

December 2023



Travel in London 2023

Road traffic trends

MAYOR OF LONDON



**TRANSPORT
FOR LONDON**
EVERY JOURNEY MATTERS

Travel in London 2023

Road traffic trends

2023 update

©Transport for London 2023

All rights reserved. Reproduction permitted for research, private study and internal circulation within an organisation. Extracts may be reproduced provided the source is acknowledged.

Disclaimer

This publication is intended to provide accurate information. However, Transport for London (TfL) and the authors accept no liability or responsibility for any errors or omissions or for any damage or loss arising from use of the information provided.

Table of contents

Summary of key findings.....	4
Overall road traffic trends.....	5
Vehicle kilometre estimates from the Department for Transport.....	5
TfL’s indicators of overall traffic trends.....	7
Road traffic trends by vehicle type.....	8
Traffic crossing TfL’s strategic cordons.....	8
Trends by vehicle type.....	10
Freight traffic entering the Congestion Charge zone in the morning peak.....	11
Congestion on the road network.....	12

Summary of key findings

This report looks at trends in road traffic in London and the principal factors affecting these over the longer term, including during the pandemic and early transport recovery.

- All available datasets for traffic volumes and flows indicate that traffic in London was broadly stable over the last decade, with traffic volumes falling during the pandemic and recovering throughout 2021 and 2022. Traffic levels appear to have recovered to a lower level than before the pandemic, particularly in central and inner London.
- The trend has been different across different areas of London, with the largest decline in central London, followed by inner London. Traffic in central London in 2022 was 14 per cent lower than in 2019, and seven per cent lower in inner London. Traffic is down the least in outer London (five per cent lower than in 2019).
- Traffic has grown at a slower rate in London than in Great Britain as a whole. Between 2009 and 2019, traffic levels in London increased by 0.8 per cent, compared with 10 per cent in Great Britain.
- London's population grew by 12 per cent between 2009 and 2019, meaning that car use per capita has declined over this period. Data from our London Travel Demand Survey (LTDS) shows that the average London resident made around 26 per cent fewer car driver trips in 2019/20 compared with 2009/10. Data for 2022/23 indicates that the number of car driver trips per person is the lowest since the survey began in 2005/06.
- Data on vehicles crossing the three London strategic counting cordons suggests that the return towards normal from the pandemic has not been even across all areas of London and all vehicle types, with evidence showing that goods vehicle traffic is returning more slowly in central and inner London than car traffic.
- A specific aim of the Mayor's Transport Strategy is to reduce the number of goods vehicles (HGVs and LGVs) circulating in the central London congestion charge zone during the weekday morning peak by 10 per cent by 2026, from 2016 levels. During 2023, the number of goods vehicles entering central London in the weekday morning peak started to decline again, with the reduction currently greater than 25 per cent.
- The long-term comparability of indices of road traffic congestion in London pre and post pandemic has been affected by a re-basing of the data series. While the absolute values between the two data sources should not be regarded as strictly comparable, the long-term trends are of interest. They show a sustained rise in congestion in all parts of London during the years leading up to the pandemic. Following reductions associated with the pandemic, with lower traffic levels, the trend over more recent years has been slowly upward to pre-pandemic levels. It is not yet clear from the available time series of data whether the relatively lower values shown by the more recent dataset are reflective of lower overall road traffic demand following the pandemic or recent operational initiatives designed to better manage congestion.

