

December 2023



# Travel in London 2023

## Trends in public transport demand and operational performance

MAYOR OF LONDON



**TRANSPORT  
FOR LONDON**  
EVERY JOURNEY MATTERS

# Travel in London 2023

## Trends in public transport demand and operational performance

### 2023 update

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## Summary of key findings

This report looks at long-term trends for public transport demand and performance to the end of financial year 2022/23, with reference to more recent 2023 data where available.

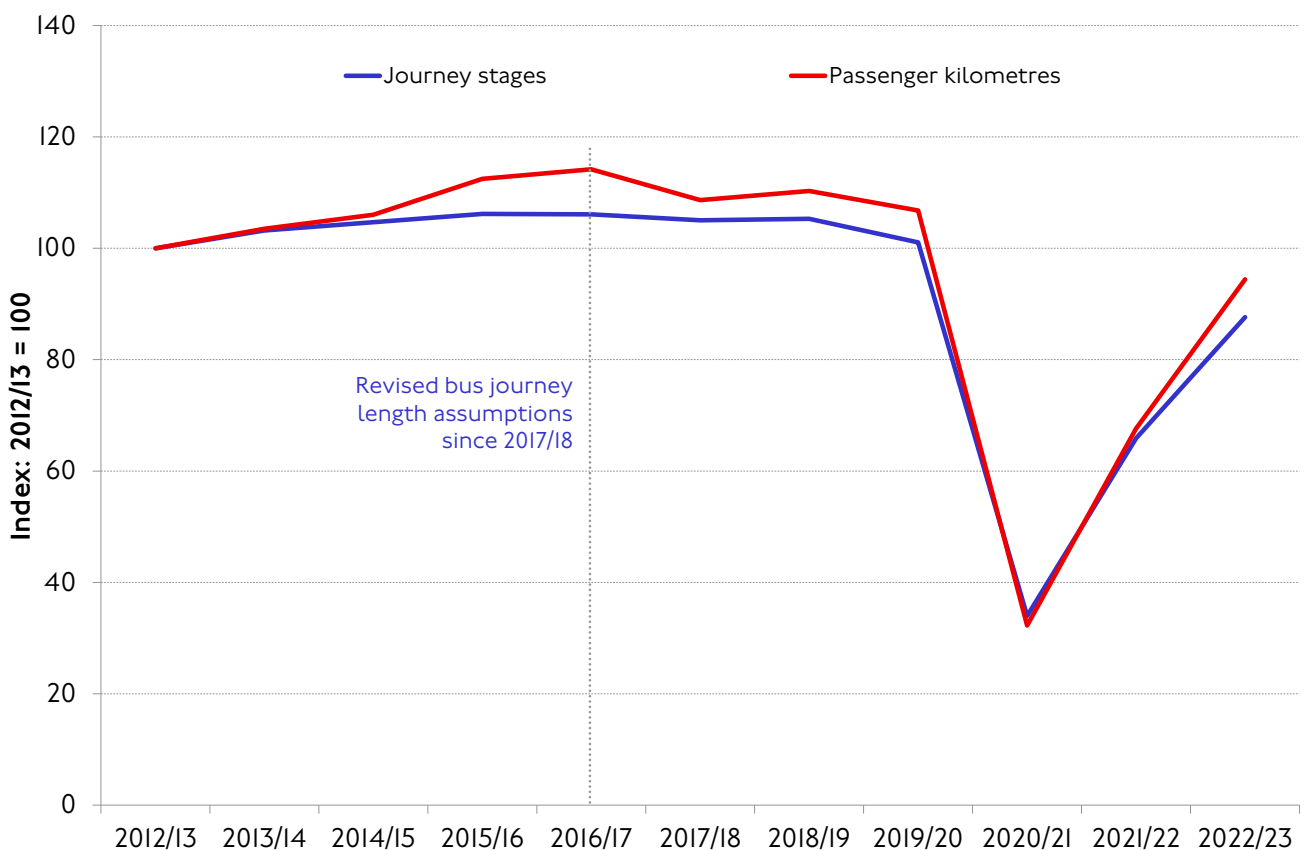
- Financial year 2022/23 was the first since the outbreak of the coronavirus pandemic over which travel demand in London had the opportunity to recover after all public health restrictions were lifted. However, it was atypical for other reasons, including the opening of the Elizabeth line, the cost-of-living crisis, widespread industrial action on several public transport networks across the country and prolonged periods of extreme weather. Nevertheless, the broad dimensions of post-pandemic demand, and the differences to pre-pandemic patterns, became increasingly clear.
- Over the last decade, public transport demand fluctuated within a small margin of around four billion journeys per year. It peaked around 2015/16 and then decreased slightly until 2019/20, this thought to reflect primarily a combination of cost-of-living pressures and some reductions in service provision, most notably affecting buses.
- With the outbreak of the coronavirus pandemic in 2020, public transport demand plummeted to historic lows and pandemic disruption continued throughout 2021, so that travel demand recovery only started in earnest in early 2022.
- Averaged across 2022/23 as a whole, public transport journey stages had recovered to 87 per cent of the 2019/20 pre-pandemic baseline, with individual modes also around that level within a range from 77 to 89 per cent. Data from more recent months shows most modes at around 80-90 per cent, which is a positive sign of consolidation and upward trend in the demand recovery.
- It is nevertheless clear that these aggregate demand statistics conceal some important post-pandemic trends in terms of the way that people travel. These include a consolidation of weekday travel on mid-week days (Tuesday to Thursday, where demand is typically higher than on Mondays and Fridays, particularly on rail modes), relatively more travel on weekends than on some weekdays, and slightly longer average journey lengths, all of which are becoming established as features of post-pandemic travel demand.
- Public transport service provision was broadly maintained on TfL services during the pandemic to cater for essential journeys and to facilitate social distancing, and rapidly returned to pre-pandemic levels following the removal of all pandemic restrictions.
- The year 2022/23 was, however, a particularly challenging one for operational performance, with a small net decline in performance across most modes due to several factors, including long-running industrial action on public transport networks across the country as well as other staff- and asset-related causes, these largely reflecting ongoing effects of the pandemic.
- In general, and although all indicators show overall positive signs of recovery towards the pre-pandemic baseline, there remains a gap in both demand, service provision and performance against pre-pandemic norms.

# Overall demand on public transport

## Consolidated long-term demand trends

Seen in the long-term context, public transport demand over the last decade (figure I) remained broadly stable at around four billion journeys per year (typically just more than a third of all journeys in London). This follows a period of expansion over the preceding two decades as described in previous [Travel in London reports](#).

Figure I Patronage on the main TfL public transport modes, 2012/13-2022/23.



Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL operational data and Office of Rail and Road.

Note: This graph excludes patronage on London River Services, the IFS Cloud Cable Car and National Rail in London (where not a TfL-operated mode). In 2012/13 (reference year) there were 3,795 million journey stages and 19,694 million passenger kilometres.

Total public transport demand peaked in 2015/16 (at 4,028 million journey stages per year) and then decreased slightly until 2019/20. This declining trend was thought to reflect a combination of cost-of-living pressures and service reductions in some areas, particularly affecting buses.

Following the outbreak of the coronavirus pandemic in 2020, public transport demand fell to unprecedented levels but has since been on a recovery trajectory – see table 1 (journeys), table 2 (passenger kilometres) and figure I (indexed change).

With the last major wave of coronavirus infections from the Omicron variant ending in early 2022, financial year 2022/23 was the first since the outbreak where public transport demand and travel in London more generally had the opportunity to return to a more

stable post-pandemic state. In other respects, however, 2022/23 might not be considered a typical year for travel in London due to several other factors impacting travel patterns, including:

- The opening of the Elizabeth line, which generated new demand for public transport and transformed the travel options for millions of people in London and the wider South East region.
- The intensification of cost-of-living pressures.
- Sustained industrial action on several public transport networks across the country, affecting the ability to travel and the reliability of public transport.
- Atypical weather (for example a very hot summer) and other events such as Queen Elizabeth II's Platinum Jubilee in May 2022 and state funeral in September 2022.

Table 1 Demand (million journeys) on TfL's public transport modes, 2012/13-2022/23.

Year	Buses	LU	DLR	LO <sup>1</sup>	EL <sup>1,2</sup>	Trams	Total <sup>3</sup>	River Services	IFS Cloud Cable Car
2012/13	2,311	1,229	100	125	-	30	<b>3,795</b>	6.3	2.0
2013/14	2,382	1,265	102	136	-	31	<b>3,916</b>	8.4	1.5
2014/15	2,385	1,305	110	140	-	31	<b>3,972</b>	10.0	1.5
2015/16	2,314	1,349	117	183	37	27	<b>4,028</b>	10.2	1.5
2016/17	2,262	1,378	122	189	45	30	<b>4,025</b>	10.4	1.5
2017/18	2,247	1,357	120	190	42	29	<b>3,985</b>	10.0	1.4
2018/19	2,220	1,385	122	188	51	29	<b>3,995</b>	9.8	1.4
2019/20	2,112	1,337	117	186	56	27	<b>3,835</b>	9.6	1.2
2020/21	865	296	40	59	18	12	<b>1,290</b>	1.6	0.4
2021/22	1,491	748	77	127	37	19	<b>2,499</b>	5.3	1.4
2022/23	1,785	1,065	92	157	204	21	<b>3,324</b>	8.5	1.5
Change 2019/20-2022/23	-16%	-20%	-21%	-16%	+268%	-23%	<b>-13%</b>	-11%	+25%

Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL operational data and Office of Rail and Road.

1: The demand figures on London Overground and the Elizabeth line are estimates from the Office of Rail and Road based on National Rail's LENNON ticketing system. There are known limitations with this method for the Elizabeth line in particular, and therefore these estimates should be considered only as indicative. However, TfL estimates for the Elizabeth line are only available from 2022/23 onwards and for comparability with the historic trend the Office of Rail and Road series is useful. Official TfL estimates of journeys on the Elizabeth line have been provided on other reports in the Travel in London 2023 family.

2: The Elizabeth line opened in May 2022 so the results up to 2021/22 refer to the previous TfL Rail services.

3: This total is calculated for the main modes only for easier comparison of the overall change with table 2 below, given that passenger kilometre values are only available for a subset of modes.

Table 2 Demand (million passenger kilometres) on the main TfL public transport modes, 2012/13-2022/23.

Year	Buses	LU	DLR	LO <sup>1</sup>	EL <sup>1,2</sup>	Trams	Total
2012/13	8,148	10,099	510	780	-	156	<b>19,694</b>
2013/14	8,420	10,423	537	840	-	162	<b>20,383</b>
2014/15	8,418	10,847	590	863	-	160	<b>20,878</b>
2015/16	8,188	11,458	623	1,237	505	140	<b>22,150</b>
2016/17	8,016	11,797	657	1,294	569	154	<b>22,487</b>
2017/18	6,899 <sup>3</sup>	11,869	644	1,296	534	151	<b>21,393</b>
2018/19	6,836	12,150	654	1,288	643	149	<b>21,719</b>
2019/20	6,538	11,746	621	1,273	706	141 <sup>4</sup>	<b>21,025</b>
2020/21	2,754	2,707	207	402	222	60 <sup>4</sup>	<b>6,352</b>
2021/22	4,774	6,726	398	864	460	98 <sup>4</sup>	<b>13,319</b>
2022/23	5,762	9,507	460	1,076	1,683	109 <sup>4</sup>	<b>18,596</b>
Change 2019/20-2022/23	-12%	-19%	-26%	-16%	+139%	-23%	<b>-12%</b>

Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data.

1: See note 1 on table 1.

2: See note 2 on table 1.

3: Methodological changes created a break in the time series for passenger kilometres after 2017/18.

4: Trams passenger kilometre estimates rely on assumptions about average trip length derived from a survey that has not been repeated since 2018/19, so the values after that are using the latest available average trip length.

Looking at the 2022/23 financial year, total journeys on TfL's main public transport networks recovered to 87 per cent of the 2019/20 pre-pandemic level (passenger kilometres to 88 per cent). However, this aggregate figure masks the opening of the **Elizabeth line**, which unlocked new journey opportunities. This means that the recovery on the established modes was relatively lower.

