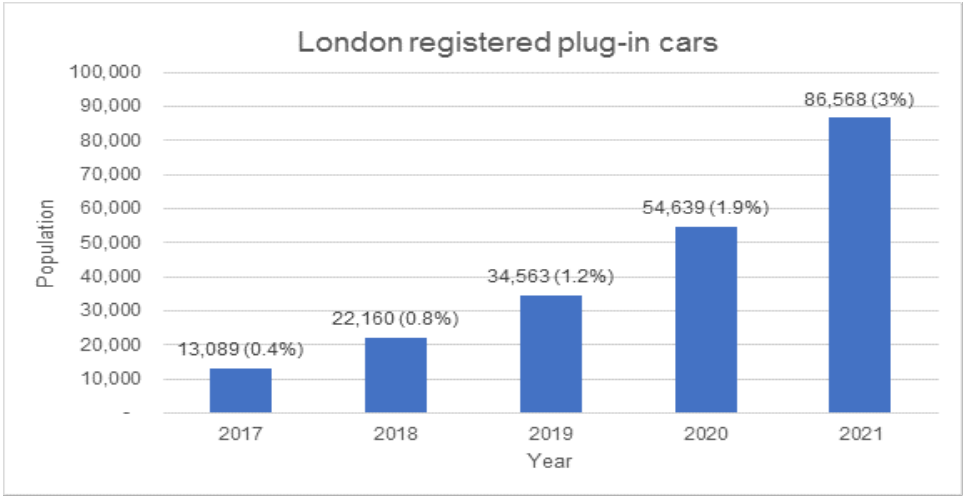

Figure 22. Electric vehicle uptake in London.

We also have the strictest taxi and private hire licensing regulations for vehicle emissions, which have been supported by taxi delicensing payments and grants for those switching to zero emission capable taxis, with over a third of our taxi fleet now comprised of these vehicles (5,250 active London Electric Vehicle Company and 122 active Dynamo taxi licences).

At the end of March 2022, we exceeded our internal zero-emission bus target of 800 and reached 805 zero-emission buses in the fleet. Zero-emission buses represent roughly nine per cent of the bus fleet. We are well on the way to achieving the Mayor's commitment to deliver a 100 per cent zero emission bus fleet in London by 2034.

Electric vehicle (EV) infrastructure

To support a transition to electric vehicles we need sufficient on-street charging infrastructure. London continues to lead the way in the electric revolution, with more than 9,600 public charging points installed across the capital, a third of the UK's total and a 131

per cent increase since 2019.

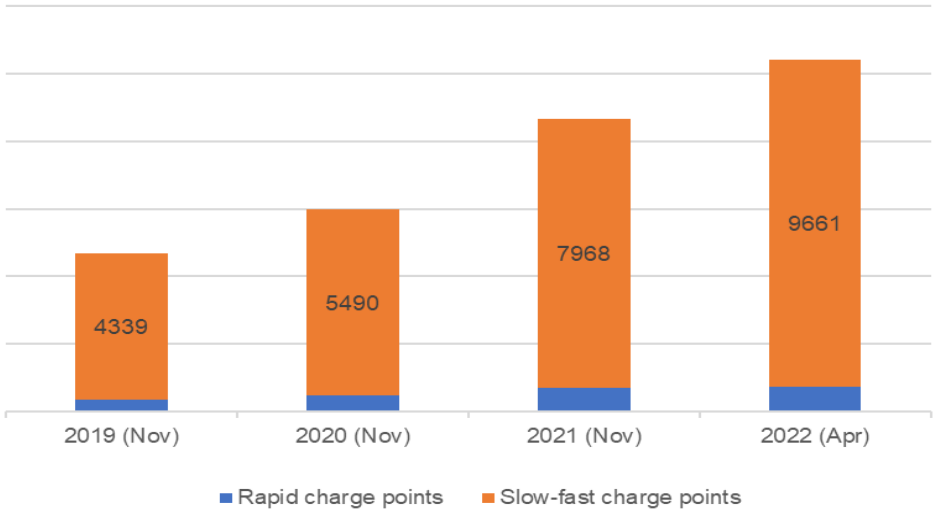

Figure 23. Growth in delivery of EV Infrastructure in London from 2019-2022. Source: Zap-Map

In December 2021, we published our 2030 Electric Vehicle Infrastructure Strategy. This seeks to accelerate the transition to zero emission vehicles by setting out the requirements for the provision of infrastructure, focusing on essential trips. New modelling indicates that in the most likely scenario, where there is increased use of rapid, on-the-go charging, London will need around 40,000 to 60,000 charge points by 2030, of which up to 4,000 will be rapids.

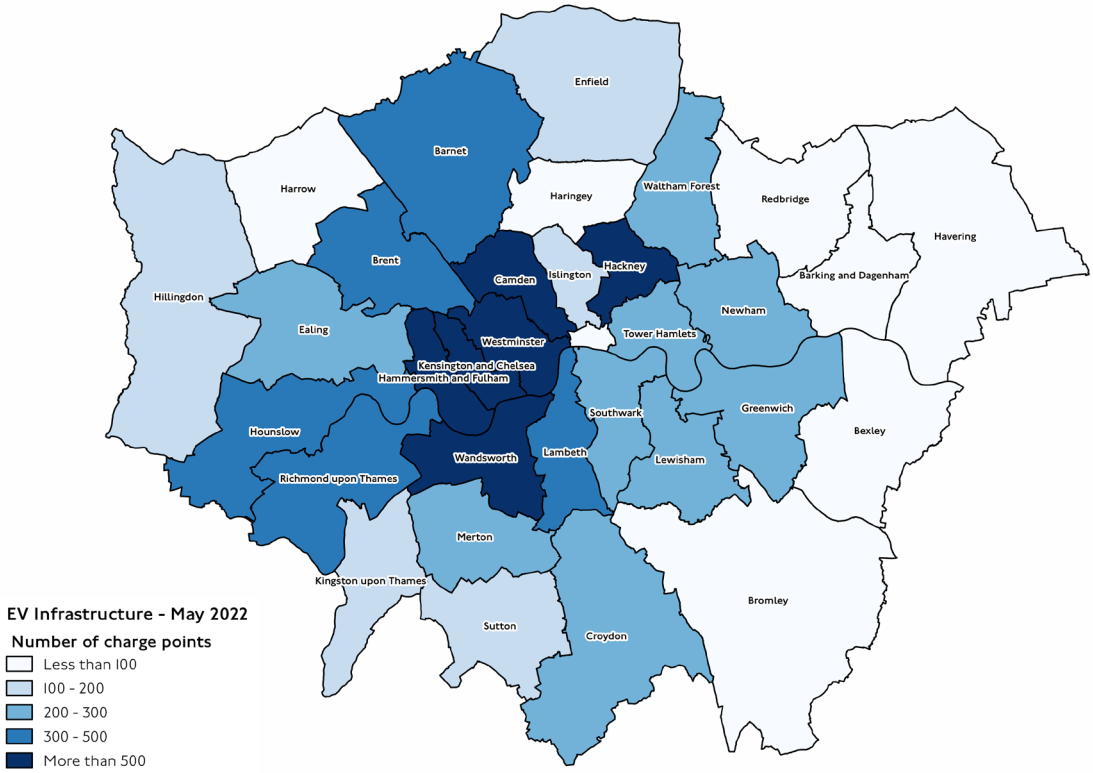

Figure 24. Total number of EV charge point devices per borough. Source: Zap-Map, March 2022

In addition to providing forecasts for London's charging needs up to 2025 and 2030, the strategy sets out the current provision and distribution (Figure 24) as well as how the public and private sectors can further support the delivery of EV infrastructure in London. Current distribution of public EV infrastructure is varied across London with many inner London boroughs leading the way with delivery in Westminster, Camden, Kensington & Chelsea. It's clear to see disparities in access to infrastructure are beginning to emerge and through London's 2030 EV Infrastructure Strategy we have set out how we will support the development of a consistent, equitable and balanced network of EV infrastructure across the whole of London. The strategy built on the work we did with the EV Infrastructure Taskforce to produce the 2019 Electric Vehicle Infrastructure Delivery Plan, which set out the need for five flagship rapid charging hubs, one in each sub region of London by 2025. Two sites have already been delivered with our support in Stratford (2019) and Glass Yard, Woolwich (September 2021). Baynard House in the City of London is due to open in spring 2022. The private sector has also been progressing hubs (defined as six or more rapid charging points in one location) and there are now over 16 across London as a whole.

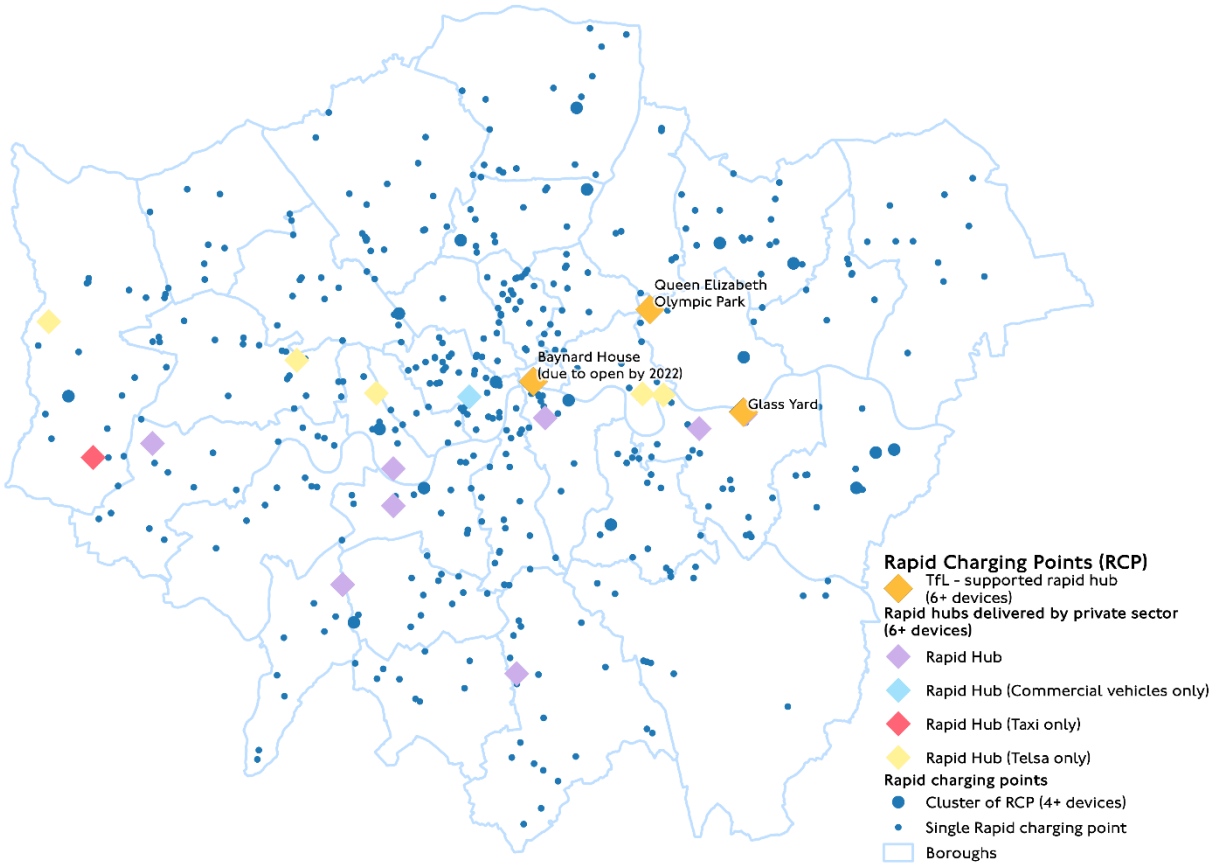

Figure 25. Rapid charging devices, clusters and hubs in London. Source: Zap-Map, May 2022

In the recent strategy, we committed to use suitable GLA Group land to roll out further public charge points with initial projections estimating this could accommodate up to 1,000 charge points. This year, we will carry out detailed site screening of land across the GLA group estate, including further delivery on the TLRN; undertake power and buildability checks and commence tendering of sites. It is expected to culminate in the delivery of an initial tranche of 100 rapid and ultra-rapid charge points across London.