Overall road traffic trends

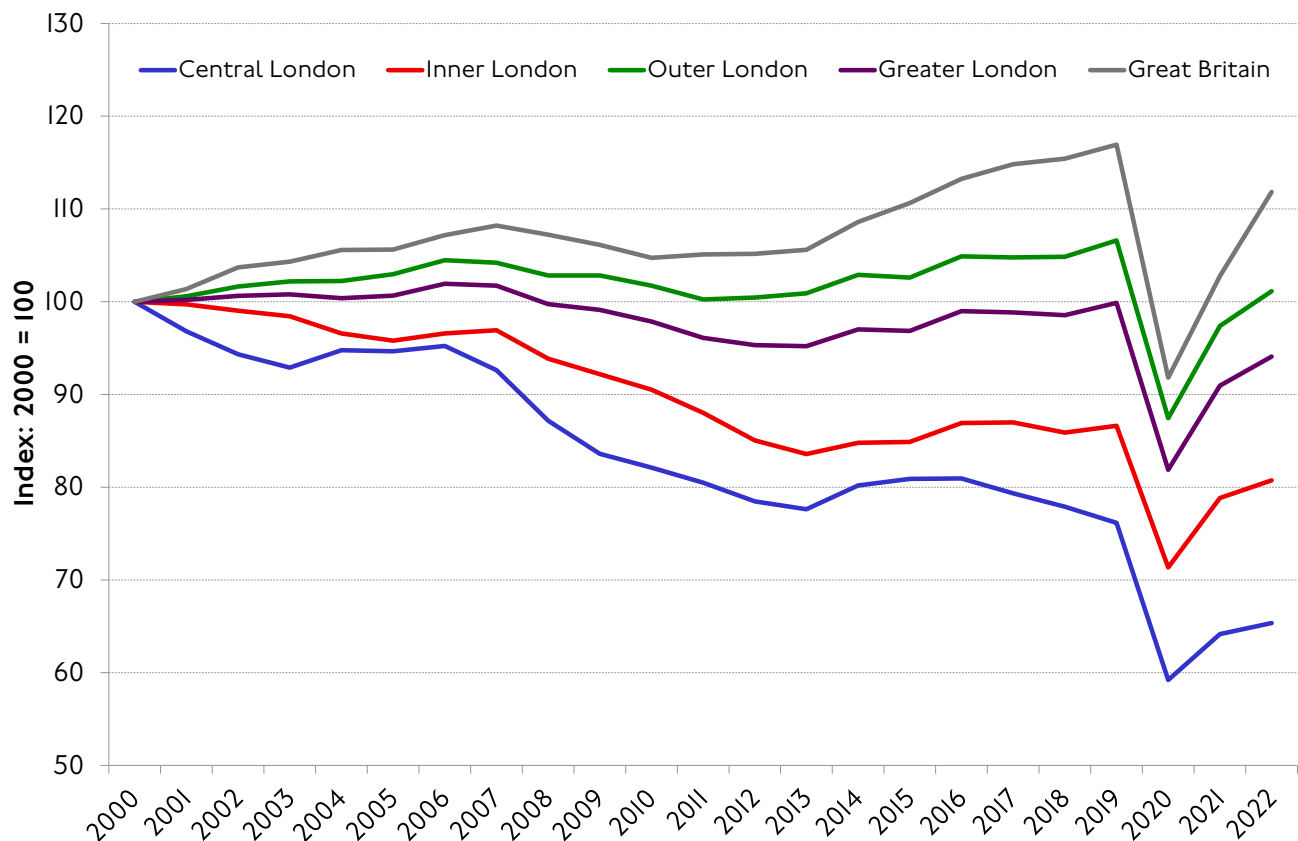
All available datasets for traffic volumes and flows indicate that traffic in London was broadly stable over the last decade, with traffic volumes falling during the pandemic and recovering throughout 2021 and 2022. Traffic levels appear to have recovered to a lower level than before the pandemic, particularly in central and inner London.

Vehicle kilometre estimates from the Department for Transport

The most direct measure of the amount of road traffic in London is the annual vehicle kilometre estimate produced by the Department for Transport (DfT) as part of its annual road traffic estimates for Great Britain (figure I and table I).

Following revisions to this metric (covered in Travel in London report I5), overall vehicle kilometres in London increased slightly over the last decade, increasing by one per cent between 2009 and 2019. London's population grew by 12 per cent over the same period, meaning that car use per capita has declined. Data from our London Travel Demand Survey (LTDS) shows that the average London resident made around 26 per cent fewer car driver trips in 2019/20 compared with 2009/10. Data for 2022/23 indicates that the number of car driver trips per person is the lowest since the survey began in 2005/06.

Figure I Change in vehicle kilometres driven by motorised modes, by London area and Great Britain, 2000-2022.



Source: Department for Transport

The trend differs across areas of London, with the largest decline in central London, followed by inner London. Traffic in central London in 2022 was 14 per cent lower than in 2019, and seven per cent lower in inner London. Traffic is down the least in outer London (five per cent lower than in 2019). Overall, traffic has recovered less in London than in the rest of Great Britain, where traffic in 2022 was just four per cent lower than in 2019.

Table 1 Road traffic (billion vehicle kilometres) in London by area, all motor vehicles, 2000-2022.