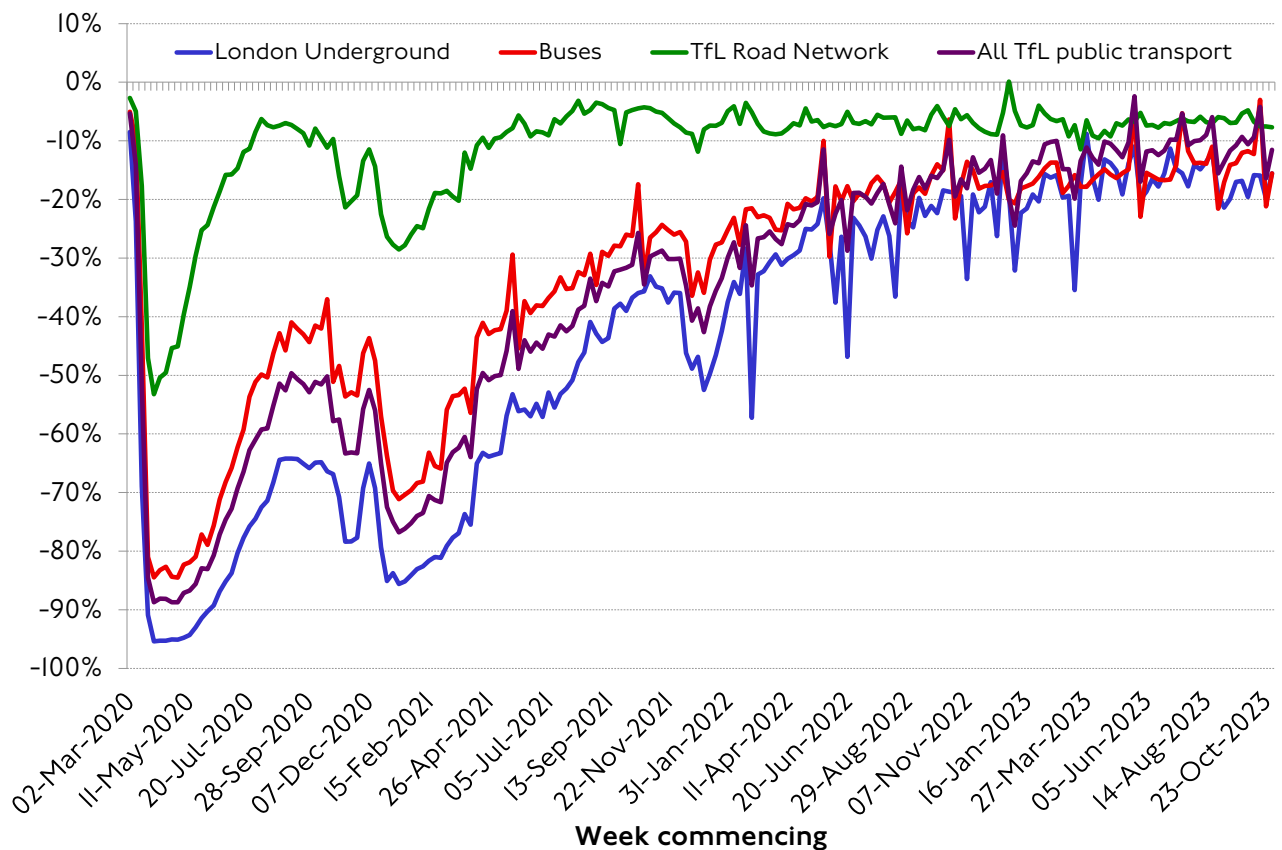
- On **buses**, the number of journeys in 2022/23 recovered to 84 per cent of the pre-pandemic baseline (passenger kilometres to 88 per cent).
- **London Underground** journeys in 2022/23 were at 80 per cent of the pre-pandemic baseline (passenger kilometres at 81 per cent).
- On the **DLR**, journeys in 2022/23 were 79 per cent of the pre-pandemic baseline (passenger kilometres at 74 per cent).
- On **London Overground**, both journeys and passenger kilometres had recovered to 84 per cent of the pre-pandemic level in 2022/23.
- **London Trams** journeys and passenger kilometres both were at 77 per cent of the pre-pandemic baseline in 2022/23.
- On **London River Services**, the number of journeys recovered to 89 per cent of the pre-pandemic baseline.

- Finally, the **IFS Cloud Cable Car** is the only mode that since 2021/22 continues to report a full patronage recovery, with 25 per cent more journeys in 2022/23 than before the pandemic.

## Current position on the coronavirus pandemic recovery

The consolidated, full-year demand figures in the previous section provide a good overview of public transport demand in the longer-term context and the progress of the post-pandemic recovery so far. It is clear, however, that certain features of pandemic demand are persisting well into the recovery period, with possible implications for transport policy and service provision more generally, albeit that the recovery will be ongoing over the next few years.

Figure 2 Average weekly demand on the main transport networks compared to the equivalent week before the pandemic, Mar 2020-Oct 2023.



Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL operational data.

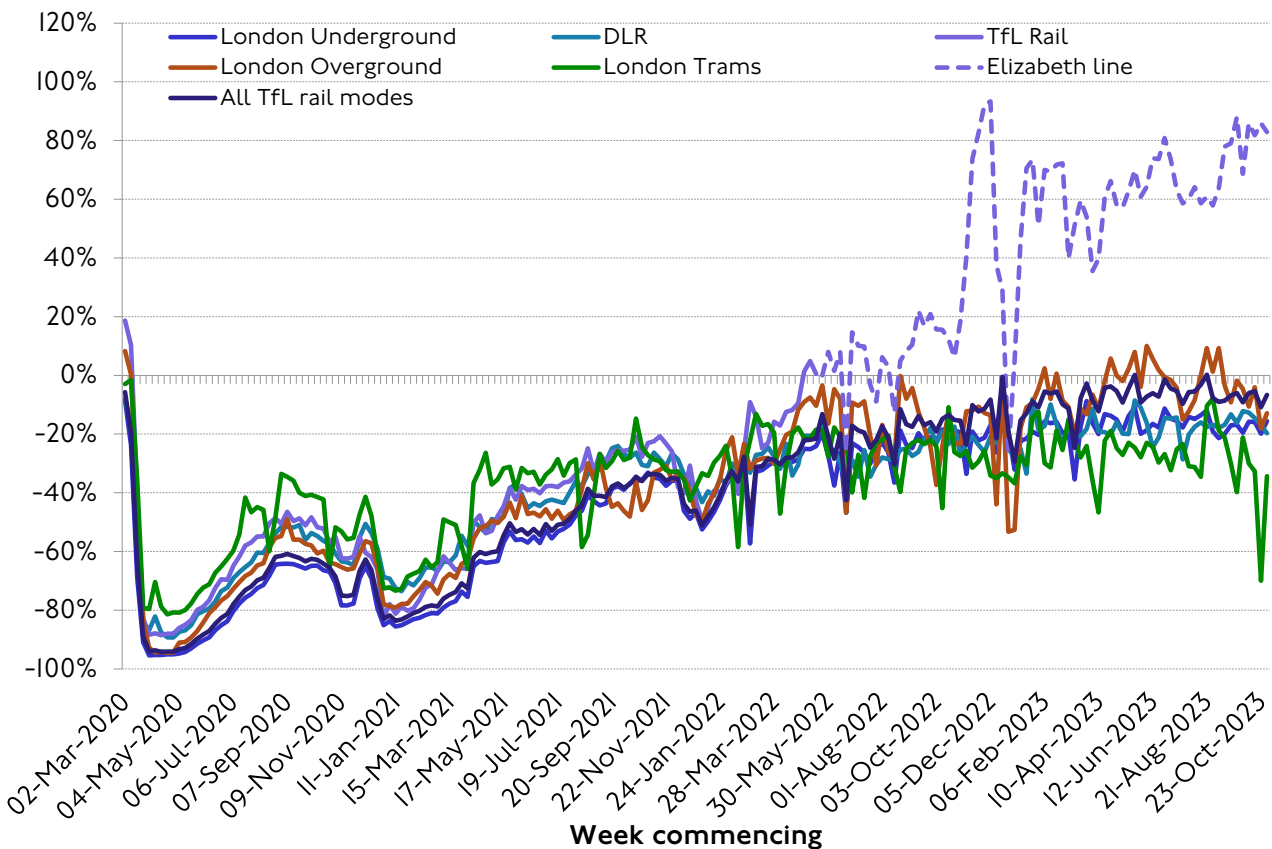
Note: Public transport trends are calculated as change in seven-day average journeys from the equivalent week in 2019, where the averages have been adjusted to account for bank holidays on a like-for-like basis. The TfL Road Network trend, on the other hand, is an average of the day-to-day change from the equivalent date in 2019 for each of the weeks, adjusted to account for bank holidays in the same way. From 1 April 2023, the TfL Road Network trend source data was re-baselined to the equivalent week in financial year 2022/23 instead of before the pandemic. However, for comparability with earlier data and with the other modes the trend presented in the graph has been adjusted to represent change from the equivalent week before the pandemic.

Figure 2 shows the average weekly demand on TfL-operated public transport, buses and London Underground, alongside the equivalent indicative trend for traffic on the TfL Road Network. The main features are:



- As of October 2023, **overall public transport** recovery was at about 90 per cent of the pre-pandemic baseline, having been on a continuous upward trajectory since early 2022 and fluctuating around this level in recent months. Note however that this value is calculated in comparison to the equivalent pre-pandemic week and adjusting for bank holidays, while the recovery values presented in the previous section are calculated on the annual total (2022/23 versus 2019/20).
- This compares to a 92 per cent return of traffic on the **TfL Road Network**. It is notable that road traffic returned to a greater extent and much earlier than public transport demand and was more resilient to the effects of the pandemic.
- Looking at the main modes individually, both **buses** and **London Underground** had recovered to around 84 per cent by the end of October 2023.
- During 2022 and 2023, the impacts of industrial action are clearly visible in the graph, particularly affecting the London Underground trendline.

Figure 3 Average weekly demand on TfL’s rail networks compared to the equivalent week before the pandemic, Mar 2020-Oct 2023.



Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL operational data.

Note: The TfL Rail trend is provided until the opening of the Elizabeth line in May 2022, where a comparison with a pre-pandemic baseline is no longer relevant. The Elizabeth line trend uses the demand on its first week of operation as a basis for the relative comparison.

Figure 3 looks more closely at the other TfL rail networks where, as of October 2023, the main features were as follows:

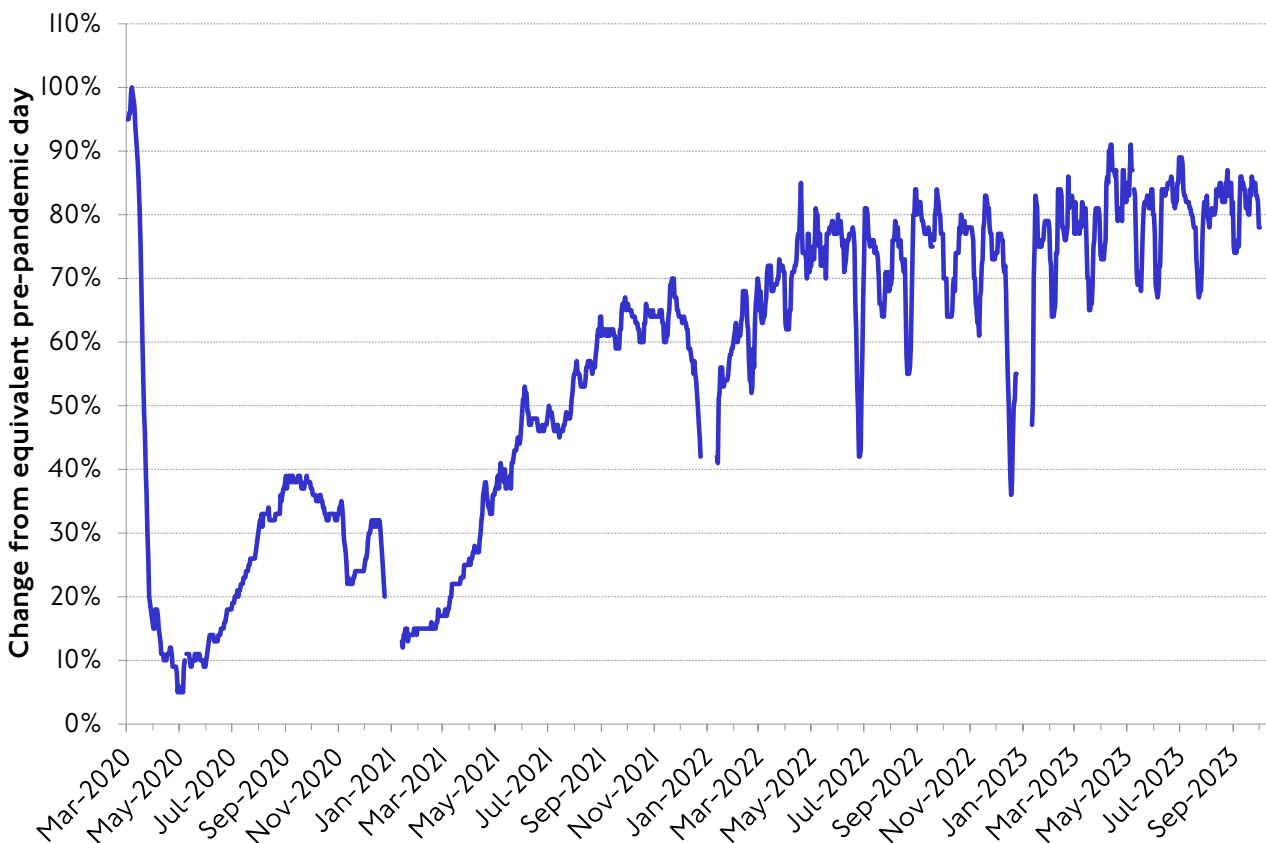
- Across **all TfL-operated rail modes**, the recovery was around 93 per cent, slightly higher than on buses and the London Underground.

