FAIR ACCESS: TOWARDS A TRANSPORT SYSTEM FOR EVERYONE

Silviya Barrett, Sara Gariban and Erica Belcher

Transport provision drives the social and economic life of the city, but the availability and impact of transport are not spread equally among citizens. This report develops a new framework for considering the barriers to accessing public transport, as well as walking and cycling options, in London. It examines how both the availability of different modes of transport, and negative impacts such as air pollution and road danger, affect different groups, including low-income Londoners, young, older or disabled people and ethnic minorities.

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CENTRE FOR LONDON

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Summary

Urban transport has a huge impact on Londoners, unlocking opportunities for employment, education, leisure and social life. Unfortunately, however, the capital's transport system does not offer the same benefits to everyone in our city.

This report examines how shortcomings in transport affordability, connectivity and accessibility hold back different groups in the capital – including young, older, disabled, ethnic minority and low-income Londoners. It also investigates how these groups are affected by air pollution, crime, road danger, and the inactivity that results from reliance on cars.

Londoners spend more of their income on transport than people outside the capital or in other world cities.

- London residents spend a monthly average of £137 (or approximately 7 per cent of their take-home income) on transport, but younger people and skilled manual employees spend even more (one-tenth).

- While single fares for the Tube and bus have been frozen since 2015, Travelcard and pay-as-you-go cap prices have increased by 10 per cent, affecting many regular travellers.

Transport costs can be a barrier to many people across the city, in both inner and outer London

- There is no strong link between transport connectivity and deprivation: there are both rich and poor areas with good connectivity.

- However, in areas of high deprivation, limited connectivity, high costs and low incomes can exacerbate poverty by reducing affordable access to employment, education and healthcare.

Disabled and older people and those with invisible conditions cannot access large parts of the public transport network.

- While the Underground has limited step-free access, it also offers valuable staff assistance. Buses provide easier step-free access, but drivers are unable to assist passengers.

- Disabled Londoners rely on private cars and taxis more, but Taxicard provision is inconsistent across boroughs and the Dial-a-Ride service can be unreliable.

Lack of provision for walking and cycling can lead to sedentary lifestyles and affect health and wellbeing.

- Outer London boroughs have higher reliance on cars and lower levels of walking and cycling.

- Walking and cycling can be accessible forms of exercise for older and disabled people. But the cost of e-assist or adapted bikes – and poor provision of cycle lanes and other infrastructure – can be prohibitive.

Some groups are unfairly affected by the negative impacts of transport provision.

- Air pollution disproportionately affects poorer Londoners, even though they are the least likely to drive. It is also more damaging to older people, children and those with heart and respiratory conditions.

- Motor vehicle drivers and passengers have higher exposure to air pollution than cyclists and pedestrians, while a third of Londoners see concern about air pollution as a barrier to using a private car or motorcycle.

- Although road casualty numbers have been declining overall, pedestrians in the poorest areas and black people in particular are more likely to be injured.

Taken together, these findings indicate how different user groups can face multiple and overlapping barriers to accessing public transport, walking and cycling:

- Older people are more likely to use buses, but are hampered by lack of direct routes and safety concerns.
- Disabled people find that lack of assistance and inconsistent information prevent them from being more independent.
- People on low incomes are held back from cycling more frequently by the associated costs and lack of storage space.
- Women have different travel patterns to men, but most travel routes are not geared to their needs; and safety concerns are a barrier for women across transport modes.
- Black and ethnic minority Londoners are more likely to cite cost and safety concerns as barriers to using public transport more, while cultural barriers can also hinder cycling take-up.
- Young people are more likely to cite overcrowding and cost as barriers to using the Tube more.

To help address these challenges, our report recommends that equity should be a central consideration in all transport planning and investment decisions.

1. When preparing business cases, the Mayor, Transport for London (TfL), boroughs, planners and developers should consider wider social benefits early on in the process alongside economic benefits. They should also prioritise inclusive design, affordable and active transport investment, and affordable housing development.

2. The Mayor and TfL should review the fares freeze and concessionary fares, and should specifically consider gradually phasing out the 60+ London Oyster photocard and the additional nominee pass for new TfL employees.

3. The Mayor and TfL should review the zone and fare structure to improve affordability – including reducing the difference in fares between zones, reducing the number of zones, or rezoning particular stations that are in low-affordability areas.

4. The Mayor and TfL should create a multi-modal journey planning platform alongside a system of mobility credits. These would allow for tailored accessibility features, targeted discounts such as subsidised bike share, and more flexible services for disabled people.

1.
Equity in transport

Transport provision drives the social and economic life of the city. We all consider public transport services – provided and regulated by the public sector, and funded from a mixture of fares and general taxation – to be a public good. But the benefits are not spread equally among the capital's citizens.

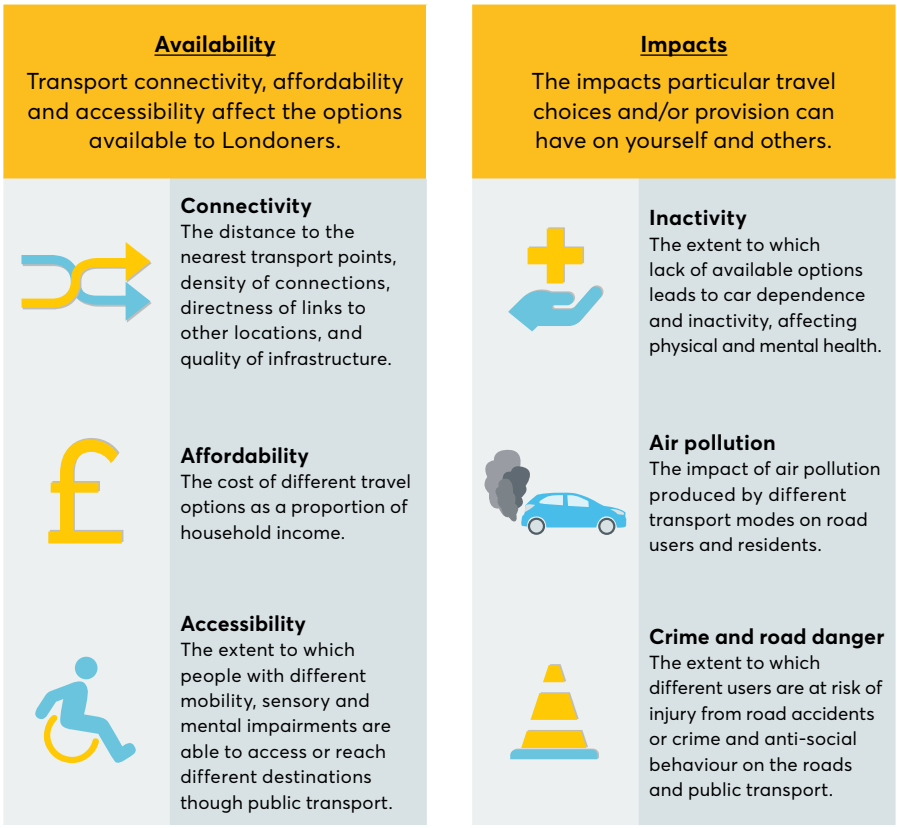
A good transport system enables Londoners to live their lives. Transport makes it possible to go to work or school, see friends, visit the shops, and get access to welfare provision, hospital services, leisure facilities, financial support and housing. Unfortunately, lack of access, unfair barriers and disproportionate negative impacts can restrict certain groups' ability to move around the city – thereby affecting their wellbeing and life chances.

Framework and methodology

In the context of transport, we define equity as having fair access to transport options – including the extent to which the options available and the resulting impacts fall unfairly on some groups rather than others. We examine the availability and impacts on different groups who may be disadvantaged or under-represented to some extent, including young, older, disabled, ethnic minority and low-income Londoners. We also consider fair access to transport in the context of the Mayor's Transport Strategy objective to move away from motor vehicle usage and towards more sustainable transport in order to accommodate continued growth in the city. To this end, our report considers the barriers to accessing public transport as well as walking and cycling routes – and the extent to which people need to rely on private cars and taxi services as a result.

For this study we developed a new framework for examining transport and equity in London (see Figure 1). It identifies two types of factors that affect equity in transport.

Figure 1: Transport and Equity Framework



First, there are three factors that affect the travel options available to Londoners.

1. **Connectivity:** the distance to the nearest transport points, density of connections, directness of links to other locations, and quality of infrastructure.

2. **Affordability**: the cost of different travel options as a proportion of household income.

3. **Accessibility:** the extent to which people with different mobility, sensory and mental impairments are able to access or reach different destinations though public transport.

These factors affect Londoners' lives in a number of ways, including:

- Increased travel times due to living further away from dense transport networks and/or choosing a cheaper form of transport.

- Reduced access to job opportunities and amenities such as hospitals, shops and schools.

- Reduced living standards resulting from having less money to spend on other things.

Second, particular travel choices and/or types of transport provision can have negative impacts on the user and those around them in terms of:

1. **Inactivity:** people who do not have good access to public transport (or walking and cycling routes) may end up relying on cars and becoming less physically active; this can contribute to social isolation and damage both physical and mental health.

2. **Air pollution:** the impact of air pollution on London's roads and other forms of transport on different road and transport users.

3. **Crime and road danger:** the extent to which different users are at risk of injury from accidents or crime/anti-social behaviour on the roads and public transport.

The conclusions of this report are based on research undertaken through a combination of methods, including:

- **Data analysis:** We used a number of different datasets to inform our findings. Global business consultancy Steer also conducted analysis for this report, mapping the impacts of affordability, connectivity and accessibility across London.

- **Survey:** We commissioned polling company ComRes to undertake a survey of Londoners on their transport choices and the barriers they encountered in accessing different transport options. (ComRes interviewed 1,011 London residents between 15 and 18 of July 2019. Data is representative of all London residents by age, gender and region. ComRes is a member of the British Polling Council and abides by its rules.)

- **Interviews:** We interviewed representatives of a number of stakeholder groups, as well as academics and experts in the field.

- **Focus groups:** We organised two focus groups to understand the factors that affected the transport options available to Londoners. A total of 43 people attended, representing a range of age groups, areas of London, main ways of travelling and barriers to access (including disabled, blind and older users).