Year	Central London	Inner London	Outer London	Greater London	Great Britain
2000	1.3	9.0	22.3	32.7	466.0
2001	1.2	9.0	22.5	32.7	472.3
2002	1.2	8.9	22.7	32.9	483.2
2003	1.2	8.9	22.8	32.9	486.1
2004	1.2	8.7	22.8	32.8	492.0
2005	1.2	8.6	23.0	32.9	492.2
2006	1.2	8.7	23.3	33.3	499.5
2007	1.2	8.7	23.3	33.2	504.2
2008	1.1	8.5	23.0	32.6	499.7
2009	1.1	8.3	23.0	32.4	494.5
2010	1.1	8.2	22.7	31.9	488.0
2011	1.0	7.9	22.4	31.4	489.7
2012	1.0	7.7	22.4	31.1	490.1
2013	1.0	7.5	22.5	31.1	492.1
2014	1.0	7.7	23.0	31.7	506.1
2015	1.0	7.7	22.9	31.6	515.6
2016	1.0	7.8	23.4	32.3	527.7
2017	1.0	7.9	23.4	32.3	535.1
2018	1.0	7.8	23.4	32.2	537.9
2019	1.0	7.8	23.8	32.6	544.9
2020	0.8	6.4	19.5	26.7	427.9
2021	0.8	7.1	21.8	29.7	478.9
2022	0.8	7.3	22.6	30.7	521.1

Source: Department for Transport.

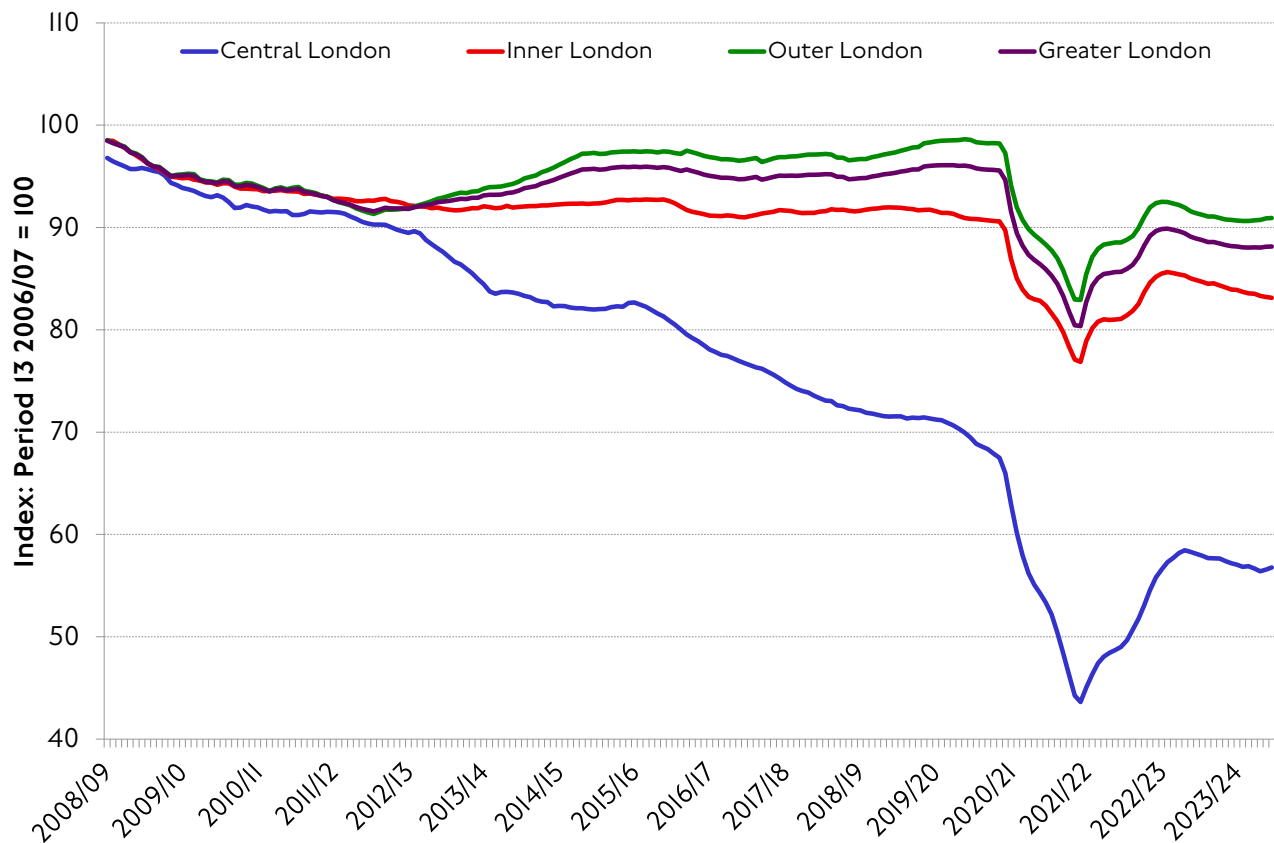
TfL's indicators of overall traffic trends