- Over the last few months, **London Overground** seems to be leading the recovery, occasionally exceeding the pre-pandemic level of demand in April 2023 and at around 90 per cent in October 2023.
- The recovery of **DLR** demand seems to follow closely that of the London Underground, at slightly over 80 per cent in recent weeks in October 2023.
- Demand on **London Trams**, on the other hand, seems to have stabilised at around 70 per cent of the pre-pandemic level in recent weeks.

There is no corresponding pre-pandemic trend for the **Elizabeth line** as a whole, given that the main central section opened during the latter stages of the pandemic. Initial demand patterns on the Elizabeth line until October 2022 were described in [Travel in London report 15](#), and a refresh is provided in a separate report in the Travel in London 2023 family.

Finally, figure 4 looks at the demand trend for **National Rail** services. Note that this graph gives an estimated recovery position for the whole of Great Britain (although the Elizabeth line has been explicitly excluded).

Figure 4 Daily demand on National Rail in Great Britain (excluding the Elizabeth line) compared to the equivalent day before the pandemic, Mar 2020–Oct 2023.



Source: Department for Transport.

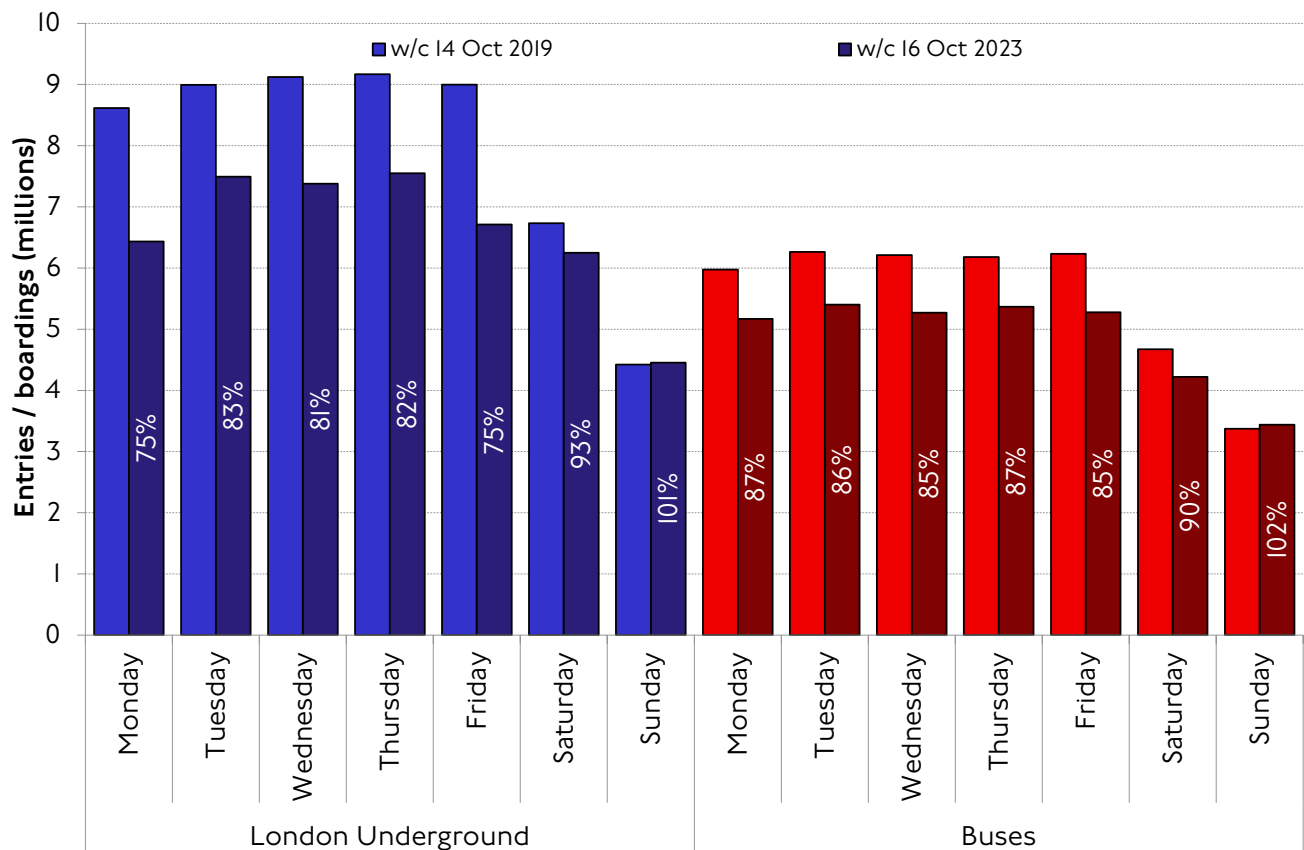
The Department for Transport reports that, as of October 2023, rail journeys in Great Britain excluding the Elizabeth line had recovered to around 80 to 90 per cent of the pre-pandemic baseline, having fluctuated around this range since the beginning of the year. The impact of industrial action is also visible in the figure.

## Changes in the temporal distribution of travel demand

One of the main legacies from the coronavirus pandemic is the change in public transport demand across the week (particularly on rail modes) and, to a lesser extent, throughout the day. These are thought to largely reflect the consolidation of hybrid working patterns among a section of the travelling public for which this is available.

Figure 5 shows this in terms of the absolute demand of each weekday of a recent week compared to the equivalent week before the pandemic. The percentages inside the bars for the most recent week represent the relative recovery against that same day in the baseline week.

Figure 5 London Underground and bus demand by day of week, week commencing 16 Oct 2023 versus week commencing 14 Oct 2019.



Source: TfL Data & Analytics, Technology & Data.

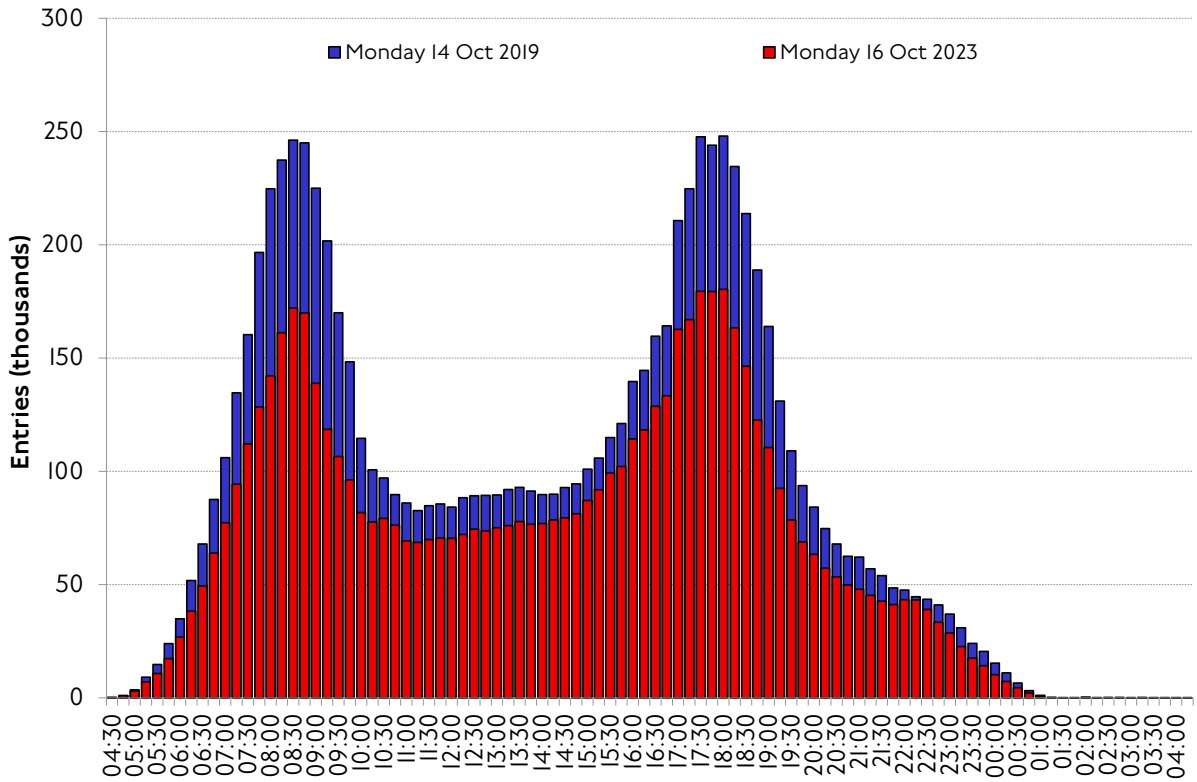
Alongside the shortfall in demand that persist across both modes in all days of the week (except Sunday for the sample weeks), the relative recovery has been largest on weekends, which exceed 90 per cent, in line with the observation of a faster and more consolidated recovery in the leisure travel market.

Shifts in the timing of travel since the pandemic have also been observed. The overall relative profile of demand has largely returned to how it was before the pandemic. However, the recovery of ridership has also varied throughout the times of the day. For example, there is still relatively lower demand in the peaks, mostly the morning peak, and a slightly higher share of demand in the inter-peak. And on Fridays for example the recovery of demand is more advanced in the later hours of the day than in the morning, suggesting perhaps a stronger return of demand for leisure travel.

In absolute terms there is a clear shortfall with respect to before the pandemic which is larger around the peaks and on particular days of the week (notably Mondays and Fridays).

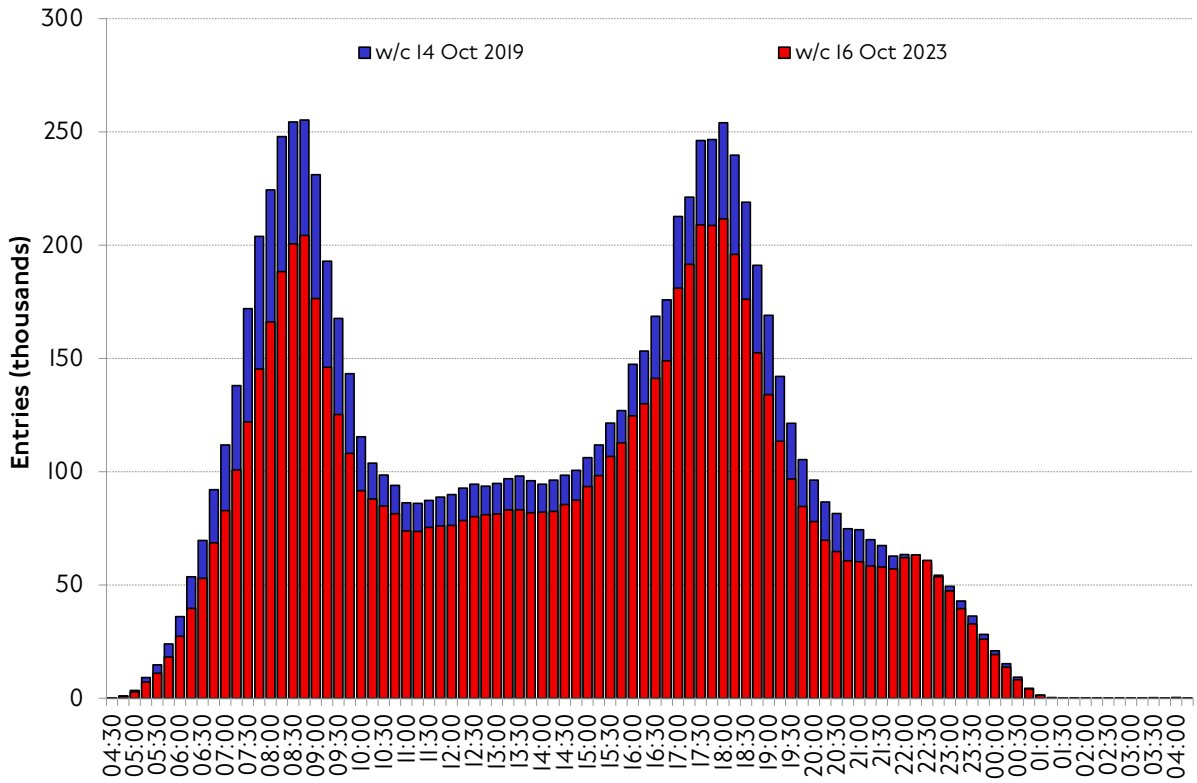
For London Underground, figures 6, 7 and 8 contrast the demand profiles before and after the pandemic on Mondays, Tuesday-Thursday and Fridays, respectively, based on representative weeks in each year.