Green infrastructure and biodiversity

The MTS aims to deliver a net gain in biodiversity as part of transport schemes. Biodiversity net gain continues to be embedded into our project development and management processes.

We currently have 70,000 m^2 of wildflower verge[6] along our road network and are progressing additional trial sites this year that will increase our wildflower verge area by 38,000 m^2. Based on this and the experiences of several boroughs, we are developing a London wildflower verge brochure and guide to encourage others to manage road verges for wildlife.

We are developing our first natural capital account. Natural capital accounting assigns economic values to some of the different benefits we get from our green infrastructure, such as carbon storage and air pollution removal. This will allow nature to be included more effectively in our decision-making.

We are on track to meet our MTS target of increasing our street tree numbers year on year by one per cent until 2025. This year we have 24,581 trees on the TLRN road network, a two per cent increase in comparison with last year. This compensates for lower tree planting rates in the previous year as a result of the pandemic, leaving us slightly ahead of the cumulative MTS target.

The MTS also includes a sustainable drainage target for all London roads. We have successfully agreed more than £600,000 of Thames Water funding to deliver multiple sustainable drainage projects on our road network by 2025 to help reduce the risk of surface water flooding. We have also installed a sustainable drainage project at Elspeth Road in Wandsworth, which captures 500m^2 of surface water run-off and incorporates green infrastructure that will help support biodiversity.

Figure 26. Rain Garden at Elspeth Road, Wandsworth. Photo credit: John Birch, TfL.

[6] https://tfl.gov.uk/travel-information/improvements-and-projects/managing-road-verges-for-wildlife

Climate change adaptation and resilience

The July 2021 flood events and Storms Dudley, Eunice and Franklin in February 2022 demonstrated how well we respond during extreme weather events, with most operational networks running as normal within 24 hours. However, they also highlighted how important it is to adapt our networks to the impacts of climate change, so that we can reduce the need for, and scale of recovery.

As part of this adaptation work programme, we have completed our most detailed and comprehensive climate risk assessment to date. This was carried out as part of our Adaptation Reporting Power submission to Defra. It highlights that precipitation (both too much and too little) is the climate hazard category linked with the greatest number of risks. This assessment will inform a pan-TfL Adaptation Plan we are developing this year.

We continue our work on adaptation collaboration. For example, we chair the quarterly Transport Adaptation Steering Group and are a key member of the Mayoral surface water flooding roundtables set up after the July 2021 flood events. Our adaptation research programme is expanding and will deliver initial findings later this year.

Good Public Transport Experience

London has one of the most extensive and high-quality public transport networks of any city in the world. However, the pandemic also changed people's expectations of a good public transport experience. To respond to this, our trains and buses are regularly cleaned with hospital grade cleaning products, and information on quieter times to travel is shared with customers.

The MTS established that ongoing improvement to all public transport modes would be needed to meet customer expectations and continue to encourage people to make more of their journeys by sustainable modes. There are three outcomes related to this mayoral priority area: Connected, Accessible, and Quality.

- **Connected –** The public transport network will meet the needs of a growing London
- **Accessible –** Public transport will be safe, affordable and accessible to all
- **Quality –** Journeys by public transport will be pleasant, fast and reliable

Connected

London's transport network reaches across the capital, serving the diverse needs of Londoners. It provides Londoners with efficient and affordable options for journeys contributing to reduced dependency on cars. Maintaining and enhancing this connectivity is vital if Londoners are to continue to have attractive and realistic options for their trips that do not need a car. Good public transport connectivity also helps to deliver future housing growth, helping more people to travel by public transport in the future.

Dense, high-frequency bus networks along with frequent, fast rail services form the backbone of public transport connectivity across London. We are seeking to maintain and enhance connectivity through improvements that meet the needs of a changing London, faster journeys that make public transport a more attractive choice, and providing the

capacity to ensure that Londoners can rely on the connectivity being available when they need it.

Buses

The Bus Action Plan was published in March this year and sets out our approach to delivering the connections that Londoners need over the next decade. This continues our long-established approach of incremental change that keeps pace with an evolving city where we continuously review the bus network to ensure services reflect changing demand and deliver good value.

In central and inner London, increased rail capacity and improved active travel options continue to change the way people choose to travel. Even before the pandemic, bus demand was falling in central London, and our Financial Sustainability Plan set out a four per cent reduction in the bus network as a proportionate response to these changes to demand.

We have been reviewing bus services to ensure they reflect current and projected usage, while ensuring key links across the city are maintained. These changes are taking place where rail, walking and cycling alternatives are most attractive to customers. This allows us to protect the frequency of services in areas of outer London where people tend to be more reliant on buses due to an absence of other sustainable alternatives.

Specific enhancements of bus services have included the extension of route 324 in Stanmore to better serve the Royal National Orthopaedic Hospital, and implementation of bus services changes in May, in the boroughs of Newham, Greenwich and Bexley to support the opening of the Elizabeth line.

Focus on: The Bus Action Plan

The Bus Action Plan sets out how we will deliver the high-quality bus service London needs for 2030. The plan is centred on five priorities:

An inclusive customer experience

Travelling by bus should be easy, comfortable and accessible to all. We will deliver a modern bus network that is relevant to Londoners and makes it easy for people to travel spontaneously and independently. This means providing more real-time information on the network, delivering new diversity and inclusion training for bus drivers, and improving the experience at stops and on-board, as we have done recently with the launch of new higher specification buses on route 63.

Safety and security

Everyone should be able to travel by bus safely and with confidence. We will deliver Vision Zero on the bus network, with no one killed on or by a bus by 2030 and fewer people saying they are put off travelling due to security concerns. We will continue to fund and work in partnership with the Metropolitan Police to keep customers and staff safe, ensuring that the bus remains a low-crime environment. Alongside this, we will support bus drivers and other frontline colleagues.

Journey times
We must continue to reverse the pre-pandemic trend of worsening journey times to win back customers and encourage more people to switch from using the car. Our aim is for journey times to improve by ten per cent compared to 2015. We will do this by delivering better streets for buses, aiming to introduce 25km of new and improved bus priority by 2025, working with boroughs to extend bus lane operating hours, and continuing to review traffic signal timings to ensure buses are given appropriate priority. We will also work with operators to ensure the service is efficient and reliable.

Connections
The bus should be the obvious choice to get around London for more people, more often. We will improve connectivity for longer trips, particularly in outer London, while maintaining our network coverage of more than 96 per cent of Londoners living within 400 metres of a bus stop.

Decarbonisation and climate change resilience
A zero-emission bus service will provide a zero-carbon choice for more people, for more of their trips. We will seek to accelerate the achievement of a zero-emission fleet from 2034 to 2030, subject to additional Government funding. We will also safeguard the network from extreme weather conditions.

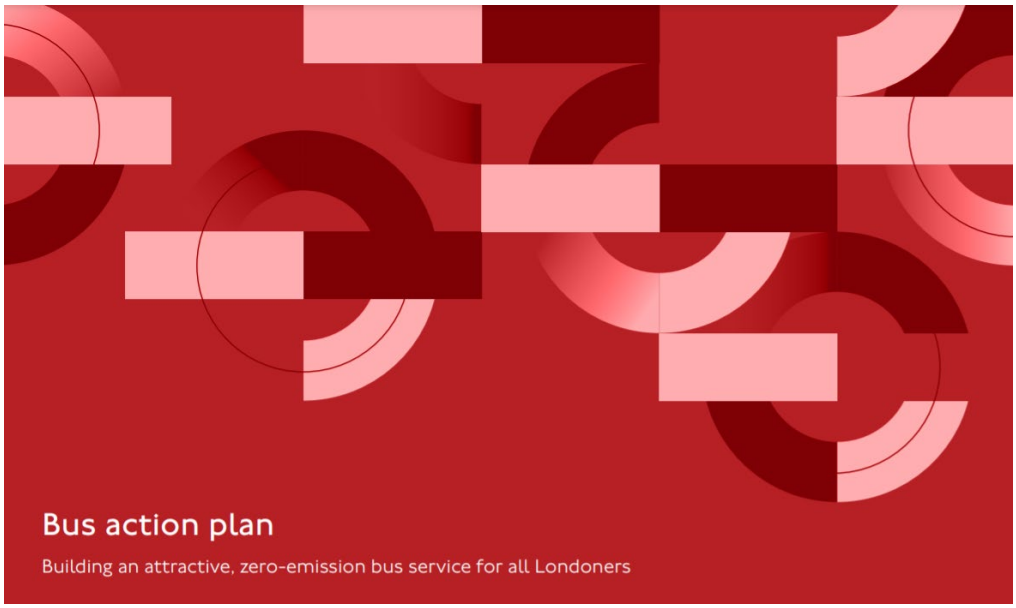

Figure 27. Bus Action Plan 2022.

Our key connectivity metric for public transport is the percentage of Londoners living within 400m of a bus stop, which represents the ability of Londoners to access public transport services within a five-minute walk of where they live. Whilst the MTS itself does not set an aim for this measure, it is assumed to be maintained at a high level.

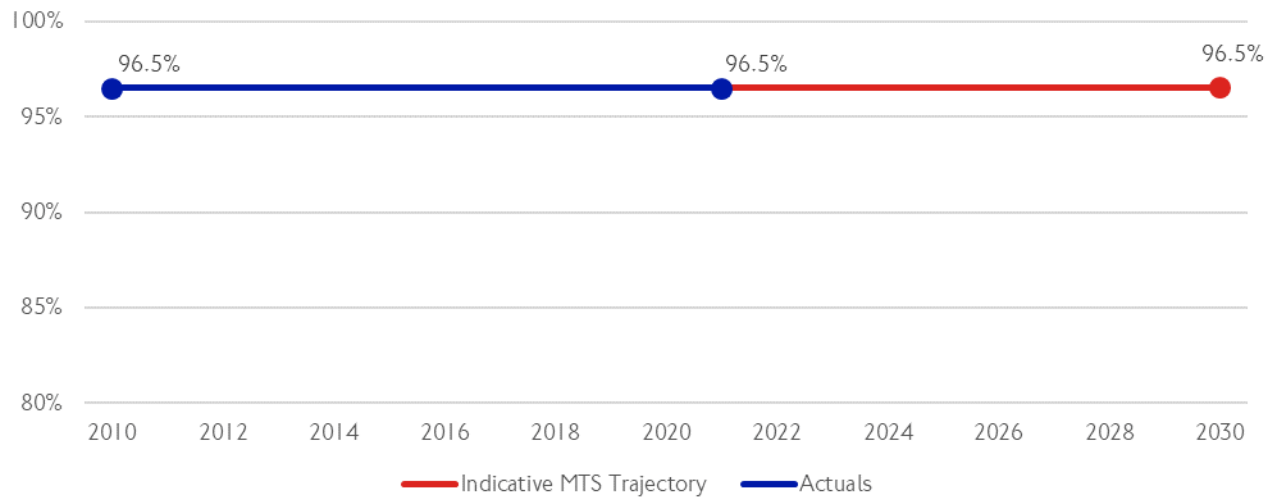

Figure 28. MTS Tracker for Connected: Londoners living within 400m of a bus stop. Source: TfL.