TfL's indicators of traffic in London provide robust trend-based estimates of traffic volumes. Over the last decade up to 2019, the trend was broadly stable, with traffic flows increasing by around two per cent across London overall. In 2020, however, traffic volumes were significantly impacted by the coronavirus pandemic.

Figure 2 shows the effects of the pandemic restrictions in early 2020, with traffic levels dropping across all areas of London, although the decline was much sharper in central London. During 2021, traffic levels increased gradually before plateauing across all areas at a lower level than before the pandemic, although traffic recovered relatively quickly compared with public transport.

Traffic flows in both inner and outer London in autumn 2023 are around seven to eight per cent below pre-pandemic levels, while flows in central London are around 17 per cent lower than in 2019.

Figure 2 Change in motor vehicle traffic flows by area, 13-period moving average, 2008/09-2023/24.



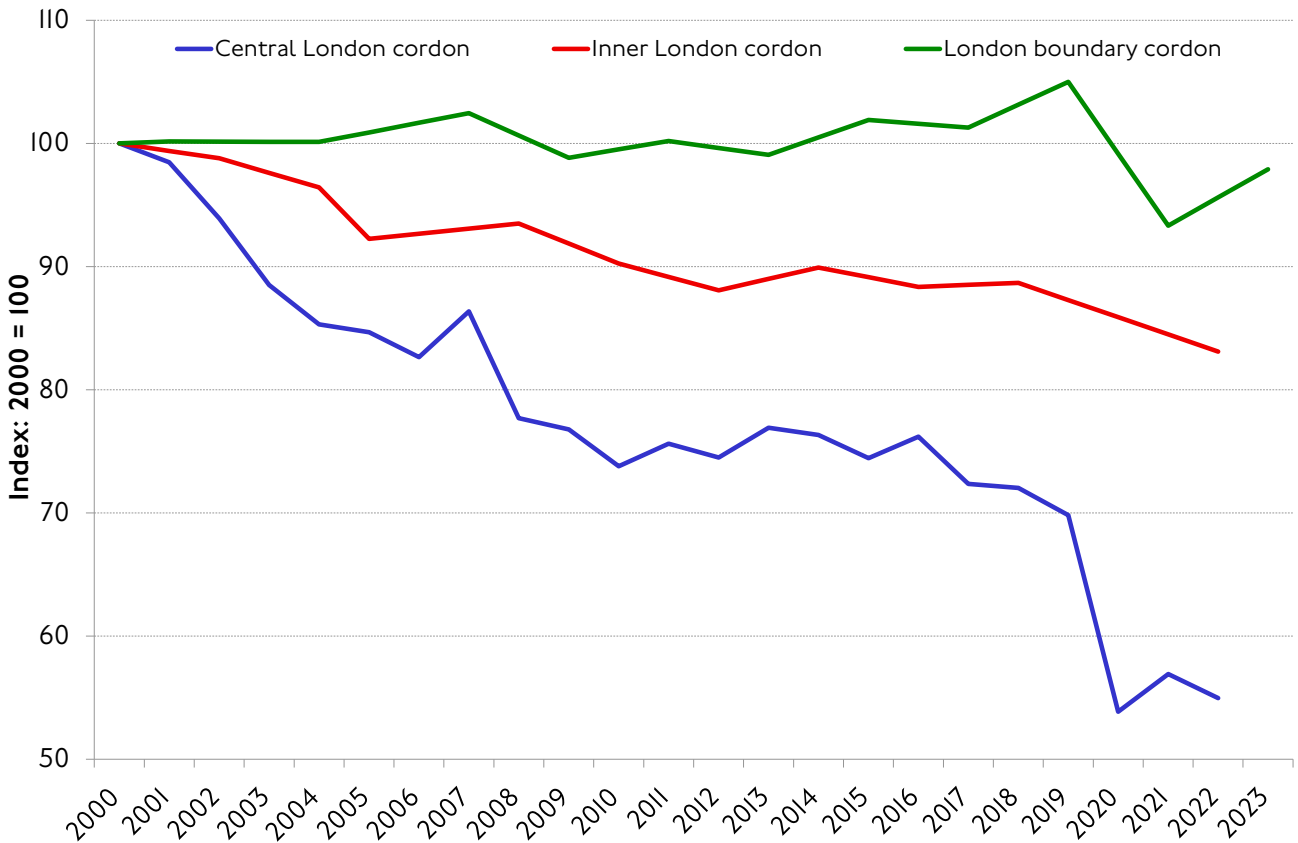
Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL traffic data.

