Overview

Travel in London report 15

Travel in London is Transport for London's (TfL's) annual publication that summarises trends and developments relating to travel and transport in London. Its principal function is to describe how travel is changing and to provide an interpretative overview of progress towards implementing the Mayor's Transport Strategy. It also provides an evidence and analysis base for the general use of stakeholders and policymakers.

This fifteenth report covers trends and developments up to 2021 and into 2022, including the disruption brought about by the coronavirus pandemic from early 2020 and London's recovery since then. As well as describing overall travel trends, such as patterns of travel demand and mode shares, the report is broadly structured around the Mayor's key aims for transport, these being:

- Healthy Streets and healthy people
- A good public transport experience
- New homes and jobs

Travel in London is recovering from the pandemic, but there are some lasting legacies continuing to affect travel demand

The coronavirus pandemic brought widespread disruption to daily life and travel during 2020 and 2021, key features of which were described in previous Travel in London reports.

This report updates the position with a particular focus on developments that will be of significance as we build on the transport recovery so far.

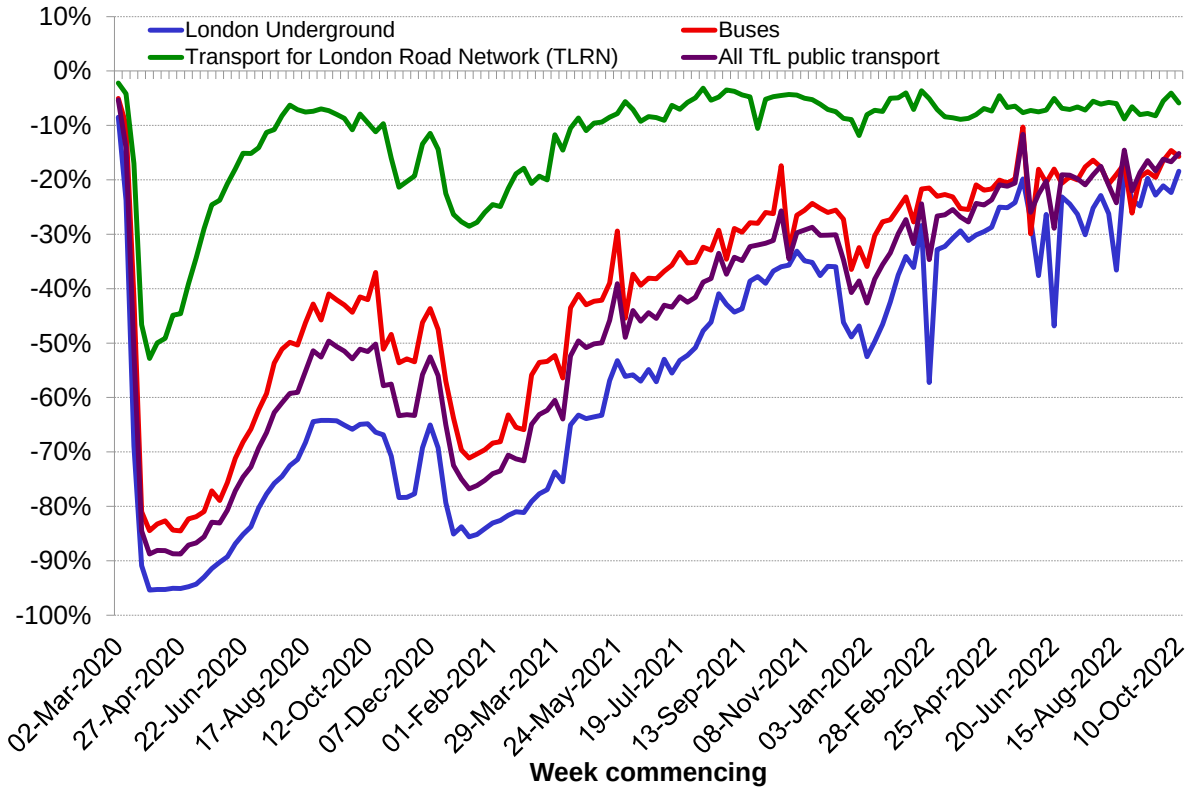
Travel demand and recovery trends on the main transport modes

Figure 1 shows the dramatic impacts on aggregate travel demand on key modes in London over the pandemic period, as well as the encouraging progress of London's travel recovery during 2022.

As of October 2022, representative average daily demand on the London Underground was about 82 per cent of the pre-pandemic levels. Bus demand was around 84 per cent of the pre-pandemic levels. Traffic on London's major roads (the TLRN) was about 94 per cent of pre-pandemic levels, although it had been close to this level since early 2021.

The broad relativities between the modes established during the pandemic appear to have persisted into the recovery, although recent values for the London Underground are suggestive of a stronger recovery into autumn 2022.

Figure 1 Average weekly demand on the main transport networks compared to the equivalent week before the pandemic, Mar 2020-Oct 2022.



Source: TfL Traffic and Service Performance data.
Note: Public transport trends are calculated as change in average seven-day flow from the equivalent week in 2019, where the averages have been adjusted to account for bank holidays on a like-for-like basis. The TLRN trend, on the other hand, is an average of the day-to-day change from the equivalent date in 2019 for each of the weeks.

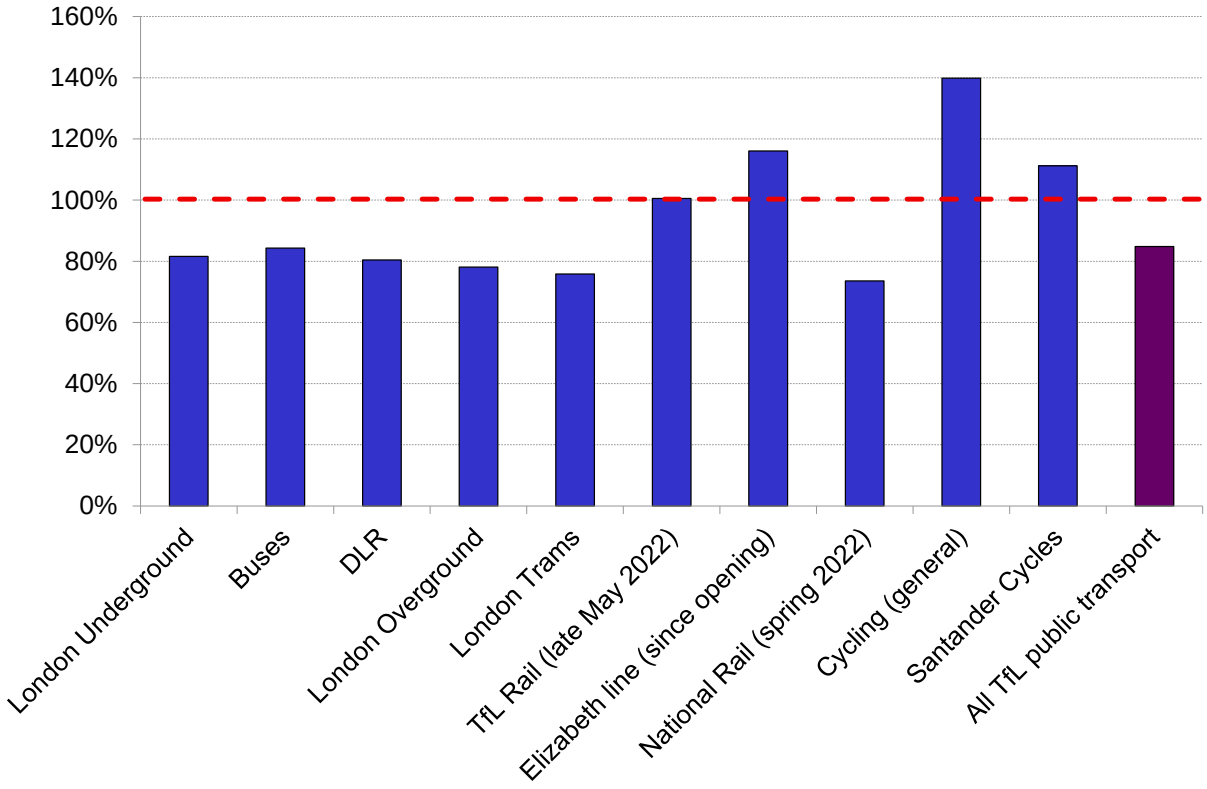
In interpreting the later months on figure 1, it should be noted that 2022 has been marked by a series of external, non-pandemic events that have disrupted activity and travel patterns (such as industrial action, the state funeral of Queen Elizabeth II and extreme weather events), and therefore it is not yet possible to discern clear trends that could be regarded as representing settled post-pandemic levels of demand. The persisting general upward trend for public transport, together with stable road traffic at slightly below pre-pandemic levels are, however, notable. As yet, there is no direct evidence of an immediate fuel price impact on London's major road traffic in 2022.

For comparison, figure 2 shows representative levels of demand on other transport modes relative to a pre-pandemic baseline as of October 2022.

All public transport modes continue to show varying degrees of shortfall relative to the pre-pandemic demand, with the exception of TfL Rail and the Elizabeth line, where comparisons are more complex due to the changes to services ahead of the full opening of the central section of the Elizabeth line in May 2022.

Cycling, on the other hand, currently exceeds pre-pandemic levels of demand.

Figure 2 Indicative average weekly demand on transport modes in London, autumn 2022 vs representative pre-pandemic baseline.



Source: TfL Service Performance data, TfL Cycle Hire, and Office for Rail and Road.
Note: Data is generally from the latest representative week in autumn 2022, except for TfL Rail, which shows the level as of May 2022 before the opening of the Elizabeth line; the Elizabeth line itself, which shows a representative level in autumn relative to its first week of operation; and National Rail, where demand stems from the latest available quarterly data.

- **DLR** and **London Trams** are typically seeing some 80 per cent of pre-pandemic demand, comparable to the position on London Underground.
- At that same time, **London Overground** recovery is slightly lower at just under 80 per cent of pre-pandemic levels.
- The **TfL Rail/Elizabeth line** story is more complex. On the week before the opening of the central section of the Elizabeth line with services running between Paddington and Abbey Wood from May 2022, TfL Rail services from Paddington and Liverpool Street were seeing a level of demand on par with the equivalent pre-pandemic dates, likely reflecting the continuous expansion of services over the last few years in the ramp up to the Elizabeth line. The Elizabeth line itself, as of October 2022, is also showing an increase in demand compared to the first week of operation in late May 2022 (shown in the graph) of about 20 per cent. The initial impacts of the central section of the Elizabeth line are described in more detail in chapter nine of this report.
- Demand for **National Rail** services in London (London and South East franchised operators) is updated quarterly, with the latest available data from April-June 2022 showing that journeys at that time, as the impact of the prolonged industrial action was starting to be felt, were at about 74 per cent of the pre-pandemic levels. By comparison, recovery at the Great Britain level as of October 2022 was at around 85 per cent of the pre-pandemic baseline.
- Finally, the latest indicative **cycling** trends from October 2022 show weekly demand at some 140 per cent of the pre-pandemic baseline, with **Santander**

Cycles hires at some 111 per cent of the pre-pandemic level as of late September 2022, maintaining the pattern seen during the pandemic of significant increases to pre-pandemic levels of cycling in London.

Key features of pandemic travel demand that have persisted into the recovery

These averages conceal important features of interest, many of which have been previously observed during the pandemic. The following are perhaps the most significant in terms of planning for the next phases of the recovery:

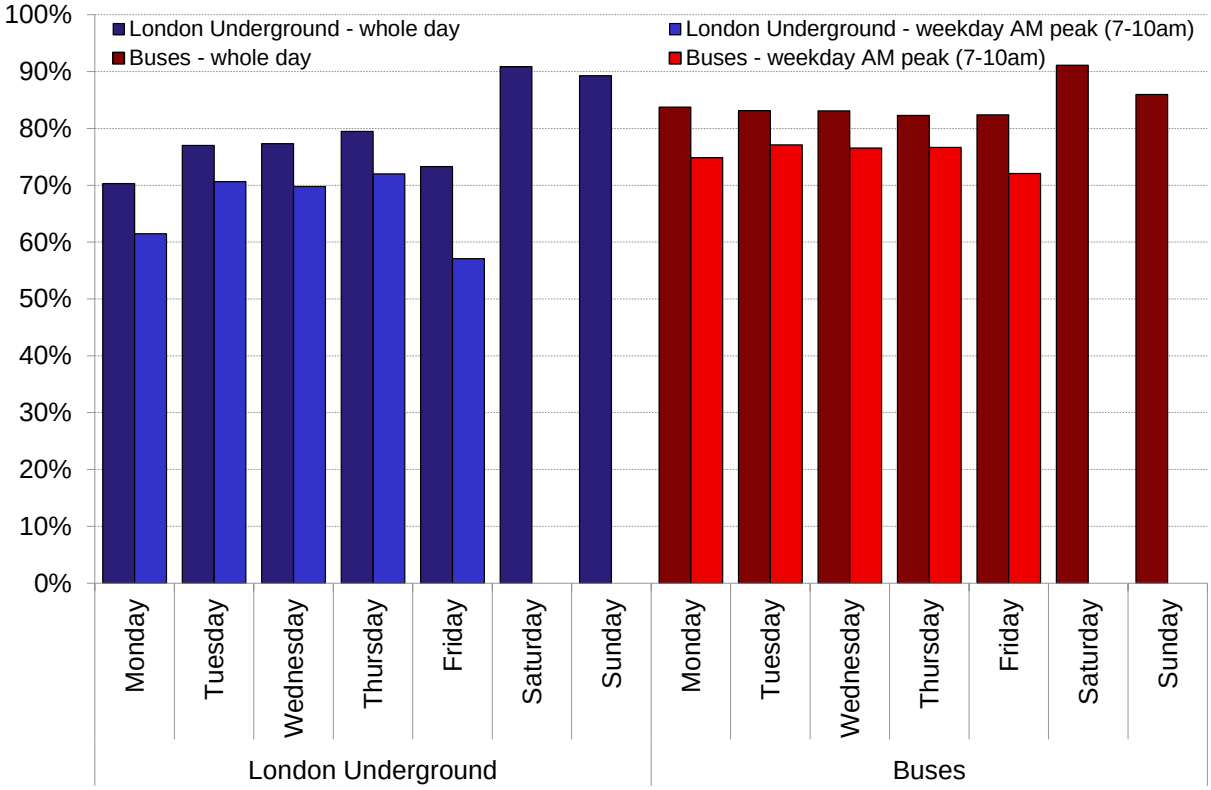
- **Relativities in demand and recovery between different modes**: A striking feature of the pandemic has been the uneven pace of recovery among different modes. These relativities have tended to persist into the recovery, although data from recent weeks suggest that these gaps are narrowing significantly.
- **Changes in travel demand by day of the week**: Another feature is the extent to which the pre-pandemic relativities among days of the week have changed, which is different across modes. On one hand, there do not seem to be any persisting changes in the distribution of road traffic and bus demand throughout the week either side of the pandemic. However, the opposite is true for rail (particularly London Underground), where recovery has been noticeably faster on weekends than on weekdays and where differences among the days of the traditional working week have been exacerbated, with central days (Tuesday to Thursday) now showing a relatively higher difference to Mondays and Fridays than before the pandemic (figure 3). This is particularly apparent on Fridays, which used to be the busiest weekday and are now one of the quietest, while Mondays were always the quietest and are now only slightly more so than before the pandemic.