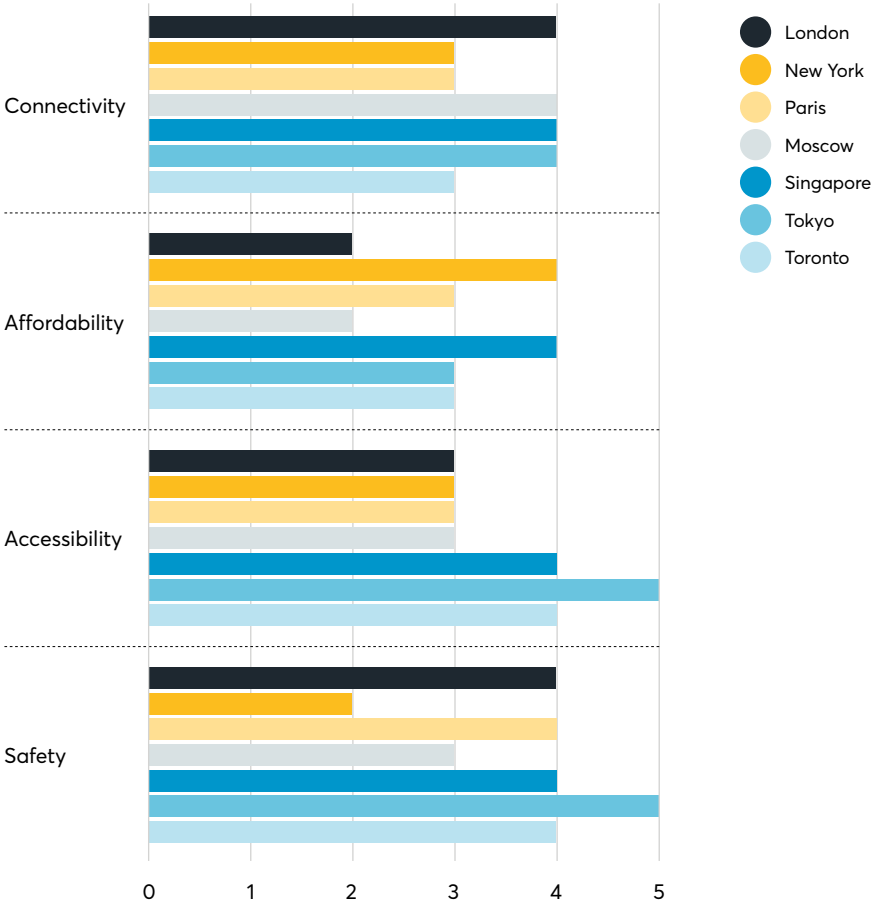
The rest of this chapter examines how London compares to other global cities. It also shares our headline survey results on Londoners' travel choices and the barriers to accessing the different transport options. Chapter 2 then focuses on the affordability, connectivity and accessibility of public transport, walking and cycling – as well as whether the availability of these options affects certain groups unfairly. Chapter 3 examines whether the negative impacts of transport provision and usage affect certain groups disproportionately, and looks at the specific barriers different groups face in accessing transport. Based on the report's findings, we then make a number of policy recommendations to address equity concerns and remove barriers to access.

International comparisons

First, we look at how London compares to other global cities on some of the measures we identified – particularly in terms of public transport.

There are a number of global rankings suitable for this purpose: for example, Deloitte's 2019 City Mobility Index ranks London relatively highly on connectivity and safety, but lower on affordability and accessibility (see Figure 2).[1]

Figure 2: Travel in London compared to a selection of other cities, score out of 5



Source: Deloitte Mobility Index 2019.

In terms of connectivity, London is the highest-scoring European city and on a par with Moscow, Singapore and Tokyo. Indeed, more than one-third of Londoners live within 500 metres of a Tube or rail station: this is in line with Berlin (33 per cent) and Hong Kong (40 per cent), and is a substantially higher proportion than in American cities such as Los Angeles (12 per cent).[2]

Despite this, the time spent commuting in London is high compared with other cities. According to travel app Moovit, Londoners using the app spend an average of 84 minutes per day commuting by public transport. This figure is on a par with American cities of similar size like Los Angeles and New York, but is higher than in smaller European cities like Paris and Berlin, where the average commute is just over an hour.[3]

Affordability is the Achilles heel of London's transport system. The Deloitte Index scores London at two out of five on this measure – worse than Paris, Singapore, Tokyo and New York. McKinsey's index of urban transportation in 24 global cities also ranks London among the least affordable. As a comparator, the average monthly ticket in Tokyo costs 2.5 per cent of average income, while in London it is 6.1 per cent.[4]

Deloitte also awards London three out of five points for public transport accessibility. This is in line with similar global cities like New York and Paris, but lags behind world leaders such as Tokyo, Shanghai, Hong Kong, Copenhagen and Los Angeles. In these cities, much of the transport system (particularly the newer parts) is fully wheelchair-accessible, with ramps or elevators from the street level to platforms.[5]

In the next section, we examine how regular Londoners experience these barriers to accessing public transport.

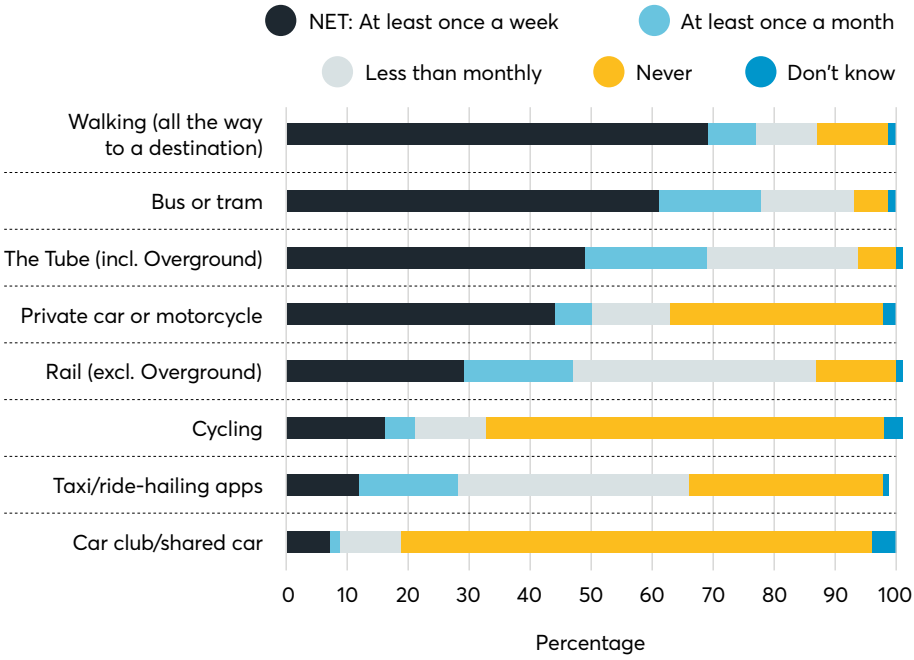
How Londoners travel and the barriers they face

While large volumes of data on transport usage are published regularly, we lacked detailed information on usage by different groups within London, and on the factors behind their choices. The polling commissioned

from ComRes as part of this project sheds more light on these factors, discussed in more detail in chapter 3.

According to the survey, walking and taking the bus are the most frequently used modes of travel in London. Seven in ten (69 per cent) Londoners walk all their way to a destination (rather than to a bus stop or station) at least once a week, and three in five (61 per cent) use the bus with the same frequency. This is followed by the Tube (including Overground), which half of people (49 per cent) use at least once a week (see Figure 3).

Figure 3: Frequency of use of different transport modes among Londoners



Source: ComRes survey for Centre for London.
*Results add to 100 +/- 1 per cent due to rounding.

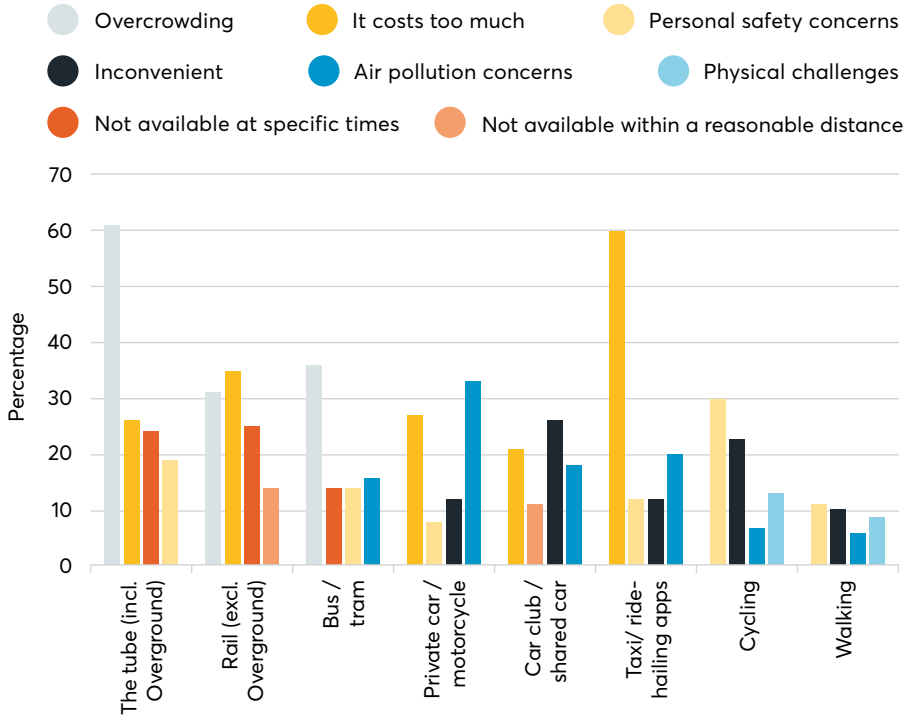
Respondents were the most polarised in the use of private cars or motorcycles. Whilst 44 per cent of London residents use this mode of travel at least once a week, one-third (35 per cent) say they never do.

This reflects the fact that only 55 per cent of London households own a car (compared to 80 per cent across the rest of England).[6] However, it also suggests that those who have access to a car are likely to use it regularly, perhaps instead of walking or taking public transport.

The survey also found that only 29 per cent of Londoners report using the train on a weekly basis. This is a significantly lower frequency of usage than for the other modes of transport, possibly reflecting less extensive coverage.

Barriers to access also vary by mode of transport. Our survey found that the biggest barriers to using Tube and rail more frequently were overcrowding (61 per cent for Tube and 31 per cent for rail) and cost (26 per cent for Tube and 35 per cent for rail). (See Figure 4).

Figure 4: Top four barriers to Londoners using different modes more frequently



Source: ComRes survey for Centre for London

By comparison, only 9 per cent of respondents said that cost is a barrier to using the bus more frequently – but overcrowding is again cited as a barrier for just over one-third of people (36 per cent). Cost was the main reason given for not using taxi/ride-hailing services (60 per cent) and car clubs (21 per cent) more frequently, alongside lack of convenience (26 per cent for car clubs and 12 per cent for taxi/ride-hailing apps). This perhaps reflects relatively limited coverage. In addition to cost, concern about air pollution is cited as the main barrier to using a private car or motorcycle more frequently (33 per cent). It is also a factor in discouraging increased car club (18 per cent) and taxi/ride-hailing usage (20 per cent). By comparison, personal safety, convenience and physical challenges were most likely to be cited as barriers to more cycling or walking.

Throughout the remainder of this report, we examine in more detail how these barriers affect different age, ethnicity and income groups.

2. Factors reducing the availability of travel options

This chapter examines the extent to which different parts of the capital have available transport links, whether people can afford to use them, and whether they face any physical and non-physical barriers to accessing them.

Connectivity

As discussed above, London has an extensive public transport network – both compared to other global cities and to the rest of the UK. This means that car use is lower in the capital compared to other places. Just 29 per cent of London residents say that driving is their usual method of commuting – significantly lower than the English average of 67 per cent.[7] The share of journeys made by car or motorbike is also declining, while public transport's share is increasing.[8] As London has grown, the public transport network has been expanding outwards to accommodate a growing population.

The nature of London's transport system means that Inner London is better connected than Outer London. Data show that the Inner London borough of Camden is the most connected borough – with 85 per cent of homes within 500 metres of a Tube or rail station – whereas the Outer London boroughs of Havering, Bexley, and Barking & Dagenham are the least connected, with fewer than 20 per cent of properties within 500 metres of a station.[9] In addition, south London is particularly badly served by the Underground. Our survey found that 23 per cent of south London residents consider the lack of stations within a reasonable distance to be a barrier to using the Tube more frequently, while only 16 per cent of east Londoners, 13 per cent of north Londoners and 9 per cent of west Londoners reported this.[10]

Low connectivity can limit access to employment opportunities. It is estimated that Inner London residents can access up to 2.5 million jobs by travelling up to 45 minutes on public transport, compared to between 250,000 and 500,000 jobs for Outer London residents.[11] This leads to higher car dependency in areas of lower connectivity: 41 per cent of those living in Outer London

report getting to work by car, compared to just 14 per cent of those in Inner London.[12] With the Mayor's aim for 80 per cent of journeys to be via cycling, walking or public transport by 2041,[13] it is clear that improving connectivity in some of these areas will play an important role in encouraging the behaviour change necessary to meet these objectives.