Figure 6 Monday London Underground entries, by quarter hour, week commencing 16 Oct 2023 versus week commencing 14 Oct 2019.



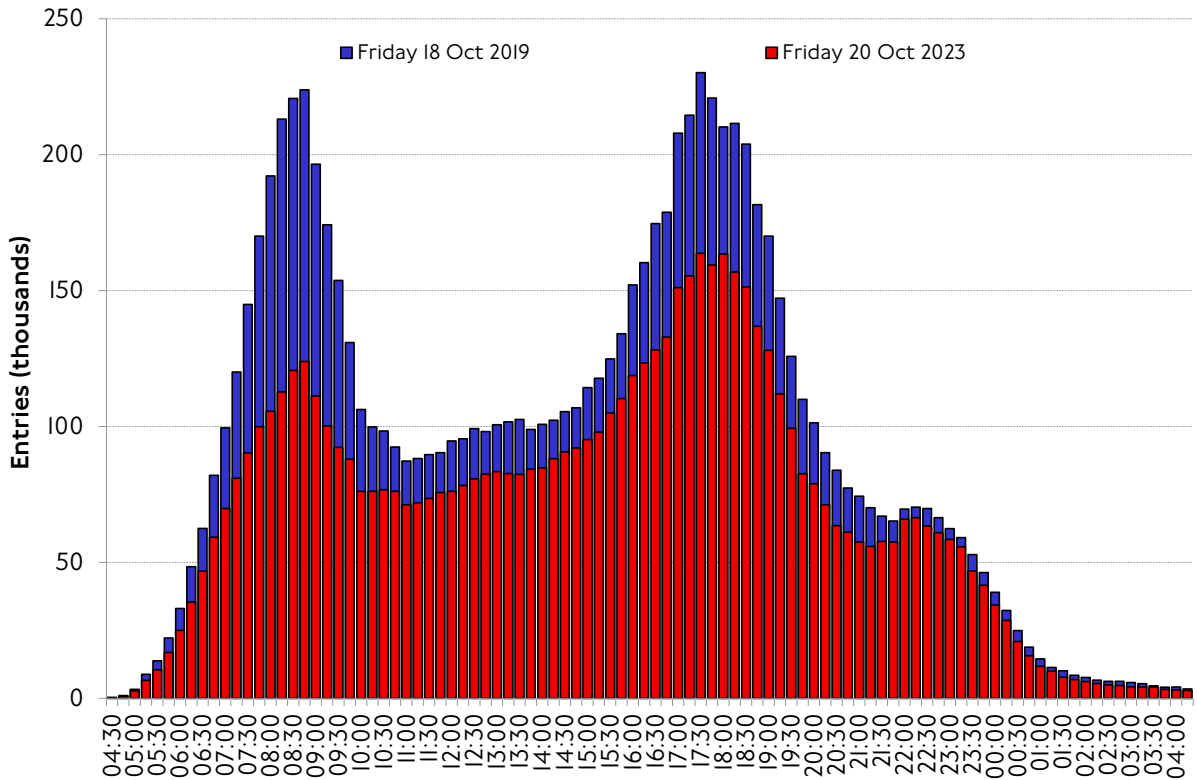
Source: TfL Data & Analytics, Technology & Data.

Figure 7 Tuesday to Thursday London Underground entries, by quarter hour, week commencing 16 Oct 2023 versus week commencing 14 Oct 2019.



Source: TfL Data & Analytics, Technology & Data.

Figure 8 Friday London Underground entries, by quarter hour, week commencing 16 Oct 2023 versus week commencing 14 Oct 2019.



Source: TfL Data & Analytics, Technology & Data.

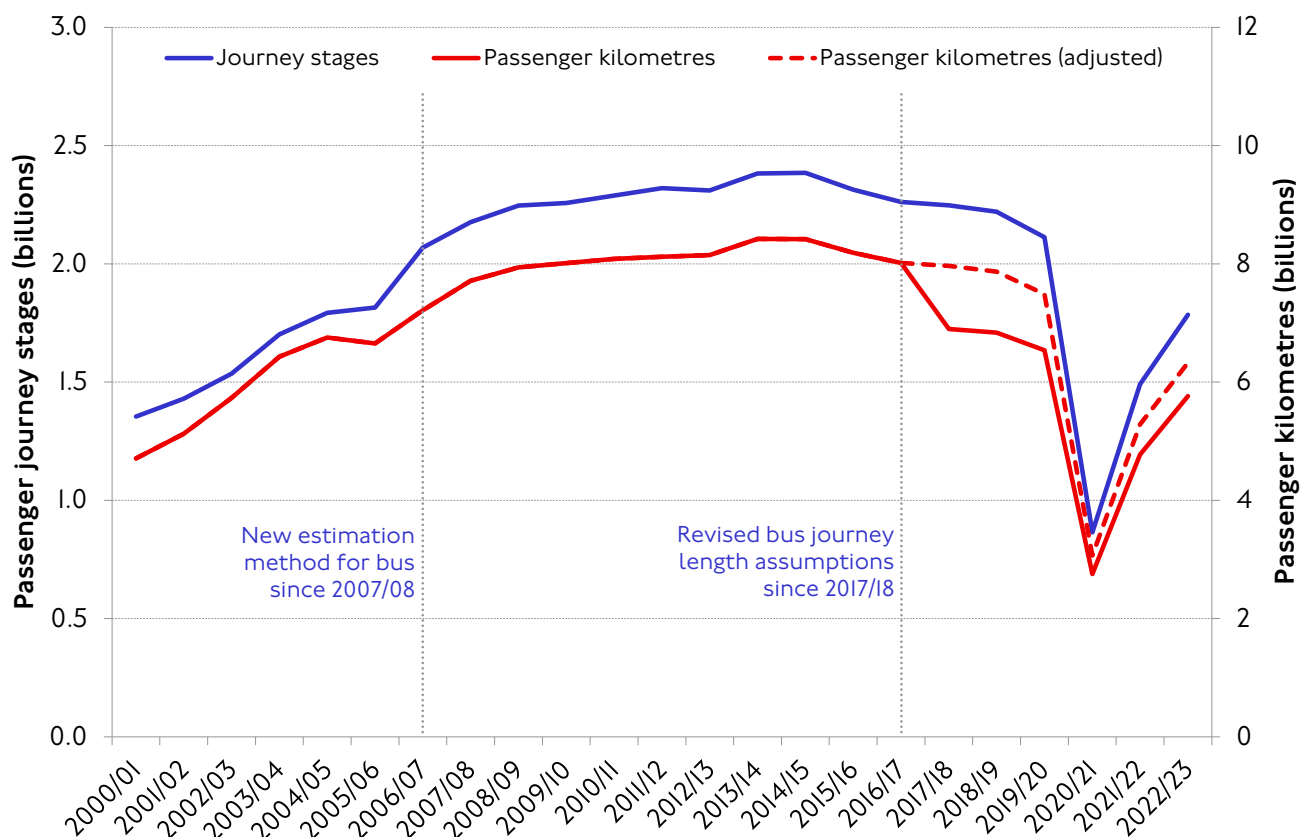
## Demand on public transport by mode

This section considers in more detail the long-term demand trends on each of the public transport modes.

### Bus

Buses are the most used public transport mode in London and play a vital role in connecting communities and places of interest as well as in providing access to rail stations and other transport interchanges.

Figure 9 Passenger kilometres and journey stages by bus, 2000/01-2022/23.



Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data.  
 Note: Methodological changes created a break in the time series for passenger kilometres after 2017/18. To allow like-for-like comparisons across this break, an adjusted series (dashed) using the old assumptions has been added to the graph.

Figure 9 shows the demand for buses over the last two decades. The main features are:

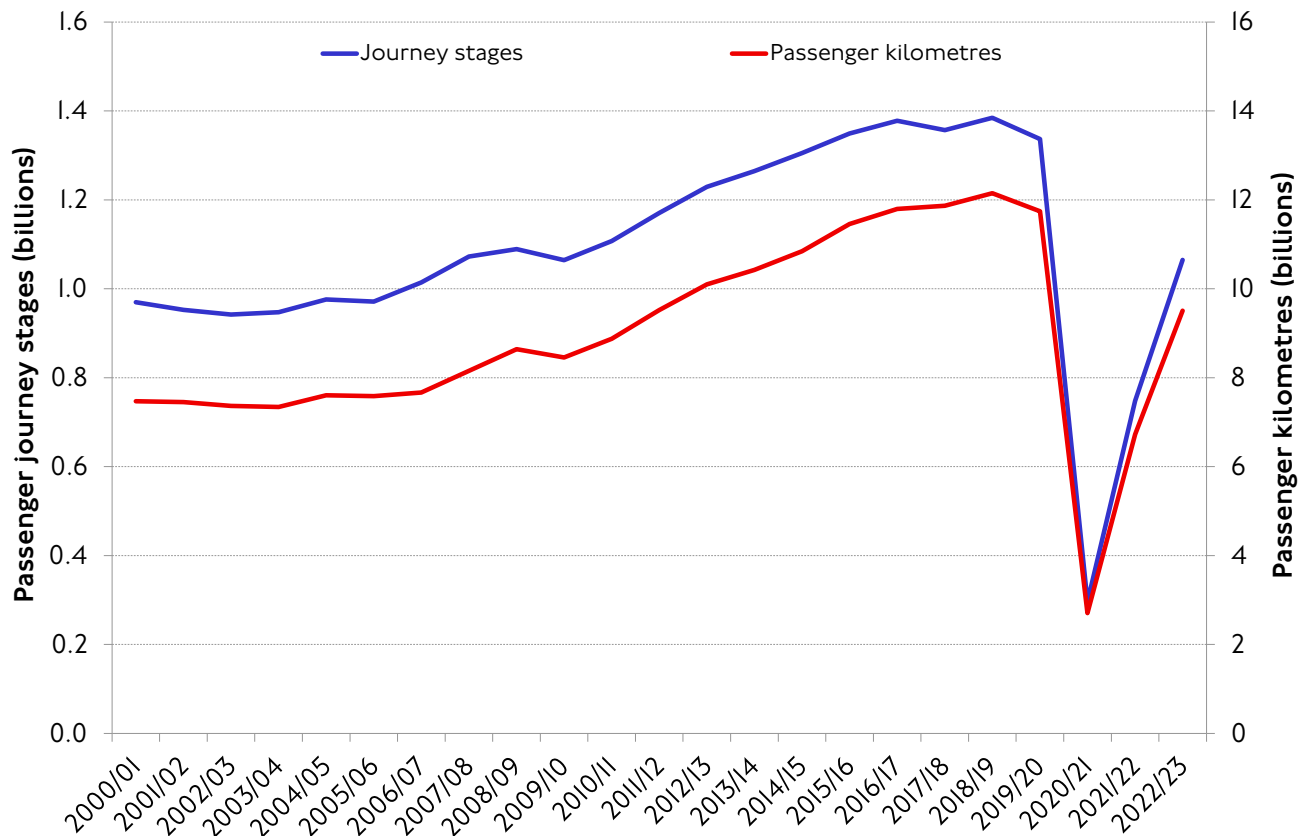
- Following rapid growth over the first decade of the millennium, the second decade was characterised by a much slower rate of growth, reaching a high point in the mid-2010s and a slow but steady decline afterwards. This should be seen in the context of rapid demand growth on other, rail-based public transport modes (notably London Underground, DLR, London Overground and National Rail in London) over the same period.

- As with all other modes, the coronavirus pandemic caused demand levels to drop to historic minima, after which a steady recovery has been taking place.
- In 2022/23, the number of journeys recovered to about 84 per cent of the pre-pandemic baseline and that of passenger kilometres to 88 per cent, suggesting perhaps a higher recovery of longer journeys.
- By October 2023, the recovery in buses demand fluctuated around 84 per cent of the pre-pandemic baseline.

## London Underground

The London Underground is the most used railway in the London region, providing quick and frequent services across the city.

Figure 10 Passenger kilometres and journey stages by London Underground, 2000/01-2022/23.



Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data.

Figure 10 shows the trend in London Underground demand since year 2000. The main features are:

- Following a period of steady but slower growth in the first decade of the millennium, the 2010s were characterised by a rapid increase in London Underground demand, likely enabled by the completion of several upgrade programmes to the network as well as population and economic growth.
- As with buses, a demand peak was reached in the mid-2010s, but this was followed by a stagnation of demand growth rather than a clear decline.

- During the coronavirus pandemic, demand dropped to historic lows and then progressively recovered over the next couple of years, at a pace initially slightly slower than on other modes, notably buses.
- In 2022/23 as a whole, London Underground journeys were at 80 per cent of the pre-pandemic 2019/20 baseline, and passenger kilometres at 81 per cent.
- By October 2023, London Underground demand had recovered to around 84 per cent of the pre-pandemic level, on par with the recovery on buses.

## DLR

The DLR is a fully automated railway connecting various areas of inner east London.

Figure II Passenger kilometres and journey stages by DLR, 2000/01-2022/23.



Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data.

Figure II shows an overview of demand trends on the DLR since 2000. The main features are:

- Strong growth in demand during the best part of the last two decades, particularly since 2009 following a series of upgrades and extensions to the network as well as an increase in population and economic activity in the areas served.
- Of note is the relatively higher increase of passenger kilometres compared to journeys over this latter period, suggesting an increase of the average trip length as the network expanded.
- DLR demand peaked around 2016 and then remained fairly constant for the next few years prior to the coronavirus pandemic.



- Demand plummeted in 2020/21 (although in relative terms less than on other modes) and has since been on a recovery trajectory.
- In the year 2022/23, DLR journeys were at 79 per cent of the pre-pandemic baseline, and passenger kilometres at 74 per cent.
- As of October 2023, demand on the DLR had recovered to around 84 per cent of the pre-pandemic baseline, a level not dissimilar to that seen on buses and the London Underground.

## London Overground

Since its opening as a TfL service in the late 2000s, the London Overground has connected areas of inner and outer London with frequent services largely using pre-existing railway infrastructure where other services had been operating beforehand.

Figure 12 Passenger kilometres and journey stages by London Overground, 2009/10-2022/23.



Source: Office of Rail and Road.

Figure 12 looks at London Overground demand trends since. The main features are:

- Strong growth in demand until 2015/16, closely linked to the expansion of the network over that period and in line with the increase in public transport demand seen across other modes.
- Stabilisation between 2015/16 and 2019/20, as observed on other modes.
- Of note since 2014/15 is the relatively higher increase of passenger kilometres compared to journeys, suggesting an increase of the average trip length, probably reflecting the expansion of the network.

- Demand dropped dramatically in 2020/21 following the outbreak of the coronavirus pandemic (although in relative terms less than on other modes) and has since been recovering, at a pace usually faster than other modes.
- In 2022/23, London Overground journeys and passenger kilometres were 84 per cent of the pre-pandemic baseline.
- As of October 2023, demand on the London Overground was at around 90 per cent of the pre-pandemic baseline.

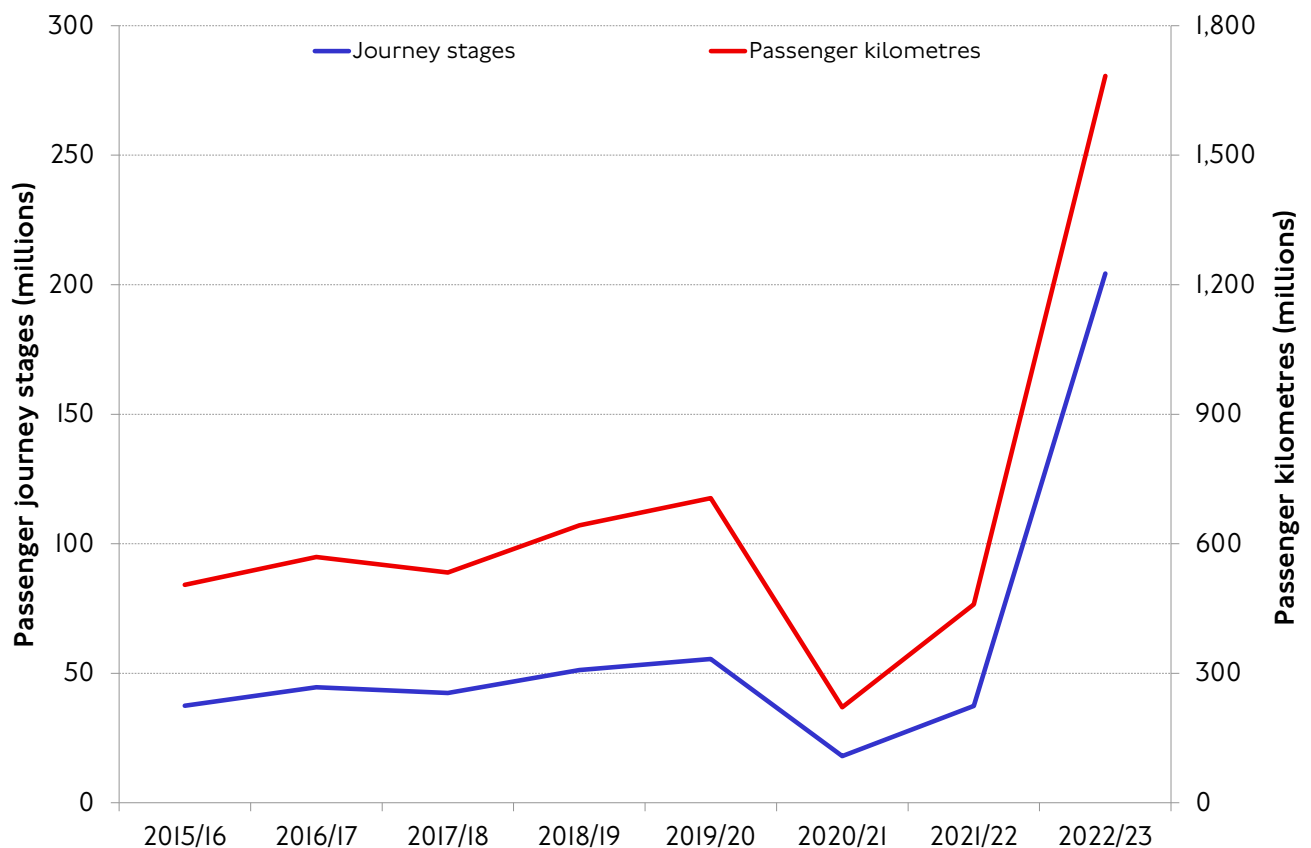
## Elizabeth line

The Elizabeth line is London’s newest railway, officially inaugurated in May 2022 with the commencement of services on the central tunnelled section between Paddington and Abbey Wood.

Before this opening, however, TfL had been operating services under the TfL Rail brand since 2015 on the outer branches of what is now the Elizabeth line (between Reading and Paddington and between Shenfield and Liverpool Street), with services from Heathrow airport to Paddington added from 2018.

Figure I3 shows demand trends on the Elizabeth line and former TfL Rail over this period.

Figure I3 Passenger kilometres and journey stages on the Elizabeth line, 2015/16-2022/23.



Source: Office of Rail and Road.

Changes in the scope and extent of the services mean that it is difficult to create like-for-like comparisons. However, the main features are:

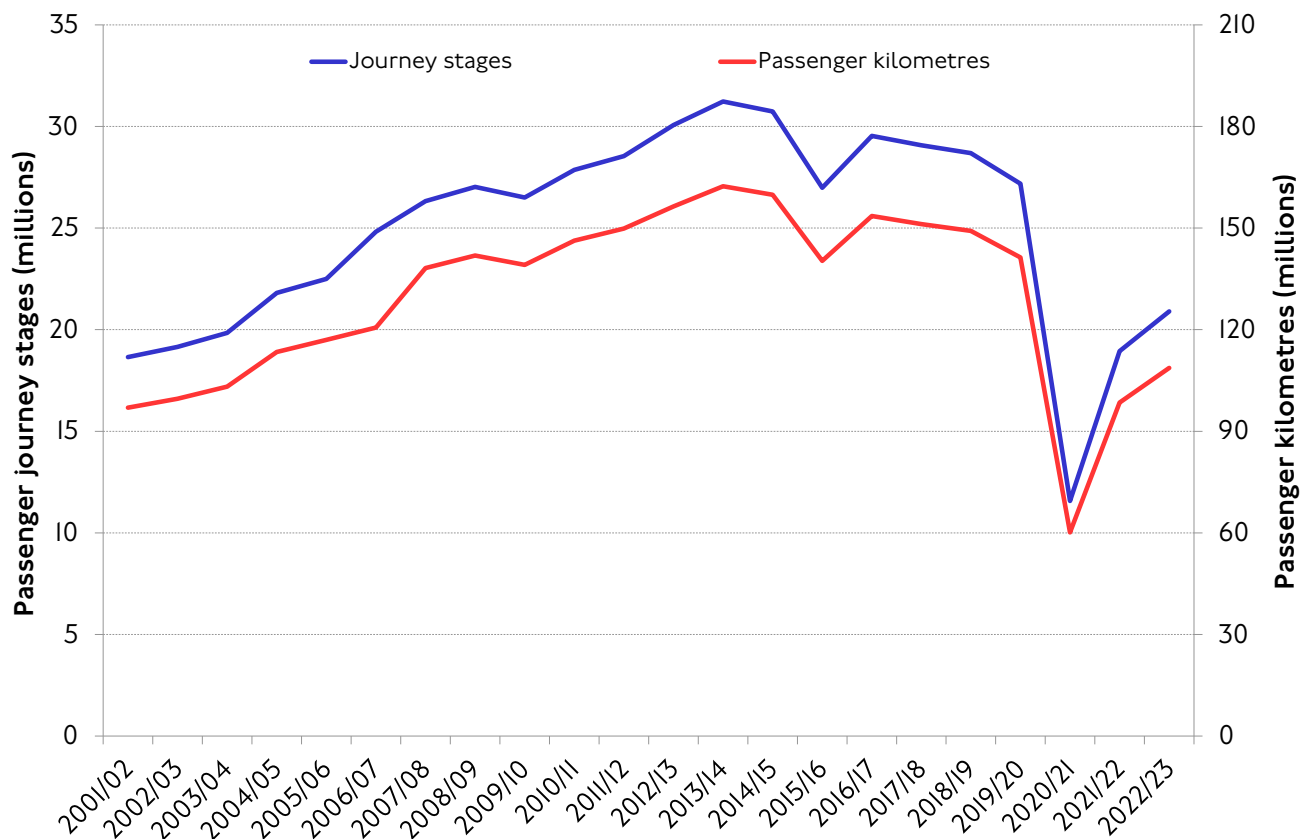
- Demand growth between 2015/16 and 2019/20, with step changes noticeable in line with the expansion milestones over the years.
- A dramatic drop during the coronavirus pandemic in 2020/21, followed by a slow recovery in 2021/22.
- In 2022/23, coinciding with the opening of the central section between Paddington and Abbey Wood, the level of demand almost quadrupled as the new railway allowed journeys that were not possible previously, and also accommodated journeys that transferred from other modes, most notably the London Underground in central London. In this regard it is important to note that capacity relief in the central area was a major objective of the Crossrail project that gave rise to the Elizabeth line.
- As of October 2023, the demand on the Elizabeth line continued the increasing trend since its opening. This was boosted by the phased introduction of new services and journey opportunities, which culminated with the latest timetable in May 2023 enabling direct services to/from the outer branches through the central section.

## London Trams

London Trams services operate in south London between Wimbledon, Beckenham and New Addington via Croydon town centre.

Figure I4 shows the trend in London Trams demand over the last two decades.

Figure I4 Passenger kilometres and journey stages by London Trams, 2001/02-2022/23.



Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data.