Other features of pandemic travel demand that have largely dissipated

On the other hand, there are features of travel demand that changed dramatically during the pandemic but which have already largely dissipated.

- **Changes in travel demand by time of day**: During the pandemic a noticeable redistribution of travel demand during the day was observed, with more travel in the early morning and in the inter-peak period and much subdued peak travel. These patterns, however, have progressively faded as the recovery advanced (likely due to the lifting of restrictions, resumption of activity, return to workplaces and regained confidence in the population, as well as other factors) so that currently the distribution of demand throughout the day follows again the traditional two peaks for most modes, albeit with some minor residual traces of increased demand in the inter-peak and the shoulders of the morning and evening peaks.
- **Changes in the spatial patterns of travel demand**: Similarly, at the beginning of the pandemic there was a dramatic change in the spatial pattern of travel, with much reduced demand to and from central London and increased local travel outside the centre. As the recovery progressed, there has been a slow return to the previous pattern. However, the reduction of, in particular, medium- and long-distance commuting into central London due to flexible hybrid and remote working practices is still noticeable during the working week, and there continues to be relatively more travel in local areas than before the pandemic.

Figure 3 London Underground and bus demand recovery, whole day and morning peak, by day of week, w/c 17 Oct 2022 vs w/c 14 Oct 2019.



Source: TfL Service Performance data.

Hybrid working

The imperative to work from home changed with different stages of the pandemic and was one of the most prominent pandemic adaptations affecting Londoners' travel behaviour, despite it being an option available only to some.

Although Government advice to work from home has not been in place for more than a year, the scale of change and length of time it had to become embedded present obvious challenges for the recovery of pre-pandemic commuter travel, and it is expected that higher levels of home working will persist in the medium to long term.

Figure 4, based on latest (provisional) data from the London Travel Demand Survey (LTDS) for London residents, relating to the first half of 2022, suggests that:

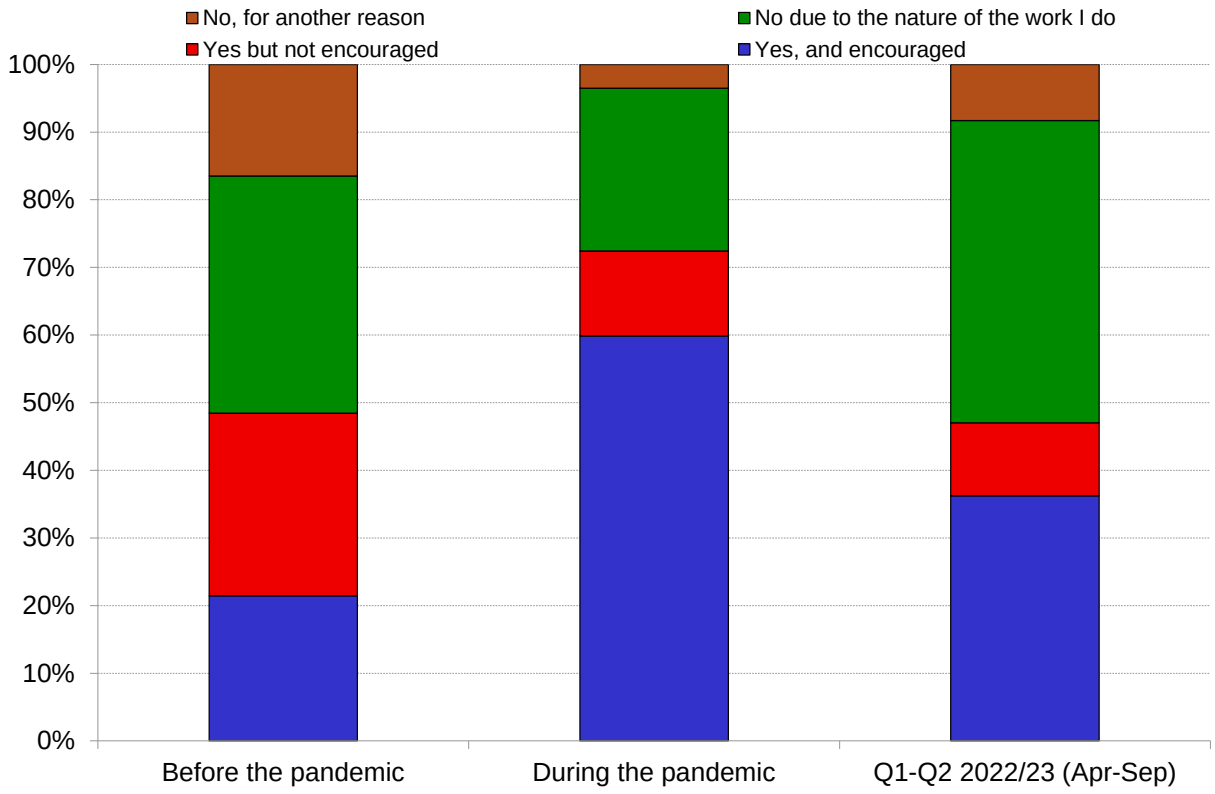
- Before the pandemic, just less than half of London resident workers (48 per cent) were able to work from home, although only 21 per cent of workers were encouraged to do so. Just more than half of workers (52 per cent) were not able to work from home, either due to the nature of the work they were doing (35 per cent) or for other reasons (16 per cent).
- During the pandemic, the proportion of London resident workers who were encouraged to work from home increased from 21 per cent to 60 per cent, with a further 13 per cent able to work from home, although it was not necessarily encouraged. This was a 24 percentage point increase in the share of workers who were able to work from home. The proportion who were not able to work from home decreased from 52 per cent to 28 per cent.

- The latest (provisional) London Travel Demand Survey (LTDS) data (April-September 2022) suggests that the proportion of resident workers who are able to work from home has returned to similar levels seen before the pandemic, however the share who say they are encouraged to work from home is notably higher than it was before the pandemic (at 36 per cent compared to 21 per cent).
- On the other hand, the proportion of workers who say they cannot work from home due to the nature of the work they do has increased compared to before the pandemic (45 per cent compared to 35 per cent). The share of workers who say they cannot work from home for other reasons has decreased from 16 per cent before the pandemic to eight per cent. Further data is required to understand the extent to which these important trends stabilise as the recovery progresses.

Of the people who said they are able to work from home in the first half of 2022/23 (April-September), more than one in four (26 per cent) said their employer expects them to attend their workplace between one and two days per week, 18 per cent said three to four days per week, six per cent said five days a week and 50 per cent said the number of days is flexible.

Rates of home working will continue to be monitored as more data becomes available.

Figure 4 Ability of London resident workers to work from home, LTDS.



Source: TfL City Planning.

Discerning the medium- to long- term future

The extent to which the features of demand identified above, catalysed by the pandemic, will persist into the longer term is not yet clear.

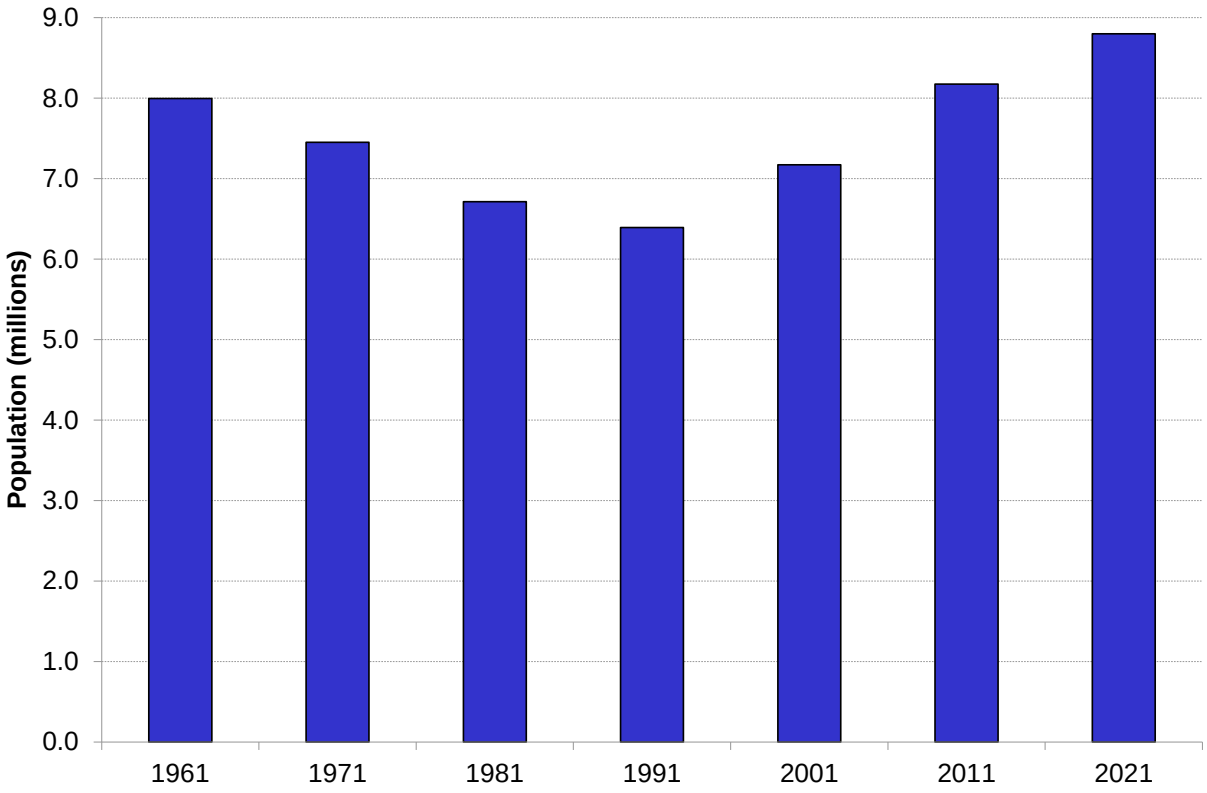
It seems likely that London's recovery has some way yet to run before immediate pandemic effects are fully eliminated and any post-pandemic legacy impacts fully embedded. There is also evidence of some longer term changes to London's population from the 2021 Census and, of course, growing concerns over economic stability and the cost of living, both of which are likely to be significant for travel demand over the medium to long term.

London's population and the 2021 Census

A decennial Census of Population was conducted across the UK in March 2021 and the population in London is now estimated at 8.8 million.

While the timing reflected the later stages of pandemic restrictions, the Census gave the first firm, quantified estimate of London's population since 2011 (figure 5).

Figure 5 Long-term trend in London's resident population, 1961-2021.



Source: Office for National Statistics.

Although the data is still undergoing analysis by ONS, the following are the key emerging conclusions so far:

- The 2021 Census estimates London's population as 8.8 million, an increase of 7.7 per cent compared with 2011 (8.2 million). In contrast, the growth between 2001 and 2011 was 14 per cent. The 2021 estimate is lower than the mid-year estimate for 2020, which was 9.0 million.
- Population growth has been highest in east London, with low growth in south west London and an indicated population decline in central and inner west London, perhaps reflecting temporary arrangements during the pandemic restrictions that were in place at the time of the Census.

- London’s population is getting older. The highest growth rates between 2011 and 2021 were in people in their 50s, 60s and 70s, with the largest in people in their 50s (30 per cent). The number of people in their 20s declined, as did the number of children under five.

The estimate of London’s population in 2021 was lower than previously predicted and potentially reflects on the slowing of the rate of growth in demand, particularly for public transport, observed in the immediate pre-pandemic years, that was identified in previous Travel in London reports.

For the future, lower estimated population growth (and changing age profiles) will have implications for travel demand forecasts, yet to be updated to reflect the 2021 Census, and our wider planning assumptions. These implications are currently being worked through.

London’s economy

Previous Travel in London reports identified a prolonged ‘cost-of-living squeeze’, stemming from the banking crisis of 2008, as a significant factor acting to depress per capita travel demand growth in the latter years of the last decade.

The pandemic itself, taking place in the context of the UK’s departure from the European Union, placed a large burden on public finances and had negative impacts across the economy, some of which are still apparent, for example labour shortages particularly affecting the service and leisure industries.

To add to this, there have been a series of emerging economic problems in 2022, all of which add up to a likely very challenging economic environment for travel demand and investment over the next few years.

In the context of international and political instability and potential lingering inequality impacts from the pandemic we are now seeing rapidly rising inflation, which directly affects people’s ability to afford travel itself and, perhaps more importantly, to partake in those activities which give rise to travel, such as leisure activities.

Although the Bank of England forecast this to be relatively short-term, inflation is currently circa 10 per cent, well above its target of 2.5 per cent, and the medium-term future is subject to considerable uncertainty, with wages not keeping pace.

The associated rise in interest rates, from historic record low levels, is also a significant emerging concern and could impact consumer spending and discretionary trip rates in the future, in similar ways to the trends seen as a result of the prolonged squeeze on disposable incomes in the last decade.

The pandemic also saw a collapse in international and domestic visitors to London, although airports serving London were back to about 80 per cent of pre-pandemic throughput by summer 2022. More recently, the relative devaluation of the pound sterling may act as an encouragement to international visitors.

Preparing for an uncertain future: TfL’s revised scenarios

In 2019 TfL adopted a scenario planning approach to dealing with uncertainty to help ensure that our long-term plans were robust and resilient. Scenarios have been used across TfL and applications included the Capital Planning work, the Service Level Reviews, and in the development of a Hybrid Forecast of travel demand.

Now that London is recovering from the pandemic, our scenarios have been updated once more to build on previous work and reflect new long-term risks, challenges and opportunities.

Four new scenario narratives to 2041 have now been developed to reflect the envelope of uncertainty for our planning. The scenarios are intended to be plausible and internally coherent alternative futures for London, given what is known now, but they are not forecasts or predictions, and many combinations of circumstances could give rise to the outcomes illustrated for each of the scenarios. The intention is that the real future will lie somewhere within the envelope bounded by the scenarios.