For this metric, success means maintaining the extensive bus network we already have developed in London to be responsive to the needs of Londoners. Figure 27 shows that we have performed consistently well against this measure with c. 96 per cent of Londoners within 400m of a stop over the past decade and 96.5 per cent in 2021. This followed a period of growth for the bus from the early 2000s, as part of an integrated transport strategy to tackle London's chronic congestion and insufficient public transport capacity, we improved the reliability of bus journeys and the network was expanded. As a result, bus journeys increased by 56 per cent between 2000 and 2019. However, maintaining this level of proximity to the bus network could be at risk if, for financial reasons, we need to consider reducing services beyond those needed to respond to changing patterns of demand. Without appropriate levels of funding to support the growth of bus patronage, the achievability of the 80 per cent active, sustainable and efficient mode share target by 2041 is also at risk.

Underground

In September 2021, we opened the Northern line extension which is vital to linking the Nine Elms and Battersea areas to the rest of central London, supporting sustainable new homes and jobs. Around 90,000 passengers pass through the two new Northern Line extension stations every week. Train frequencies will double on the new branch later in the summer to continue to support the growth in homes and jobs in the Battersea area. Further detail is provided in the 'New Homes & Jobs' section of this paper.

In September, we also took advantage of signalling improvements delivered by the Four Lines Modernisation programme to improve journey times for our passengers on the Hammersmith & City, Circle and Metropolitan lines.

In November, we reintroduced Night Tube on both the Central and Victoria lines for the first time since the closure at the beginning of the pandemic. We have continued to build London's recovery further by reintroducing Night Tube services on the Jubilee line in May, with the Northern and Piccadilly lines to follow later in the summer. This supports connectivity to jobs and the night-time economy, allowing Londoners to access the wealth of opportunities the city has to offer.

Throughout the pandemic we have operated as much of the Underground service as possible given the challenges created by social distancing and staff isolation. While the level of operated service has been below the historic average, particularly during periods of heightened infection such as the Delta and Omicron waves, we have maintained service across all lines since the reopening of the Waterloo & City line in June 2021. We aim to increase the proportion of the timetable operated in 2022/23 back closer to the historic level.

Station projects

The Bank branch of the Northern line closed between Kennington and Moorgate in mid-January to finalise work on the new tunnel and customer concourse. This phase of the major upgrade work was completed in mid-May, with the Northern line fully reopening to customers at that point. Further improvements are still to come, including step-free access to the Northern line and improved access to the DLR platforms. There will also be more direct routes within the station and a new station entrance on Cannon Street. Improving this station at the heart of London's financial district is critical to supporting the growth and success of the City, addressing long-standing capacity issues, and making journeys through Bank safer, easier, quicker, and more comfortable when fully complete later in 2022.

Figure 29. New platform at Bank station after reopening. Source: TfL.

A new station entrance at Imperial Wharf was completed in May to provide a covered walkway with new ticket gates and CCTV. This will ease the vertical capacity and relieve the current congestion on the steps to the platform and on the platform around the lift.

Works continue to provide a secondary entrance to Hackney Central station via Graham Road, which will open in June. The new entrance will give passengers an option of departing/entering the station from either platform. Additional staircases will be added to the existing footbridge to both platforms to enhance passenger flow and ease congestion.

Docklands Light Railway (DLR) trains

We agreed with Government in summer 2021 to add up to 11 more trains to the new DLR fleet of 43 trains currently under construction. The additional trains will unlock thousands more homes for Londoners in the Royal Docks and the Isle of Dogs, with services increasing to every two minutes at peak times on the Canary Wharf to Lewisham branch.

Accessible

Improving the accessibility of London's extensive public transport services is fundamental to supporting and enhancing the quality of life of Londoners. Around 19 per cent of London's population have a disability, and around 12 per cent of Londoners are aged over 65, so making travel more accessible and inclusive for Londoners is one of our top priorities. By working to deliver an equitable, accessible and inclusive public transport system that works for everyone, we can make people's lives easier and increase the appeal of sustainable public transport over the use of private cars.

Figure 30. An accessible bus journey. Source: TfL.

Station and vehicle accessibility

Table 3 shows the Underground stations which have become step-free over the last year, with Harrow-on-the-Hill the most recent completion taking the total to 91 of London's 272 Underground stations that are now step-free. Beyond this, we have continued to make

stations across our rail network more accessible, with half of the stations now step-free (Table 4).

Table 3. London Underground stations converted to step-free over the last year

Station	Line	Step-free date	Zone
Battersea Power Station	Northern	Sep-21	1
Harrow-on-the-Hill	Metropolitan	Mar-22	5
Ickenham	Metropolitan / Piccadilly	Jun-21	6
Nine Elms	Northern	Sep-21	1
Osterley	Piccadilly	Oct-21	4
Sudbury Hill	Piccadilly	Dec-21	4
Whitechapel	District / H&C	Aug-21	2
Wimbledon Park	District	Aug-21	3

Table 4. Number of step-free stations on TfL network in 2021/22

Network	Step-free stations	No stations made Step-free in 2021/22	% of network that is now Step-free
Tube	91	8	33
London Overground	61	1	55
TfL Rail	31	6	97
DLR	45	N/A	100
Tram (stops)	38	N/A	100

The opening of the Elizabeth line provides 40 step-free stations from Reading and Heathrow in the west, to Shenfield and Abbey Wood in the east. Bond Street station will also be step-free , helping make the heart of the West End accessible and inclusive for more Londoners than ever before. These have been opened in phases over the last few years.

People with disabilities using our public transport network face additional barriers, which means it takes them longer to undertake journeys. Our key accessibility ambition is to reduce this differential in journey time by 50 per cent by 2041 by delivering better access across public transport in London. Over the past year we have made significant progress in addressing this, and once the Elizabeth line is fully open the differential in journey time will be reduced by 40 per cent. It is hugely important to continue to deliver accessibility improvements to ensure we serve all Londoners.

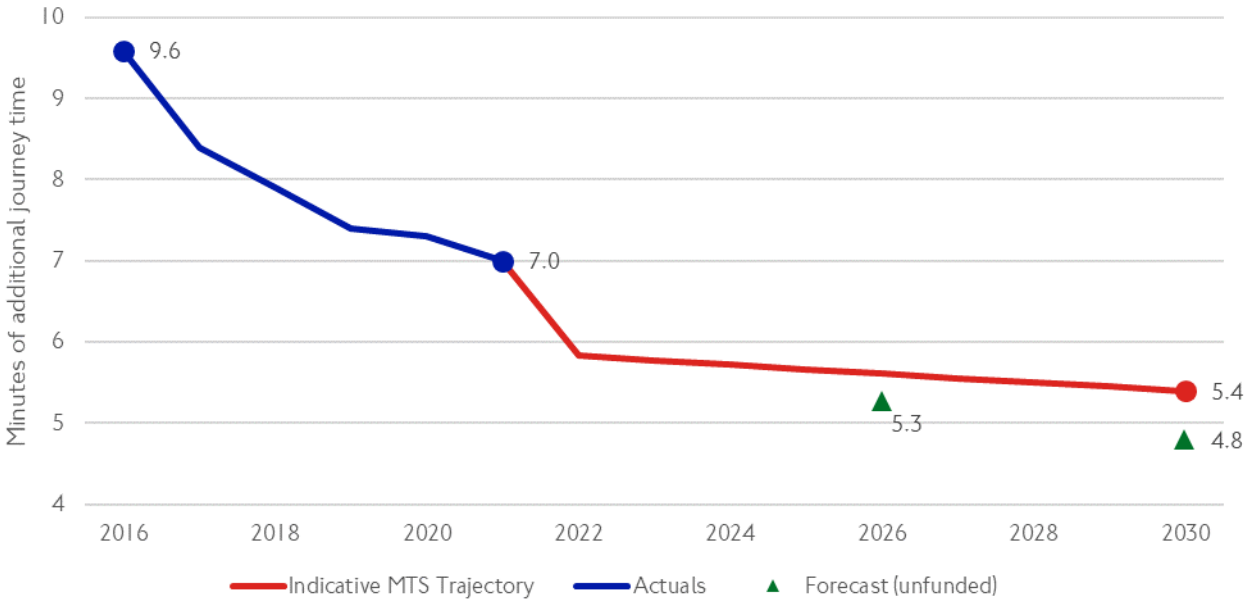

Figure 31. MTS Tracker for Accessible: Additional Step Free Journey Time. Source: TfL.

To support the future of our step-free programme in a way that responds to the needs of Londoners, we undertook a pan-London consultation, between November 2021 and February 2022. We received over 5,600 replies and through this consultation we can identify the step-free priorities that matter most to Londoners, rather than focusing on specific locations. From this we can apply what we learn to every Underground station in London to see which locations will benefit the most people. We are currently reviewing the results of the consultation to help shape future step-free access priorities, with final outcomes of the consultation due to be communicated in the summer.

Our Independent Disability Advisory Group – a panel of ten members, appointed for their lived experience of disability, as well as their extensive expertise and knowledge of the key issues and barriers to accessing public transport – continues to provide strategic and practical recommendations based on inclusive best practice. We have engaged with key stakeholders to understand their diverse accessibility needs to inform the customer experience on the London Trams fleet in the future in line with our aspirations for an inclusive accessible London.

TfL Go app and digital displays

TfL Go, our new innovative travel app, has now had 1.2 million downloads since its launch, with nearly a million of these in this past year. During 2021/22, we added functionality to the app with real-time ‘busyness’ information for Underground stations, further reassuring customers as they return to the network. Customers can now see whether stations are ‘quiet now’, ‘busy now’ or ‘very busy now’, alongside the expected quieter times to travel on any given day.

For the first time we are showing detailed accessibility information for stations and platforms, including live step-free access status based on lift availability. The app also complies with accessibility regulations for public sector apps such as screen reader support to landscape mode and larger type.

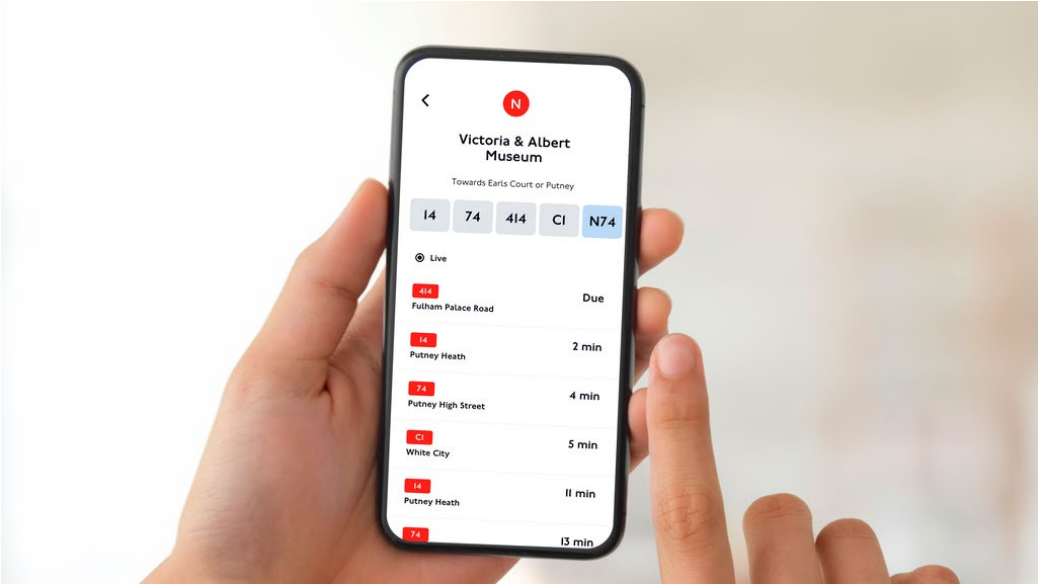

Figure 32. TfL Go smartphone app showing buses due to arrive at a stop outside the V&A Museum. Source: TfL.