The main features are:

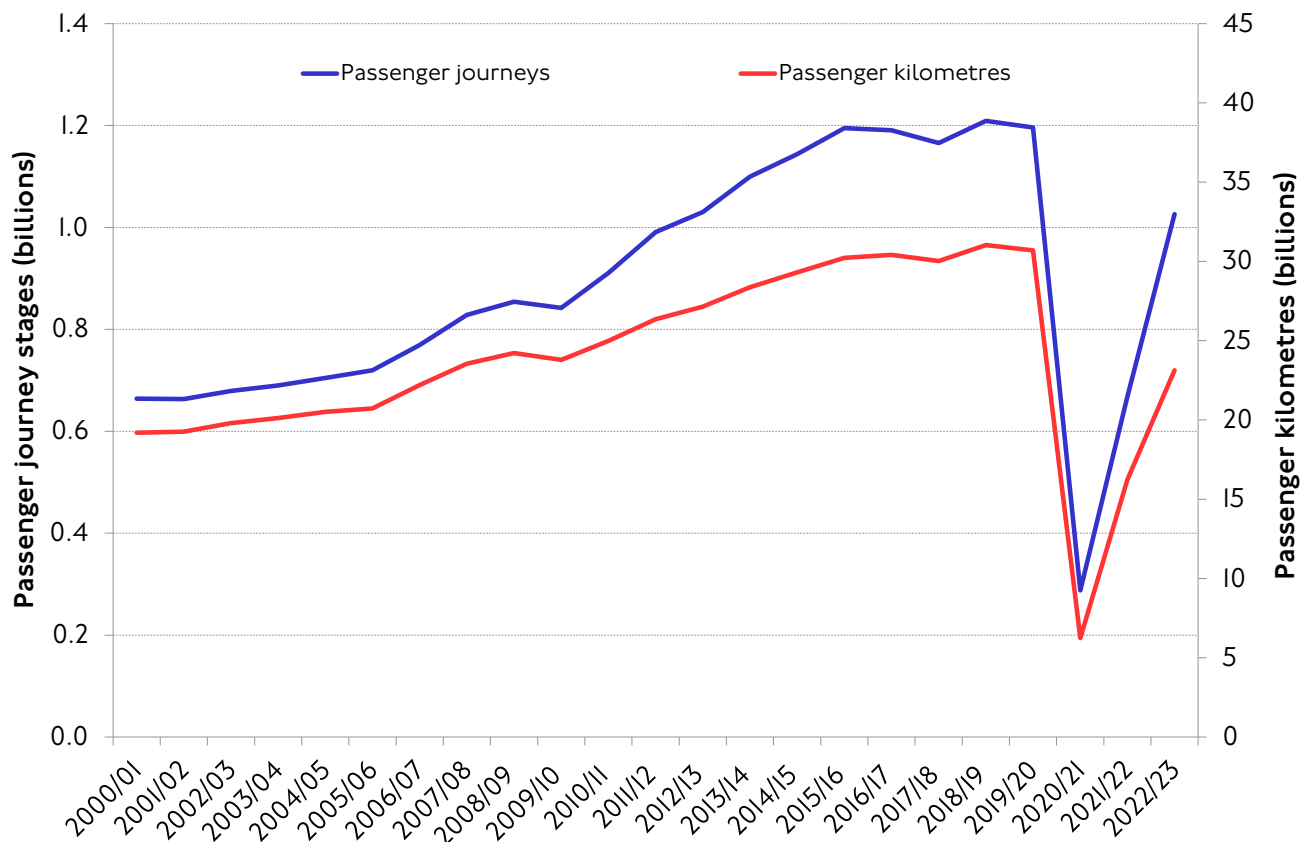
- From 2001/02 until 2013/14 there was strong and steady growth in demand up to a peak in 2014. From then until 2019/20, demand gradually decreased.
- Demand dropped during the coronavirus pandemic in 2020/21 and has since been on a recovery trajectory.
- In 2022/23, London Trams journeys and passenger kilometres were at 77 per cent of the pre-pandemic baseline.
- As of October 2023, demand on London Trams was fluctuating around 70 per cent of the pre-pandemic level.

## National Rail in London

The London region is served by a number of National Rail services from several different operators that provide services to various London termini. However, due to the nature of these services, it is difficult to isolate demand from travel occurring strictly within the London boundary and therefore the aggregate demand for operators that the Office of Rail and Road (ORR) classifies as franchised in London and the South East is used as a proxy. As such, these figures include a proportion of travel that does not take place within or across the London boundary.

Figure I5 shows the long-term trend in annual passenger journeys and passenger kilometres on National Rail in London and the South East.

Figure I5 Passenger kilometres and journeys on National Rail London and South East franchised operators, 2000/01-2022/23.



Source: Office of Rail and Road.

The main features are:

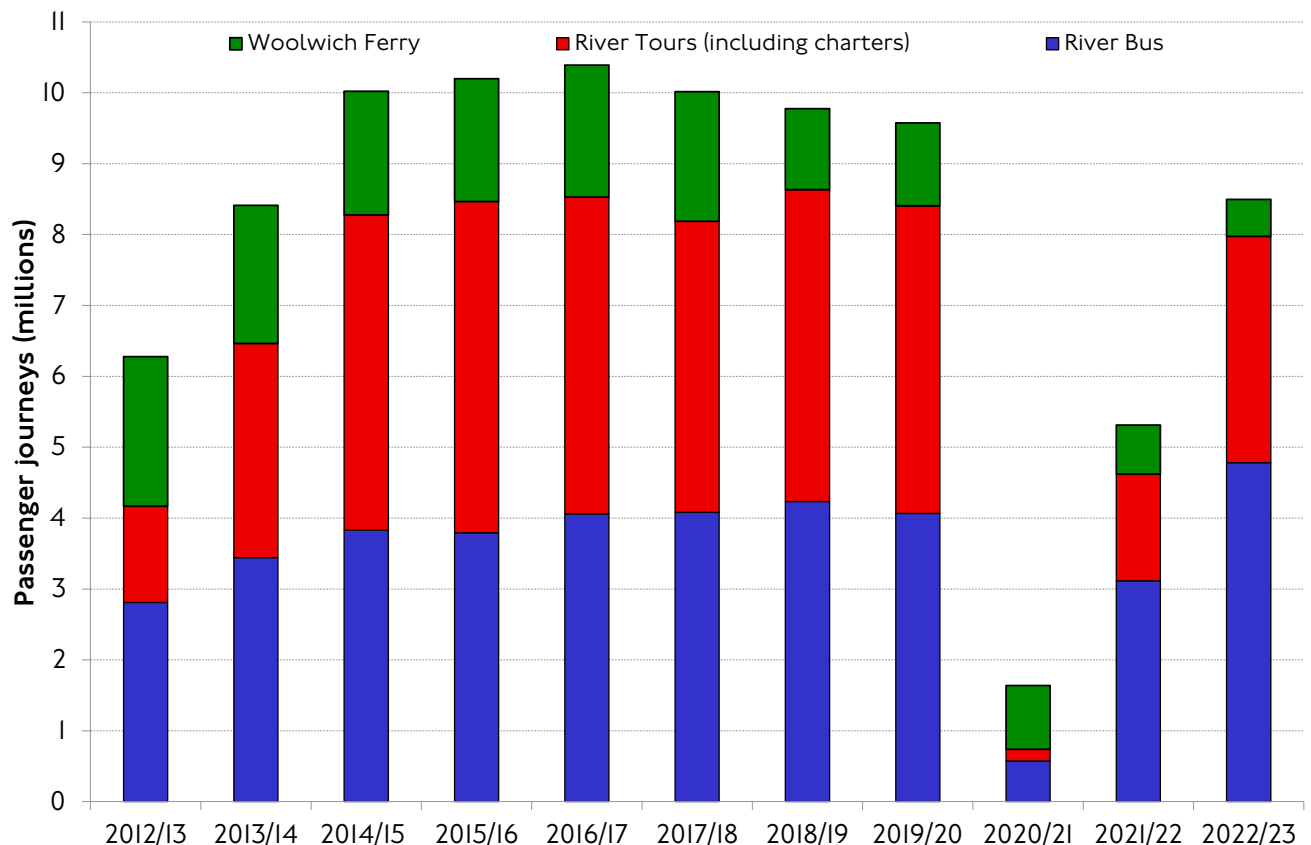
- Steady growth during the first decade of the millennium, accelerated in the early 2010s up to a high point in 2015/16, in line with other public transport modes.
- Of particular note in the early 2010s is the relatively higher increase in passenger journeys with respect to passenger kilometres, suggesting a gradual shortening of the average trip length.
- Between the mid-2010s and the end of the decade, demand stabilised with fluctuations around the level seen in 2015/16.
- As with other modes, the coronavirus pandemic caused a historic drop in demand in 2020/21 which was followed by a steady recovery.
- By 2022/23, the recovery on passenger journeys reached 86 per cent, although passenger kilometres only reached 75 per cent, suggesting a faster recovery of longer journeys or an increase in average journey length.

## London River Services

TfL, together with the Port of London Authority and other stakeholders, is responsible for the planning and monitoring of various boat travel services on the river Thames.

Figure I6 shows the trends in London River Services demand by service type over the last decade.

Figure I6 Demand on London River Services, by service, 2012/13-2022/23.



Source: TfL London River Services.

The main features are:

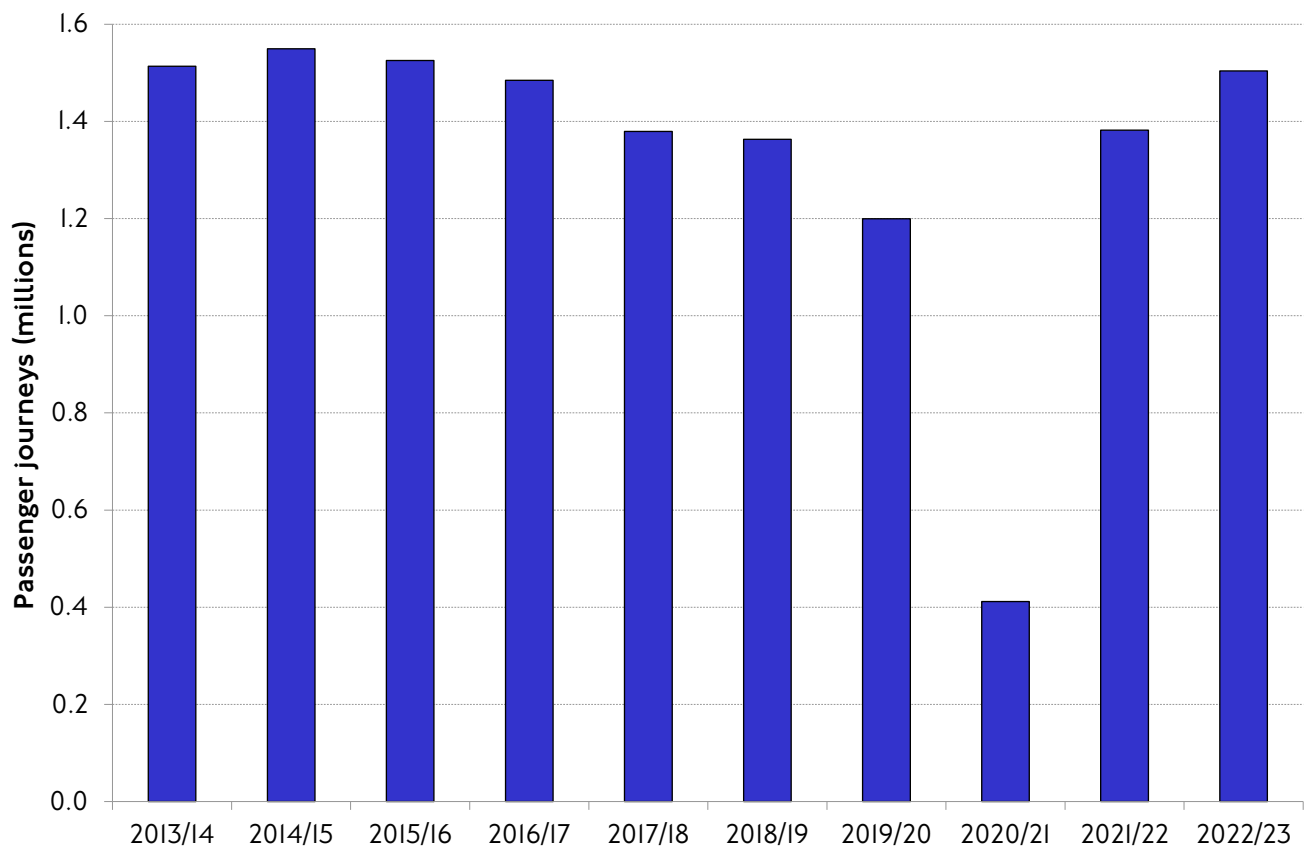
- A rapid expansion between 2012/13 and 2014/15, largely driven by an increase in demand for River Tours (including charters), followed by a stabilisation with slower growth up until 2016/17. After that, London River services demand slowly declined until 2019/20.
- During the coronavirus pandemic, overall demand fell dramatically but unequally across the different service types, with the Woolwich Ferry seeing a much smaller drop in demand in relative terms compared to the River Bus and particularly River Tours (including charters), which saw the largest reduction.
- Following a fast recovery since then, the total number of journeys in 2022/23 was 89 per cent of the pre-pandemic baseline despite a small contraction in the demand for the Woolwich Ferry and with River Bus services exceeding the pre-pandemic level of demand.