The scenarios will be finalised and used in conjunction with our two fully modelled forecasts for future planning:

- A Planning Forecast (formerly known as the Reference Case) for travel demand in London in line with the London Plan.
- A Hybrid Forecast drawn from emerging evidence on how London is changing.

Forecast definition

Both forecasts contain the same portfolio of investment limited to only those schemes that are funded and committed.

The Planning Forecast includes a modest increase in working from home compared to pre-pandemic forecasts, levels of online shopping remain as forecast before the pandemic and London gets back on track for achieving pre-pandemic projections of population growth by 2041.

The Hybrid Forecast, however, incorporates evidence on how London is changing:

- The latest population and employment projections, following a more central trend than the Planning Forecast.
- More working from home for office workers, particularly for those on high incomes and for those working at offices in central London.
- A greater shift towards online shopping with people making fewer and more local shopping trips.
- Greater flexibility to undertake leisure trips as part of the working day due to more home working.
- Slightly higher relative car ownership, largely due to lower house building and a small minority of the population who are reluctant to return to public transport after the pandemic.

The very latest evidence has recently been reviewed as part of the annual update of the forecasts, and will incorporate:

- The latest population and employment projections, including some spatial redistribution of jobs in London.
- An increase in Light Goods Vehicle (LGV) trips London-wide associated with more home deliveries and private use but with fewer trips to central London. A drop in post-pandemic Heavy Goods Vehicle (HGV) trips due to reduced activity in some of the main sectors (for example construction, general haulage, retail) and particularly in central London.
- Updated forecasts of the number of international visitors.

Consolidated estimates of travel demand and mode shares in 2022

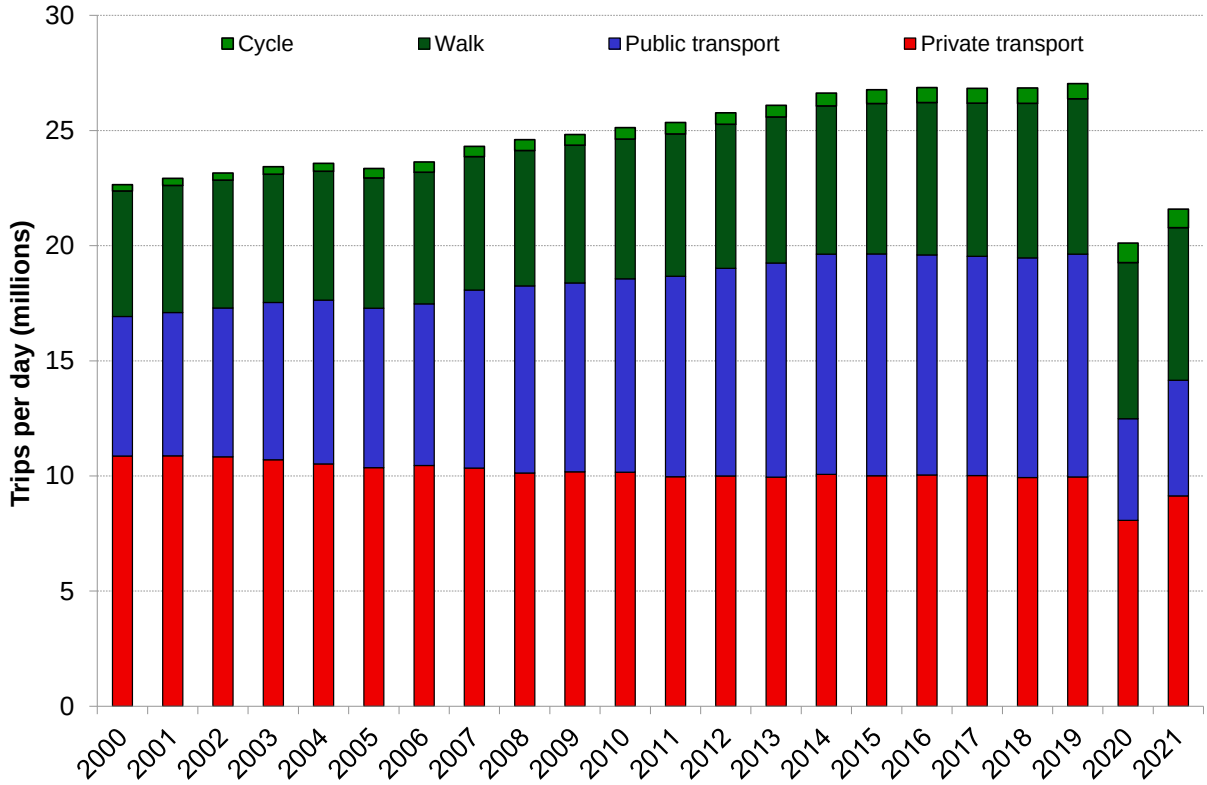
Historic and pandemic context

The years 2020 and 2021 were notable for the unprecedented variability in travel demand, this reflecting the impacts of the pandemic and associated restrictions on many aspects of daily life, and annual averages and totals should be seen in this context. They should also be seen against the longer-term pre-pandemic trends of generally consistent year-on-year growth in travel demand in London, and the longer-term trend of increasing use of active, efficient and sustainable modes.

Before the pandemic, travel demand in London grew from 25.1 million trips per day in 2010 to 27.0 million in 2019, an increase of 7.6 per cent. The share of trips made by active, efficient and sustainable modes (walking, cycling and public transport) increased from 59.6 per cent in 2010 to 63.2 per cent in 2019, an increase of 3.6 percentage points.

Figure 6 shows these longer-term trends, alongside the scale of the pandemic-related change in 2020 and 2021.

Figure 6 Estimated daily average trips by mode, seven-day week, 2000-2021.



Source: TfL City Planning.

In 2021, it is estimated that 21.6 million trips were made on an average day. This is an increase of 7.3 per cent compared to 2020, but still 20.1 per cent below the pre-pandemic level of 27.0 million in 2019.

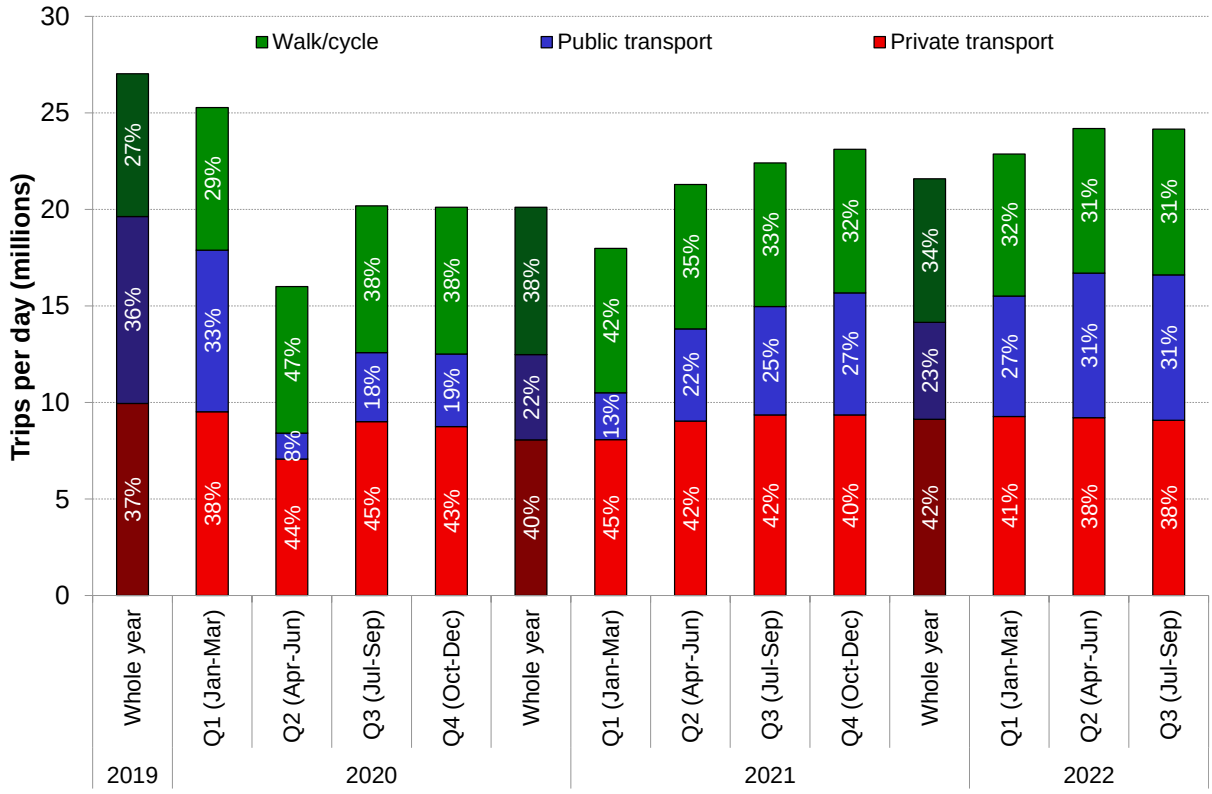
As previously observed, these mode shares during the pandemic were relative to significantly lower levels of mobility. They also reflect a wholesale change to the nature of trip-making, for example a marked reduction in daily commuter trips and an

increase in local trips by active modes, alongside changes to trip lengths, purposes and origin-destination patterns, as described in previous Travel in London reports. While therefore not generally comparable to pre-pandemic values, they do represent what might be regarded as a relatively resilient performance given the nature of pandemic restrictions, particularly affecting public transport patronage.

Total travel and mode shares during the pandemic

Figure 7 shows how estimated trips and mode shares varied during the pandemic.

Figure 7 Estimated quarterly trips and mode shares by mode, 2019-2022.



Source: TfL City Planning.

During relatively normal years, the overall mode share varies little by quarter. However, the pandemic impact can be seen throughout 2020 and most of 2021.

Public transport mode share declined significantly, with a gradual recovery following the lifting of restrictions. Despite the reduction in public transport usage, walking and cycling use remained relatively high as Londoners stayed local to do essential shopping or their permitted daily exercise.

The relaxation of all pandemic-related restrictions in early 2022 has led to a gradual increase in overall trips throughout 2022, with an estimated 24.2 million daily trips in the quarter between July and September. This is still 11 per cent lower than in 2019 but is the highest estimated travel demand since the pandemic began.

Public transport mode shares have increased throughout the year, and are now at 31.2 per cent, with private transport mode shares declining to 37.6 per cent, only slightly higher than in 2019. Walk and cycle mode shares remain high, although have been decreasing during 2022 as public transport demand has increased.

The overall active, efficient and sustainable mode share for travel in 2021 is estimated at 57.7 per cent, compared to 63.2 per cent in 2019 and 59.9 per cent in 2020. However, the gradual increase in public transport trips in 2022, coupled with high levels of walking and cycling has led to an increase in the active, efficient and sustainable mode share measure, which at 62.4 per cent in the quarter between July and September 2022 is at its highest level since before the pandemic began, only 0.8 percentage points lower than in 2019.

Active travel and the pandemic

In general, changes brought about by the pandemic supported a shift to walking and cycling, modes that were uniquely placed to cater for travel demand during periods of restrictions. Increased local travel at these times also bolstered use of active modes.

However, this took place in the context of overall reductions to activity, meaning that although mode shares for these modes were notably higher, absolute trip levels overall by these modes remained close to pre-pandemic levels.

As we head into London's recovery and bearing in mind the highly unusual circumstances of the pandemic, it is useful to review what the latest data tell us.

Walking

Our analysis of walking is mainly based on data from the LTDS. This shows that walking accounted for almost 60 per cent of all trips made by Londoners (aged 17+) during restriction-affected January-March 2021 and typically over 40 per cent during other periods of the pandemic, compared to 35 per cent before the pandemic. Most of these walking trips were local trips in inner and outer London.

The latest available data (April-September 2022) shows that the walking mode share for London residents was 41 per cent, lower than the pandemic average but still above representative pre-pandemic values.

Figure 8 shows the trend in walking trips per person per day throughout the pandemic and suggests that, in general, walking trip rates (per person per day) throughout the pandemic were higher than the pre-pandemic 2019/20 average of 0.8, ranging between 0.79 and 0.93 throughout 2020/21 and 2021/22.

The latest (provisional) data from April-September 2022 shows that the walking trip rate is 0.89, 11 per cent higher than the 2019/20 (pre-pandemic) average and seven per cent higher than the value in the quarter between January and March 2022. This corresponds with higher overall rates of travel in the most recent data.

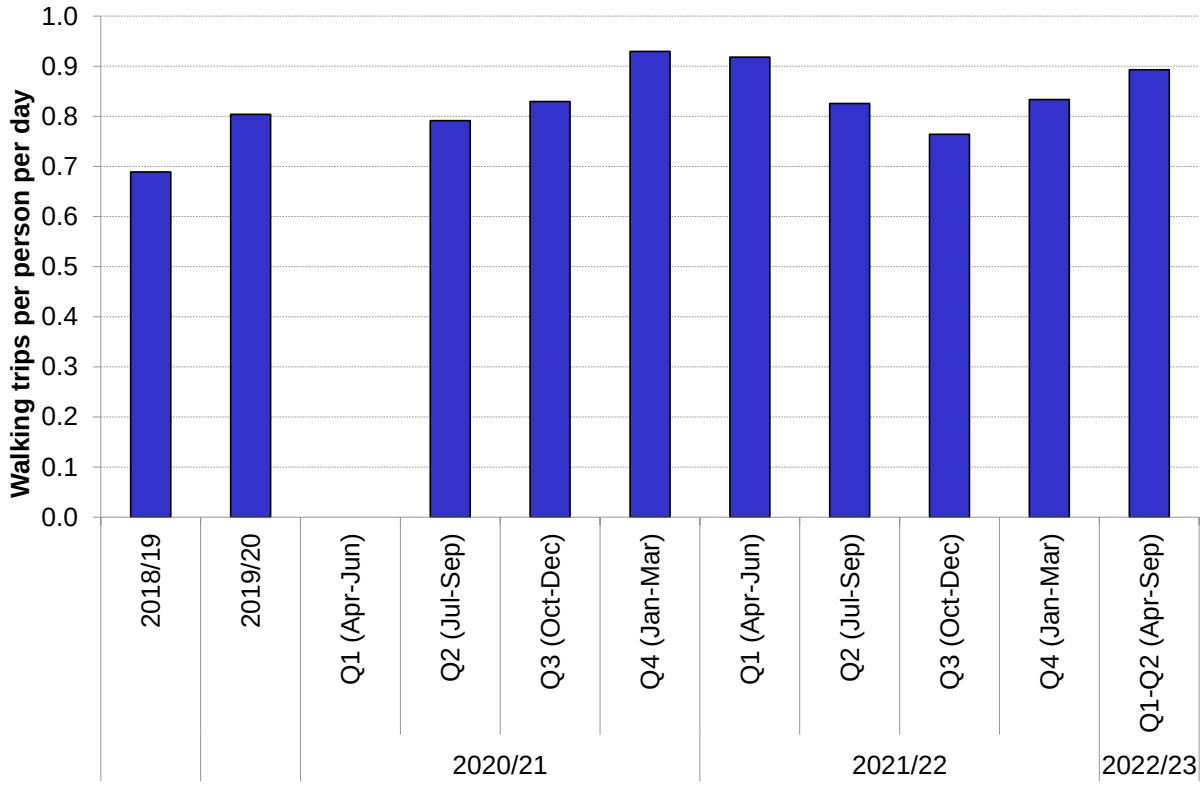
Looking specifically at our quarterly survey of pedestrian populations in central London, the scale of the pandemic impact on footfall here is clear from figure 9.