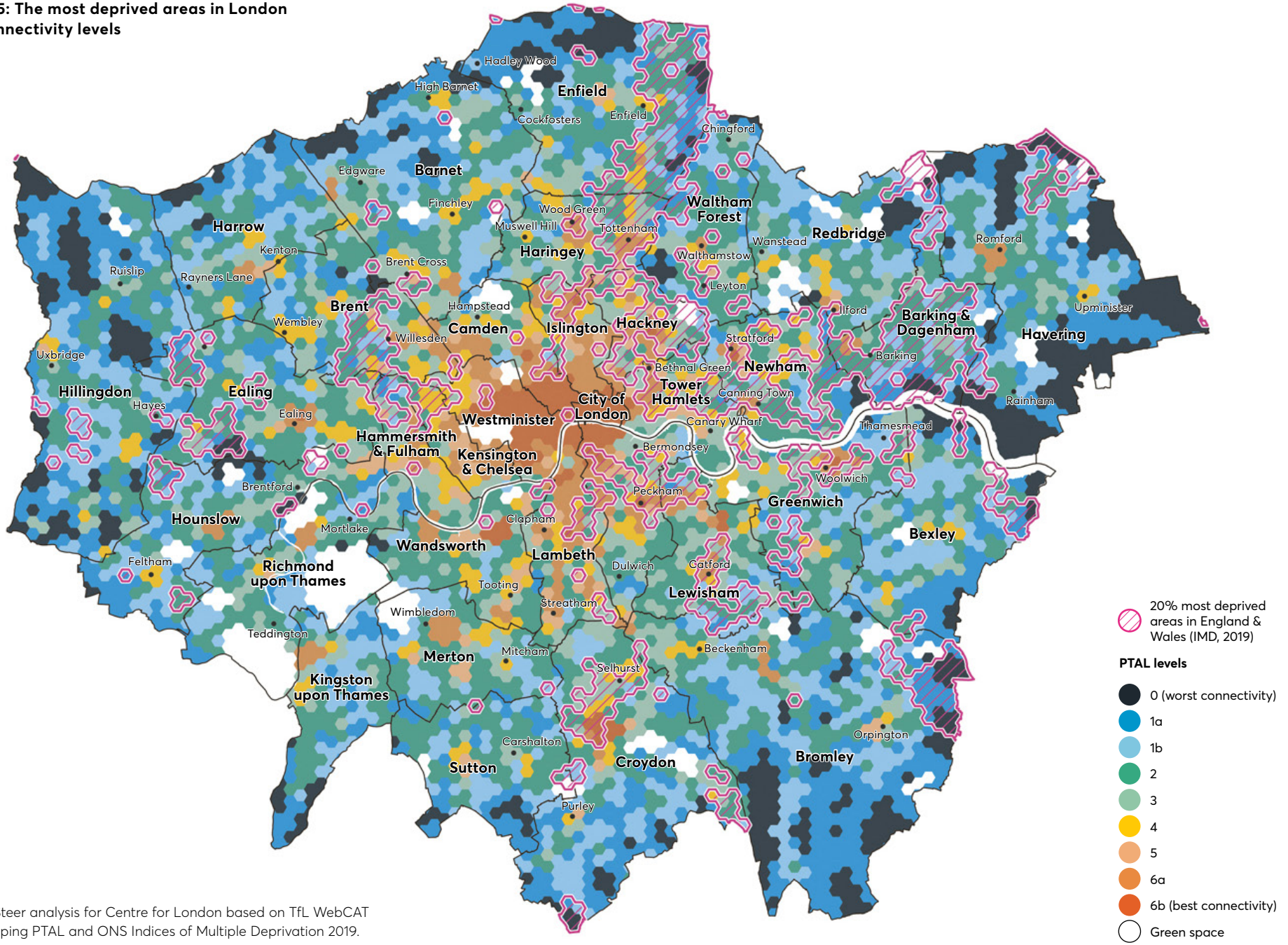
Connectivity and deprivation

Good public transport connectivity is clearly important, as longer commutes and complex routes can be stressful and reduce time for leisure, or seeing family and friends. It should then come as no surprise that London house buyers are willing to pay a 10.5 per cent premium to live within 500 metres of a station.[14] But is there a broader link between connectivity and deprivation?

Examining connectivity (as measured by Public Transport Access Levels, or PTAL) against deprivation (as measured by the Index of Multiple Deprivation, or IMD, scores) at the Low Super Output Area (LSOA) level shows a relatively low correlation between the two. Simply put, there are both rich and poor areas with good and bad connectivity in London. We can find affluent suburbs alongside pockets of poverty in Outer London, and housing estates not far from exclusive prime central London properties.

Mapping the 20 per cent most-deprived areas against PTAL (see Figure 5) shows there are large areas of deprivation with low levels of connectivity in the Lower Lee Valley and Barking & Dagenham, as well as some areas on the edge of London. There are also deprived areas with good connectivity in central and Inner London, particularly in Islington, Hackney, Tower Hamlets, Southwark and Lambeth. Although living in areas of high connectivity is no guarantee of being able to access public transport – as people on low incomes may not be able afford to use Tube and rail services – the combination of high deprivation in a low connectivity area can lead to social isolation and reduced access to employment, education and healthcare, thereby exacerbating poverty and impacting physical and mental wellbeing.

Figure 5: The most deprived areas in London and connectivity levels



Source: Steer analysis for Centre for London based on TfL WebCAT tool mapping PTAL and ONS Indices of Multiple Deprivation 2019.

Of course, connectivity is not a static measure, and public transport upgrades and extensions gradually extend capacity to underserved areas. The Elizabeth line alone is set increase London's overall rail capacity by 10 per cent,[15] while upgrades to the Circle, District, Hammersmith & City and Metropolitan lines are expected to increase peak-time capacity by one-third on these lines.[16]

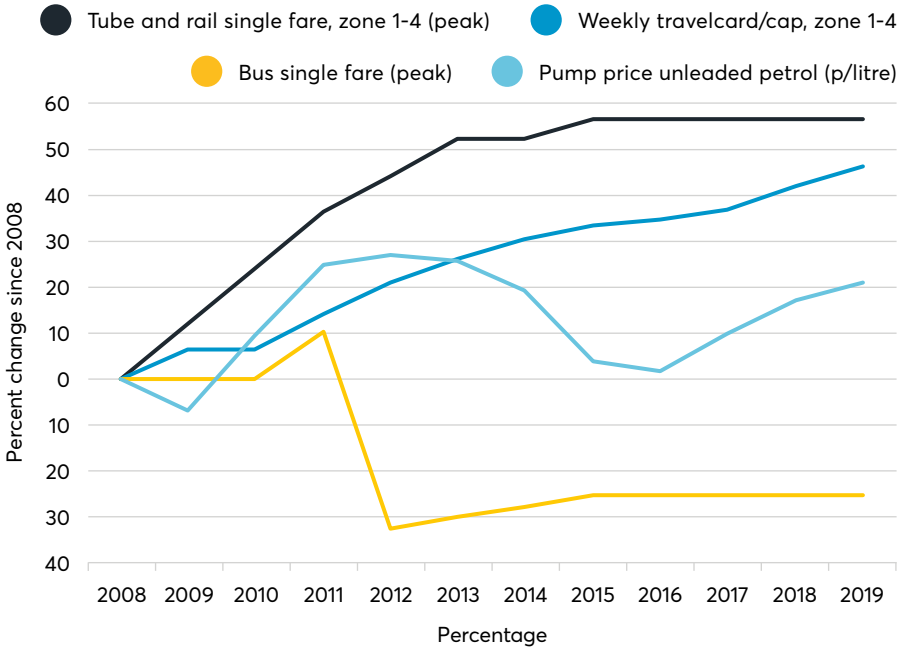
However, beyond public transport connectivity, there is also a further major consideration for transport planners: how affordable are the available transport options for Londoners throughout the city?

Affordability

The cost of public transport in the capital is high and has been rising above the rate of inflation.[17] Combined with rising housing costs and slow wage growth, this can place a significant financial strain on Londoners – and for those on low-to-middle incomes, transport costs can eat away at disposable income.[18]

Our analysis shows that between 2008 and 2019, single fares for zones 1-4 increased by 56 per cent, while weekly Travelcard costs increased by 46 per cent (see Figure 6). However, while single fares have been frozen since 2015 (at £3.90 for zones 1-4), Travelcards and Oyster caps have continued rising in line with RPI – the same as rail fares. Since the freeze was implemented, the cost of a weekly Travelcard for zones 1-4 has risen by nearly 10 per cent. This disadvantages regular travellers and commuters, while benefiting less regular travellers such as visitors or tourists. As costs increase with distance across zones, those living on the edges of the city are hit the most, as well as people commuting to London from further afield. By comparison with cars, the freeze on fuel duty over the last decade has meant that petrol pump prices (which of course are only a fraction of the full cost of driving) have not increased substantially – which can be a damaging incentive to drive over the use of other modes of transport.

Figure 6: Increases in London travel costs over time, indexed 2008-2019



Source: Centre for London calculations based on Transport for London (TfL) fares information and Department for Business, Energy & Industrial Strategy road fuel prices.

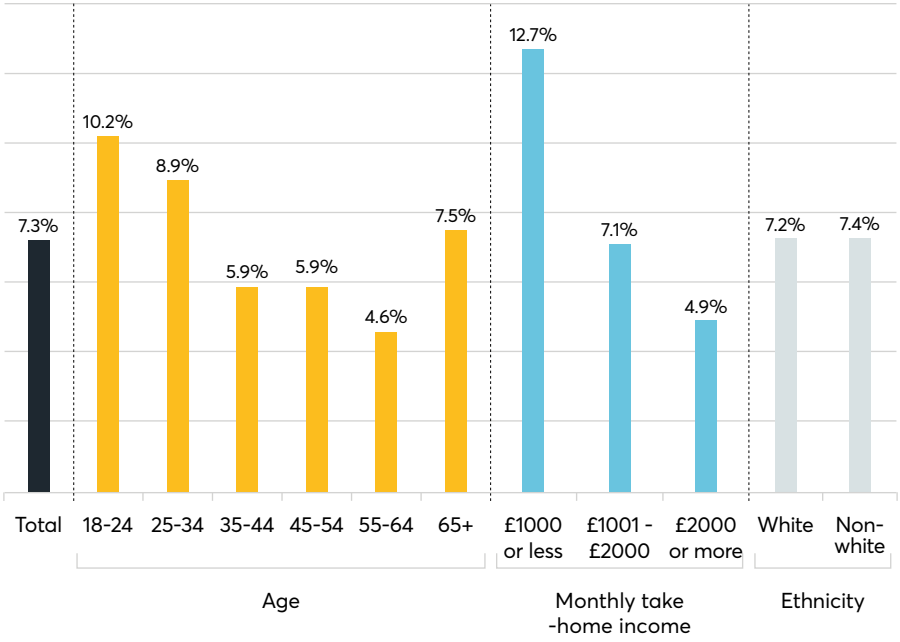
Transport expenditure

National data shows that Londoners spend a higher amount on transport compared to the English average. However, they also spend the most of all regions on public transport and other transport services, and the least on the purchase and operation of personal vehicles.[19] Furthermore, transport spending and travel choices vary by income. We know that lower-income Londoners are more likely to use bus services and to make bus-only journeys, while rates of rail and Tube travel, as well as driving, increase with higher incomes.[20]

Our survey shows that, on average, London residents spend £137, or approximately 7 per cent of their take home income, a month on transport (see Figure 7). However, monthly spend on travel as a proportion of

income declines with age: on average, 18-24 year-olds spend 10 per cent of their monthly income on travel costs, compared to six per cent for 35-44-year olds. Furthermore, people on lower incomes spend less on their monthly travel in absolute terms but this spending takes up a higher percentage of their income. The survey showed that respondents with a monthly take-home income of £1,000 or less spend an average of £90 a month – or 13 per cent of their income – on transport, compared to £176 – or 5 per cent of income – for those with a monthly take-home income of over £2,000.[21] Such differences may be due to the usage of different modes (people on lower incomes are less likely to use the tube, for example) or to different commuting distances. There are no obvious differences in the average travel spend between white and non-white respondents.