## IFS Cloud Cable Car

IFS Cloud Cable Car is the commercial name of the cable car service connecting the Greenwich Peninsula to the Royal Docks across the river Thames in inner east London.

Figure 17 shows the demand trend for this service over the last decade. After years of slowly declining patronage between 2014/15 and 2019/20, followed by the pandemic drop, the number of journeys on the IFS Cloud Cable Car quickly and completely recovered in 2021/22, exceeding the number of journeys seen immediately before the pandemic. In 2022/23 growth continued and demand has reached a level last seen in 2016.

Figure 17 Demand on the IFS Cloud Cable Car, 2013/14-2022/23.



Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data.

## Public transport service provision and operational performance by mode

This section describes long-term trends in selected indicators of service provision and operational performance for each of the main public transport modes in London.

### Bus

Table 3 shows a summary of bus service provision (in terms of scheduled kilometres) and overall performance (as operated kilometres and average speed) over the last decade.

Table 3 Bus service provision and reliability, 2012/13-2022/23.

Year	Scheduled kilometres (millions)	Scheduled kilometres operated	Scheduled kilometres lost due to congestion	Scheduled kilometres lost due to other causes	Average speed (mph)
2012/13	503	97.6%	1.7%	0.7%	-
2013/14	502	97.7%	1.9%	0.4%	9.6
2014/15	504	97.1%	2.0%	0.9%	9.5
2015/16	507	97.2%	2.3%	0.5%	9.3
2016/17	508	97.4%	2.0%	0.6%	9.2
2017/18	500	98.1%	1.4%	0.5%	9.3
2018/19	491	98.1%	1.3%	0.5%	9.3
2019/20	486	97.8%	1.5%	0.7%	9.3
2020/21	471	98.7%	1.5%	0.5%	10.3
2021/22	486	97.9%	1.2%	0.9%	9.6
2022/23	478	96.0%	1.5%	2.5%	9.4

Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data.

1: Includes other lost kilometres outside the control of the operator.

2: Includes all lost kilometres within the control of the operator, including mechanical and staff reasons.

Service provision (in terms of scheduled bus kilometres) peaked in the mid-2010s and slightly declined afterwards. This reflects changes in bus demand as well as to the wider TfL public transport network. The outbreak of the coronavirus pandemic in 2020/21 triggered a small reduction in service but of much smaller magnitude than for demand, which reflects TfL's efforts to maintain the network to support essential workers and the recovery. Having reached pre-pandemic levels in 2021/22, service provision decreased slightly again in 2022/23 (by 1.5 per cent). TfL is constantly reviewing bus services to respond to demand changes and ensure that it is as efficient as possible for customers. For example, in recent years TfL has carried out a review of central London bus provision and increased services in outer London areas.

In terms of performance, the proportion of scheduled kilometres operated in 2022/23 continued to decline from the high level seen in the pandemic year of 2020/21, where the reduction in overall traffic made it easier to operate reliable bus services

Looking at the causes of this, staff and mechanical reasons accounted for 2.5 per cent of the lost scheduled kilometres in 2022/23, compared to typical historic levels of under 1.0 per cent. Staff-related lost kilometres accounted for 1.8 per cent, an exceptionally high level not seen in recent years and driven by a post-pandemic shortage of drivers (0.52 per cent), increased sickness (0.69 per cent) and bus operator industrial action (0.58 per cent), with the rest for other staff-related reasons. In terms of mechanical losses (0.7 per cent), these were also higher than pre-pandemic levels and were driven by a post-pandemic shortage of spare parts, engineering staff and the rollout of electric vehicles).

The average bus speed also declined in 2022/23, reflecting returning road traffic, but remains slightly above the level seen in the five years before the pandemic. Falling bus speeds are driven by delays and incidents associated with the impact of street works, traffic congestion, staff shortages, vehicle breakdowns, passenger impacts, among many other factors. They can be improved for example by giving buses priority through technology to optimise traffic signal cycles, infrastructure such as dedicated bus lanes for some or all of the day, bus gates or by operating limited-stop services.

**Table 4** Bus punctuality and reliability by service type, 2012/13-2022/23.

Year	Actual average wait time (min) <sup>1</sup>	Excess average wait time (min) <sup>1</sup>	Customer journey time (min) <sup>1</sup>	Timetabled services on time <sup>2</sup>
2012/13	5.9	1.0	-	83.6%
2013/14	5.9	1.0	-	82.5%
2014/15	6.0	1.1	-	81.8%
2015/16	6.1	1.2	-	80.6%
2016/17	6.1	1.1	-	80.1%
2017/18	6.0	1.0	32.4	82.3%
2018/19	6.1	1.0	32.5	82.3%
2019/20	6.2	1.0	32.2	83.3%
2020/21	6.1	0.6	30.5	89.5%
2021/22	6.1	0.9	31.8	84.4%
2022/23	6.5	1.2	34.0	81.5%

Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data and Public Transport Service Planning.

1. This metric is defined only for high-frequency services – those operating with a scheduled frequency of five or more buses per hour. Note that in 2012/13 there was a methodology change.

2. This metric is defined only for low-frequency services – those operating with a scheduled frequency of less than five buses per hour. Note that in 2013/14 there was a methodology change. Buses are defined as 'on time' if departing between 2.5 and 5.0 minutes after their scheduled departure times.

Table 4 shows selected reliability indicators for high- and low-frequency bus services separately.



In general, year 2022/23 saw a deterioration of reliability across all service types, although it remained at levels similar to those seen before the pandemic. On high-frequency services, there was an increase in actual average wait time, in the excess average wait time, and also in the weighted customer journey time metric, which did not meet the target of 33.5 minutes for that year. Low-frequency bus services also saw a decline in the proportion of services on time to 81.5 per cent. This was due to the factors described above as well as to the return to pre-pandemic levels of traffic disruption and an associated deterioration of bus speeds.

## London Underground

Table 5 provides a summary of service provision and operational performance indicators for the London Underground.

**Table 5** London Underground service provision and reliability, 2012/13-2022/23.

Year	Scheduled kilometres (millions)	Operated kilometres (millions)	Scheduled kilometres operated	Journey time metric <sup>1</sup> (annual average) (min)
2012/13	77.5	75.6	97.6%	n/a
2013/14	78.2	76.2	97.5%	n/a
2014/15	82.3	80.3	97.6%	n/a
2015/16	84.5	82.4	97.5%	n/a
2016/17	86.3	83.7	96.9%	n/a
2017/18	87.3	84.3	96.6%	n/a
2018/19	87.8	85.0	96.8%	29.0
2019/20	87.7	82.4	94.0%	29.1
2020/21	83.3	72.6	87.2%	25.0
2021/22	84.9	74.9	88.2%	26.9
2022/23	87.5	77.3	88.3%	27.8

Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data and Public Transport Service Planning.

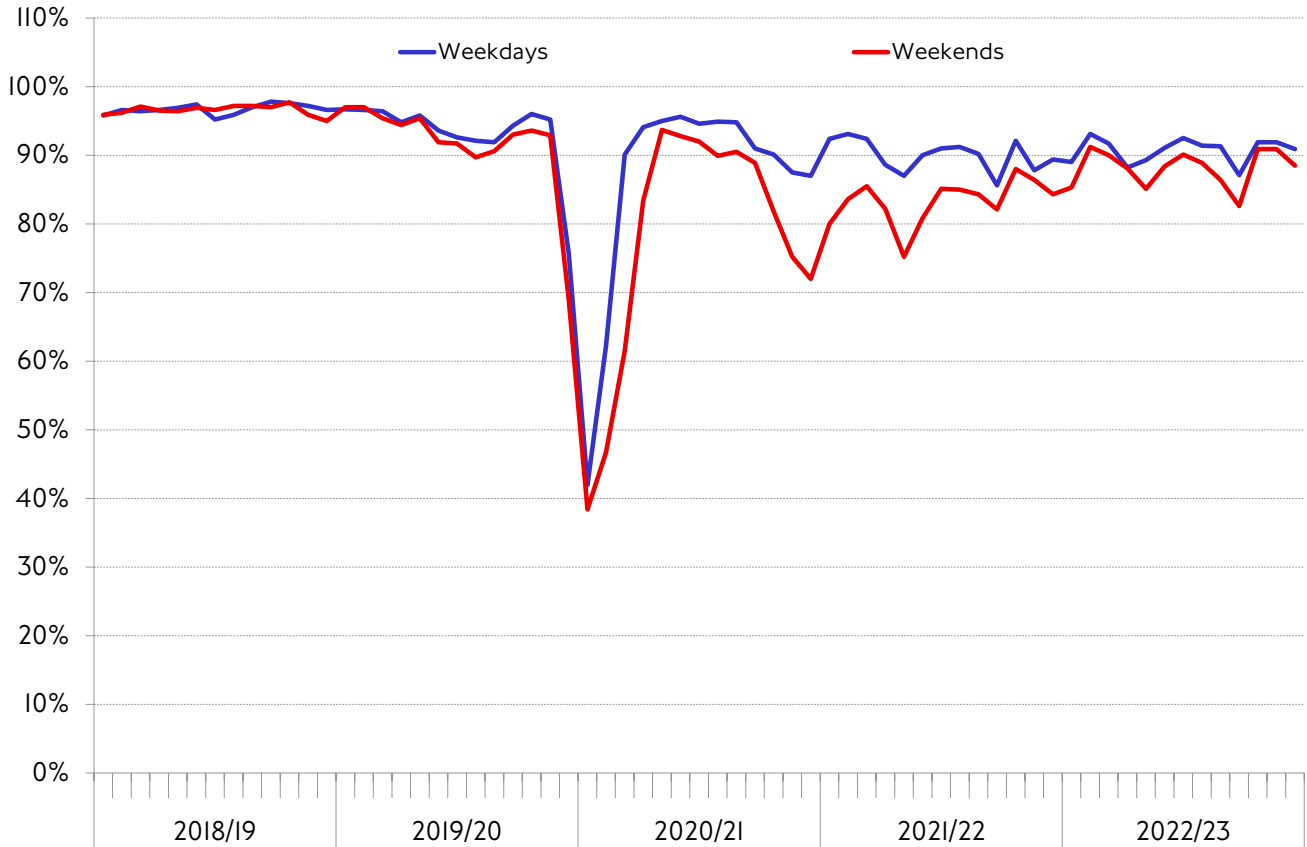
1: The journey time metric excludes access, egress and interchange time, which is around 12.5 minutes on average and explains the differences with previously published results.

Following a steady increase in service provision (in terms of scheduled kilometres) up to just before the coronavirus pandemic, in 2022/23 service provision almost fully recovered to the pre-pandemic baseline, following the full reinstatement of Night Tube services in July 2022.

In terms of overall performance, the proportion of scheduled kilometres operated in 2022/23 was similar to 2021/22 (a level lower than typical before the pandemic), likely as a result of services being impacted by industrial action. The journey time metric increased slightly in 2022/23 but remains below the pre-pandemic level.

The service operated metric (figure I8) compares the actual number of trains in service against those scheduled, using a predefined set of measuring points. The schedule includes adjustments for planned closures, weekend engineering works and timetable notices.

Figure I8 Service operated metric on London Underground by financial period, 2018/19-2022/23.



Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data.

The graph shows that, after the impacts of the pandemic, in 2022/23 the proportion of services operated stabilised at around 90 per cent on weekdays and slightly below that on weekends.

## DLR

A selection of service provision and performance indicators on the DLR is shown in table 6.

Service provision (kilometres operated) continued to recover in 2022/23 following the drop caused by the coronavirus pandemic but had not yet fully recovered. Operational performance, in terms of the proportion of scheduled service operated and excess wait time, deteriorated slightly in 2022/23 to levels not seen for the last ten years. The poorer performance can be partly explained by a knock-on impact from industrial action on London Underground preventing DLR services operating into Bank station, as well as by a number of asset failures.

The journey time metric for the DLR decreased slightly in 2022/23 but remains slightly above the pre-pandemic baseline. A new timetable was introduced in September 2022 which introduced some reliability improvements.

Network availability, on the other hand, continued to recover albeit not to the high levels seen just before the pandemic in 2019/20. This is partly a reflection of fewer planned closures in 2022/23 compared to the previous year.