The surveys show a steady increase in pedestrian activity throughout the latter part of 2021 and into 2022, but pedestrian activity in July-September 2022 remained 23.8 per cent below pre-pandemic levels.

This trend is similar to that seen on the London Underground and reflects upon both the immediate pandemic impacts on commuting and other agglomerative activities

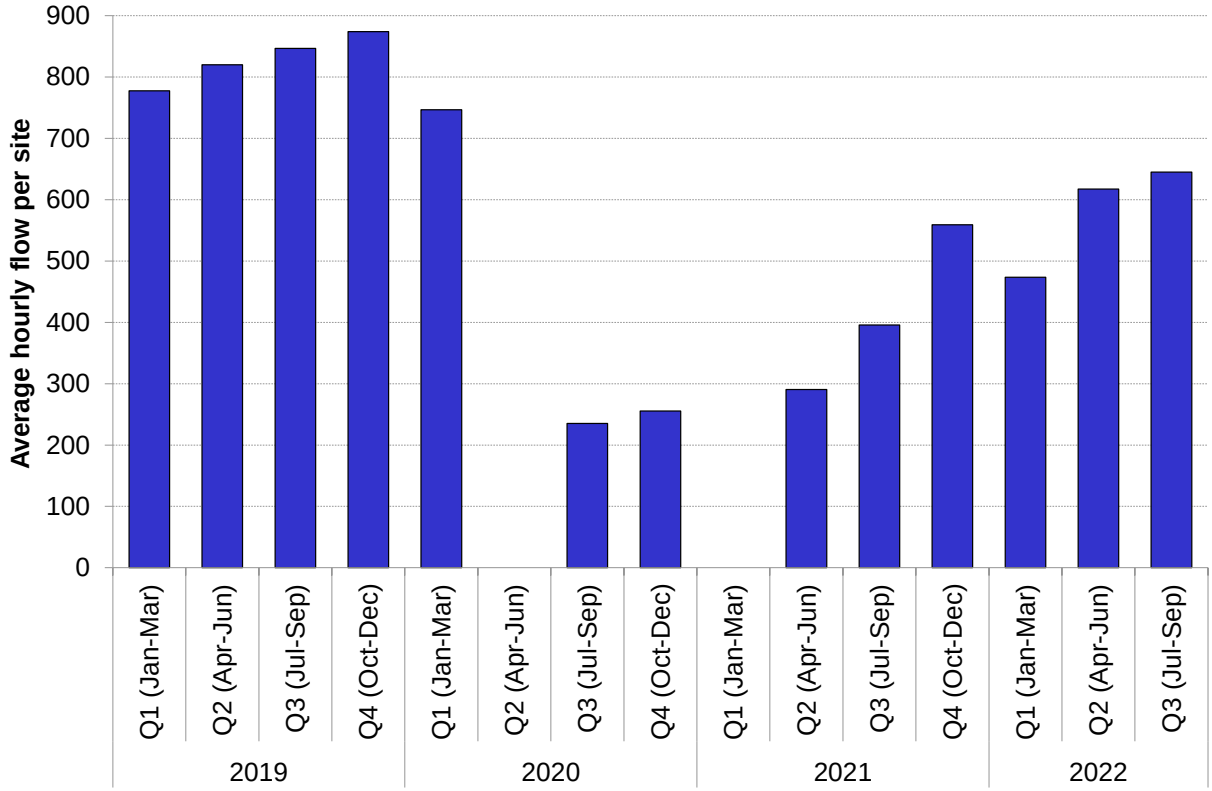
as well as a lack of visitors, and hints at a potential longer-term reduction in footfall in central London.

Figure 8 Walking trip rates by quarter, London residents aged 17+, LTDS, 2018/19-2022/23.



Source: TfL City Planning, London Travel Demand Survey.

Figure 9 Average hourly pedestrian flow by quarter, central London, 2019-2022.



Source: TfL City Planning.

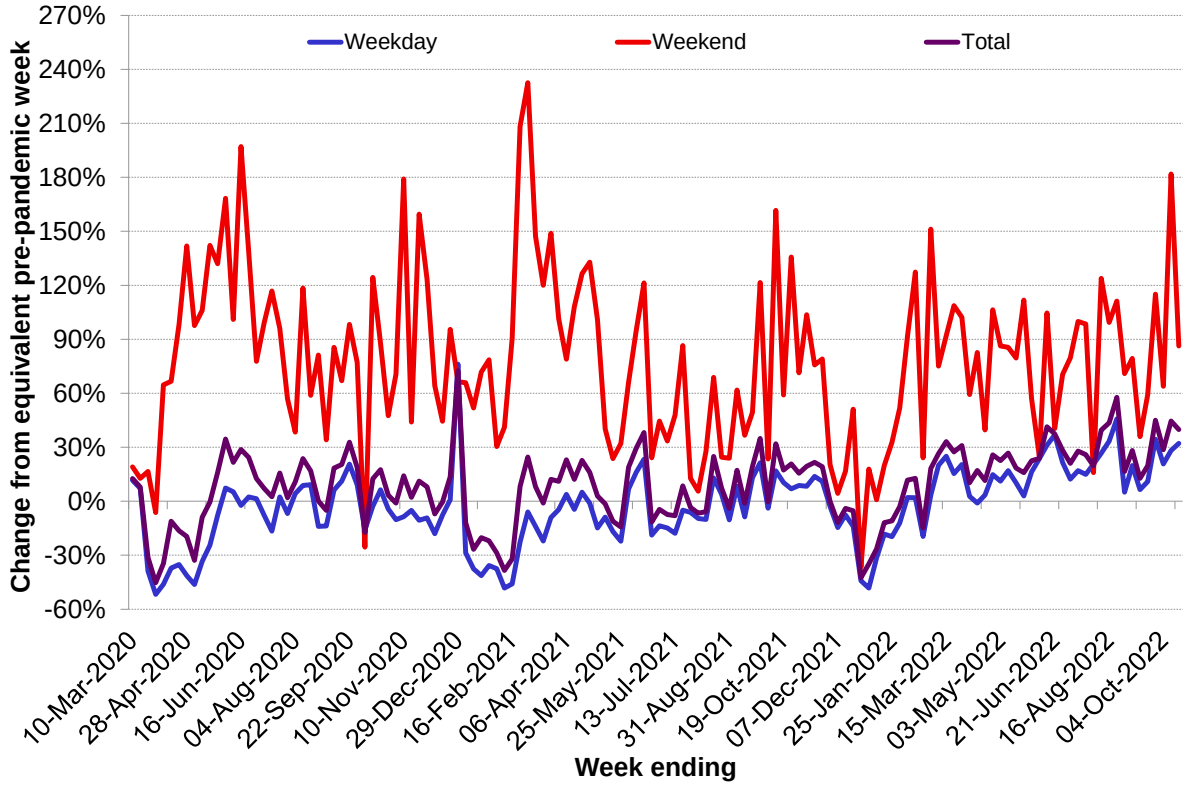
Cycling

Looking at cycling and noting that the data is based on a small sample of sites in central and inner London that provided continuous data throughout the pandemic, figure 10 shows how the overall impact of the pandemic was to boost cycling, particularly at weekends.

Although weekday commuter cycling was curtailed for lengthy periods in line with work from home restrictions, weekday demand was overall comparable to pre-pandemic levels, in sharp contrast to other modes. This demonstrated the utility and attractiveness of cycling as a leisure mode in this time.

During the latter months of 2022 some of these patterns are persisting with the more general return to normal activities, albeit in the context of fine weather and other factors affecting the wider transport network. Representative weekday demand was some 20-25 per cent higher than before the pandemic, with weekend demand still typically around 90 per cent higher.

Figure 10 Cycle flow at automatic cycle counters, Mar 2020-Oct 2022 vs 2019.



Source: TfL Network Performance.

Excepting the strict lockdown periods, Santander Cycles (which mostly serve central and some parts of inner London) enjoyed record patronage during the pandemic and continue to see demand above pre-pandemic levels. This was especially remarkable given markedly reduced activity levels in central London throughout the pandemic.

Finally, a look at our revised consolidated estimates of cycling across London confirms the evidence that post-pandemic cycling levels in spring 2022 were firmly above the pre-pandemic baseline, with weekday cycle-km travelled in London 18 per cent higher in 2022 compared to 2019 and the seven-day average number of trips 14 per cent higher over the same period. The highest growth was seen in central London, followed by inner and outer London.

London's cycle network

By 2025, TfL wants the proportion of Londoners living within 400 metres of a high-quality cycle route to increase to 33 per cent. By autumn 2022, this proportion was 21.9 per cent, up from 19.4 per cent in autumn 2021 and 11.5 per cent in 2019 before the pandemic.

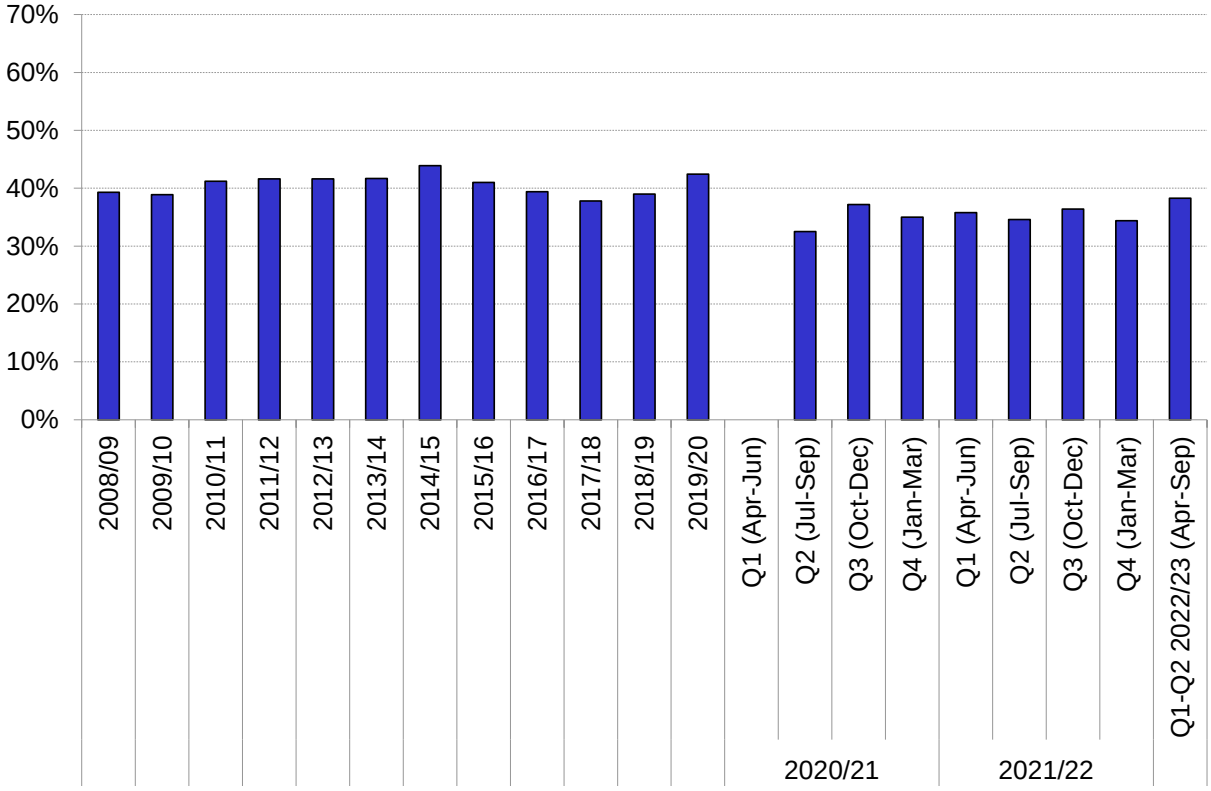
While much of the recent cycling infrastructure was delivered in 2020 and 2021 on a temporary basis as part of the Streetspace for London programme in response to the pandemic, the focus is now on assessing the performance of experimental schemes to make informed decisions about permanency as well as resuming and progressing work in other pipeline strategic connections.

Active travel: physical activity through travel

The Mayor's Active Travel target is for all Londoners to achieve at least 20 minutes of active travel (defined as either walking or cycling) per day by 2041.

The historic trend prior to the pandemic was relatively flat, with typically about 40 per cent of Londoners achieving this benchmark (figure 11).

Figure 11 Proportion of London residents aged 20+ who achieve at least 20 minutes of active travel per day, LTDS, 2008/09-2022/23.



Source: TfL City Planning.

Although comparable quarterly estimates are available during the pandemic, restrictions on surveys mean that the picture is not complete. Nevertheless, results suggest that the proportion of Londoners achieving the target decreased during the pandemic, with quarterly estimates ranging from 33 to 37 per cent.

This reflects a combination of formal pandemic restrictions limiting travel and a range of informal personal responses to the pandemic, reducing individual travel overall, for example the walk journey stage frequently associated with commuting trips.

The latest data for April-September 2022 shows that the proportion of Londoners achieving the target increased to 38.3 per cent, up from 34.4 per cent in January-March 2022 and returning closer to the pre-pandemic trend.