Our focus with the TfL Go app will now be on integrating account and payment functionality so that customers can plan, pay and travel in one fully inclusive, integrated digital experience. Alongside TfL Go we rolled out a new design for status updates on digital displays in stations. The new design ensures disruption information is more accessible for a more integrated, modernised digital service.

Stand together against hate

Over the past year we have worked with transport police and community groups to launch a poster campaign across the network highlighting our zero-tolerance approach to hate crime and abuse The campaign aims to raise awareness of hate crime, encouraging people to report it and reassuring customers and staff that all incidents are treated seriously and investigated.

Each year, we work with our policing partners to support National Hate Crime Awareness Week. This year, we worked with community and partner organisations including StopHate UK, Tell MAMA, Covid-19 Anti-Racism Group, Gallop and London TravelWatch to improve our understanding of hate crime. This insight was, and continues to be, invaluable in helping to shape our campaigns, engagement activities and interventions, ensuring that our approach and activities are impactful in both reaching and reassuring the communities they represent.

Through our school's outreach Sustainable Travel, Active, Responsible Safe (STARS) Programme, secondary schools are also being given additional support to educate children about the impact of hate crime, encouraging pupils to share the solidarity message that hate crime will not be tolerated.

Tackling violence against women and girls

Women and girls are disproportionately affected by sexual offences and harassment while travelling in London by public transport, in taxi and private hire vehicles, walking and cycling, and we are taking action with our transport policing partners to tackle it.

We launched a programme of activity to improve the safety of women and girls covers policy, environment/infrastructure measures, communications, training and legislation. This work will have wider benefits for all our customers and staff.

We are rolling out sexual harassment training to our frontline customer service staff and enforcement officers to help them respond to reports, support customers and each other and challenge behaviour. Hundreds of staff have already completed the training. Sexual harassment will also form part of the new diversity and inclusion training being rolled out to all 25,000 bus drivers from 2022/23.

We were pleased to be accredited by White Ribbon UK which is the leading charity engaging with men and boys to end violence against women.

In addition to this, we are working with the Mayor's Office for Policing and Crime and the Night Czar to coordinate activity and deliver on the Mayor's pledge to make London one of the safest cities in the world for women and girls. We are strengthening our stakeholder engagement with women's safety organisations to better understand and respond to the issues facing women and girls as they travel in the capital.

Figure 33. TfL leaflets highlighting that sexual harassment will not be tolerated on our network. Source: TfL.

Travel mentoring

We ensured that our free travel mentoring service was able to continue to support people using public transport during the coronavirus pandemic, with safety procedures and risk

assessments in place. In addition, we introduced virtual mentoring, using a range of smartphone and personal computer applications to assist with social distancing guidelines. The Travel Mentoring Service is now operating as it was before the pandemic with telephone and email advice to help plan accessible routes and mentor supported practice journeys to help customers gain experience to become confident independent travellers. When customers prefer, we are continuing to offer the virtual mentoring, though most choose an in-person service.

Delivering value fares

Despite facing an unprecedented challenging period, we have continued to keep fares as affordable as possible and deliver value for money to support Londoners, and the London economy. However, in March, we raised fares to help us reach financial sustainability, in line with the conditions placed on us as part of our short-term funding agreement with the Government. The revenue raised from fares will ensure we can continue to keep services operational. Our fares continue to offer good value with our bus hopper fare allowing unlimited journeys within the hour for £1.65. From March, the minimum auto top-up amount on Oyster cards was reduced from £20 to £10 in recognition of the pressure some Londoners face due to increased living costs, and to make paying for public transport as easy and convenient as possible.

Quality

A quality public transport experience is vital if public transport is to be a mode that Londoners choose to use. This means we need to address the aspects of travelling by bus, Underground or rail that are difficult or discourage travel. We know that journey times matter to bus customers and that pre-pandemic declines in bus speeds contributed to a decline in bus use with many of these journeys being made by car or not being made at all, both bad outcomes for the environment, the health of Londoners, and local economies.

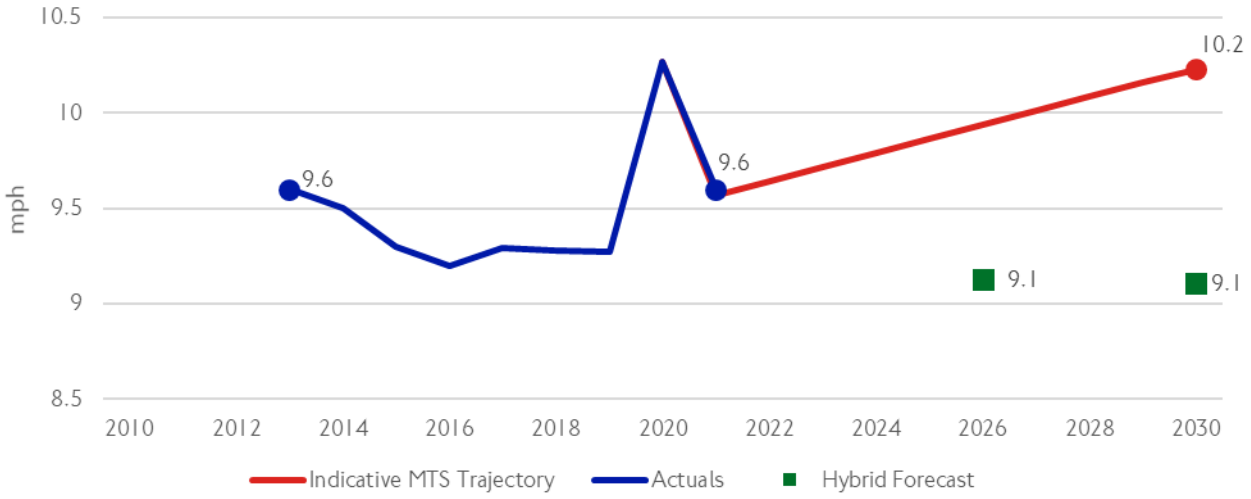

Figure 34. MTS Tracker for Quality: Bus speeds in London. Source: TfL.

Bus speeds are a key indicator for the perceived quality of a service. Figure 34 shows that these speeds were declining since 2015, but this trend has changed since the pandemic.

With recent increased rates of car travel and therefore congestion, the huge improvement seen in 2020 has fallen back in 2021, but we still remain in a better position than before the pandemic. However, our forecasts indicate that bus speeds risk declining again unless we take action to improve them. That is why our Bus Action Plan has recognised that "we urgently need to deliver a transformational improvement to bus journey times in order to provide a bus service that Londoners will choose to use."

We set a target of achieving an average perceived bus journey time of 32.9 minutes in London for 2021/22. Over the last year we have achieved a bus journey time of 31.8 minutes, which was better than the target. The bus journey time metric is a weighted measure of journey time as perceived by the customer combining time spent waiting and on the bus as well as buffer time to account for variabilities and time taken to interchange. A small increase element of the weighted time is included to account for bus crowding.

Bus priority programme

We work closely with the boroughs to bring forward schemes that prioritise buses on London's streets. Boroughs have a particularly significant role to play in delivering bus priority: boroughs are responsible for 95 per cent of London's streets, including 75 per cent of the strategic bus network, so congested borough streets will seriously impact the attractiveness of buses for Londoners.

In 2021/22, we worked with boroughs to deliver seven kilometres of new and improved bus lanes on the TLRN and borough roads. In addition, we have generated almost 8,800 hours of savings for bus passengers through prioritising buses at traffic signals as part of our Healthy Streets Signals Programme.

In September 2020, we launched our bus lane hours trial. This involved converting 85km of bus lanes on the TLRN to operate at all times. Prior to the pandemic, 1.15 billion journeys were made each year on bus routes that use these bus lanes. Our aim was to help social distancing on buses and at stops and to reduce the spread of coronavirus. Monitoring of the trial showed that it also improved bus journey times. Improvements were particularly noticeable in central and inner London, especially in both the mornings and evenings and throughout Sundays.

Following widespread support for these changes from customers and stakeholders, we are making the changes permanent. These changes have the potential to encourage a greater number of bus journeys. As set out in the Bus Action Plan, measures to speed up buses will support people to choose the bus rather than the car – not only boosting sustainable travel but reducing traffic dominance, improving air quality and reducing road danger, creating a virtuous cycle between buses and active modes.

New green, productivity boosting buses

We have continued to invest in improvements to our customers' experience on buses. We launched the innovative fleet of new buses on route 63 running between King's Cross and Honor Oak that have a host of customer-friendly features to make bus travel more accessible and comfortable. New features on these vehicles include more comfortable high back seats and USB chargers as well as enhanced digital information screens with live information across all our modes and estimated times to key points along the route. Additionally, signal timings along the entire route were reviewed, which resulted in

significantly more opportunities for buses to deliver improved journey times, with over 180 bus passenger hours saved every day.

Figure 35. New route 63 buses with panoramic roof, travel displays and at seat buttons. Source: TfL.

'Welcome back. Tube it. Bus it. Train it.' Campaign

The pandemic resulted in a significant reduction in the use of public transport and we need to win many of these customers back if we are to achieve the outcomes of the MTS. We must rebuild Londoners' confidence in using public transport and ensure it is a mode they choose to use over the private car.

Figure 36. Tube it. Bus it. Train it. Campaign material. Source: TfL.

In July, we launched the ‘Welcome back. Tube it. Bus it. Train it.’ campaign to safely win customers back onto public transport. The campaign captured what we do for London and our commitment to helping the city recover and thrive. The campaign highlighted the role that public transport plays in enabling the lives of Londoners. In September, we launched additional messages to support customers returning to work in offices and encouraged them to return to the city, to enjoy all it has to offer.

Customer Service Quality

The MTS sets out the need to improve customer service so the whole public transport network becomes easier and more convenient for people to access and use. The measure we use in our periodic Customer Pulse survey to understand whether we are meeting Londoners’ expectations is ‘TfL cares about its customers’.

Additional measures on our Customer Pulse survey help us to further understand how well we are delivering for Londoners and shows us where we should be focusing our efforts to improve the customer experience. Throughout 2020/21 and 2021/22 we performed well as reflected in our Care score, which remained high despite some challenges posed by the pandemic. Customers who continue to travel generally enjoyed more room on our services. Slight dips in scores generally occurred when there was increased pressure on the network as customers returned after relaxing of restrictions. However, we outperformed previous years and achieved our highest score to date during Period 11 2021/22, demonstrating Londoners appreciated our efforts to keep London moving during the pandemic and providing a foundation for future improvements. As we continue to recover from the pandemic and customers return in greater number crowding will inevitably increase which will put pressure on our Care score.