Figure 7: Average proportion of net monthly income spent on travel by age, monthly take-home income and ethnicity



Source: ComRes survey for Centre for London.

Research for London Councils, Trust for London and London TravelWatch showed that a quarter of Londoners choose their route based on cost.[22] This leads to a number of trade-offs. While buses are cheaper, travel times are often longer, and reliability has been in decline since 2015.[23] This means that some Londoners are accepting longer journeys to save money, which can have a knock-on effect on leisure time, wellbeing and quality of life.

Balancing housing costs against travel costs and time is another key factor. Housing is, on average, more affordable in Outer London compared to Inner London, both in absolute terms and relative to local residents' incomes.[24] Some will spend more on travel and accept a longer commute to live in an area with cheaper housing costs; others may accept higher rents to live closer to central London and have a more convenient or cheaper commute – perhaps also being nearer to friends, family and leisure opportunities.

Mapping affordability in London

To help us understand the cost trade-offs that working Londoners consider when choosing where to live in the capital, Steer have mapped data at the Low Super Output Area (LSOA) level for housing costs by tenure, travel costs based on commuting distances, and travel time cost based on local hourly wages.

Figure 8 maps the average costs for regular commuters' journeys to work, based on the monthly Travelcard costs for the average distance travelled to work by residents from a given area. This assumes that all commuters travel by public transport and use monthly Travelcards (although we recognise that many travel by bus, car or other modes of transport – and that many journeys are made for other purposes).

The analysis shows that commuting costs are highest in areas where many residents commute into central London – for example in boroughs such as Bromley, Bexley, Havering, Harrow, Enfield, Richmond and Kingston. Generally, average travel costs increase with distance from central London, as residents have to travel further to the city centre. However, there

are exceptions to this pattern. Travel costs by public transport in zone 1 are higher than the surrounding area, due to the high cost of travelling within this zone. Zone 2 forms a cheaper "donut" around zone 1. This is because travel costs are cheaper in zone 2 than zone 1, and travel into the city centre is cheaper than areas further from the city centre. In some areas of Outer London, commuting costs are lower due to residents working locally rather than commuting to the city centre.

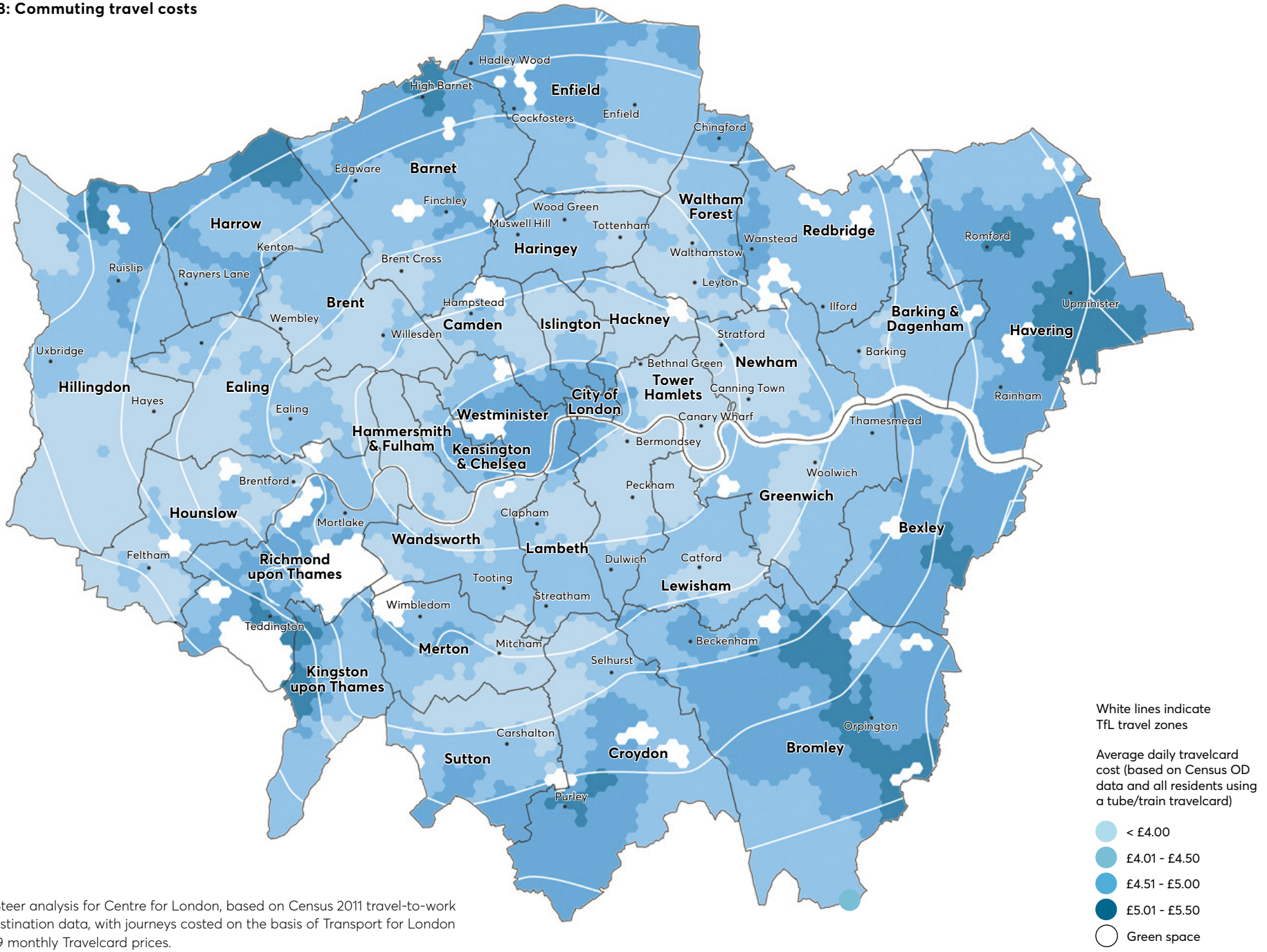
Figure 9 maps the "time cost" of travelling to central London based on local residents' average hourly wages. Although we recognise London has many employment centres, we assumed that Londoners would want to have the choice of working in central London for access to the widest range of opportunities and services. Unsurprisingly, time costs increase with distance and are particularly high in areas where higher earners live, such as Wimbledon, Richmond and Hampstead. The analysis also assumes that all journeys are made using the fastest available mode of transport (generally Tube and train). This therefore does not take account of the fact that many low-income earners may need to take lower-cost, lower-speed transport modes (such as buses). This would increase their travel time costs.

Figure 10 maps average housing costs in owner-occupied or privately rented homes. We have excluded social rented homes for the reason that many Inner London boroughs have much higher rates of social housing, but access to it is limited: this therefore masks the real costs that someone looking to move to an area would be considering. The analysis shows that housing costs are highest in areas like Westminster, Kensington and Chelsea, Kingston upon Thames, Wimbledon and Hampstead, where there are high concentrations of high-value privately owned housing. Outer London generally has lower house prices than central and Inner London, although areas in north-west Outer London have comparatively high costs.

Figure 11 adds the costs of travel, travel time and housing together to show an overall measure of cost, and

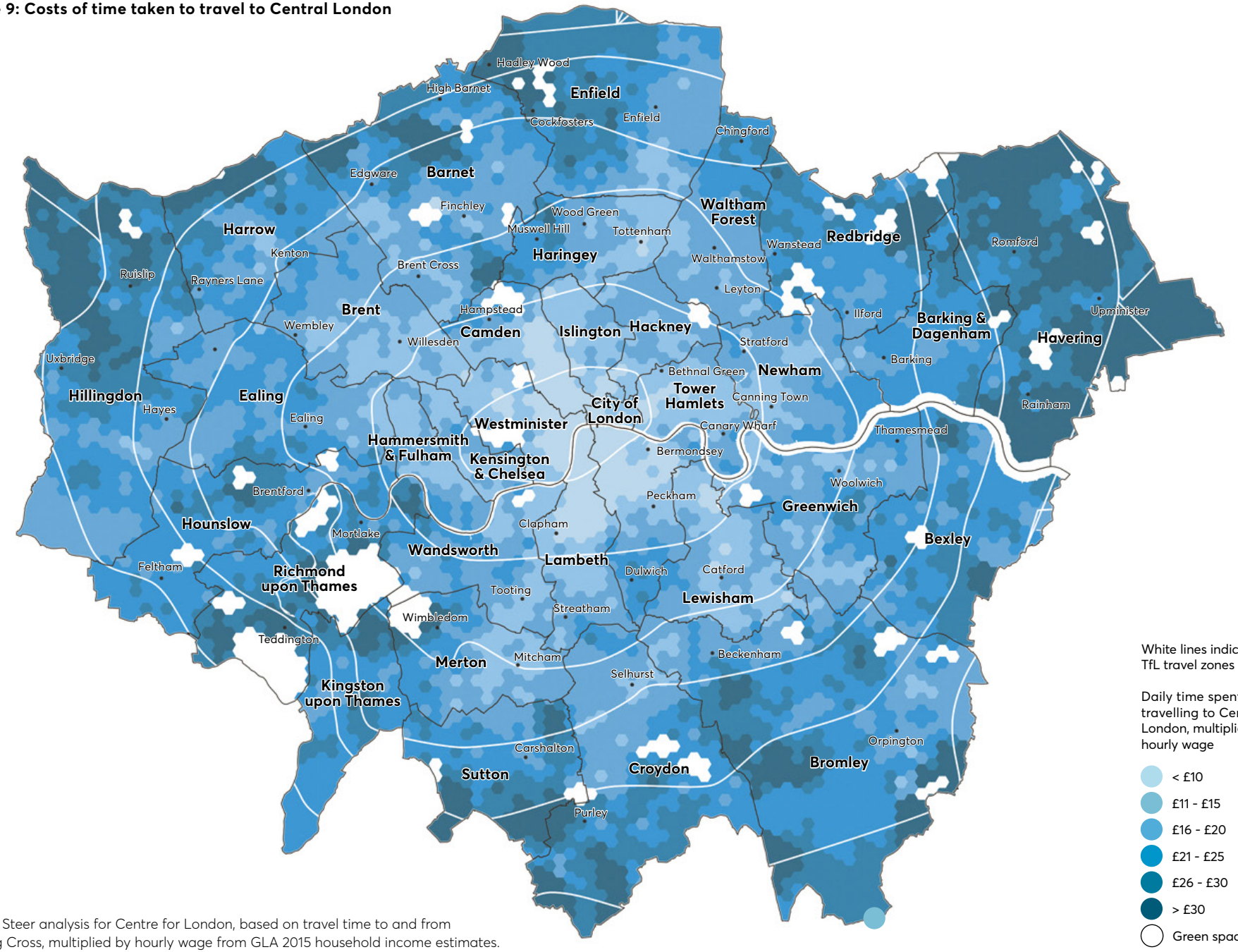
Figure 12 then subtracts these from average incomes to show residual incomes. The analysis reveals some interesting differences, with relatively high-cost and low-cost places quite close to each other across London. These findings suggest that living costs in London are not simply a story of Travelcard zones, distance from the centre or even Inner versus Outer London. The picture is much more complex, with a patchwork of costs across the capital.