Road traffic trends by vehicle type

Traffic crossing TfL's strategic cordons

Trends in the number of motor vehicles crossing the three London strategic counting cordons provide another indicator of traffic volume, and they show a broadly similar pattern to other indicators (figure 3).

Figure 3 Daily motor vehicle flows crossing the strategic cordons, 2000-2023.



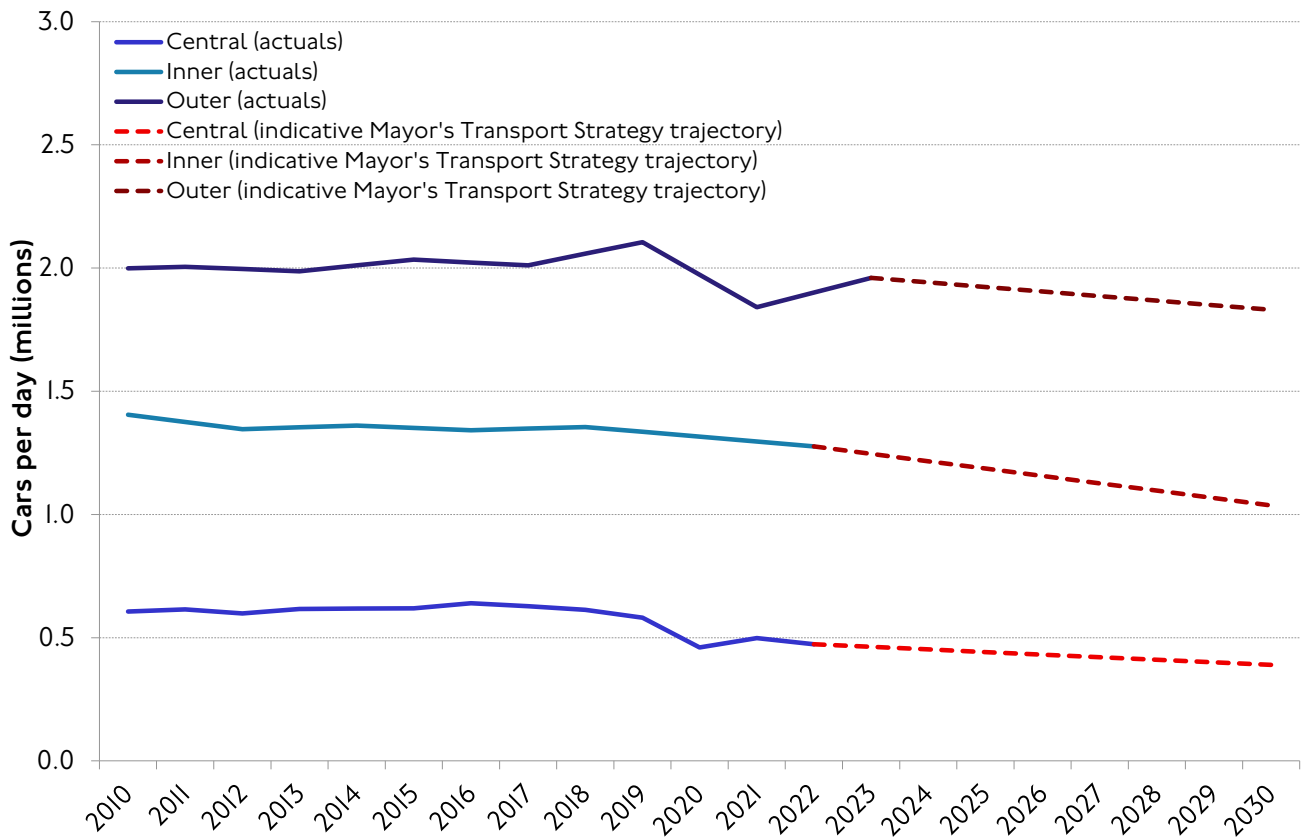
Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL traffic data.