High speed mobile connectivity across the Tube network

In December, we agreed a 20-year concession deal with the Three and EE networks, alongside BAI Communications, to provide 4G and 5G-ready mobile connectivity across the London Underground network. Customers of Three and EE now have permanent access to 4G and 5G-ready communications between Westminster and Canning Town stations whilst travelling on the Jubilee line. The connectivity has been available as part of a pilot service since March 2020 and is now permanent as BAI Communications completes the first major milestone of its rollout of high-speed mobile coverage across London Underground. Pilot services with O2 and Vodafone will continue as discussions with BAI on access agreements are finalised for a permanent service.

This is the start of work to ensure that all stations and tunnels across the Tube network are due to have high-quality and uninterrupted mobile coverage by the end of 2024 – a fantastic improvement for our customers and for London.

We expect to launch 4G services across the Elizabeth line as part of a wider programme of improving the capital’s mobile connectivity while on the move.

Rail crowding

The MTS sets an ambition to reduce the proportion of rail distance travelled in crowded conditions by 10-20 per cent. An appropriate threshold for this is two persons standing per square metre. This is lower than sometimes used in the past but reflects potential lower

customer tolerance of crowding post-pandemic. This outcome is highly sensitive to post-pandemic demand. In 2020, it dropped to effectively zero but has since recovered to three per cent. We need more time to evaluate how this measure settles post-pandemic relative to patterns of peak demand.

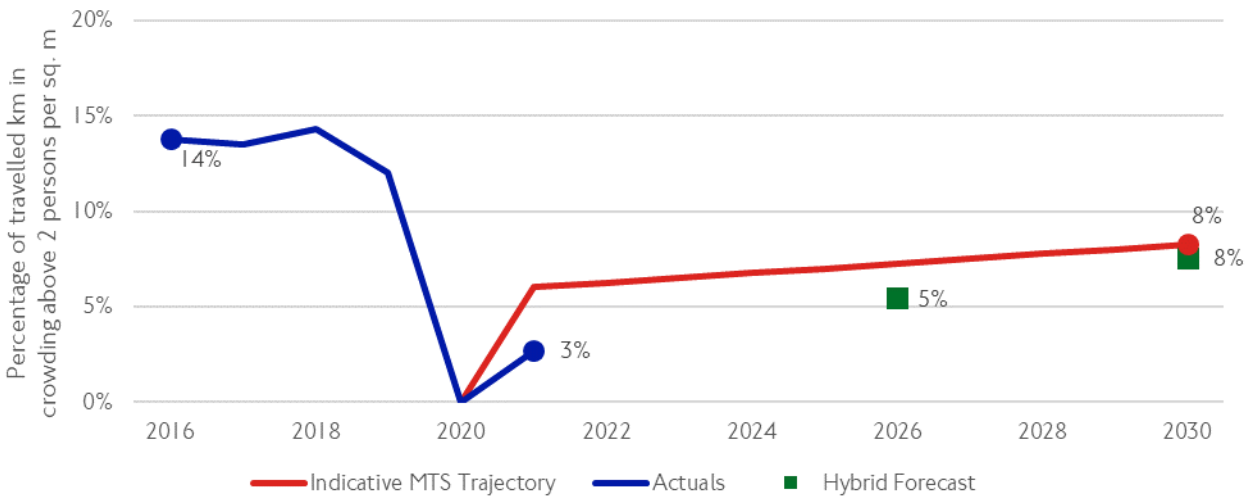

Figure 37. MTS Tracker for Quality: Percentage of rail travelled km in crowding above two persons per square metre. Source: TfL.

We forecast crowding is expected to increase in the late 2020s and potentially above trajectory if demand rebounds faster than our current estimate. In the long run there is still a case for supporting and growing rail capacity, which is at risk in a scenario with limited funding.

Future delivery plans for improving the quality of public transport

Subject to a long-term funding deal, we will continue to work with London boroughs to plan and deliver an ambitious programme of bus priority across the TLRN and borough roads.

We are actively engaged with the transition from the current national railway network structure to a new body called Great British Railways. Through this process we have responded to the Government's 'Whole Industry Strategic Plan' (WISP) call for evidence to shape the future of England's railways. The WISP will be the 30-year plan for the railways and is a key opportunity for us to shape the work being done in London to the national rail network.

The Piccadilly line generates more than ten per cent of the Underground's total ridership with approximately 202 million trips annually. Crowding is already prevalent on the Piccadilly line and is expected to increase with population and employment growth in London. We will continue to work to deliver the new generation of Tube trains for the Piccadilly line to replace the existing 1970s fleet. The new trains will be highly reliable, more energy efficient and designed for accessibility with improved customer information and security features. The new trains will begin to replace the current fleet from 2025 and the frequency of trains in peak hours will rise from 24 to 27 trains per hour from mid-2027, representing a 23 per cent increase in peak service capacity.

The Piccadilly Line Upgrade (PLU) aims to replace both the life-expired trains and signalling systems in two stages:

- Stage 1 is a £2.8bn programme to provide a new fleet of 94 longer, more spacious, air-cooled trains under construction by Siemens Mobility Ltd. Siemens Mobility Ltd have commenced construction of a c.£200m UK train manufacturing facility in Goole, East Yorkshire. Opening in 2023, this facility will create an estimated 700 skilled jobs with a further estimated 250 jobs created in construction and up to 1,700 indirectly in the supply chain. The new UK rail manufacturing facility will support around 80 graduates and apprentices and will be complemented by an Innovation campus for rail industry research and development.
- Stage 2 of the PLU, which is currently unfunded, will deliver key service enhancement objectives through a line-wide signalling upgrade to enable significant reductions in customer journey times, improve service reliability through automatic train operation and deliver the capability for a peak service of up to 36 trains per hour in the central area from the early-2030s.

We are in the process of transforming the Circle, District, Hammersmith & City and Metropolitan lines to run trains more reliably to make journeys faster and more comfortable. Since these lines share a lot of track and infrastructure, they are being modernised under a single combined and integrated project known as the Four Lines Modernisation (4LM). The four lines are among some of the oldest sections of the Underground network, with parts dating back to 1863. Together they make up 40 per cent of the Tube network.

A fleet of 192 modern, air-conditioned, walk-through trains are now running across the four lines. We have also made progress on installing a new signalling and control system to make the trains run more efficiently, improving capacity, frequency and reliability. Since September 2021 journey times between Hammersmith, Stepney Green and Monument have improved by approximately ten per cent. We have also increased the number of trains in this area from 27 trains an hour to 28 trains an hour during the busiest times. The signalling upgrade will enable a further increase in the peak service level to 32 trains per hour in the central areas when completed.

As part of our DLR rolling stock replacement programme a new fleet of 43 trains is being manufactured to replace 33 older trains with up to eleven additional trains to expand capacity. Each five-car train will be around 86 metres in length, equivalent to three of the current fleet coupled together, to enhance capacity and provide improvement to journey time and the customer experience. It will also include an expanded depot to stable and service the new fleet and there will also be telecoms system modifications to provide enhanced customer facing information and traction power capacity works.

New Homes & Jobs

The transport network has a crucial role to play in supporting people to live and work in London. Using the Healthy Streets Approach to plan new developments around walking and cycling for local trips, and public transport where walking and cycling takes too long or is impractical, enables people to live active and healthy lives and the city to function

efficiently as it recovers and grows. There are two interlinked outcomes related to this mayoral priority.

- **Sustainable –** Active, efficient & sustainable travel will be the best option in new developments
- **Unlocking –** Transport investment will unlock the delivery of new homes & jobs

The approach outlined in the MTS contributes to the London Plan's aims for Good Growth, which are to build strong and inclusive communities, make the best use of land, create a healthy city, deliver the homes Londoners need, and grow a good economy and increase efficiency. The sustainability of development is also critical for the Mayor's aims for decarbonising transport in London by supporting mode shift away from the car. Good Growth encompasses both the Sustainable and Unlocking outcomes. The metric is shared between each and so the report includes progress against each separately before considering progress against the metric and next steps together.

We work in partnership with our stakeholders to achieve these outcomes. We work with London boroughs and developers through the planning process to secure funding for infrastructure or transport service improvements which ensure sustainable and car free development. It is important to highlight some significant risks to this agenda. Some TfL financial commitment is often required to leverage third-party funding and transport schemes need to be sufficiently developed to attract funding.

The continued uncertainty over capital funding means we are at risk of losing opportunities for major improvements across London including step-free access projects. The Government is also considering planning reforms which could alter the infrastructure funding environment. In the short-medium term, this could place additional risk on our ability to secure funding through the development management process, and in the longer term it could also undermine any potential for significant revenue to fund strategic infrastructure on the scale of Bakerloo line Underground extension or Crossrail 2.

Sustainable

TfL continue to shape local plan policies across London so that they are better aligned with the Mayor's priorities as set out in the London Plan and the MTS. We have ensured policies require transport land and assets to be safeguarded, and for car parking provision to be reduced in new developments. Every car free home delivered in London brings down car ownership and generates mode shift.

Implementing the London Plan

In the past year, we have worked with more than 20 boroughs to improve their local plan policies and are scheduled to attend two examination hearings to challenge policies that are not considered robust nor evidence-based. We have also shaped more than 20 supplementary planning documents that cover more detailed planning for particular areas of growth. Figure 38 illustrates how influential we have been in shaping local parking policies.

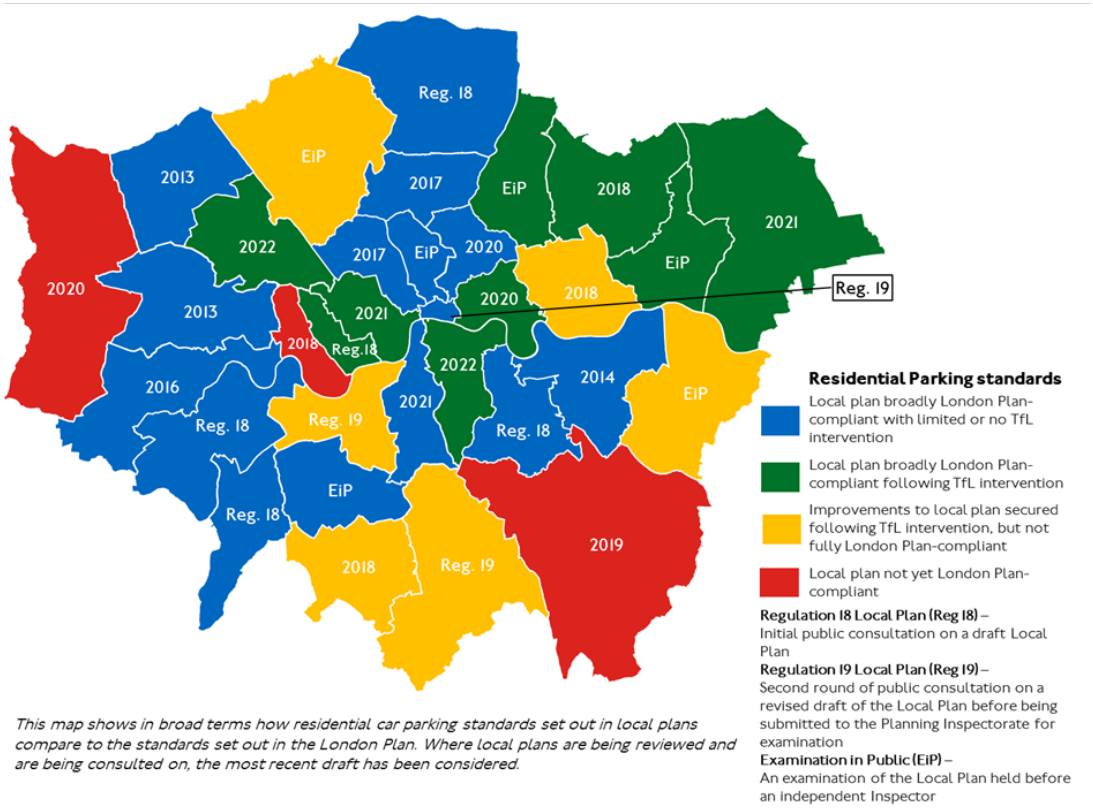

Figure 37. Residential parking standard relative to the London Plan. Source: TfL.