Figure 8: Commuting travel costs



Source: Steer analysis for Centre for London, based on Census 2011 travel-to-work origin-destination data, with journeys costed on the basis of Transport for London (TfL) 2019 monthly Travelcard prices.

Figure 9: Costs of time taken to travel to Central London



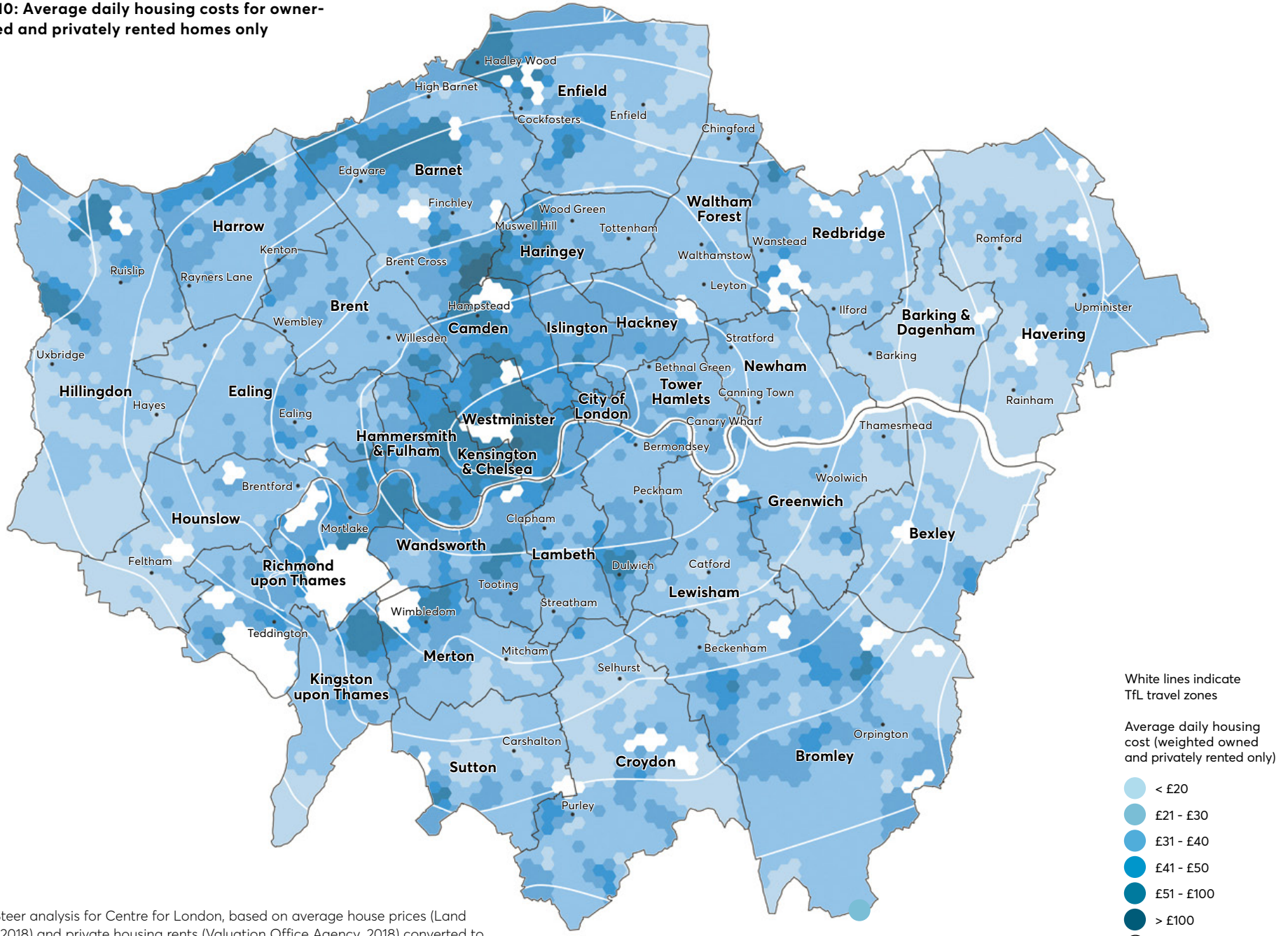
White lines indicate TfL travel zones

Daily time spent travelling to Central London, multiplied by hourly wage

- < £10
- £11 - £15
- £16 - £20
- £21 - £25
- £26 - £30
- > £30
- Green space

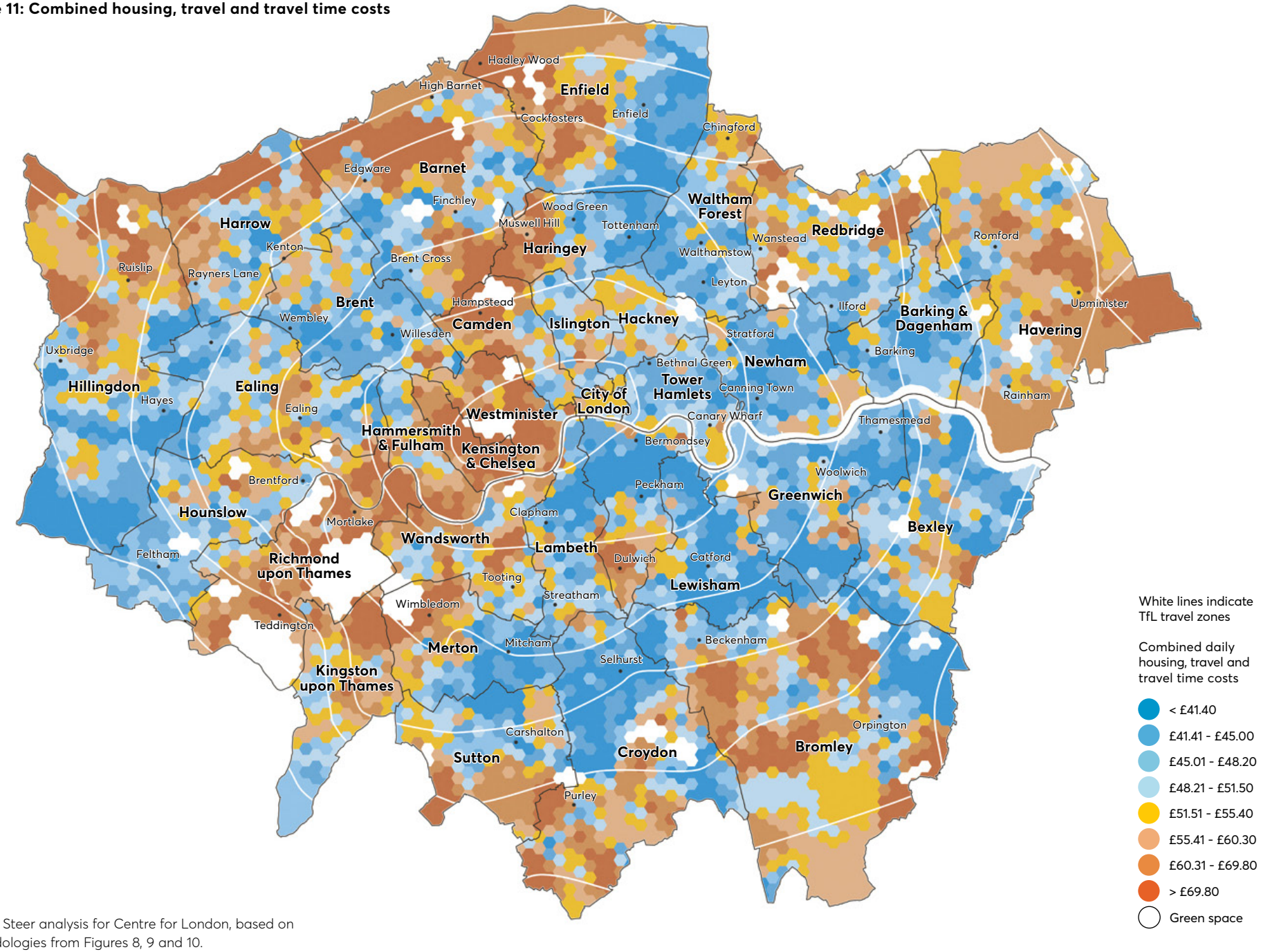
Source: Steer analysis for Centre for London, based on travel time to and from Charing Cross, multiplied by hourly wage from GLA 2015 household income estimates.

Figure 10: Average daily housing costs for owner-occupied and privately rented homes only



Source: Steer analysis for Centre for London, based on average house prices (Land Registry, 2018) and private housing rents (Valuation Office Agency, 2018) converted to daily costs per adult, weighted by proportion of residents in these tenures (Census, 2011).