Between 2001 and 2019, bearing in mind that not all cordons are surveyed every year (intermediate years are interpolated), the number of motor vehicles crossing the central cordon (enclosing a definition of central London which is neither aligned with the Congestion Charge zone nor with the DfT definition) fell by 29 per cent.

Across the inner cordon, the decline was 10 per cent between 2002 and 2018, while flows at the London boundary cordon have been relatively stable, with a net 5 per cent increase between 2001 and 2019. Between 2016 and 2022 the declines were 28 per cent across the central cordon, six per cent across the inner cordon and three per cent across the outer cordon (between 2017 and 2023).

Post-pandemic data for all cordons suggest that traffic flows have not recovered fully. Across the central cordon, flows in 2022 were 21 per cent lower than in 2019. At the inner cordon, flows were six per cent lower in 2022 than in 2018. The boundary cordon was surveyed in 2023, with flows around seven per cent down compared with 2019.

Figure 4 Cars crossing London's strategic cordons per day, 2010-2030.



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

Note: Counts were not undertaken in 2020 across the outer cordon and in 2020 or 2021 across the inner cordon, therefore the data reported are interpolated from adjacent years.

Figure 4 shows the trend in the number of cars crossing the cordons, with the aim in the Mayor's Transport Strategy being to reduce the number of car journeys by 3 million on an average day by 2041 compared with 2016. Despite post-pandemic increases in the numbers of cars crossing the boundary cordon, overall levels remain lower than before the pandemic. However, the tendency of traffic growth to reassert itself, particularly in outer London, is evident.

Trends by vehicle type

Traffic flows across all cordons are currently lower than before the pandemic (table 2).

The decrease in overall flows across the central cordon in 2022 was driven by a decrease in cars, with goods vehicle flows remaining similar to 2021. Across the inner cordon, both LGV and HGV flows were down at a greater rate than that of cars. However, the opposite was true at the London boundary cordon between 2019 and 2023, with car flows down at a greater rate than light goods vehicle flows. Across all areas of London, heavy goods vehicle flows have declined at the highest rate since the pandemic.

This suggests that the return towards normal from the pandemic has not been even across all areas of London and all vehicle types, with evidence showing that goods vehicle traffic is returning more slowly in central and inner London than car traffic.

While 78 per cent of vehicles crossing the boundary cordon in 2019 were cars, growth has been strongest in light goods vehicles (LGVs). Since 2010, the number of cars crossing the boundary cordon decreased by 2.0 per cent, while the number of LGVs increased by 9.2 per cent over the same period.

Table 2 Motor vehicles (thousands) crossing the strategic cordons per day, by vehicle type, 2010-2023.

Cordon	Year	Car	LGVs	HGVs	Total
Central	2010	606	179	51	1,133
	2015	619	181	52	1,143
	2019	581	178	46	1,072
	2020	460	153	35	827
	2021	498	147	30	874
	2022	473	146	31	844
Inner	2010	1,405	286	82	1,945
	2014	1,342	306	88	1,938
	2018	1,355	306	80	1,911
	2022	1,276	285	59	1,791
Boundary	2011	2,005	347	137	2,568
	2015	2,034	362	139	2,612
	2019	2,105	387	136	2,691
	2021	1,841	382	123	2,392
	2023	1,958	374	118	2,509