**Table 6** DLR service provision and reliability, 2012/13-2022/23.

Year	Operated kilometres (millions)	Scheduled services operated	Excess wait time (min)	Journey time metric (annual average) (min)	Network availability measure
2012/13	5.7	98.5%	0.14	-	97.8%
2013/14	5.8	99.2%	0.08	-	98.6%
2014/15	5.8	99.3%	0.07	-	99.1%
2015/16	5.9	98.5%	0.09	-	99.2%
2016/17	6.0	99.0%	0.10	-	99.1%
2017/18	6.1	98.4%	0.11	-	98.0%
2018/19	6.1	99.0%	0.09	21.2	99.1%
2019/20	6.1	99.0%	0.11	20.9	99.1%
2020/21	5.1	99.3%	0.08	20.8	99.0%
2021/22	5.2	98.5%	0.11	21.4	98.4%
2022/23	5.7	98.3%	0.13	21.3	98.6%

Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data and Public Transport Service Planning.

Note: The network availability metric accounts for the geographical extent and the duration of planned closures and, with appropriate weightings, provides an estimate of how much of the network is available for customers (100 per cent represents the whole DLR network open for all service hours).

## London Overground

Table 7 shows indicators of service provision and reliability on the London Overground.

Service provision (in terms of operated train kilometres) largely recovered from the pandemic in 2022/23. On the other hand, service reliability (measured as the annual average of the ORR's Public Performance Measure, PPM), has fluctuated in recent years around a consistently high level. The journey time metric continued to decrease in 2022/23, suggesting further reliability improvements.

**Table 7** London Overground service provision and reliability, 2012/13–2022/23.

Year	Operated train kilometres (millions)	Public Performance Measure (PPM) – annual average	Journey time metric (annual average) (min)
2012/13	7.6	96.1%	-
2013/14	7.9	95.8%	-
2014/15	7.9	95.0%	-
2015/16	10.0	94.4%	-
2016/17	9.9	94.5%	-
2017/18	10.2	94.4%	-
2018/19	10.8	93.8%	32.9
2019/20	10.7	92.6%	32.8
2020/21	9.4	96.2%	30.7
2021/22	11.0	95.2%	30.8
2022/23	10.7	93.5%	30.6

Source: TfL Strategic Analysis, Transport Strategy & Policy, based on Office of Rail and Road and Public Transport Service Planning.

Note: The Public Performance Measure (PPM) is a metric that combines punctuality and reliability to represent the proportion of all scheduled trains that are 'on time', which for operators in the London and South East region means arriving at the destination no later than five minutes after the scheduled arrival time. The train kilometres series was revised by the ORR in 2023 and the earlier results do not match previous Travel in London reports.

## Elizabeth line

The Elizabeth line opened in May 2022, but before that some of its sections were operating under the TfL Rail brand since 2015.

Although it has not yet completed a full financial year (April to March) of operation, table 8 shows the results of service provision and reliability indicators since 2015/16. Due to the progressive expansion of services, it is not possible to make like-for-like comparisons, but the trend over these years is indicative of how these services have evolved.

**Table 8** Elizabeth line (and former TfL Rail) service provision and reliability, 2015/16-2022/23.

Year	Operated train kilometres (millions)	Public Performance Measure (PPM) – annual average	Journey time metric (annual average) (min)
2015/16	2.3	91.4%	-
2016/17	2.7	91.8%	-
2017/18	2.8	89.8%	-
2018/19	4.1	93.8%	-
2019/20	5.0	95.2%	-
2020/21	6.2	96.0%	-
2021/22	8.3	94.2%	-
2022/23	10.1	92.8%	25.8 <sup>1</sup>

Source: TfL Strategic Analysis, Transport Strategy & Policy, based on Office of Rail and Road and Public Transport Service Planning.

Note: The Public Performance Measure (PPM) is a metric that combines punctuality and reliability to represent the proportion of all scheduled trains that are 'on time', which for operators in the London and South East region means arriving at the destination no later than five minutes after the scheduled arrival time. The train kilometres series was revised by the ORR in 2023 and the earlier results do not match previous Travel in London reports.

1: Reporting on the Elizabeth line started in Q4 2022/23, so this value represents only that quarter. A full financial year average will be first produced for 2023/24.

Following a progressive expansion of the TfL Rail services between 2015/16 and 2021/22, and the opening of the Elizabeth line in 2022, service provision on the Elizabeth line (measured as operated train kilometres) saw a further step change of 21 per cent in 2022/23 compared to the previous year.

Performance, however, measured in terms of annual average of the Public Performance Measure, did not follow and decreased compared to previous years. This is likely due to the challenges of running a more complicated service pattern (which also interacts with other National Rail services) and to Network Rail infrastructure issues, which had a knock-on impact on the western leg of the line in particular.

## London Trams

Table 9 shows indicators of service provision and performance on London Trams.

Table 9 London Trams service provision and reliability, 2012/13-2022/23.

Year	Scheduled kilometres (millions)	Operated kilometres (millions)	Scheduled services operated	Journey time metric <sup>1</sup> (annual average) (min)
2012/13	2.98	2.90	97.3%	-
2013/14	3.06	3.03	98.9%	-
2014/15	3.03	3.01	97.9%	-
2015/16	3.07	3.04	99.0%	-
2016/17	3.30	3.20	97.1%	-
2017/18	3.35	3.30	98.5%	-
2018/19	3.28	3.23	98.5%	19.7
2019/20	3.25	3.19	98.2%	20.1
2020/21	3.07	3.02	98.3%	20.0
2021/22	3.21	3.16	98.5%	19.6
2022/23	3.23	2.98	92.2%	20.8

Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL service performance data and Public Transport Service Planning.

Note: Operated kilometres exclude replacement bus services operated during periods of track repair works. Values for 2016/17 were affected by the tragic Sandilands incident.

By 2022/23, service provision (in terms of scheduled kilometres) had almost returned to the pre-pandemic level. However, reliability (as proportion of scheduled services operated) fell to 92.2 per cent, while the journey time metric also increased.

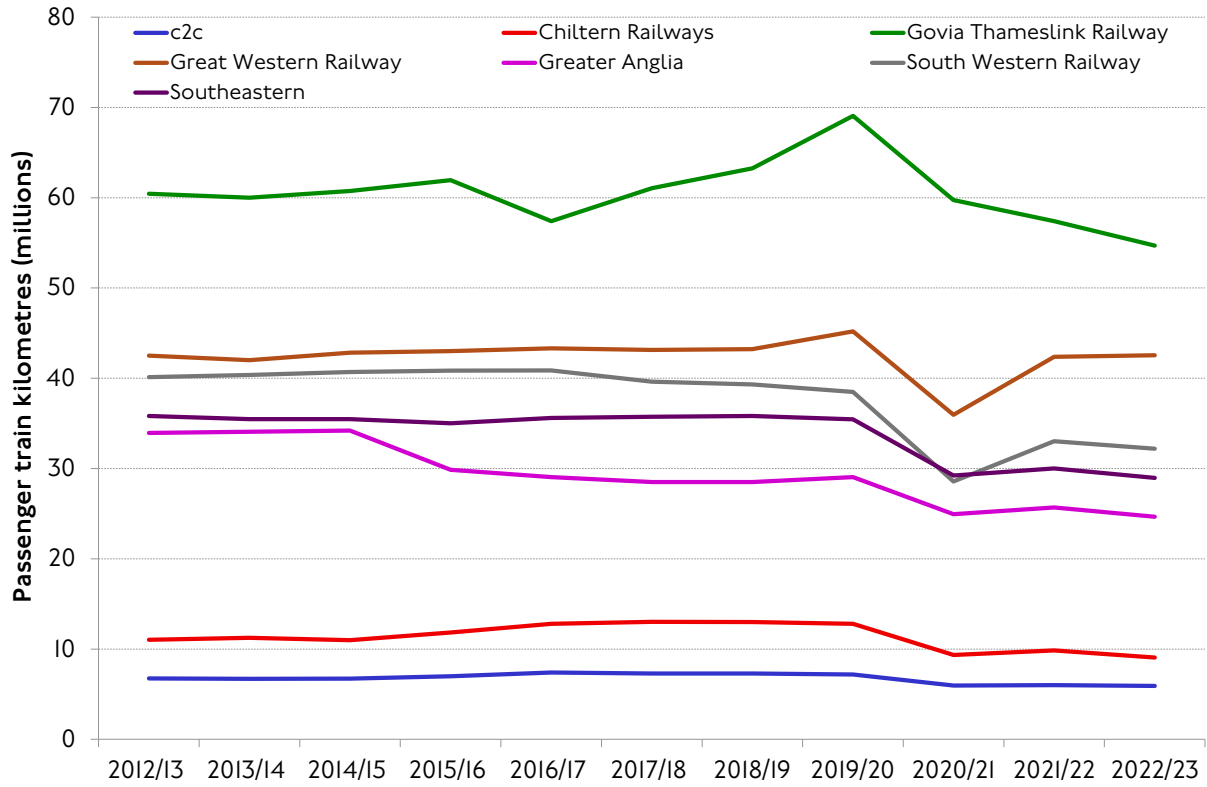
## National Rail in London

Finally, figures 19 and 20 show trends in service provision and operational performance on National Rail franchised operators in the London area (which also include some travel outside the London boundary).

Figure 19 shows a fairly static historical picture in service provision (measured as passenger train kilometres) on all operators, albeit with a noticeable decrease since 2019/20, reflecting pandemic-related rationalisation.

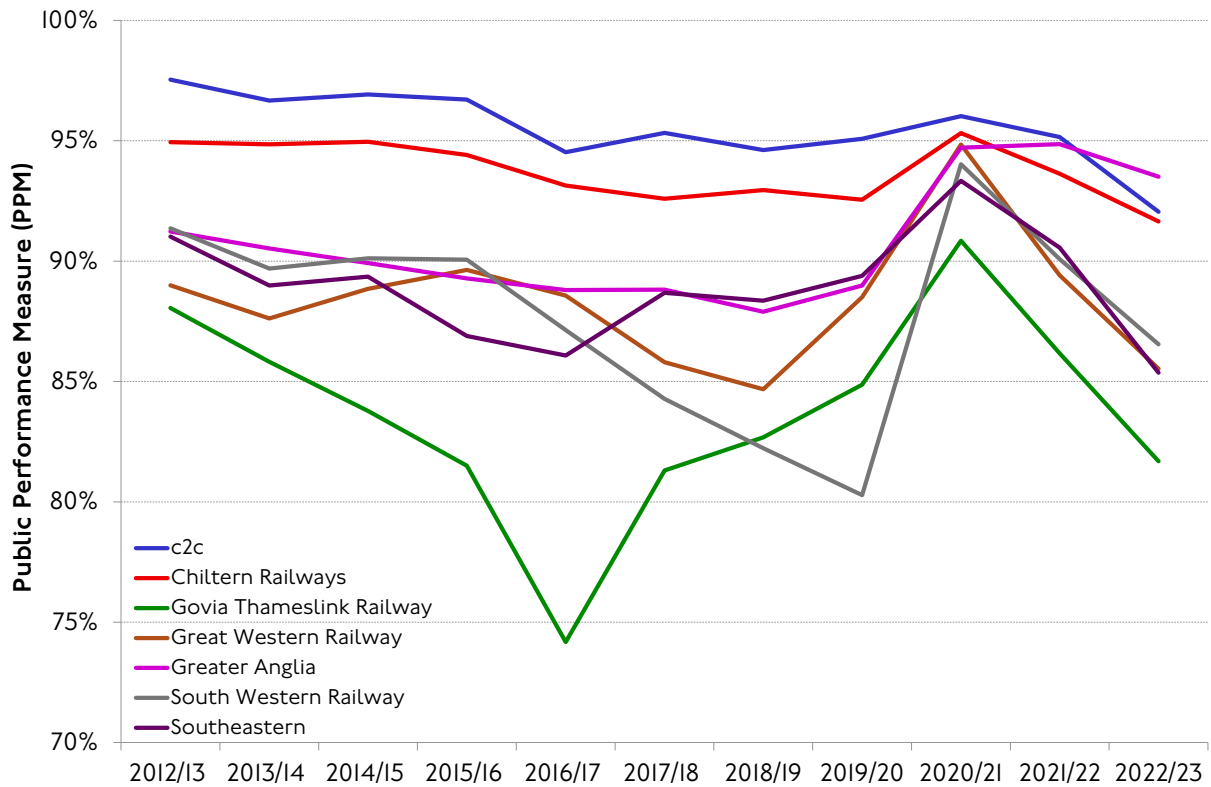
Service performance (measured with the annual average of the PPM), on the other hand, shows considerable variability over the last decade (figure 20), with each operator presenting a different trend. Since the pandemic in 2019/20, however, when operational performance increased due to the reduction in the volume of travel, performance has been steadily declining across all operators.

Figure 19 Service provision (passenger train kilometres) on London and South East operators, 2012/13-2022/23.



Source: Office of Rail and Road.

Figure 20 Performance (annual average of the Public Performance Measure) on London and South East operators, 2012/13-2022/23.



Source: Office of Rail and Road.