Figure 11: Combined housing, travel and travel time costs



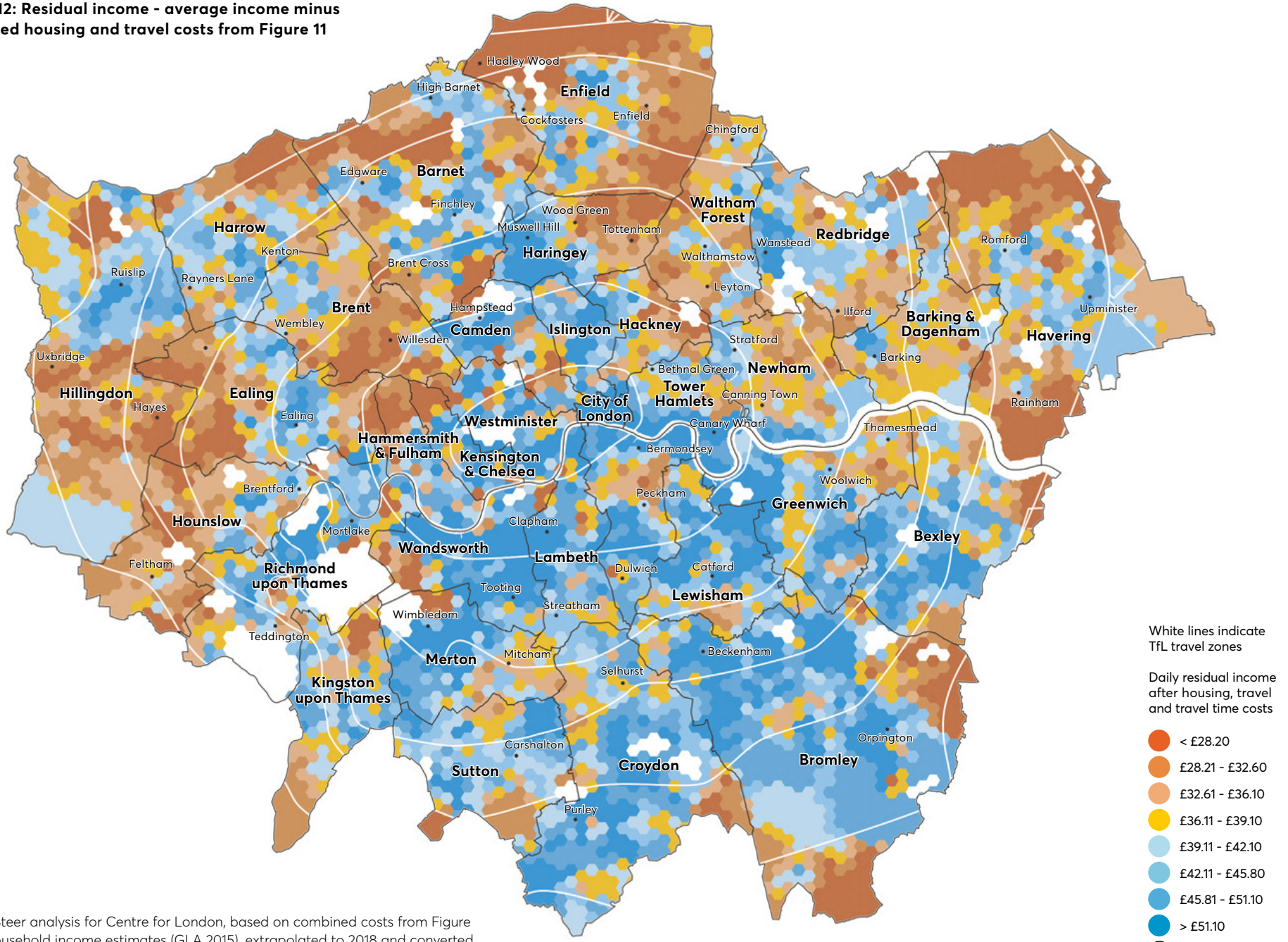
White lines indicate TfL travel zones

Combined daily housing, travel and travel time costs

- < £41.40
- £41.41 - £45.00
- £45.01 - £48.20
- £48.21 - £51.50
- £51.51 - £55.40
- £55.41 - £60.30
- £60.31 - £69.80
- > £69.80
- Green space

Source: Steer analysis for Centre for London, based on methodologies from Figures 8, 9 and 10.

Figure 12: Residual income - average income minus combined housing and travel costs from Figure 11



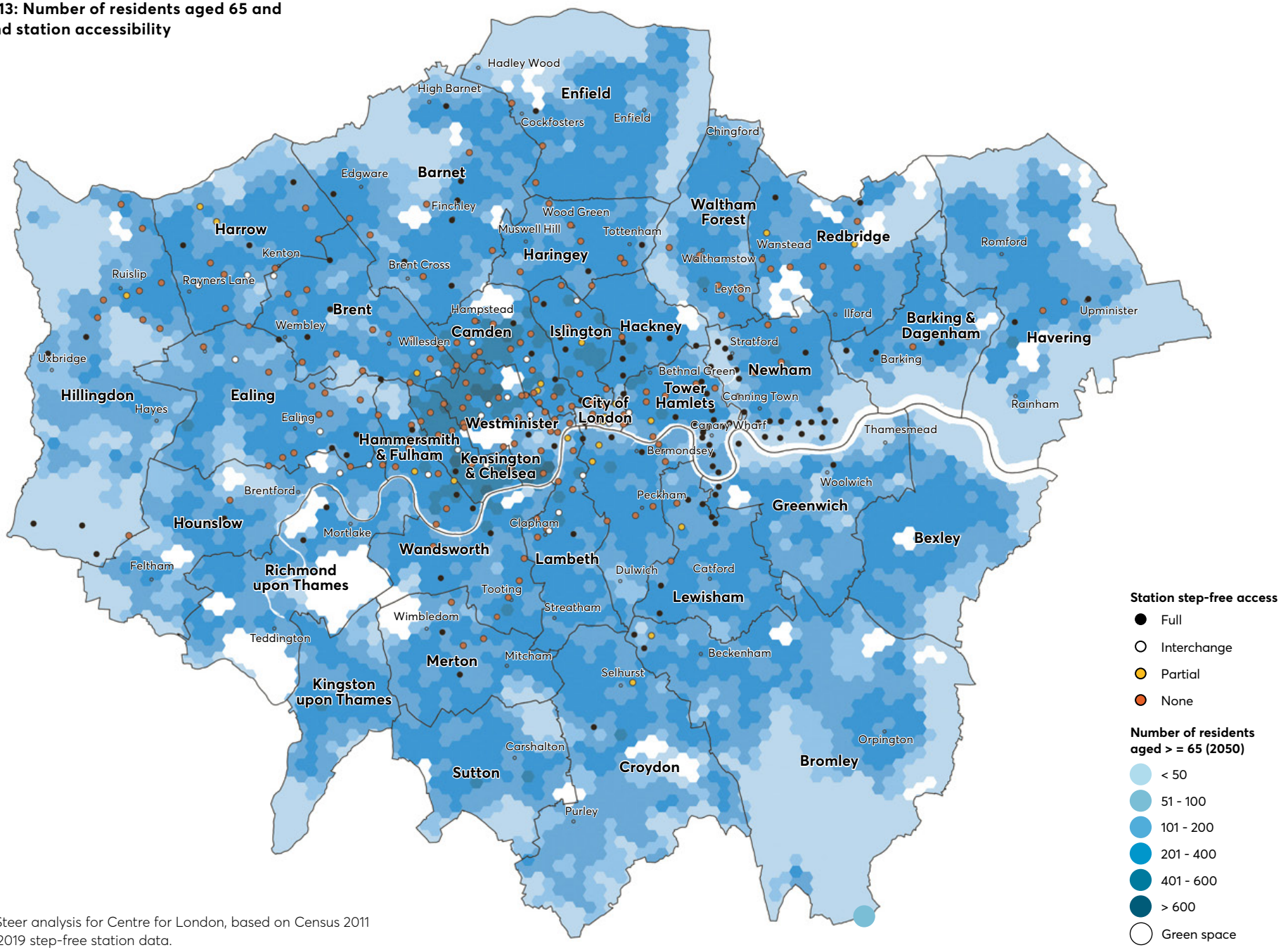
White lines indicate TfL travel zones

Daily residual income after housing, travel and travel time costs

- < £28.20
- £28.21 - £32.60
- £32.61 - £36.10
- £36.11 - £39.10
- £39.11 - £42.10
- £42.11 - £45.80
- £45.81 - £51.10
- > £51.10
- Green space

Source: Steer analysis for Centre for London, based on combined costs from Figure 11 and household income estimates (GLA 2015), extrapolated to 2018 and converted to income per person.

Figure 13: Number of residents aged 65 and over and station accessibility



Source: Steer analysis for Centre for London, based on Census 2011 and TfL 2019 step-free station data.

Figure 12 compares local incomes against the costs of housing and travel to show how "affordable" different areas of London actually are. It shows that even higher-cost areas like Westminster, Kensington and Chelsea, Hampstead and Muswell Hill are relatively affordable for their higher-income residents. In lower-cost areas like Tottenham, despite low housing and travel costs, low incomes mean that people struggle to afford them. Compared to high-wage areas, residents on lower incomes cannot afford to travel far, which may be one factor behind their higher likelihood to work more locally. This significantly limits employment opportunities – meaning that people become trapped in a vicious affordability cycle.

Broadly, we can split London into four area categories:

- **Low cost, high income:** areas such as parts of Tower Hamlets and Royal Docks have comparatively lower costs than other areas, and high-income residents benefit from good connectivity.

- **High cost, high income:** central areas with bet ter access to opportunities and services – such as Westminster, Kensington and Chelsea, City of London, Hammersmith and Fulham and Dulwich – have low travel cwosts but high housing costs, which are only affordable for individuals with high incomes.

- **Low cost, low income:** relatively low-cost areas such as Tottenham, Walthamstow, Elephant and Castle, Kennington, Borough, Brent, Hounslow, Hayes and Uxbridge are still unaffordable for people with low incomes that can only cover essential spending.

- **High cost, low income:** areas such as south Bromley, north Havering and north Enfield generally have low housing prices allowing people with low incomes to live there – but they also have high travel times and costs, resulting in poor affordability.

This section found that high housing and travel costs may lead to spatial and social exclusion for people on low incomes. Yet what if you have affordable transport available locally, but you cannot use it because of other physical or non-physical barriers? Accessibility is the final factor that affects people's ability to use transport.

Accessibility

Not everyone is equally able to access the transport network. Some groups of Londoners face significant physical and psychological barriers. Much of this section draws on feedback from our focus group participants, particularly those with different disabilities and mobility challenges.

Visible and non-visible challenges

First, disabled people face considerable physical challenges. People with wheelchairs and mobility aids, the hard of hearing, the blind and the visually impaired all require some physical adaptations such as step-free access (enabled via level access, ramps and lifts), notice board and audio announcements, and assistance from staff. As a result, 45 per cent of disabled Londoners find planning and making trips by public transport stressful.[25]

People with a range of non-visible conditions – such as autism, cognitive impairments and mental disabilities like dementia or Alzheimer's disease – can also struggle to use the transport system. For instance, noise and audio announcements can cause significant distress to those with autism or anxiety. Travellers with dementia may have difficulty with routes, dealing with money, or interacting with other passengers. They may forget where they are going and where to get off, or be confused by the layout of stations – making it difficult to travel on public transport unaccompanied.[26]

Older people may face all these challenges, as both physical disability and non-physical conditions become more prevalent with age. Continuous improvements in healthcare have allowed people to live longer lives. However, this means that for many a large proportion of life is spent in ill health. Men in London can expect

to spend approximately 80 per cent of their lives in good health and free of disability, and for women – who have a longer life expectancy – the proportion is closer to three-quarters. For socioeconomic reasons, this measure also shows a high degree of variation among different areas of London: for men it ranges from 73 per cent in Hackney to 86 per cent in Sutton, and for women ranges from 69 per cent in Tower Hamlets to 84 per cent in Southwark.[27]

How different modes compare

Lack of step-free access is a particular barrier to accessing the Tube and train network. With many stations built decades ago and spread over many different levels, only a quarter of London's Underground stations and half of London's Overground stations provide step-free access.[28] In addition, step-free access at some stations is only partial. If you require step-free access, making a single journey can take over an hour longer than if you could access the whole network.[29] This can severely limit disabled Londoners' travel options, preventing them from making a journey at all and potentially exacerbating social and economic disadvantages for them.

Mapping current concentrations of older residents against station accessibility shows that large numbers of older residents can be found in central and Inner London – where stations with no step-free access predominate (see Figure 13) – rather than in areas such as Docklands, where the DLR and Jubilee line offer better accessibility.

The Mayor has pledged to improve step-free access, with ambitions to halve the additional journey time required by those using step-free options. The opening of the Elizabeth line and other Tube and rail improvements will add step-free connectivity to many areas.[30] However, it will also be important to extend step-free access to existing stations where possible – and ensure that new developments have good access to healthcare, retail and leisure facilities so that people do not need to travel far on a regular basis.

Many disabled Londoners also view staff support as a critical factor in enabling access to the transport network. While the Tube and trains can be more challenging for

people requiring step-free access, TfL offers a "turn up and go" system for requesting staff assistance at stations with no need to pre-book. Focus group participants said that receiving support from staff on the network was reassuring and made journeys easier. However, stations may not always be staffed sufficiently, and staff may not always be available – or it may take too long to receive assistance.