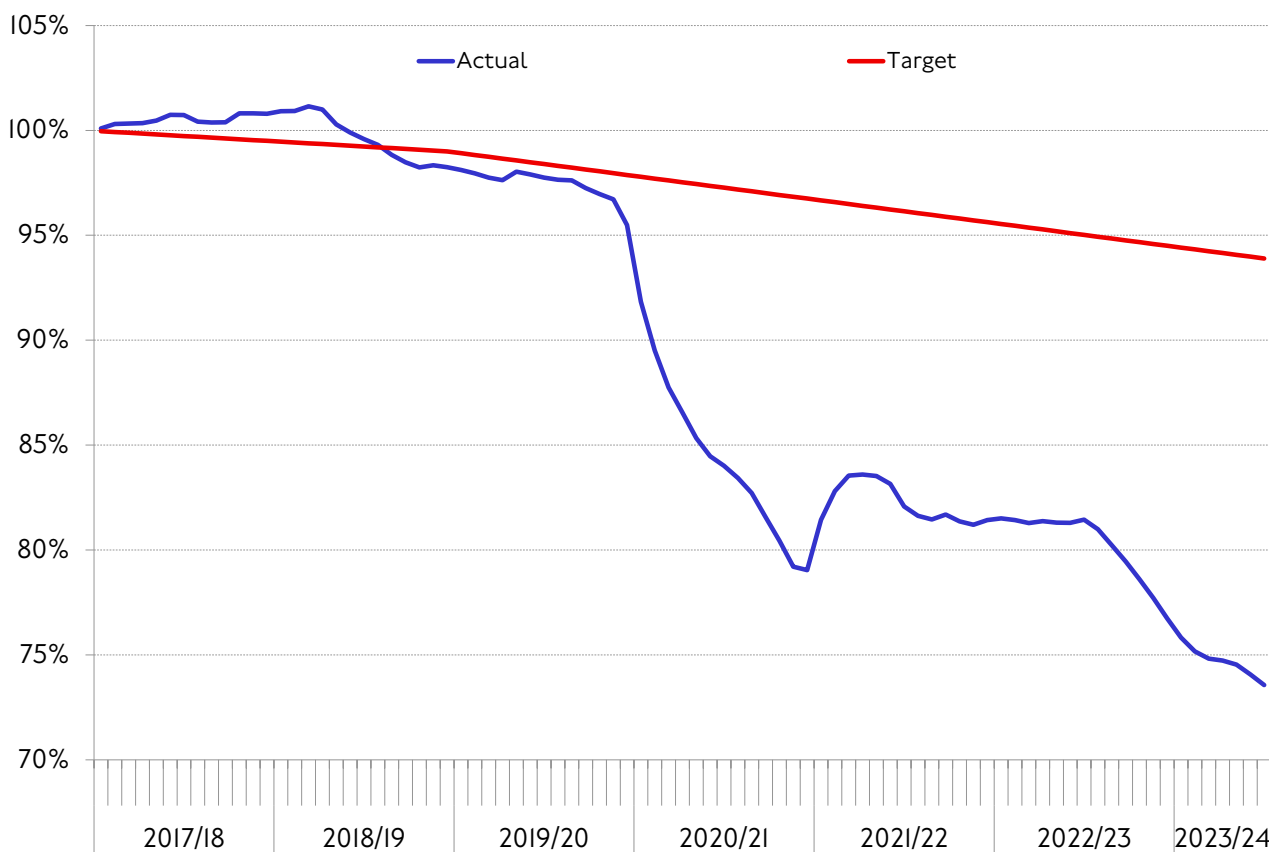
Source: TfL Strategic Analysis, Transport Strategy & Policy, based on TfL traffic data.

Freight traffic entering the Congestion Charge zone in the morning peak

A specific aim of the Mayor's Transport Strategy is to reduce the number of goods vehicles (HGVs and LGVs) circulating in the central London congestion charge zone during the weekday morning peak by 10 per cent by 2026, from 2016 levels. This reflects pressures on the road network at this time and would help to reduce road danger.

Figure 5 shows the observed trend over recent years and sets this in the context of the nominal trajectory required to meet the target. The impact of the pandemic is clearly visible, but, as traffic recovered, the number of freight vehicles remained well below the 2026 target. During 2023, the number of goods vehicles entering central London in the weekday morning peak started to decline again, with the reduction currently greater than 25 per cent.

Figure 5 Change in freight vehicles entering the Congestion Charge zone compared to 2016, 13-period moving average, 2017/18-2023/24.