Sustainable transport, walking and cycling guidance

We have developed, published and consulted on London Plan Guidance on sustainable transport. This guidance provides greater detail for local authorities and others to implement the London Plan as intended. This guidance is a material consideration in planning decisions and strengthens our ability to protect transport assets and operations across London. It replaces out-of-date, revoked guidance and is much more strongly focused on ensuring boroughs plan active travel networks and enhance the transport network through new developments.

Unlocking

We play an active role in unlocking housing and jobs across London. This includes using our own investment and leveraging third-party contributions to deliver transport infrastructure which enables more homes to be developed, more quickly and more sustainably. Public transport connections are key to unlocking parts of London to provide viable places to build homes and create jobs, generate placemaking and other benefits; at the same time as providing new and accessible connections, improving the quality of the journey. The sustainability of development is an essential part of reducing carbon emissions from transport.

The Elizabeth line

The Elizabeth line is a major transformative transport scheme providing a 118km high frequency high-capacity railway line to serve London and the South East. It provides a ten per cent increase to London's rail network capacity, bringing an estimated 1.5 million

additional people to within 45 minutes of central London and reducing journey times for existing customers.

On 24 May, the central and final section of the Elizabeth line between Paddington and Abbey Wood was opened, with the full line operating from autumn this year. The final timetable across the entire railway will be in place by May 2023, with service in the central section between Paddington and Whitechapel being 24 trains per hour during the peak.

The impact of the scheme can be seen in advance of its opening. Thus far the project has supported the delivery of an additional 55,000 new homes along the route, as well stimulating increased planning activity near many stations along the length of the corridor. The impact of the pandemic are likely to have impacted the full scale of delivery. We will continue to monitor and assess the scale of housing delivery in future reports.

Figure 39. Hayes & Harlington station supporting local development. Source: TfL

To improve links to the Elizabeth line stations in east and south-east London, where many customers will use buses to get to and from stations, changes were made to 14 bus routes from Saturday 14 and Saturday 21 May 2022 and included the new route 304, which operates between Manor Park and Custom House stations.

Through the course of the construction, Crossrail has generated 55,000 full time jobs and supported the construction skills gap by training more than 20,000 students (against an initial target of 8,000) and provided more than 1,000 apprenticeships.

Northern line extension

The Northern line extension from Kennington to Battersea opened with two new Underground stations – Battersea Power Station and Nine Elms – in September 2021. The

extension provides access to the Vauxhall Nine Elms Battersea Opportunity Area and supports the delivery of over 20,000 new homes and 25,000 new jobs. Recent data indicates that around 90,000 passengers pass through the two new Northern line extension stations every week.

The stations also provide: step-free access from street to train, improving accessibility in the local area, public space and community facilities. This is the first major expansion of the Underground since 1999 and was funded through developer contributions. The extension is a result of our multi-disciplinary and integrated approach to infrastructure planning, delivery and implementation. Following the completion of the Bank branch of the Northern line in 2022 for the Bank station upgrade, the number of services will be doubled to this area.

Barking Riverside extension

Progress continues on the delivery of a new step-free access Overground station at Barking Riverside. Barking Riverside is the largest housing development in east London, with planning permission granted for the delivery of 10,800 homes, new schools and community space. Without the station delivery, the full potential of the site would not have been achieved.

The delivery of the scheme meets the principles of Good Growth by unlocking housing in East London, provides a new station at the heart of the new development, a link to Barking town centre and other local walking and cycling improvements. The station is also an extension of the London Overground Gospel Oak to Barking services and will provide step-free access from street to train, improving accessibility to services and providing a sustainable alternative to car travel. Construction of the station and 1.5km viaduct are nearing completion with train services expected to start in autumn 2022.

East London line and DLR Housing Infrastructure Funding

The Department for Levelling Up, Housing and Communities opened the Housing Infrastructure Fund (HIF) in 2017 – a government capital grant programme of up to £5.5bn to unlock and deliver new homes across England. Together with the GLA, we applied for two schemes that were awarded Government funding. The projects include packages of interventions for the DLR and the East London line (ELL) to unlock new homes in Newham and Tower Hamlets, and Southwark and Lewisham, respectively. Over the past year, we have continued working with Government to progress these schemes.

The ELL HIF programme was awarded £80.1m from Government to enable an increase in the capacity of the core section of the line from 16 to 20 trains per hour, as well as an expansion of Surrey Quays station and a new station at Surrey Canal Road. This will enable major housing development to come forward – around 14,000 homes, in total.

On the DLR HIF, we entered an agreement with the GLA and Government in December 2020 to receive £281m to purchase additional DLR trains, expand Beckton DLR depot, and contribute to the cost of enabling works at Poplar DLR depot. This agreement was confirmed in July 2021 when, after further analysis and discussions, the number of additional trains needed was adjusted to a maximum of eleven. The DLR HIF is one of the largest single contributions that we can make to delivering the new homes and jobs

objective of the MTS by supporting or enabling the delivery of up to 12,000 homes in total – including up to up to 1,740 homes at Poplar.

Silvertown Tunnel

Silvertown Tunnel is a new 1.4km twin-bore road tunnel that is currently being constructed in East London. There is significant congestion on this part of the highway network, with traffic on the approach to Blackwall Tunnel regularly queueing for more than 20 minutes in peak periods. In addition, users experience frequent tunnel closures that lead to widespread highway congestion as there are limited options for crossing the river in this part of London. This new cross-river link will reduce congestion and improve resilience on this constrained part of the network, helping to support economic growth in East London. A user charge for both Blackwall and Silvertown tunnels, together with a significantly expanded cross-river bus network, will manage levels of traffic demand and environmental impacts, including air quality.

Construction work began in 2020 and has made good progress this year with worksites set up on both sides of the river. The tunnel boring machine (TBM) was delivered to the site in December 2021 and is currently being assembled at ground level. A launch chamber is nearing completion and we will launch the TBM this summer. Traffic, air quality and noise model forecast work is also underway which will be used to establish the opening user charge for both tunnels, inform plans for a new cross-river bus network, and inform what local highway mitigation measures are needed. The new tunnel is on track to open as planned, in 2025.

Tottenham Hale

The upgraded Tottenham Hale station opened in December 2021. The scheme was part funded by our Growth Fund. The station upgrade has delivered a step change for customers, providing a seamless step-free interchange between rail, Tube and street. It has made the location an exemplar multi-modal interchange, particularly with bus services.

Figure 40. Station upgrade at Tottenham Hale

The upgraded station supports over 5,000 new homes and 4,000 new local jobs within the town centre and surrounding area. A new entrance has also improved wayfinding in the

local area, contributes to the public realm and to the built environment. The upgrade represents a major investment in Tottenham, and we have worked closely with LB Haringey in line with community aspirations for the area. A transfer deck on the new ticket hall building can support over site development and further new homes for London.

Supporting boroughs to level up

The Levelling Up Fund is a £4.8bn capital fund for the whole of the UK to invest in infrastructure that improves everyday life across the UK. Round one was launched in 2021 for bids of up to £20m (£50m in special transport circumstances) to support town centre and high street regeneration, transport projects, and cultural and heritage assets. As part of this, London boroughs are able to bid for projects of all types and the GLA can submit one transport bid. Bids can be submitted as individual schemes or as a coherent package of schemes. Round one bids are aimed to be spent and delivered by 2024/25.

As part of the first round, we were successful in supporting three boroughs to secure investment for four transport proposals in the following locations:

- Newham – Connections to Opportunity bid: Building a new bridge over the River Lea in Newham (£19.8m)
- Newham – 15 Min Neighbourhoods bid: Connecting 75,000 of Newham's residents to vital infrastructure by a 15-minute walk or cycle (£19.9m)
- Ealing: Connecting Northolt station to White Hart Roundabout bid (£7.2m)
- Tower Hamlets: Transforming Whitechapel Road bid (£9.3m)

In total, London received £65m of the first £1.7bn of the Government's £4.8bn Levelling Up Fund, of which £56.2m will be allocated to transport proposals. We are working with the successful boroughs to deliver their projects.

The Government recently announced the second round of the Levelling up Fund. The process is similar to round one and is another opportunity to bring forward much needed schemes in London. Round two is currently open and the deadline for submissions is 1 July; with announcements on successful projects to be made later in the year. We continue to work with boroughs and the GLA on bids.

Growth Fund

Our Growth Fund is a part of a portfolio of measures designed to unlock homes and regenerate areas of London where transport acts as a constraint. The Growth Fund is where TfL directly invests in transport projects that have wider housing and regeneration benefits, that already have substantial third-party funding, further commitment by Government or other third-party sources. We also work and identify other priority projects through planning applications, allocation of Mayoral and borough CIL, Local Plans, and government funding.

The Growth Fund has contributed to a number of completed projects including Woolwich Crossrail station, White Hart Lane station upgrade, Ilford Station upgrade, Tottenham Hale station upgrade and Elephant & Castle roundabout.

Over the past year, despite a pause on several projects owing to the pandemic and funding uncertainty, progress has been made to deliver schemes funded by the programme that support Good Growth.

TfL housing sites

We continue to directly support the delivery of new homes on land we own across London. Work has already either started or completed on more than 2,000 homes and, in addition, we have planning approval for a further 6,400 across 20 sites. We have schemes submitted for planning that should be capable of delivering circa 600 more new homes, and up to a further 700 homes are due to be submitted to planning this year.

Approvals at planning committee and on appeal last year have included:

- 454 homes (40% affordable) at Wembley Park (Brent)
- 162 homes (40% affordable) at Arnos Grove (Enfield)
- 351 homes (40% affordable) at Cockfosters (Enfield)
- 51 homes (45% affordable) at Old Brompton Road (Kensington and Chelsea)

There is a significant pipeline of sites which will enable the delivery of a total of 20,000 homes over the next ten years, alongside delivering operational improvements.

Since 2016, more than 50 per cent of the homes brought forward are affordable housing.

We remain committed to delivering its housing programme in full as soon as possible, and are working with the GLA, developers and councils to make sure that it can build the homes our city needs in a safe, responsible and transparent way. To help facilitate this we work through our property company, TTL Properties Limited (TTLP).

Going forward all schemes in the programme will be rigorously reviewed to ensure they achieve industry leading levels of sustainability in line with the TfL Property Development Sustainable Development Framework, which is a metric-driven approach to optimising, specifying, delivering and monitoring best-in-class sustainability performance across the development portfolio. In terms of energy and carbon reduction, this means an average reduction of emissions of 55 per cent (and up to 80 per cent on some projects) which significantly exceeds the London Plan requirement of 35 per cent carbon reduction. All of our developments are net zero carbon as per the London Plan definition (i.e. operational carbon) and we are currently looking to procure responsible offsets and achieve whole life net zero carbon as per the United Kingdom Green Building Council definition (and where feasible aligned to London Energy Transformation Initiative with no offsets required for operational carbon). We are committed to achieve this by 2030 but would like to bring that date forward for our residential and commercial property development programme. For our existing housing estate, which will require retrofitting etc, and this will be done by 2030.