Conversely, National Rail stations recommend (or require) advance notice to ensure that assistance for disabled users can be provided. And while buses are now more easily accessible for disabled people, with wheelchair ramps and designated priority spaces, focus group participants highlighted that bus drivers are not always willing or able to help passengers. As a result, 53 per cent of wheelchair users find it impossible to use the bus without help.[31] In addition to being confined to a cabin and unable to help wheelchair users into priority spaces, bus drivers may park far from the kerb or pull away before older or frail people have managed to sit down.

Those with less visible conditions also seem to benefit less from targeted support. TfL and some bus companies have started to offer their staff dementia training (see case study below). However, station redesign measures that could help people with invisible conditions are often deemed to be unfeasible due to resource constraints. Campaigners for groups with less visible conditions find it challenging to bring about changes, as investments and upgrades still tend to be aimed at making transport systems more physically accessible.

Case study: Co-designed Bus Driver Training

Two charities based in Tower Hamlets have identified that driver behaviour can have a serious impact on older and disabled people's ability to access buses. Bus driver training has long been developed in collaboration with disabled and older people's organisations like Transport for All, Age UK and RNIB. Recognising the benefit of lived experience, disabled people from Real and older people from Toynbee Hall have come together to propose co-designed training for bus drivers using participatory training techniques. This training will allow drivers to experience barriers to access first-hand and how they can be overcome. The

groups aim to co-design the training and put the proposal to TfL and London-based bus companies in the coming year.

Case study: A dementia-friendly city

In order to tackle some of the challenges felt by those living with dementia, the Mayor has pledged to make London a dementia-friendly city by 2022. This includes helping businesses become dementia-friendly, advancing understanding of the condition, and improving access to public transport. To accomplish this, all TfL staff are to receive training to be dementia friendly; clear stopping information is to be installed on buses (both visual and audio); Freedom Pass eligibility will be available for those with early onset dementia; and Taxicard eligibility will be determined based on mental factors as well as physical criteria.

In situations where they were unable to access staff support, focus group participants reported that they would often have to rely on members of the public to assist them. One visually impaired participant described being guided by a passenger from their terminated bus to another bus stop, while another described asking other passengers where her train would stop due to a lack of audio announcements. Such experiences made people feel less independent and caused concern about navigating the transport network alone.

> "You are just at the mercy of others, you are not independent."

Private vehicles and taxis

Due to the difficulties of using mainstream public transport, some disabled Londoners resort to using private cars, taxis or minicabs. Across England, people with a mobility difficulty make on average 40 per cent fewer trips per year, but make more trips as a car/van passenger and by taxi/minicab.[32] Some boroughs provide door-to-door transport through Dial-a-Ride, and there is some support with taxi costs through the London-wide Taxicard scheme, which provides subsidised transport in taxis and private hire vehicles for London residents who have serious mobility impairments or are seriously visually impaired. However, the number of journeys offered differs by local authority: for example, disabled

people in Newham are offered 144 trips a year, while in Harrow they are only offered 40. Some also allocate fewer Taxicard journeys to residents who claim the disability-related Freedom Pass.[33] This creates differences in people's ability to access a door-to-door service and move around the city.

A number of focus group participants also found the Dial-a-Ride and Taxicard scheme services to be unreliable. Some said they had missed appointments because the vehicle was delayed or failed to turn up. The campaign group, Transport for All, has raised similar concerns about the Taxicard service, highlighting problems with booking taxis, long wait times, a lack of suitable cars for those in larger wheelchairs and mobility scooters, and unfair waiting charges.[34]

> "I'd try and book a taxi with Taxicard but can still be waiting and miss the appointment."

However, access to private vehicles has improved: beginning this year, the government has extended the Blue Badge free parking scheme to those with hidden disabilities such as autism and mental health conditions.[35]

Evidently, navigating the public transport system is more complicated and time-consuming for people with limited mobility or those who require support. While policies such as expanding the step-free network are certainly welcome and will have a positive impact on many Londoners, a broader approach to accessibility and inclusion is crucial in tackling some of the barriers to accessing the network.

Barriers to walking and cycling

Beyond public transport, it is equally important for streets and the wider public realm to be designed in such a way as to provide good opportunities for walking and cycling. Regular physical activity has been found hugely beneficial for both physical and mental health. Although the official guidelines say adults should aim for a minimum of 150 minutes of physical activity a week, any small amount of additional exercise by someone

who was previously inactive can have significant health benefits. As physical ability diminishes with age, walking can be among the few forms of exercise older people are able to engage in. Similarly, evidence shows that cycling among older people has a positive health impact: a study of a group of cyclists aged 55 to 79 found that they had levels of physiological function comparable to people much younger.[36] Yet cycling among older people is significantly less common in the UK than other European countries such as Germany and the Netherlands.

Equally, cycling may be an accessible form of exercise for disabled people. Different types of adapted bikes exist, and many disabled people find cycling easier than walking, using their cycle as a mobility aid. This is particularly important for people with a long-term limiting disability, who are twice as likely to be physically inactive than those without such disability and live shorter lives as a result.[37] One wheelchair user at the focus groups noted that people with disabilities may have "less energy and time than others", meaning that it can be challenging to get to a gym or take part in sport. As such, active transport was cited as an important way for this group to exercise.

However, uneven pavements, lack of dropped kerbs and physical obstructions can be significant barriers to disabled people, as well as older people and those with pushchairs. For example, 65 per cent of disabled Londoners consider the condition of pavements a barrier to walking more.[38] In our focus groups, visually impaired participants also raised the issue of street clutter, which was viewed as getting worse – especially with the profusion of parked dockless bicycles and electric vehicle chargers on pavements.

Nonetheless, electric bikes can enable people with diminished physical ability to cycle, and one in five disabled cyclists currently uses some sort of electrical assistance when cycling.[39] Yet only around 20,000 electric bicycles are sold every year in the UK, compared to 300,000 in Germany and 175,000 in Netherlands.[40] One barrier may be cost: electric, adapted and cargo bicycles are more expensive. While Cycle to Work schemes now

include electric bicycles, older and disabled people are more likely to be out of work or retired. In this regard, bike share schemes can play a role in increasing cycling uptake among older people, but an alternative scheme would be needed to support disabled people with the cost of adapted bikes. Adding cargo bikes to bike hire schemes could also enable parents to cycle with small children in tow.

Unsuitable infrastructure provision and a poor built environment is another barrier to cycling for older and disabled people. Older focus group participants felt more concerned about cycling on busy roads, while disabled participants expressed frustration with physical barriers such as gates and bollards, the inconsistent quality of cycle lanes, and cycle lanes that are not wide enough for adapted bikes. Inclusive infrastructure design is crucial in enabling active travel for older and disabled people on equal terms, and charities like Wheels for Wellbeing have produced design guides for inclusive cycling.[41]

> "If disabled cyclists knew what kind of infrastructure they were going to get in Brixton and that it's going to be the same in Islington that would ease a lot of problems."

More generally, lack of quality infrastructure provision is a barrier to cycling for most under-represented groups. The ways that streets are designed and road space allocated can favour particular groups of road users and types of journey. In some parts of London, the sheer dominance of cars and other motor vehicles – both on the roads and at the kerbside – can create a hostile environment that makes cycling unattractive, particularly for vulnerable users.

The Healthy Streets principles offer an opportunity to rebalance streets in favour of people and enable walking and cycling. In places where bold action has been taken to reprioritise streets and offer quality infrastructure – such as Waltham Forest's "Mini-Holland" – the number of people cycling has seen an increase.[42]

3.
Impacts on different groups

Transport impacts on people's lives – through the choices that people make themselves, and through the choices that other people make around them. For instance, one person's health may be affected by having a sedentary lifestyle, but someone else's health may also be affected by the air pollution created by people driving cars. The key question is: do these negative impacts affect different groups in London disproportionately?

Health and wellbeing

Londoners lead busy lives and many struggle to fit exercise into their busy routines. The commute to work may therefore provide a valuable opportunity to be physically active by walking or cycling some or all of the way. However, inadequate cycling infrastructure and a lack of public transport options may limit people's ability to choose these more sustainable modes, leading to car dependency. In turn, sedentary lifestyles affect people's health, contributing to obesity and related conditions such as heart disease or diabetes.

The proportion of London adults classed as overweight or obese is lower than the national average (56 per cent compared to 62 per cent across England), while the same proportion (two-thirds) is classed as "physically active" for both London and England. However, there are significant variations across the capital, with boroughs in east and northwest London faring the worst and those in central and southwest London faring the best. In contrast to adults, the proportion of children in London classed as overweight or obese is higher than the national average (38 per cent compared to 34 per cent across England), although similar proportions of children are physically active in London and England. Again, there are variations across London, with levels of child obesity highest in east and northeast boroughs.[43]

Centre for London's analysis found a relatively strong correlation at borough level between weight problems, inactivity and low levels of walking and cycling.[44] With less access to public transport in Outer London, reliance on private cars is higher and levels of active travel lower.

The proportion of trips made via walking and cycling is lowest for residents in Havering (20 per cent), Hillingdon (21 per cent), Bexley and Redbridge (both 22 per cent).[45]

For children in London, there was no clear overall link between boroughs' obesity and physical activity rates. Yet there was a clear link to socioeconomic factors, with more children classed as overweight or obese in areas of high deprivation or with higher proportions of non-white residents.[46] This shows that, particularly in the formative years, health may be linked more closely to socioeconomic factors than physical activity.

Air pollution

Air pollution is a major health concern in London. It is responsible for up to 141,000 life years lost, as well as over 3,400 hospital admissions ever year, and its impacts are estimated to cost £3.7 billion per annum.[47] With half of all air pollution in London coming from motor vehicles, tackling the problem has become a priority for the Mayor.

Concentrations of all three of the main pollutants – nitrogen dioxide (NO_2), particulate matter (PM10) and fine particulates (PM2.5) – have remained consistently above legal limits. Over two million people are living with illegal levels of air pollution, and many main roads in London regularly breach legal limits for NO_2.[48] The introduction of the Ultra Low Emission Zone in April 2019, which charges the most polluting vehicles entering central London, has made a dent in air pollution levels – particularly NO_2 concentrations. By September 2019, these were 36 per cent lower than in February 2017 when the zone was announced.[49]

However, air pollution remains a significant problem. Unlike inactivity, air pollution from motor vehicles affects not only the users of that vehicle but also anyone else in close proximity. There is a common misconception that people inside a vehicle have a lower exposure to air pollution than cyclists and pedestrians, but evidence shows that the reverse is true, due to drivers and passengers spending longer in traffic.[50] Our survey did highlight that one-third of respondents saw concern about air pollution as a barrier to using a private car or

motorcycle. While it is not clear whether this is a concern for their own health or about causing damage to others, it may signify a growing public awareness of the health impacts of air pollution.

Monitoring data also shows that air pollution is concentrated not only in central London, but also in any areas close to very busy roads.[51] As a result, people living in the most deprived areas of London are exposed to around a quarter more NO_2 pollution than those living in the wealthiest areas.[52] In addition, the health impacts of air pollution are felt more acutely by some people: older people, children and those with heart and respiratory conditions are particularly vulnerable. This means that children and older people living in more deprived areas are severely at risk of air-pollution-related health conditions.