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

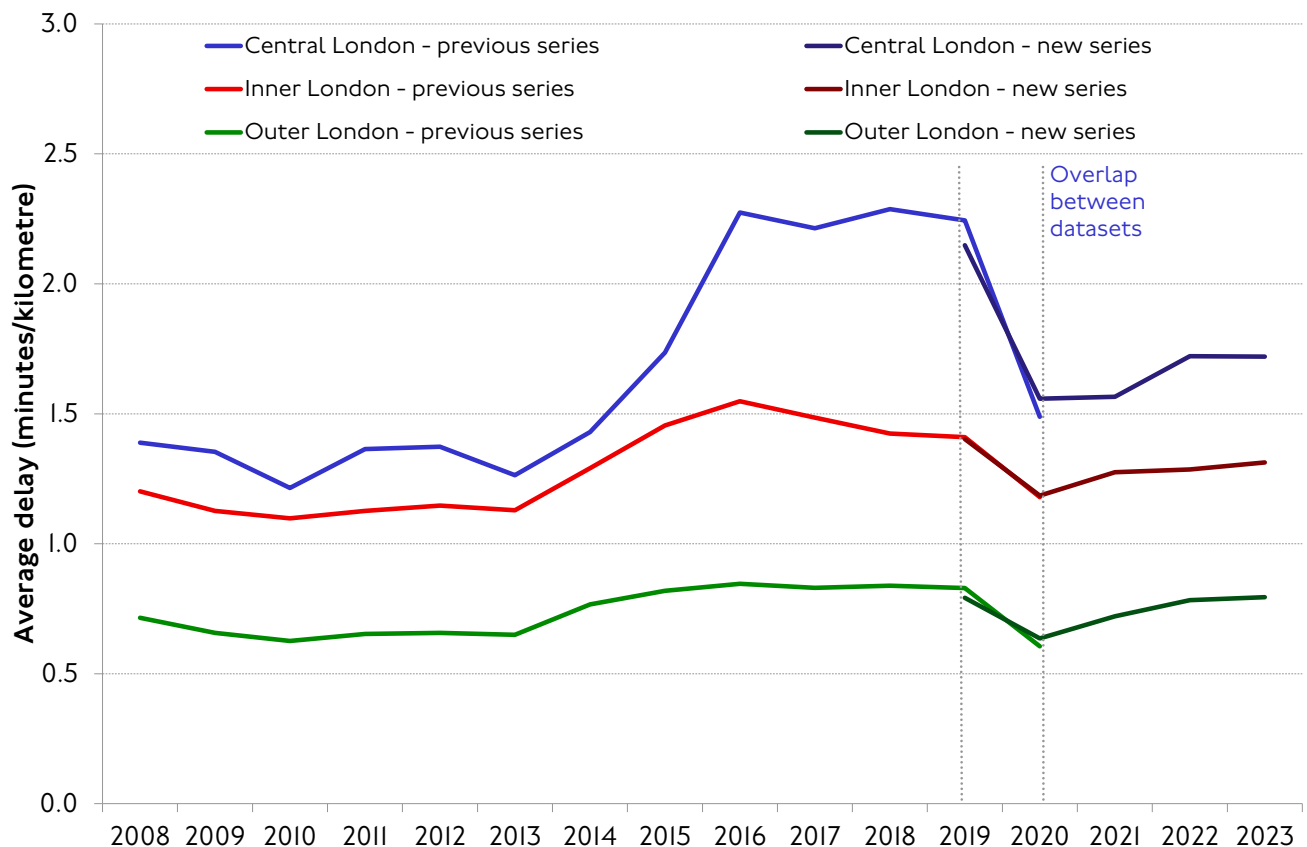
Congestion on the road network

Traffic congestion arises when the demand for road space is greater than the ability of the network to carry it at an acceptable level of service. This level of service is reflected in metrics such as average speed or, more commonly, journey time, where this is greater than it otherwise would be if the network were operating at free-flow speeds (delay).

The most comprehensive measure of traffic congestion in London is provided by the Department for Transport. However, recent changes to their dataset mean that it is not possible to construct a long-term time series on a comparable basis, with a series break in 2020.

Bearing this limitation in mind, figure 6 shows annual average congestion values from 2008 to date. Congestion is represented as an excess delay, that is, the average time taken to drive one kilometre over and above what would be the case if the network were operating at free-flow speeds. This is conventionally taken as reflecting free-flow conditions in the middle of the night.

Figure 6 Morning peak average weighted road vehicle excess delay, by area, 2008-2023.



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

Whilst the absolute values between the two data sources should not be regarded as strictly comparable, the long-term trends are of interest. They show a sustained rise in congestion in all parts of London during the years leading up to the pandemic. Following reductions associated with the pandemic, with lower traffic levels, the trend over more recent years has been slowly upward to pre-pandemic levels. It is not yet clear from the available time series of data whether the relatively lower values shown by the more

recent dataset are reflective of lower overall road traffic demand following the pandemic or recent operational initiatives designed to better manage congestion, such as changes introduced to charging times for driving within the Congestion Charge zone.