Development of these sites in and around transport infrastructure, including bus depots and train stations, supports the electrification of the bus fleet and helps to facilitate Step Free Access at a number of our stations. Given the sustainable location of the majority of these sites we are able to deliver primarily car free developments.

Progress against our aims

Overall delivery of homes and jobs in London is not within our direct control. However, we can influence London-wide policy, and the MTS has a number of proposals focused on improving the sustainability of new developments.

The MTS sets an ambition to increase the number of Londoners living in areas well served by public transport – as measured by the Public Transport Access Level (PTAL). We have developed a measure of the proportion of Londoners living in PTAL (4+), both in Greater London and specifically in Opportunity Areas, where substantial housing growth is expected.

The proportion in PTAL 4+ has been rising because of population growth around public transport, and because PTALs have increased since 2010. Future progress is reliant on new homes being built and jobs generated in well-connected locations and would be undermined by service reductions, if implemented.

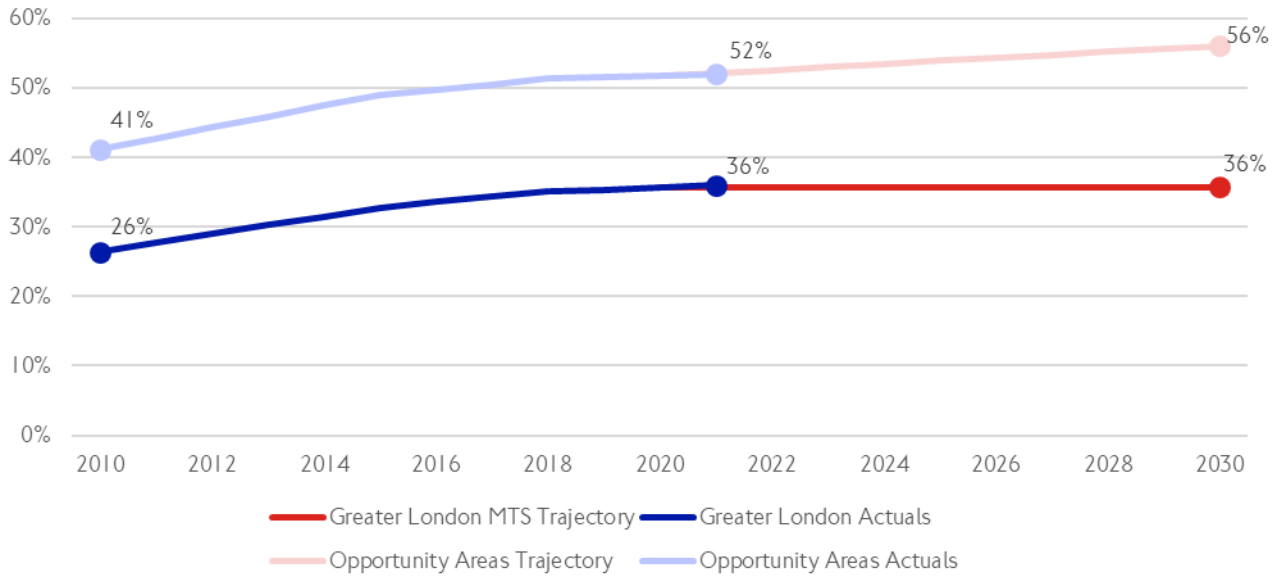

Figure 41. MTS Tracker for Sustainable and Unlocking: Proportion of population living in high PTAL. Source: TfL.

Future delivery supporting New Homes & Jobs

We will continue to work with boroughs and exert pressure on car parking provision in London as local plans make their way through the planning system. We will also increase our focus on ensuring local plans adequately plan for cycle networks, which will be made easier and more likely to succeed with the London Plan Guidance published this year.

We shape the city through our development management function, securing improvements to design and the sustainability of sites, as well as funding from developers to continuously enhance and expand the public and active travel networks in London. Taken together with improving local policies, this is the most effective way to deliver mode shift in London.

We will continue to make the case that maintaining and improving London's public transport infrastructure is crucial for achievement of shared policy goals with government,

including the increase in development that is required by both Mayoral and national policies.

Major new rail projects

A number of projects which will unlock future growth in London are reliant on and in need of funding to secure delivery in the long term. These projects form an important part of meeting London's current and future needs, both in terms of strategic areas of growth and benefitting existing communities.

Focus on: Public transport access to Thamesmead

We are actively working on the business case to seek funding for the extension of the DLR from Gallions Reach via Beckton Riverside to Thamesmead, as set out in the MTS. The scheme has the potential to bring about transformative change across four major sites in the Thames Estuary Gateway, and unlock 25-30,000 new homes, 10,000 jobs, a new town centre at Beckton Riverside and an improved town centre at Thamesmead, as well as providing a new river crossing. In addition, a bus transit is under investigation linking Thamesmead with Woolwich Arsenal and Abbey Wood.

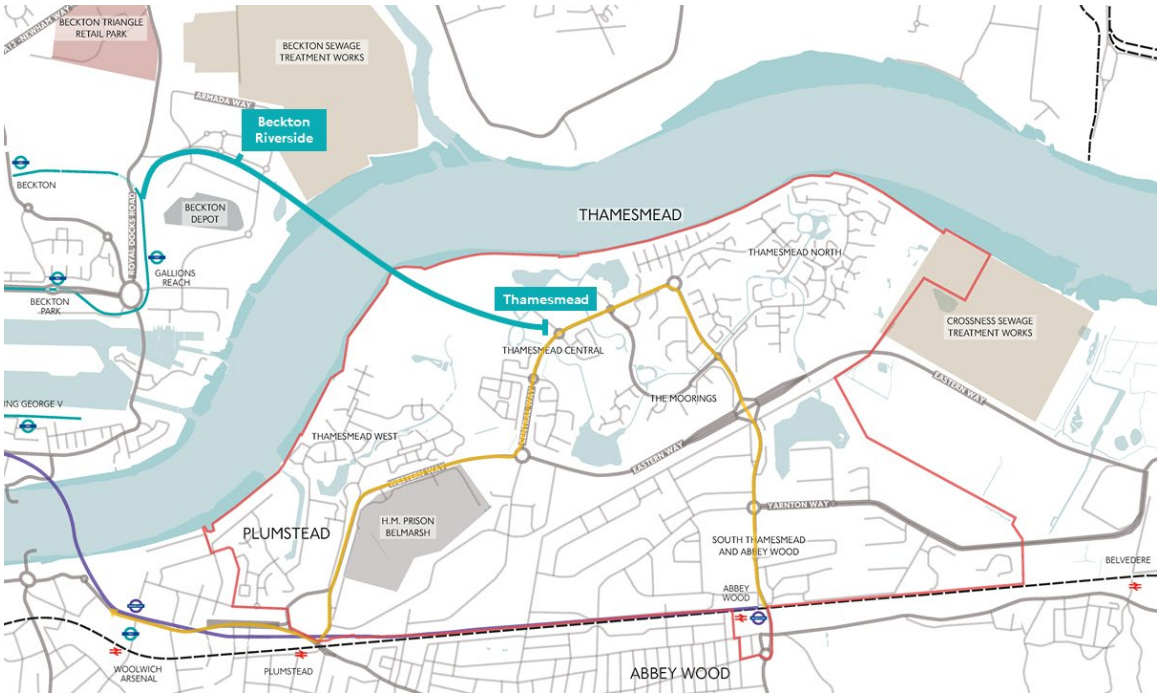

Figure 42, Potential public transport access to Thamesmead

The scheme would also incorporate Healthy Streets principles, and other local walking and cycling improvements to support more active travel in local communities. Without the transport infrastructure, the full scale of potential will not be maximised. Alongside the other DLR improvements and new Elizabeth line station at Abbey Wood, this will generate a holistic change and improvements to the wider area.

A strategic outline case for these proposals and how they support development is being drafted and will be presented to the Government early next year. Subject to funding and approvals, an application for consent could be submitted in 2025 with services operating by the early 2030s.

We are working closely alongside the LB Newham, Royal Borough of Greenwich, the GLA, Homes England, Government departments and the private sector to bring an affordable and deliverable scheme forward.

West London Orbital

We are continuing to work closely with the West London Alliance and associated boroughs to develop the case for the West London Orbital. The West London Alliance is a partnership covering seven West London boroughs – Barnet, Brent, Ealing, Hammersmith & Fulham, Harrow, Hillingdon and Hounslow. This much needed new orbital link would significantly improve connectivity across this part of outer London and support sustainable housing growth and jobs across west London. It would also offer interchange opportunities with the Elizabeth line and High Speed 2. The scheme is still at an early stage of development but, together with the boroughs, we are developing the feasibility design and the case for the scheme. To deliver it, funding will be required from Government as well as from local sources. Subject to funding, an application for consent could be submitted in 2024, with services operating by the end of the decade.

Bakerloo line extension & Crossrail 2

The Bakerloo line extension has been safeguarded from Elephant and Castle to Lewisham and will be developed in future subject to a viable funding package. It will unlock up to 25,000 homes and 5,000 jobs, improve capacity and connectivity in Old Kent Road and the wider south-east corridor.

Crossrail 2 safeguarding needed to be refreshed and, subject to DfT approval, we aim to complete this by this summer. Crossrail 2 could play a vital role in providing new connections across London, improving transport capacity across the network at the point it is needed, and unlocking homes and jobs across the capital and beyond.

While we recognise the schemes are not presently affordable, by safeguarding their routes we keep open the possibility of delivering them in later decades. Both schemes have an important role in London's future growth and we will continue to promote these schemes at a national, regional and local level.

4. Future delivery of the MTS

The previous section established our progress against each MTS outcome, together with the level of change needed by 2030 to remain on trajectory towards the 2041 ambitions (based on the measures on the MTS Tracker). These are summarised in Table 5. The scale of the challenge is large, and achieving these ambitions therefore requires an integrated approach and commitment to long-term change.

Table 5. MTS Tracker June 2022

Outcome	Measure	2021	Aim 2030	Forecast 2030
Mode Share	Percentage of trips undertaken by active, efficient and sustainable modes	58%	68%	64%
Active	% of Londoners doing 20min active travel per day	35%	52%	37%
Safe	Number of people killed or seriously injured on London's roads	26% below 2010-14 baseline	70% below baseline	36% below baseline
	Number of customers killed or seriously injured on TfL services	190	45% below 2021	8% below 2021
Efficient	Number of car trips crossing cordons in central, inner and outer London	Outer 1.8m; Inner 1.3m[7]; Central 0.5m	Outer 1.8m; Inner 1.1m; Central 0.6m	Outer 2.2m; Inner 1.3m; Central 0.6m
Green	Average roadside NO_2 concentration in central, inner and outer London	Outer 31; Inner 32; Central 34	Outer 19; Inner 22; Central 26	Forecast not available, but we are on trajectory towards the ambitions
	All CO_2 emissions from London's transport network	6.3m tonnes (2020 figure)	4.4m tonnes	4m tonnes in MTS, aspiration now to reach net zero
Connected	% of Londoners living within 400 metres of a bus stop	96.5%	96.5%	96.5% (subject to service level review)
Accessible	Additional journey time by step-free routes	7 minutes	5.4 minutes	4.8 min (needs investment)
Quality	Percentage of rail travelled km in crowding above 2 persons per sq. metre	2.7%	8%	8%
	Average bus speed (within safety and speed limits)	9.6mph	10.2mph	9.1mph

[7] 2019 figure for inner London

Outcome	Measure	2021	Aim 2030	Forecast 2030
New Homes & Jobs	Proportion of population living in PTAL 4 or higher, in Greater London and Opportunity Areas	London 36%; OAs 52%	London 36%; OAs 56%	London 36%; OAs 56%

Table 5 shows that significant progress will be required this decade to remain on trajectory towards the 2041 aims, based on the assumption that the rate of progress will be even between the 2020s and 2030s.