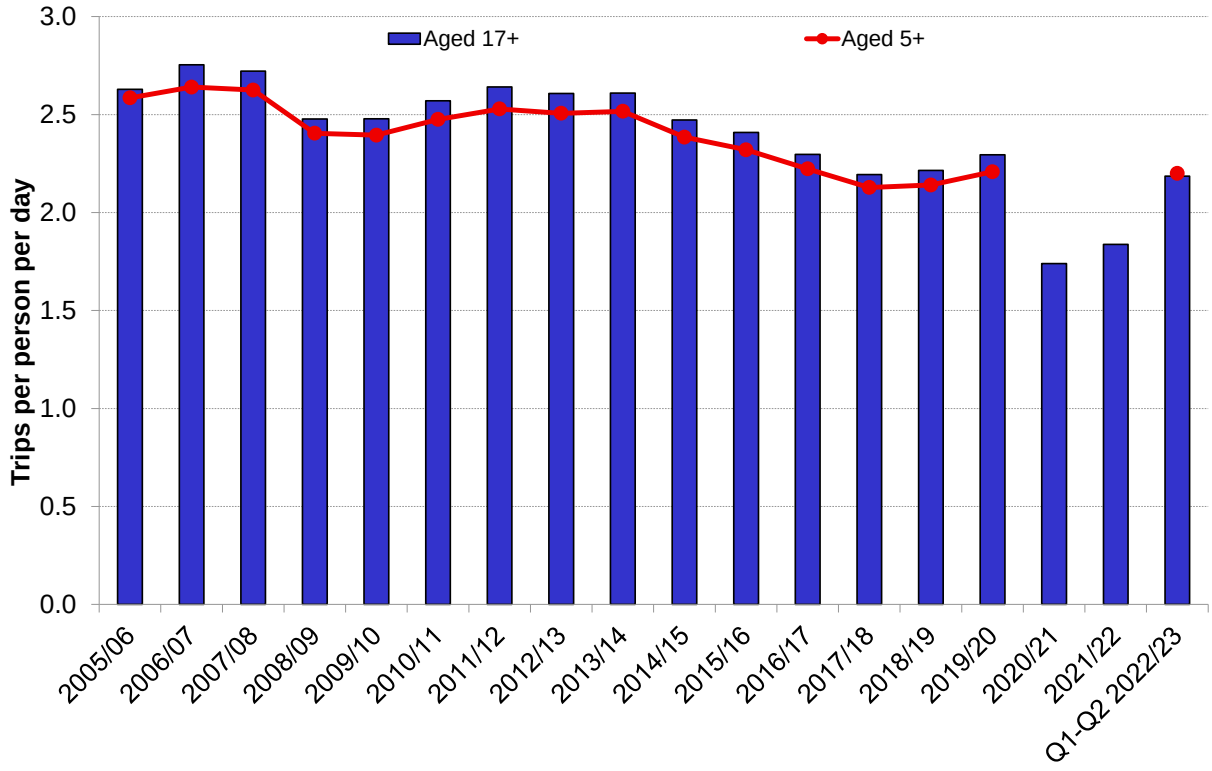
Per person trip rates

Trip rates are a basic indicator of travel, relating to the number of trips undertaken on an average day.

The London Travel Demand Survey (LTDS) has tracked a pattern of generally falling trip rates over its lifetime, this trend accelerating between 2013/14 and 2017/18 (figure 12).

However, in the two years prior to the pandemic, the number of trips per day made by the average London resident increased slightly, to 2.21 trips by those aged 17+ in 2018/29 and 2.29 in 2019/20 (thought to be due to improving economic conditions).

Figure 12 Trip rate among London residents, LTDS, 2005/06-2022/23.



Source: TfL City Planning.
Note: The back series has been amended to represent those aged 17+ for consistency with amended data collection during the pandemic. The red line shows the trend for those aged 5+ (the usual survey methodology).

The following are some of the key trends in trip rates during the pandemic:

- The annual average trip rate was six per cent higher in 2021/22 compared to 2020/21 at 1.84 trips per person per day.
- The latest (provisional) data from the first half of LTDS 2022/23 (April-September) shows that the trip rate has increased to 2.19 trips per person per day, an increase of 19 per cent on 2021/22 and only five per cent below the 2019/20 average.
- The average distance travelled per person per day in 2019/20 was 9.4km. This reduced by 47 per cent to 5km in 2020/21, increasing by 17 per cent to 5.9km in 2021/22. The latest provisional data for 2022/23 (April-September) shows that the average distance travelled per person is 8.7km (seven per cent below the pre-pandemic average and following the pattern of trip rates).

Thus, according to latest (indicative) LTDS data for London residents in the first half of 2022, both trip rates and average trip distances were approaching pre-pandemic levels; yet there were still significant differences in patterns of demand on the wider transport networks.

The LTDS was reinstated to its full pre-pandemic form from April 2022, and a fuller picture of Londoners' post-pandemic travel should be available from summer 2023.

Opportunities to increase active travel and contribute to the Mayor's mode share aims: potentially switchable trips

TfL has developed an activity-based modelling capability which opens many new avenues for policy appraisal and analysis.

One application is determining the modal 'switchability likelihood' of trips currently made by London residents in London, in relation to the Mayor's aim for 80 per cent of trips to be made by active, efficient and sustainable modes by 2041.

This analysis accounts for the characteristics of trips (of the trip maker, for example, age), and of the trip (distance, origin/destination/availability of alternatives). It shows that, considering a 2026 forecast year, some 21 per cent of Londoners' car trips would be assessed to have a high likelihood, with appropriate incentives, of switching from car to active, efficient and sustainable modes. This would bring the percentage of trips made by these modes to 73 per cent.

Road traffic in London

Previous Travel in London reports have tracked a picture of gradual change in London's road traffic over the last decade or so, the key elements of which are:

- A slow but generally consistent trend of reducing traffic volumes in central and inner London, contrasting with relatively stronger growth on public transport, contributing to a progressive increase in the active, efficient and sustainable mode share. Traffic volumes in outer London have, however, grown over this period.
- Different trends affecting the different motorised modes, with generally lower car traffic, higher freight and servicing traffic, particularly LGVs, and a dramatic increase in the numbers of private hire vehicles (PHVs).
- The introduction of, and responses to, various policies potentially affecting road traffic, notably the central London Congestion Charge and the Ultra Low Emission Zone.
- A progressive increase in traffic congestion in the pre-pandemic period.

Following a review of their National Road Traffic Statistics, the Department for Transport has further revised their estimates of road traffic volume in London. They have the effect of increasing the estimated vehicle kilometres driven in London by between eight and 10 per cent, depending on the year, compared to their previous estimates.

It is important to acknowledge that this is a cross-sectional change relating to 2009 and carried forward on the same basis. As such, it does not reflect a change to the recognised trend for road traffic over the period since 2009, which has been broadly flat.

Although showing the immediate impacts of the pandemic during 2020 and 2021, TfL's own estimates of road traffic volumes, for example those crossing our strategic monitoring cordons, corroborate this long-term trend, and also show significant shifts

in the composition of road traffic in the pre-pandemic period, as well as during the pandemic itself. A full assessment of settled post-pandemic traffic composition is not yet possible.

Goods vehicles in central London

A specific aim of the transport strategy is to reduce the number of light and heavy goods vehicles circulating in the central London Congestion Charge zone during the weekday morning peak, by 10 per cent by 2026, from 2016 levels.

Before the pandemic, the overall trend was compatible with good progress towards this aim. By early 2021, however, reflecting the pandemic, the reduction in the number of freight vehicles was more than 20 per cent against the 2016 baseline. As this is for the central London Congestion Charge zone, this does not reflect the increase in home deliveries during this period, given the low numbers of residential properties in this part of London.

As restrictions were lifted the number of freight vehicles started to increase but remained around 16 per cent below 2016 levels in October 2021. During 2022, the number of freight vehicles declined slightly, and by October 2022 were at 19 per cent below 2016 levels.

Changes to the Congestion Charge scheme in central London

Changes to the Congestion Charge scheme

Several changes to London's Congestion Charge scheme have been implemented in recent years to address transport challenges arising from the pandemic and to support London's recovery.

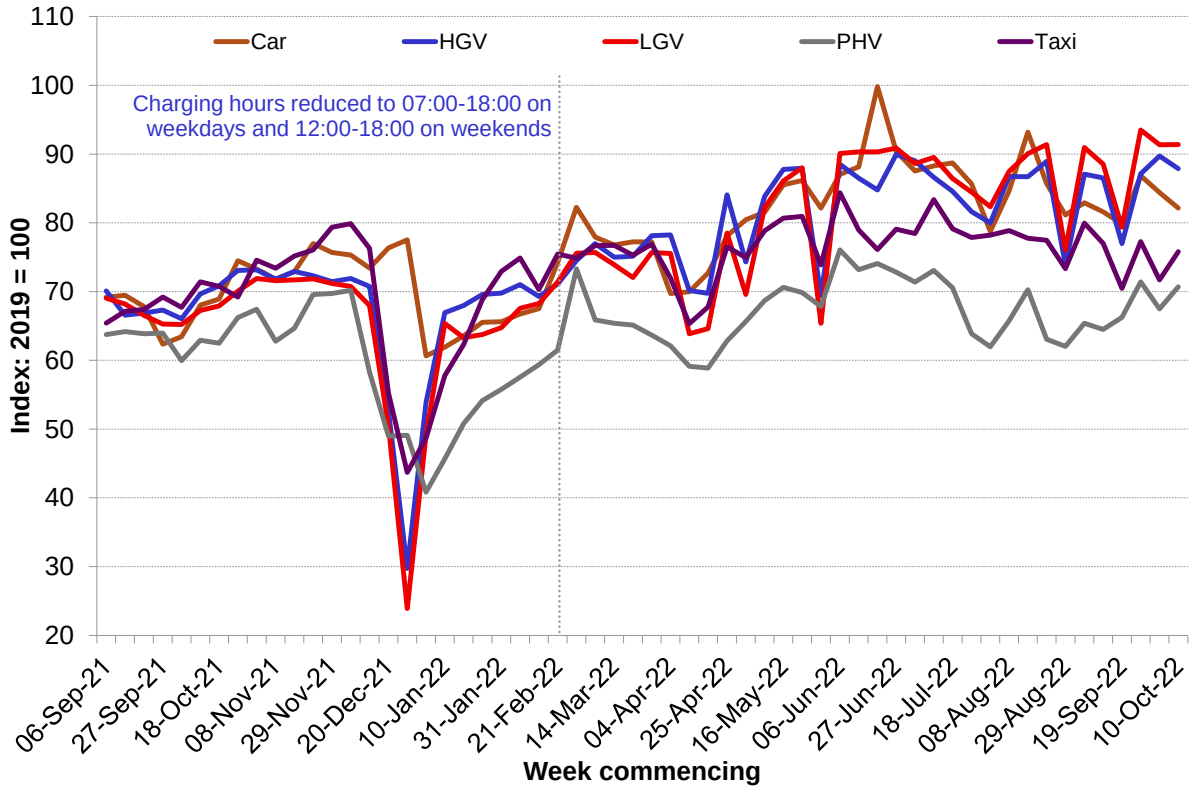
The initial impacts of the extension of charging hours on weekdays and the implementation of charging on weekends was described in Travel in London report 14. Further changes to the scheme were implemented on 21 February 2022, and these included a reduction in the hours of operation of the charge from the temporary hours of 07:00 to 22:00 each day, to between 07:00 and 18:00 Monday to Friday and 12:00 to 18:00 at weekends and on bank holidays.

It is important to note that changes to the scheme were implemented alongside changes to travel demand reflecting the latter stages of pandemic restrictions and London's subsequent recovery. Additionally, a range of further external events during 2022 will have affected travel to and from central London.

Traffic in the central London Congestion Charge zone

At the start of September 2021, average weekly entries to the Congestion Charge zone ranged between 60 and 70 per cent of pre-pandemic levels for all vehicle types (figure 13). Entries for cars and freight vehicles were around 70 per cent of pre-pandemic levels, with the return of licensed taxis and PHVs slightly lower at 65 per cent and 64 per cent respectively. Vehicle entries were then affected by the Omicron wave into early 2022.

Figure 13 Change in weekly entries (camera captures) to the Congestion Charge zone, by mode, Sep 2021-Oct 2022 vs 2019.



Source: TfL Traffic Data.

In the week that changes to operational hours were implemented (week commencing 21 February 2022), car entries increased by 10 per cent week-on-week. There was also a small increase in freight vehicles of three per cent and five per cent for HGVs and LGVs respectively. In the week commencing 28 February there was a spike in car and PHV entries due to London Underground industrial action on 1 and 3 March.

Entries for all vehicle types returned through May 2022, in line with the more general resumption of activity. However, by September 2022 freight vehicle entries remained at a similar level to June 2022, while entries for car, taxis and PHVs had declined slightly.

At the start of October 2022, average weekly LGV entries had returned to the greatest extent of 91 per cent of 2019 (pre-pandemic) levels, followed by HGVs (88 per cent) and cars (82 per cent).

The return of taxis and PHVs has been slower. At the start of October 2022 licensed taxi entries were 76 per cent of pre-pandemic levels, and PHVs entries were 71 per cent of pre-pandemic levels.

It is important to consider road traffic trends seen in central London over the last year in the wider context of the pandemic recovery, as well as numerous days of industrial action on rail, during the period of analysis. Reflecting on the changes to the scheme over this period, the impact of the introduction of weekend charging on the return of car traffic is most notable. Looking at the later part of 2022:

- Car entries to the charging zone on weekends remain well below pre-pandemic levels. This is likely as a result of the charge currently operating between 12:00

and 18:00 when a charge did not operate prior to the pandemic. Car entries during this time period are 61 per cent of 2019 levels, compared to 70 per cent across the day.
- Weekend car entries to the charging zone increased by 21 per cent on the weekend that the charging hours were shortened, and by 42 per cent in the periods that were temporarily charged during the pandemic (07:00 to 12:00 and 18:00 to 22:00). Nonetheless, car entries during this period remain well below pre-pandemic levels, at 75 per cent in October 2022.
- Changes to traffic as a result of changes to the Congestion Charge are broadly in line with expectation, when also accounting for pandemic-related travel demand changes in central London.

Shared and micro-mobility in London

Innovative forms of mobility continue to develop, and TfL is monitoring these to understand the extent to which they could contribute to the Mayor's transport aims.

The **car club** fleet size in London was 3,582 vehicles in 2021. TfL has conducted a review of its policy on car clubs to set out how it will work with car clubs to take the Mayor's policy forward and help deliver the benefits of reduced car ownership.

The result of this review is a set of commitments and TfL will work closely with London Councils, boroughs and car club operators and the wider sector to take them forward. In summary, these commitments are:

- To work with London Councils, boroughs and industry to encourage data sharing and visualisation to help inform strategic planning and policy development.
- To ensure that car clubs are included in policies and public messages that reference alternatives to car ownership, particularly when targeted at areas with high car ownership.
- To support operators and provide opportunities to promote third party offers as part of scrappage schemes to individuals who want to reduce their private car use.
- To consider the role of car clubs in any potential future form of integrated road user charging.
- To support the electrification of car clubs through the roll out of electric vehicle charging in London and work with operators to assess the needs of car clubs when implementing charging on TfL/GLA land.
- To provide quarterly updates setting out progress with these commitments.

London's **e-scooter trial** launched in June 2021 and has expanded significantly, with 10 boroughs, more than 500 designated parking locations and 4,425 e-scooters now involved.

In the first year of the trial, 1.8 million journeys were made across the three operators taking part in London's trial: Dott, Lime and TIER.

Safety is an important consideration, and the data so far shows that the rate of serious injuries arising from the trial has been falling as the trial matures.

Finally, TfL is keen to understand the potential of **cargo bikes** to support Mayoral aims for transport.

To help understand this potential, a study was recently conducted which showed that, unsurprisingly, areas in central London have the highest potential for cycle freight, given that they also have the highest levels of employment and retail, cycling permeability and further supportive measures.

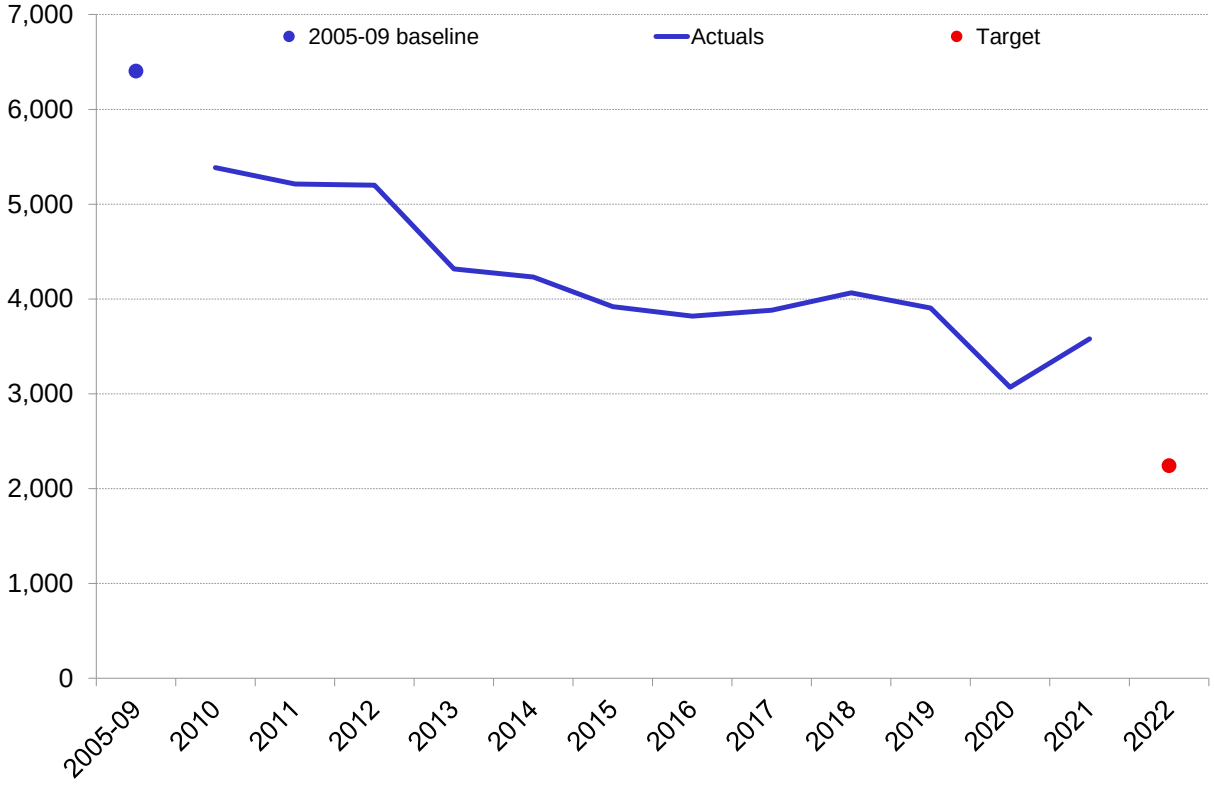
At present, cargo bikes make less than one per cent of the cycle flows in London. However, current estimates suggest that, with the right measures, up to two per cent of van kilometres in London could be replaced with cargo bikes by 2025, with varying uptake rates by area (for example in central London it could be up to between three and nine per cent).

Road danger

The Mayor's Vision Zero Action Plan makes it clear that no death or serious injury on London's roads is acceptable or inevitable. It also sets targets of a 65 per cent reduction in all persons killed or seriously injured (KSI) on London's roads by 2022 and a 70 per cent reduction in people killed or seriously injured in or by a bus by 2022, ahead of eliminating all deaths and serious injuries by 2041.

- In 2021 there were 23,319 reported collisions in London, resulting in 75 people being tragically killed, 3,505 being seriously injured (3,580 KSIs) and 23,092 being slightly injured.
- 2021 saw the lowest number of road fatalities on record. There was a 22 per cent reduction in fatalities between 2020 and 2021, and a 44 per cent reduction in roads KSIs from the 2005-09 baseline towards the target of a 65 per cent reduction by 2022. For children (0-15) there was a 68 per cent reduction.
- 2021 was an unusual year with large changes in the composition of people regrettably killed or seriously injured. This was largely due to new travel patterns in the wake of the pandemic. Motorcycling and pedestrian fatalities were significantly lower by historic standards but cycling fatalities and serious injuries increased.
- For KSIs in or by a bus we have achieved the Mayor's interim target for 2022 of a 71 per cent reduction from the 2005-09 baseline for the second year in a row, although in the context of the pandemic (figure 14).
- As pandemic disruptions recede, there may be increased challenge in protecting vulnerable road users from motorised vehicles as more people choose to walk, motorcycle, cycle, and use e-scooters.

Figure 14 Progress towards Mayor's Vision Zero target for killed or seriously injured casualties involving London buses, 2005-09 baseline to 2022.



Source: TfL Safety, Health and Environment.

Improving London's air quality and reducing our CO_2 emissions

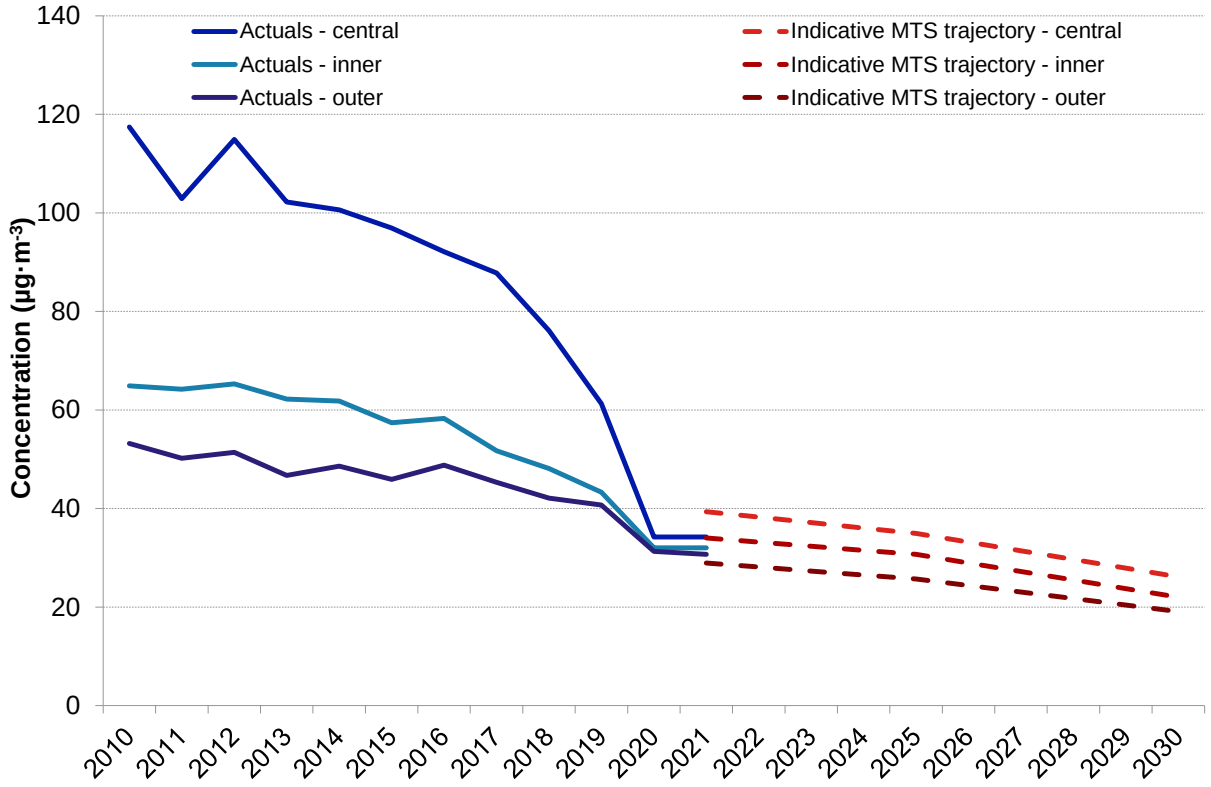
London's air quality remains a threat to the health of all Londoners, particularly some of the more vulnerable or otherwise disadvantaged.

Although significant improvements have been seen in recent years, following the general clean-up of the vehicle fleet, and encouraged by policies such as the Ultra Low Emission Zone, there is still much to do, particularly to continue to address levels of Nitrogen Dioxide (NO_2), especially alongside major roads in inner London that continue to exceed current UK legal limits (figure 15).

In 2021, the World Health Organization (WHO) released evidence showing and recommending the case for more stringent limits on a range of ambient air pollutants, including NO_2.

These recommendations have yet to be formally adopted by the UK. Nonetheless, the latest WHO recommendations clearly make the case for continued action to address air pollution, from transport and all other sources, to further benefit the health of Londoners.

Figure 15 Average NO_2 concentration in London by area, 2010-2030.



Source: TfL City Planning, based on London Air Quality Network.

Extension of the Ultra Low Emission Zone to inner London

On 8 April 2019 the Mayor of London launched the world's first 24-hour Ultra Low Emission Zone (ULEZ) in central London. On 25 October 2021 the zone was expanded up to but not including the North and South Circular Roads.

The ULEZ is now 18 times the size of the original area and covers four million people. The expanded ULEZ operates in conjunction with the established London-wide Low Emission Zone for large and heavy vehicles. The LEZ standards are now the same as the ULEZ standards for most large and heavy vehicles.

Six months on from the ULEZ expansion and over a year on from the enforcement of tighter LEZ standards these schemes are having a significant impact on the number of older, more polluting vehicles seen driving in London and the levels of harmful pollution that Londoners are exposed to.

In spring 2022, nearly 94 per cent of vehicles seen driving in the whole zone met the strict ULEZ standards on an average day, up from 87 per cent in the weeks immediately before the zone expanded and up from 39 per cent in 2017 when impacts associated with the ULEZ began. The compliance rate on boundary roads was 90 per cent and the compliance rate in outer London was 85 per cent, demonstrating the wider benefits as cleaner vehicles also operate outside the zone.

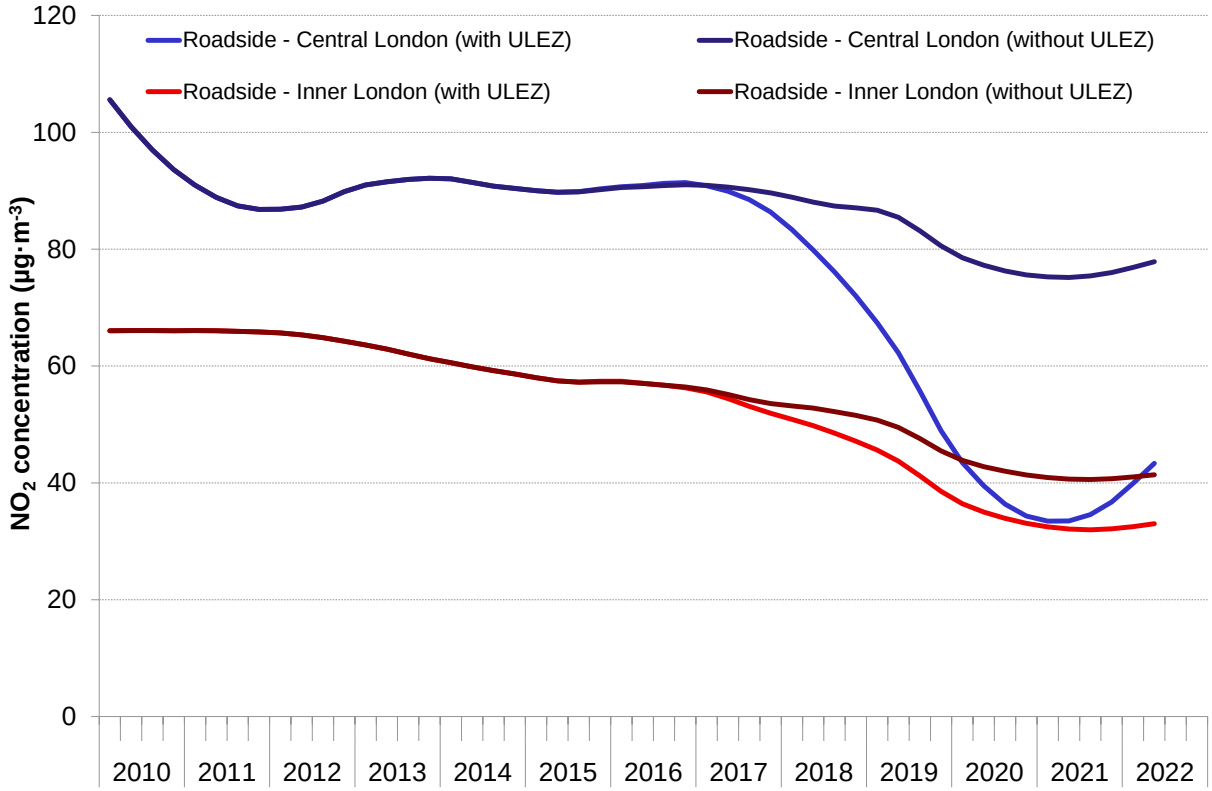
Initial analysis undertaken six months after the introduction of the expanded zone demonstrates that the ULEZ, LEZ and other policies have had a transformative impact on reducing NO_2 levels in this area.

In April-June 2022, the most recent data available, the mean roadside NO_2 concentrations measured in central London were 35µg·m^{-3} lower than the estimated (equivalent) 'without ULEZ' scenario, a difference of 44 per cent.

In inner London, roadside NO_2 concentrations were 8µg·m^{-3} lower than the estimated 'without ULEZ' scenario, a difference of 20 per cent. Crucially, the air quality improvements in inner London are being seen over an area that is 18 times the size of the original central zone, improving air quality directly for the four million people living in this area and those who come into the area for work, study or leisure.

Figure 16 also shows the importance of 'pre-compliance', that is, improvements in air quality as vehicle owners prepared for the introduction of the ULEZ in 2019 and its expansion in 2021.