Many of the outcomes of the MTS are interrelated and progress on one outcome can support progress towards many other outcomes. On this basis, we have identified three key areas for action to address the most pressing issues where we will need to make progress in the coming years. These are:

1. Reducing traffic
2. More progress on safety
3. Continuing investment

Reducing traffic

The majority of MTS outcomes, including Mode Share, Safe, Active, Efficient, Green and bus speeds, depend on reducing the volume of car traffic on London's roads. Traffic reduction is fundamental to the goals of the MTS, which sets a target to reduce the number of car journeys made in London by three million every day by 2041, based on 2015 levels.

Between 2000 and 2011, the number of weekly car driver trips in Greater London reduced from 6.8m to 5.9m. Subsequently, the rate of decline has slowed significantly, and in outer London car travel has started to increase.

During the pandemic, London saw a sharp reduction in traffic levels, especially during times of lockdown. This contributed to attractive environments for walking and cycling, and significantly improved bus speeds. Since then, road traffic returned earlier and at a higher level than public transport, with recent trends suggesting a stable picture at just below pre-pandemic traffic levels.

We are taking bold action to accelerate the trend of reducing car travel, working with boroughs to deliver a range of inter-linked measures:

- Delivering our Walking and Cycling Action Plans, together with our new Bus Action Plan. These Plans include infrastructure and non-infrastructure measures to make walking, cycling and buses more attractive than cars, including reducing parking and reallocating more road space to sustainable modes;
- Working with London boroughs to plan and deliver measures to provide convenient alternatives to the car for local journeys, including local improvements to bus and cycle networks and measures such as cycle parking which reduce the need for car ownership. This will build on the latest round of borough Local Implementation Plans developed for 2022/23;

- Managing the street network in a way that makes walking, cycling and public transport attractive and appealing choices for journeys. In 2022/23 we aim to deliver 15,000 hours of savings every day for people using sustainable modes as part of our signals retiming programme, as well as continuing to enhance our traffic management capabilities through investment in the SITS; and
- Consulting on expanding the Ultra Low Emission Zone London-wide in 2023, and on the potential for a future road user charging scheme that could integrate existing schemes by the end of the decade. Both of these would encourage reductions in car use and ownership.

More progress on safety

Achieving Vision Zero ambitions both on London's roads and our public transport services is a critical, long-term undertaking. Improving safety will not only help achieve the Safe outcome of the MTS but will make sustainable travel more attractive for everyone – which is vital to making progress against Mode Share, Active, Efficient and Green outcomes.

Vision Zero on London's roads requires a safe systems approach, based around five key pillars of action: Safe Speeds, Safe Streets, Safe Vehicles and Safe Behaviours, as well as post-collision response.

There was a significant reduction in the number of people killed or seriously injured in 2020, during pandemic conditions on the roads. However, 2021 saw a reversal of this trend as car journeys returned to near normal levels, and people killed or seriously injured increased compared to 2020. Unless improvements are made, we are forecast to significantly miss our interim 2022 aim.

The good news is we have a clear set of priorities that will help affect change. Traffic reduction remains one of the most effective ways of reducing the number of people killed or seriously injured on our roads, particularly in residential neighbourhoods, and lowering speeds reduces the likelihood and severity of collisions that may occur. Nearly half of London's roads have a 20mph limit and we need to set the expectation that all roads should be 20mph by default, with justification provided as to why a higher limit would be more suitable.

By focusing our available investment where excess harm is occurring on our roads, such as at the most dangerous junctions, we will reduce the likelihood of collisions occurring. We will need to continue our Safer Junctions programme and understand how interventions can be accelerated at pace as funding allows.

We must continue to reduce the danger at source with safer vehicles. We have been leading the way in this area with Direct Vision Standard and the Bus Safety Standard. We will be building on both in the coming years to address safety of heavy goods vehicles and buses. Progress on implementing safety features on cars is lagging. Cars have become much safer for their occupants during the 21st century, but much less has been done to reduce the danger cars pose to other street users. Technologies are available or developing that can make a real difference to this, most notably ISA. Progress in improving vehicle safety relies on legislation and further development by manufacturers. We are

recommending to government that they adopt stretching ambitions for vehicle safety measures and continue to engage with them on a regular basis.

We must continue to reduce dangerous behaviours and better protect people when they are most at risk, such as walking, cycling or riding a motorcycle. Working with the MPS, our new and enhanced enforcement capacity will allow for a million additional offences to be enforced by 2023/24. We also need to prioritise road safety investment to help reduce the gap in road safety outcomes in areas of high deprivation, inequality and vulnerability and will be publishing further research soon.

Around 70 per cent of deaths and serious injuries in London take place on borough roads, so the strategic partnership between us, the police and London boroughs is the foundation of our approach to achieving Vision Zero.

We commend the work undertaken by boroughs over many years to reduce road risk in their areas and to lead the way with key interventions such as area wide 20mph limits and School Streets. The scope of this ambition and the embracing of Vision Zero is very clear in many borough Local Implementation Plans. While each borough is unique, there is a core set of actions pioneered by the most ambitious that all boroughs can take to reduce the impact of road risk and the toll of road deaths and injury to their residents:

- Lowering speed limits to 20mph;
- Reducing traffic on local streets for safer, greener roads to protect children and people walking and cycling;
- Designing streets with safety in mind, to help everyone get around safely and make active travel attractive;
- Promoting and encouraging ways to travel that pose less risk to other people on the roads; and
- Leading by example in committing to eliminating casualties on our streets, through supply chains and fleets.

Major risks to ongoing improvement in safety include the emerging tendency for larger vehicles, which increase the risk of serious injury or fatality in any collisions. The fact that much of the required progress is outside our direct control is a risk, though we use our influence as much as possible to both encourage individual behaviour change as well as pressing government for regulatory improvements that would encourage safer vehicles.

Compared to the number of deaths and serious injuries on London’s road network, our public transport network is relatively safe. Our focus here is to maintain and continually improve the safety of our public transport network. We are working to ensure our policies and processes are evolving to do that, and that we are sharing learning across our public transport modes. We apply a focused approach on the areas we expect to drive the biggest change. Vision Zero for public transport takes a similar safe systems approach focusing on Safe People, Safe Places and Safe Policies and Processes.

Customers most commonly injure themselves through slips, trips or falls. We have strategies to understand why these injuries happen across different modes, and to assess further action needed to prevent them.

To keep our customers safe our stations, stops and vehicles need to be safe places to travel on and through. As part of the Bus Safety Standard, from 2024 all new buses

entering the London bus fleet must have additional safety features. In addition to reducing road risk, these requirements include improved occupant friendly interiors to reduce risk to passengers on the bus.

A focus on safe people, both through the behaviours of our workforce and customers, helps keep customers safe whilst travelling. On London Underground, intoxication is frequently a contributory factor in slips, trips and falls and London Underground's intoxication strategy aims to reduce customer injuries, and help our customers feel safe. The strategy takes the four E's approach to behaviour change: Engagement, Education, Encouragement and Enforcement. The key to tackling intoxication on the front line is through consistent staff engagement to support and assist our more vulnerable customers. As part of this work, behaviour change workshops continue to be delivered at our hotspot stations where customer injuries are highest. The workshop explores drivers of customer behaviours and works with station staff to implement interventions tailored to the specific challenges at challenges at each station.

Continuing investment

The pandemic has had a devastating impact on our finances. With financial support from Government, we have been able to continue operating our services as well as making targeted investments to improve London's transport network. Looking to the future, we have demonstrated how we will reach financial sustainability, and no longer require emergency revenue support, by April 2023, but this by itself is not adequate to fund the continuing investments needed to achieve shared policy goals between the Mayor and Government. The level of investment which can be afforded under our current Budget (to 2025/26) is 'managed decline'[8] characterised by only completing contractually committed enhancement projects (except coroner-mandated safety schemes or financially positive business cases). This means no new Healthy Streets schemes, step-free access projects or Growth Fund, as well as the replacement of future rolling stock such as the Bakerloo and Central lines being deferred into the late 2030s. If this level of investment is continued in the long-term, then there would be a profound impact on delivery of MTS outcomes. Further capital funding is essential if London, like the UK's other great cities, is to contribute to pressing national priorities.

There are several critical steps to securing and maximising the impact of investment in London's transport network:

- We continue to discuss our funding requirements for the next three years (the Spending Review period) with central Government. We have been clear that long-term funding certainty is needed for us to commit to the ongoing renewal and improvement of London's transport network, which is critical both for achieving MTS aims but also those of central Government. These discussions have been progressing and we hope will lead to confirmed investment funding over the Spending Review period;
- Beyond the Spending Review period, the need for funding certainty and continued investment in London's transport network will continue. We will keep building the

[8] Our 'Managed Decline' scenario is set out in our Financial Sustainability Plan https://content.tfl.gov.uk/financial-sustainability-plan-11-january-2021.pdf

evidence base of the benefits of investment in London, and consequences of allowing our network to move into Managed Decline, to ensure we are in the best possible place to lobby for funding in the next Spending Review;

- We will be submitting evidence to the National Infrastructure Committee to inform their development of an updated National Infrastructure Assessment, expected to be published in autumn 2023. This will set out the spending requirements for infrastructure across the country, and we will be making the case for why continued investment in London's transport network is needed and beneficial to national policy goals;
- Alongside securing funding, we must ensure our own financial sustainability. Ensuring all our activities – both operations and investment – are delivered as efficiently as possible means we can maximise the available funding to deliver the improvements the transport network needs. Our Financial Sustainability Plan, published in January 2021, set out how we would achieve this financial sustainability, and we continue to progress the key workstreams set out in that plan; and
- It is critical our investment is targeted as much as possible towards improving MTS outcomes. To support this, we are developing evidence-led tools to inform our next Business Plan and aligning these both to the MTS ambitions and our Vision & Values, allowing us to prioritise the projects which will deliver the most progress against our ambitions.

5. Conclusion

The pandemic significantly affected how people have travelled in and around the capital, both in the short- and the longer-term. At the time of writing, whilst all formal coronavirus pandemic restrictions have been removed and demand on the principal public transport networks is recovering, it remains materially below pre-coronavirus pandemic levels. It is also becoming clear that some travel behaviours, catalysed by the pandemic, are tending to persist into the post pandemic period, for example hybrid working, more living and working locally, and a range of new challenges relating to the increasing cost of living are likely to be factors affecting the pace of the recovery for the foreseeable future.

As we begin to move on from the worst stages of the coronavirus pandemic, we need to continue to ensure we are closing gaps in progress to avoid a long-term car-led recovery, protect the health of Londoners and respond to the climate emergency.

With continued investment we will deliver this by focusing on actions grouped under two strategic themes: reducing traffic and progress on safety. This will require bold action by us and the boroughs to deliver further Healthy Streets schemes and public transport enhancement while at the same time disincentivising motor vehicle trips, through future road user charging to reduce traffic dominance and CO_2 emissions. We also need to work on cleaning up the remaining essential traffic by consulting on an extended ULEZ and incentivising a switch to electric vehicles.

We continue to make best use of our available resources to deliver high quality services, plan for the future, and maintain our infrastructure to support mayoral ambitions for transport, jobs, homes and the environment. However, securing stable long-term funding is key to unlocking the full potential of the MTS vision.