Figure 16 Average NO_2 concentrations in London by quarter, with and without ULEZ, 2010-2022.



Source: TfL City Planning, based on London Air Quality Network.

The air is also cleaner on the boundary. All monitoring sites on the boundary of the expanded zone have seen reductions in NO_2 concentrations, with an estimated 17 to 24 per cent reduction in pollution on the boundary compared to a scenario without the ULEZ, reflecting the general improvement to emissions of vehicles travelling to/from the expanded zone.

Air quality, health and inequality

The reduction in NO_x emissions from road transport has not happened equally across London. Road transport NO_x emissions in inner London halved between 2013 and 2019. Comparatively, outer London NO_x emissions from road transport fell by 31

per cent over the same period, and in 2019 accounted for 28 per cent of London's total NO_x emissions.

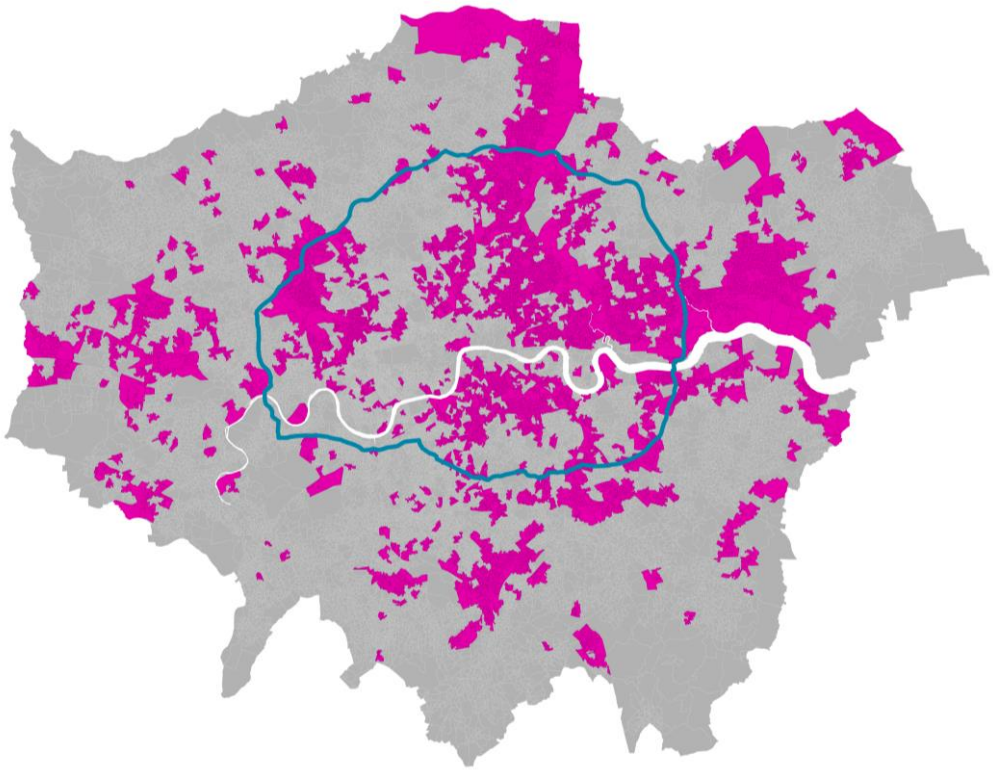
Similarly, $PM_{2.5}$ emissions from road transport fell by almost a quarter in inner London between 2016 and 2019, whereas in outer London they fell by seven per cent.

As a result, outer London now accounts for an increasing proportion of NO_x and $PM_{2.5}$ emissions from road transport and more needs to be done to ensure improvements in air quality are felt by all Londoners.

The differential impacts of poor air quality on London's deprived communities has been previously documented, and this analysis has been extended by TfL to take account of the (interim) WHO recommendations.

Considering the 30 per cent most deprived LSOAs and their intersection with NO_2 concentrations above the interim WHO guideline, figure 17 shows their distribution across London. The shaded area accounts for 36.6 per cent of the London population (2.9 million people).

Figure 17 Spatial distribution of the 30 per cent most deprived areas with the highest NO_2 concentrations.



Source: TfL City Planning/GLA.
Note: The boundary of the expanded Ultra Low Emission Zone (ULEZ) is overlaid on the graph for reference.

Towards net zero carbon by 2030

The Mayor's Transport Strategy set a target for London to be a zero carbon city by 2050. However, the Mayor has recently stated his ambition for London to be net zero carbon by 2030, recognising the urgency of the climate change emergency we face.

Addressing carbon (dioxide) emissions generated by road transport will be central to meeting the 2030 net zero target, as road transport is the second largest contributor to London's carbon emissions.

The Mayor's preferred option by which he envisions achieving his net zero target (the Accelerated Green scenario) would require a 27 per cent reduction in car vehicle kilometres.

Recent initiatives to reduce road transport carbon emissions have included:

- The early introduction of the ULEZ in central London in April 2019, which resulted in an estimated six per cent reduction in CO_2 emissions in the central zone.
- The recent expansion of the ULEZ to inner London, estimated to reduce CO_2 emissions London-wide by 4.6 per cent; the equivalent of taking 60,000 cars off the road.
- London has western Europe's largest fleet of zero emission, currently 866 vehicles, alongside strict taxi and private hire licensing regulations for vehicle emissions, with 6,152 zero emission-capable taxis registered in London as of October 2022.

Analysis of London's road transport carbon emissions data shows that:

- Cars and freight vehicles generate the greatest proportion of road transport carbon emissions, although freight vehicles are more polluting per mile and emissions from LGVs and HGV volumes have not been falling at the same rate as for other vehicle types.
- Outer London generates the highest proportion of carbon emissions from road transport, however when accounting for size, central and inner London, as well as strategic radial routes, generate a disproportionate amount of carbon emissions.
- Reductions in road transport carbon emissions since 2016 have been the greatest in central and inner London, with most boroughs reducing emissions by more than 10 per cent. In outer London, however, the picture is mixed with some boroughs (Bexley and Havering) seeing increases of over five per cent over the same period (figure 18).
- Both a reduction in vehicle kilometres and an acceleration of the transition towards cleaner vehicles will be needed to significantly reduce the contribution of road transport to London's carbon emissions and minimise the proportion of emissions which require offsetting.

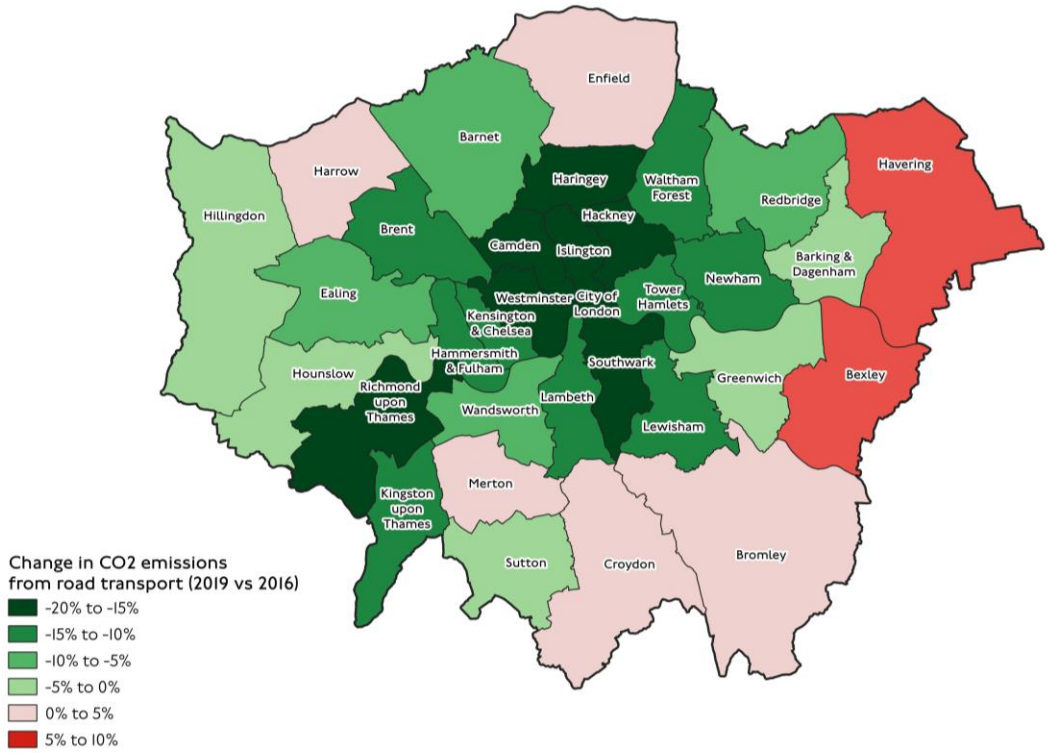
Supporting the transition to electric vehicles

As more fully electric cars come on to the market with larger batteries and longer range to meet consumer demand for zero emission vehicles, the number of new battery-electric vehicle (BEV) registrations has started to overtake the number of new plug-in hybrid electric vehicle (PHEV) registrations.

Data from the Department for Transport indicates that first-time registered ultra-low emission vehicles hit a record high in London with 28,000 vehicles registered new in 2022 so far, representing 20 percent (one in five) of all newly registered cars, motorcycles and light goods vehicles. Londoners are beginning to choose ultra-low emission vehicles in larger numbers over traditional internal combustion engine vehicles.

Delivery and utilisation of charging points in London continues to build, with over 11,200 publicly accessible charging units available, of which 820 are rapid chargers. In summer 2022, some 70 per cent of chargers saw five or more charging events on an average day.

Figure 18 Change in road transport CO_2 emissions by borough, 2019 vs 2016.



Source: London Atmospheric Emissions Inventory (LAEI).

A good public transport experience

Long-term trends in public transport demand

Aggregate public transport demand in London has grown strongly over the last couple of decades as a reflection of the economic growth of the Capital as well as the progressive enhancements to service capacity, connectivity and reliability.

For example, between 2009/10 and 2019/20, the number of journeys on the principal public transport modes increased by 11 per cent and the number of kilometres travelled by 26 per cent, significantly contributing to the historic shift to active, efficient and sustainable modes.

More recently, changes to key factors such as population, economic growth and disposable incomes led to a slowdown in growth since the mid-2010s and the coronavirus pandemic had a devastating impact on public transport demand from March 2020, leading to record lows of patronage and a long and volatile recovery affected by rapidly changing restrictions to economic activity and travel.

Since the last of these restrictions were lifted, public transport demand has entered a period of sustained recovery, as described above. Although this is not yet complete, and there is evidence of some pandemic adaptations persisting into the recovery

period, the status of the public transport recovery in late autumn 2022 can be regarded as encouraging.

Service provision and operational performance

As both a consequence and enabler of London's growth, public transport service capacity, connectivity and the wider customer experience (reliability, physical accessibility, etc.) have been continually improved over the last couple of decades.

For example, between 2009/10 and 2019/20 (before the coronavirus pandemic), the total capacity provided by the main public transport networks in London increased by some 28 per cent. This excludes more recent improvements such as the new Elizabeth line inaugurated in May 2022 (which once fully operational will by itself add a further 10 per cent to central London's rail network capacity) or the more recent London Overground extension to Barking Riverside, which opened in July 2022.

In terms of operational performance, the last few years have been characterised by maintaining a very high standard of operational performance even through the challenges of increased demand as well as those arising more recently from the coronavirus pandemic itself.

Public transport customer safety

With fewer customers travelling due to the pandemic, there was a corresponding fall in the number of customer and workforce injuries on our public transport network.

In 2021/22 there were 6,957 injuries of all severities across our public transport network. This compares to 3,389 injuries during 2020/21, which was severely affected by pandemic restrictions. It also compares to representative pre-pandemic figures of over 9,000 such injuries per year.

A rate-based examination suggests, however, that there may be some adverse trends emerging as we recover from the pandemic and as people return to public transport. The customer injury rate has increased substantially this year, up by seven per cent, compared to 2017/18.

This is a worrying trend and suggests that some customer behaviours seen during the pandemic, such as not wanting to hold onto handrails, may be persisting, despite our much-publicised cleaning efforts.

TfL will be looking at this closely over the coming year, making sure to evolve our customer marketing campaigns accordingly and providing advice on travelling safely.

Public transport customer satisfaction and Care

Care and customer satisfaction are our primary measures for understanding the quality of the customer experience that TfL delivers, from a customer perspective. They are complementary elements in determining how TfL is working for our customers, providing a rounded picture of our performance.

'TfL cares about its customers' is the measure used to understand whether TfL is meeting expectations and making Every Journey Matter for our customers.

Care measures Londoners' overall perceptions of TfL and is the best reflection of how it meets expectations in every interaction with customers (for example all

journeys, interactions with the Contact Centre and communications such as email updates), not just the last journey. An ongoing focus on Care helps TfL understand, in the short term, how it works for our customers, and in the longer term, how to encourage greater use of active, efficient and sustainable modes.

Our key Care measure has maintained an encouraging trend throughout the pandemic, quarterly scores lying in the range of 55 to 60 per cent of our customers agreeing that 'TfL cares about its customers'. The stability of this measure throughout the pandemic, and at higher values than were typical before, is particularly notable.

Public transport fares

The average fare paid on public transport differs across all modes.

London Underground has the highest yield, at just over £2 per journey. This has increased slightly from £1.98 in 2017/18 to £2.02 in 2021/22, although the latest two years of data are affected by change in travel patterns due to the pandemic.

In contrast, the lowest yield is on the bus, at 74 pence per passenger journey. The impact of concessionary fares means that the income per passenger journey is lower than the average fare per mode.

The average yield per passenger journey for all modes was £1.20 in 2021/22, an increase of 3.2 per cent compared with 2017/18.

Physical accessibility of the public transport networks

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 all is one of our top priorities.

TfL measures progress against this aim by comparing, for all possible journeys using London's public transport network, the relative additional journey time that would be incurred on average when using only the step free network against the time required if the whole network was available.

In 2021/22, Nine Elms and Battersea Power Station opened with step-free access as part of the Northern line extension; and eight other London Underground stations were made step free. At the end of 2021/22, some 91 of London's 272 Underground stations were step free. Beyond this, TfL has continued to make stations across our rail network more accessible, with half of the stations now step free.

The opening of the Elizabeth line provides 41 step-free stations from Reading and Heathrow in the west to Shenfield and Abbey Wood in the east. While some of these have been put in place over recent years on existing national rail networks, the opening of the central section to direct services through central London from late 2022 will help to make the heart of the West End accessible and inclusive for more Londoners than ever before.

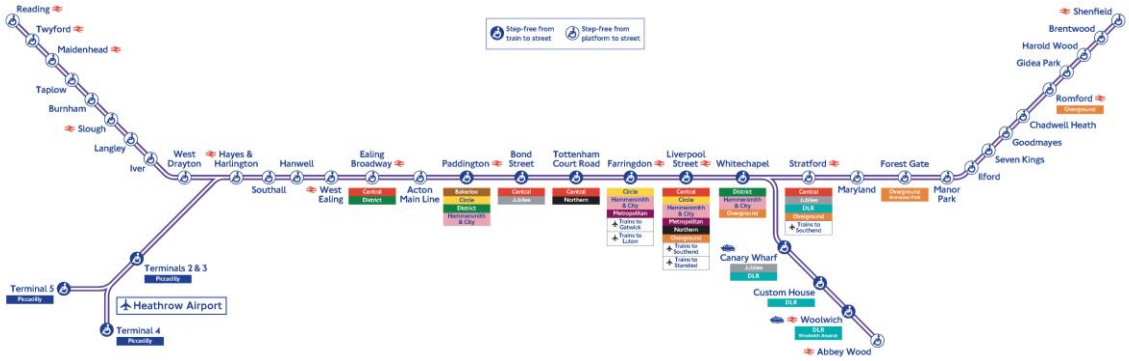
All these recent improvements to the step-free network will translate to a reduction of approximately 32 per cent (from 9.5 minutes in 2016/17 to 6.4 minutes in 2022/23) in the average journey time difference using the step-free network compared to the rest of the network. This is in addition to the transformational changes in journey times across London brought about by the Elizabeth line.

Supporting New Homes and Jobs: new transport infrastructure for London

Opening of the central section of the Elizabeth line

The central section of the Elizabeth line opened successfully on 24 May 2022. This was the first stage in the realisation of the full Crossrail project, which is transforming journey opportunities to, from and within central London and has facilitated the delivery of 54,725 new homes within 1km of its stations between 2008 and 2021.

Figure 19 The Elizabeth line.



Source: TfL.

After six months of operation, it is already clear that the central section is delivering the anticipated benefits and that Londoners are taking full advantage of the new journey opportunities it offers.

Delivery of the full interconnected railway, and the full realisation of the transport benefits of the project, are expected to be achieved no later than May 2023.

- Between 24 May and 20 October there were around 55 million passenger journeys using the whole Elizabeth line, of which around 27 million used the central section.
  A typical weekday (Tuesday-Thursday) sees over half a million passenger journeys on the whole line, and a quarter of a million on the central section. Demand is broadly in line with expectations, and at current rates in line with expectations in the business case of between 130 and 170 million passenger journeys per annum by 2025/26.
  Current demand is also well within the capacity provided.
- Journey times have been transformed. A journey between Liverpool Street and Paddington that took 24 minutes before opening now takes as little as 18 minutes; a journey between Paddington and Tottenham Court Road previously took 21 minutes, and now takes as little as 11 minutes. Demand has also increased where there have been improvements in journey times.
- Connectivity, especially in southeast London, has also dramatically improved. There are 1.4 million more jobs across London and the South East accessible now within 60 minutes of Abbey Wood than before the central section of the Elizabeth line opened.
- The full impacts of the new railway on patronage on other rail lines will become apparent as the project reaches completion. So far, an estimated 39 per cent of

total passenger kilometres on the line come from other London Underground lines and a further 14 per cent from the DLR.

- However, there are also early indications of the potential of the new line to generate new rail trips. Rail demand from stations in the Canary Wharf area has grown by 25 per cent, and in the Woolwich area by 20 per cent, well above background growth. There is also a large increase in usage at Tottenham Court Road station that is not being offset with (rail) reductions elsewhere, suggesting generation of new demand.

An extensive programme of monitoring and evaluation of the project has been put in place by TfL and the Department for Transport, as joint sponsors for the line. This will ensure that the full benefits of the new line are understood and reported in future years.

Northern Line extension

Travel in London report 14 introduced the recently opened Northern line extension as an example of Good Growth and of the role of transport infrastructure in enabling development of more than 20,000 new homes and around 25,000 jobs in the Vauxhall Nine Elms Battersea (VNEB) area.

After a full year of operation, and in the context of ongoing development at the site, the latest data shows that typically some 90,000 passengers enter the stations on the extension every week. Battersea Power Station is the busier station, with some 50,000-55,000 passengers per week as of late September 2022, while Nine Elms sees some 35,000 entries per week.

As the many developments in this Opportunity Area progressively reach completion, it is expected that demand will continue to grow, as has been seen recently for instance with the opening of the new Battersea Power Station development (which includes residential units, offices, retail and leisure space) in October 2022.

London Overground extension to Barking Riverside

The Barking Riverside Extension is a 4km extension of the Gospel Oak to Barking Overground Line and is the first extension of the London Overground since 2015.

A new step-free station at Barking Riverside was opened in July 2022, providing a new rail link between Barking Riverside and Barking town Centre as well as a step-free entry point to other London Underground, Overground and National Rail services, reducing travel time by over 15 minutes.

Together with the developer Barking Riverside London, TfL is continuing work on the public areas around the station until 2023. These will form the district centre at the heart of the Barking Riverside development.

The opening of the new station unlocks the full development potential of the largest housing development in east London. The masterplan for the site includes 10,800 new homes (half of which will be affordable), a new school, healthcare, shopping, community and leisure facilities, high quality public spaces and connections to walking and cycling routes.

If public transport did not cater for demand, many trips would be dependent on private car use. Improvements have been made to bus services but this on its own

would be unable to accommodate the level of passenger demand generated by 10,800 homes.

Coupled with planning conditions to ensure that public transport and housing are coordinated and delivered sustainably, no more than 4,000 homes could be occupied without delivery of the new Overground link. Therefore, the extension has unlocked 6,800 homes in dependent development, helping to meet strategic housing targets for London and accommodate future population growth.

The Barking Riverside Extension is therefore a catalyst enabling the full build-out of the Barking Riverside and currently attracts over 11,000 passenger trips each week.

The Silvertown tunnel

The Silvertown tunnel will be a 1.4 km twin bore road crossing of the Thames, linking Silvertown in Newham with the Greenwich Peninsula. It is due to open in 2025 and construction is now well underway.

This modern tunnel combined with a user charge and improved cross-river bus network will improve public transport connectivity and the reliability and resilience of the wider road network, in particular relieving pressure on Blackwall tunnel.

The tunnel is part of a wider package of improvements, including for walking and cycling, and the areas near the tunnel entrances as part of major regeneration of both sides of the river.

This report describes the extensive baseline monitoring that is being put in place to ensure that the impacts of the tunnel once it opens can be properly understood, and to allow for any unforeseen impacts to be detected and mitigated. This monitoring covers a wide range of factors related to the usage and operation of the local road network, air quality, and wider changes to social and economic conditions in the vicinity of the new tunnel.

Supporting New Homes and Jobs: London's Opportunity Areas

Context and monitoring

Opportunity Areas are designated through the London Plan as areas with particular development potential. They have an important role in delivering the 66,000 additional homes per year that London needs.

TfL works closely with the GLA, London boroughs and other key stakeholders to ensure that Opportunity Areas are delivered in line with the transport principles of Good Growth. Central to this is the requirement of supporting sustainable and active travel and avoiding car dependent development.

Delivery of homes, jobs and infrastructure in Opportunity Areas should be monitored and action should be taken where necessary to overcome any barriers to delivery. TfL monitoring work in Opportunity Areas seeks to understanding of the extent to which the Mayor's principles of Good Growth are being realised on the ground.

Opportunity Areas are delivering increased public transport accessibility

Accessibility to public transport is an important measure of Good Growth; the more connected people are to the public transport network, the more likely they are to choose public transport over car travel.

Traditionally TfL has measured the populations' access to public transport by using the public transport accessibility level (PTAL) metric. However, in our monitoring work this is taken a step further by combining PTAL and population data to report on the proportion of the Opportunity Area's population that falls within low/medium/high PTAL categories.

The Mayor's aim is for the proportion of Opportunity Area population living in PTAL band four or higher to reach 56 per cent by 2030.

The 2004, 2008 and 2011 Opportunity Area cohorts have all seen an increase in the proportion of their respective populations that live in high PTAL areas, and a decrease in the proportion of their respective populations that live in low PTAL areas between Opportunity Area designation and 2022. However, the 2016 cohort (Canada Water and Harrow & Wealdstone) have seen a decrease in the proportion of their population that live in high PTAL areas.

For comparison, since 2005 the proportion of London's population living in high PTAL areas has increased from 26 per cent to 33 per cent, while the proportion of London's population living in low PTAL areas has reduced from 27 per cent to 19 per cent.

These figures indicate that TfL is making good progress in our spatial planning work towards increasing the PTAL of London's population. However, a more detailed consideration of the data shows that between 2020 and 2022 there has been a slight reversal in the progress being achieved against this metric, which is related to public transport changes during the pandemic. TfL will continue to monitor this situation over future years.

People choose to walk and cycle in Opportunity Areas

There is a clear upward trend in proportion of walking trips in both the Opportunity Area sample and the Greater London sample: across the three-year period walking trips in Opportunity Areas rose from 26 per cent to 31 per cent, while across Greater London the rise is from 30 per cent to 35 per cent.

Opportunity areas are designed with the principles of Good Growth in mind which help to achieve this, for example by using transport to support and direct growth and by creating high-density, mixed-use places where people can walk (and cycle) to local amenities and use public transport for longer trips.

Housing delivery in Opportunity Areas

The capacity for delivery of new housing is a key defining feature of an Opportunity Area. Typically, Opportunity Areas present opportunity for high density sustainable development on brownfield sites.

A total of 28,284 homes have been delivered in adopted Opportunity Areas over a two-year period (April 2019-March 2021), which represents nine per cent of the

London Plan target for the adopted Opportunity Areas over the 2019-2041 time period.

Four of the Opportunity Areas have received over 3,000 completed homes between April 2019 and March 2021, these are: Olympic Legacy (3,329), Upper Lea Valley (3,170), City Fringe/Tech City (3,550) and Wembley (3,903). The Opportunity Area with the highest number of affordable homes delivered over the two years is Wembley with 919 affordable homes, followed by the Olympic Legacy Opportunity Area with 722 affordable homes.

Housing on TfL Land

TfL's ambitious housing programme continues to progress. Construction is underway on some 1,700 homes on nine sites across London and TfL is on track to start work on over 2,500 new homes this financial year. Construction is nearly complete on 350 homes at Blackhorse View (Waltham Forest), and the tallest building on its 619-home Kidbrooke site (Greenwich) has topped out, meaning the structure of the building is complete, in the summer of 2022.

In 2021/22, 467 homes were started across three sites: Wembley Park (454 homes), Aylesbury Street (nine homes) and Albany Road (four homes), and at Bond Street Oversite Development (354 Oxford Street) nine homes have been completed.

Rising construction costs and inflation are impacting the wider industry and TfL is working through what this means for its projects with partners. TfL is also aware of the wider capacity issues with the electricity grid in west London. This could potentially delay some schemes, including 460 homes at Southall (Ealing). TfL is working closely with its partner Grainger as part of joint venture, Connected Living London, to mitigate the grid capacity issues and is working on a temporary supply which could still allow construction to start this financial year.

Monitoring the legacy of the 2012 London Olympic and Paralympic Games

It is now 10 years since London hosted the 2012 Olympic and Paralympic Games.

Although acknowledged to have been highly successful as an event, it is timely to examine the extent to which transport-related legacy expectations are being met.

Baselines for some of these indicators were set out in Travel in London report 6.In view of the complications to gathering data and assessing trends brought about by the pandemic TfL will be gathering travel data over the next year, from which a fuller 10-years-on assessment can be made. In the interim, it is possible to update on development in the Olympic Legacy Opportunity Area.

Development in the Olympic Park Opportunity Area

The Olympic Legacy Supplementary Planning Guidance (SPG) (2012) set out a vision for making the Olympic Park and its surrounding areas "a distinctive and well-connected place where people can live and work sustainably and offer a wide range of new jobs and homes".

Since the decision in 2005 to award the 2012 Olympic and Paralympic Games to London, there has been significant investment in public transport and other infrastructure to support continued regeneration of East London:

- **2006**: Lifts providing step-free access to high level platforms at Stratford station brought into service.
- **2007**: TfL took over the North London line services, formerly Silverlink (the line was terminated at Stratford at that point). This was the start of the London Overground.
- **2007**: New DLR platform opens at Stratford station.
- **2009**: High-speed commuter services commenced operation from Stratford International station.
- **2010**: New platform 3a for westbound Central line trains opened in advance of the London 2012 Olympic and Paralympic Games.
- **2011**: New mezzanine ticket hall along with additional staircases and lifts opened in advance of the London 2012 Olympic and Paralympic Games.
- **2011**: DLR extension to Stratford International including new DLR stations at Stratford High Street and Abbey Road and making use of previous North London line platforms at Stratford station.
- **2011**: Stratford City bus station opened.
- **2011**: New northern ticket hall opened in conjunction with the Westfield Stratford City shopping centre.
- **2011**: New northern ticket hall opened in conjunction with the Westfield Stratford City shopping centre.
- **2013**: Improved frequencies on the Central and Jubilee lines.
- **2018**: Improvement works on Hackney Wick Overground station completed, improving the connectivity through the area as well as station capacity.
- **2022**: Elizabeth line services started serving Stratford and Maryland stations, allowing people to travel from Stratford to Paddington in just 19 minutes.

These and several more local transport developments in Stratford Town Centre have significantly improved connectivity, as reflected by the proportion of the population that live in areas with high PTAL. This has increased from around one third of the population in 2005 to around one half of the population in 2020, which represents strong progress towards the Mayor's aim of 56 per cent of the population of Opportunity Areas living in high PTAL areas by 2030.

The Olympic Legacy SPG identified the capacity for 32,000 homes in and around the Olympic Park in the 20-year period after the 2012 Olympic and Paralympic Games. Some 15,500 homes have been delivered in the Opportunity Area, and London is currently on track to achieve the 32,000 homes growth target that was set out in the Olympic Legacy SPG.

Job creation underpinned by sustainable and active travel connectivity has always been central to the Games legacy vision for the Olympic Park area.

The Mayor's London Plan identifies the Olympic Legacy Opportunity Area as having potential for 65,000 new jobs by 2041. This employment vision is well underway.

On the Stratford station side (eastern side) of the park is the International Quarter London, which hosts the Financial Conduct Authority, Transport for London,

UNICEF, Cancer Research UK, the Nursing and Midwifery Council, The Insolvency Service, the British Council and shared workspace facilities.

On the northwestern side of the park, just to the north of Hackney Wick station, lies the thriving innovation campus of Here East. Employers at Here East include: Loughborough University London, University College London, Staffordshire University and BT Sport.