Finally, other forms of transport also contribute to air pollution. While still within Health and Safety Executive limits, the Underground can have up to 30 times higher levels of particulate matter than beside busy roads. These figures are higher than concentrations reported in other underground transport systems globally, most likely due to the age and average depth of the network.[53] Although this particulate matter is mostly created not from exhaust fumes but from other sources such as textiles, its health impact is as yet unknown.

Safety concern: crime and road danger

London's transport system is highly rated for safety compared to other big cities.[54] Nevertheless, 14 per cent of Londoners cite fear of crime as a deterrent from using public transport, while another 21 per cent identify drunken passengers, intimidation and aggressive behaviour as barriers.[55] There are differences in response across gender and ethnicity. In our survey, 24 per cent of women cited worries about personal safety as a barrier to using the Tube more, compared to only 13 per cent of men; and 20 per cent of non-white respondents (compared to just 11 per cent of white respondents) reported the same about using the bus.

In fact, overall crime levels on public transport have been declining, but incidents of violence against the person and sexual assault on buses and the Underground have been showing small increases.[56] While this is a concerning trend, it has been suggested that it is partly attributable to successful awareness campaigns that encourage reporting of this type of behaviour.

People's perceptions of safety, however, may also be influenced by overall crime levels. Official rates of recorded crime in London are higher than the England average and, although it has been falling over the longer term, the crime rate consistently increased between mid-2015 and mid-2019 for all major offences – including crime against the person, theft and public disorder.[57]

Perceptions of crime are also in line with this trend. Across England, a higher proportion of people are worried about crime increasing at the national level than at the local level, but concern about both has been rising.[58] More women say that crime has increased than men, and Bangladeshi people are the most concerned of all ethnic groups about crime at the local level. Compared to other regions, Londoners worry the least about crime at the national level but are among the most concerned about crime at the local level.[59]

Casualties on the road are another factor that affects safety. In 2018, the Mayor of London adopted the Vision Zero action plan, which aims to eliminate all deaths and serious injuries on London's roads by 2041.[60] As part of this, a 20mph speed limit is being introduced on all central London roads managed by TfL, with ambitions to expand this speed limit to high-risk areas in London's suburbs.[61] While 2018 marked the lowest number of casualties on London's roads on record – and the overall number of people killed and seriously injured has been declining over the long term – people walking, cycling and motorcycling are most at risk (making up nearly four-fifths of all people killed or seriously injured).[62]

By group type, the most deprived pedestrians are more than twice as likely to be injured than the least deprived.[63] Unfortunately, traffic-calming measures

seem to have a limited impact in reducing such inequalities. In fact, 20mph zones in deprived areas have no discernible effect across different deprivation levels, and rates of people killed or seriously injured in road accidents actually increase among people of black ethnic origin.[64] This demonstrates that despite improvements in pedestrian safety, there is a persistent safety gap related to ethnicity and levels of deprivation.

Safety concerns are also a major barrier to cycling across all groups. Without infrastructure that segregates cyclists from other forms of traffic, London's roads are often viewed as a hostile environment for cycling.[65] This is particularly the case for older and disabled cyclists who may feel more physically vulnerable than others. Even though the number of casualties has decreased since the 1990s (despite a significant increase in cycling in the capital),[66] concerns about safety remain high, with 30 per cent of respondents in our survey reporting safety as a barrier to cycling.

Cycling also has an image problem: half of Londoners say that cycling in London is not for "people like them".[67] TfL has now renamed "Cycle Superhighways" – which gave the impression that cycling is a high-speed competitive sport – as "Cycleways".

> "Cycle Superhighways are good infrastructure but the aggression from some of the users can be quite intimidating."

Overall, people living in poorer areas and from ethnic minorities are more likely to be affected by road danger and to be concerned about local crime levels. Both pedestrians and cyclists remain vulnerable to road collisions. Addressing both crime and road accident levels – as well as people's perceptions of them – is important in removing barriers to using these transport options.

Barriers and impacts on specific groups

This section summarises the main barriers to accessing transport, and the exposure to negative impacts of transport provision for specific groups.

Older citizens

While there are fewer older people in the capital compared with the rest of the country, a higher proportion of London pensioners live in poverty (19 per cent vs. 14 per cent in England).[68] As over-60s in London have access to free public transport, however, cost is not a significant barrier to travel for them. Only 18 per cent of over-65s cite cost as a barrier to using the train more, and just 5 per cent of this group report the same about the Tube (compared to 35 per cent and 25 per cent respectively for all Londoners).

Factors like proximity to their home and destination, fewer steps and greater seat availability mean that older people tend to use buses more. They are also much more likely to drive, according to our polling. However, connectivity seemed to be a concern, and with recent changes to bus routes, interchanges are increasingly necessary for some journeys. Some older people prefer to access services and activities in one direct trip, so interchanges or multiple modes of transport could be daunting for them; a number were worried about how they would move between platforms or bus stops.

> "Sometimes, before I go out, I think: 'Do I really need the hassle?'"

Personal safety was also a concern for older people. Focus group participants expressed concerns about other passengers' behaviour, and said that they would not take transport at certain times in order to avoid busy periods and potential overcrowding. Furthermore, some felt that members of staff did not always consider their physical vulnerability. In one instance, an older person had to be lifted off the bus by members of the public, as the driver could not see her and therefore did not lower the vehicle for her to get off. These experiences deter older people from using public transport, as they worry about injury and the stress of making their way through the busy transport system. Our polling also showed that older people are more likely to worry about their safety when walking, and have physical barriers to both walking and cycling.

Disabled people

In addition to the accessibility challenges discussed at length above, inconsistency across the network was deemed to be a problem for disabled people. A number of focus group participants highlighted issues such as audio announcements on trains not always being made, the buzzer for assistance on the Underground not always being in the same place, some stations not always being staffed, and cycling infrastructure varying. All these inconsistencies made travelling particularly stressful for disabled Londoners who need extra assistance to make their journey, or who may feel physically vulnerable on the network.

Some participants stressed that disabled Londoners must complain to TfL to flag the issues they face on the transport network. For these participants, this was the only way to draw attention to the challenges disabled Londoners face and encourage improvements to the network. However, others found this process complicated and lengthy.

Low-income Londoners

According to official figures, over a quarter of the city's population lives in a low-income household.[69] Londoners in these households are more likely to be women, from a minority ethnic group, older, retired and/or disabled compared to all Londoners and those in higher-income households.[70] Those on low incomes are more likely to be exposed to the negative impacts of transport provision: they are more likely to be killed or seriously injured on the roads, suffer the harmful effects of air pollution, and be the victims of street crime.[71]

Our survey showed Londoners on low incomes are less likely to use the tube or rail: 38 per cent of people with a monthly take-home income of £1,000 or less use the Tube (including Overground) at least once a week, compared to 61 per cent for people with a monthly take-home income of over £2,000. Londoners with an income of £1,000 or less are also more likely to use the bus (68 per cent), compared to 63 per cent for people with an income of over £2,000 - and to make bus-only journeys,

in large part due to buses' relative affordability. Although the introduction of the Hopper fare has eliminated the cost difference associated with changing between buses, changes still have time cost implications – potentially adding another 10-15 minutes onto journey times where an interchange is necessary. Overall, many low-income Londoners are choosing cheaper but longer routes and sacrificing other discretionary expenditure to afford travel costs.

Despite being a cheap way to get around, poorer Londoners are less likely to cycle. While safety concerns are the main barrier across the board, the upfront cost, and lack of outside or indoor space, can also be issue for poorer Londoners. Disabled or older people are more likely to live in low-income households, suggesting that there may be some physical barriers to active transport for this group. In our survey of Londoners, more than twice as many DE compared to AB respondents identified physical challenges to cycling and walking as barriers.[72] Concerns about air pollution, which is more prevalent in deprived areas, can also make active transport less appealing. While the evidence suggests the health benefits of physical activity outweigh the potential harms,[73] many perceive it to be harmful – or may simply not enjoy the experience due to busy and congested streets.

Women

Women tend to move around cities in different ways to men. Generally, women make more complicated trips, with shorter distances and multiple stages, as these trips are more likely to be part of a chain of activities like shopping and care giving.[74] However, public transport and cycling routes are often designed with travel-to-work patterns in mind – which tend to be more radial – so women are disadvantaged when this results in a lack of orbital transport and cycling networks. Women are also more likely to travel accompanied by children and/or carrying luggage, so travelling by car is frequently seen as a necessity.

"I get the Thames Clipper – it's very expensive but it's the safest way to get around."

Women are also more likely than men to raise safety concerns about transport. In our survey of Londoners, women were nearly twice as likely as men to report personal safety as a barrier to walking and using public transport more. Concern about personal safety also deters women from using car-clubs and taxi-ride hailing services. One focus group participant discussed taking a more expensive route because her door-to-door journey felt safer. Many women in the capital will weigh up factors like time, cost and safety to decide how they travel at different times of the day. Women use the bus more than men during the day, but less at night,[75] adapting travel patterns with safety-related considerations at the core.

Ethnic minorities

Ethnic minority Londoners make up 41 per cent of the city's population (compared to 10 per cent of the population in England).[76] Like low-income Londoners, ethnic minority groups in the capital are more likely to experience the negative impacts of the transport system, experiencing higher rates of road deaths and higher exposure to pollution.

Cost is a specific barrier to ethnic minority Londoners, who as a result tend to use buses more often. Our survey found that non-white respondents were significantly more likely than white respondents to use the bus on a daily basis (26 per cent compared to 16 per cent). Compared to other groups, non-white Londoners cited cost as a barrier to using different modes of transport more often: 33 per cent of non-white respondents reported this with respect to travelling by Tube, compared to just 21 per cent of white respondents.

"The issue with buses often comes down to waiting and interchange – you may have to wait in an isolated area that you're not familiar with."

However, safety was a bigger concern for ethnic minority Londoners than other groups, with 20 per cent saying that concerns about personal safety were a barrier to using the bus more (compared to just 11 per cent of white respondents). Participants in our focus groups suggested that waiting at bus stops could leave people feeling vulnerable, especially in areas that they were unfamiliar with. Additionally, we know that levels of reported crime are higher on buses than on other types of transport. With non-white groups using buses more frequently, it may be the case that they are more regularly exposed to incidents and are therefore more concerned than others about safety.

Non-white groups are also under-represented in cycling statistics. In addition to safety concerns, there are cultural barriers to cycling: some communities have been found to have negative perceptions of cycling, with car ownership seen as a sign of success and cycling viewed as low-status.[77] In turn, having few role models perpetuates lower participation. For example, in Hackney, where many school children receive cycling training at school, levels of uptake outside school remain low because parents (typically non-cyclists) do not see it as a valid form of transport.[78] Targeted campaigns can help broaden access to cycling. Cycling groups – like the Cycle Sisters in Waltham Forest for Muslim women, and other inter-faith cycling events – can broaden travel horizons and raise awareness of cycling as both a physical activity and a mode of transport.

Young people

London has a younger age profile than the rest of England – a pattern especially pronounced in Inner London.[79]

The main barrier to transport for younger people is cost, with stark differences in spending between older and younger Londoners. Our survey found that young people spend a higher proportion of their income on travel, and that 24 per cent of those aged 18-24 felt that cost was a barrier to using the Tube more frequently (compared to just 5 per cent of those aged 65 and over). Alongside higher transport costs, younger people are

more likely to face high rental costs. As a result, young Londoners report balancing factors like cost, time and safety when they make decisions about how they travel. Some students we spoke to reported that they would sometimes take longer routes by bus to save money, but some also said that this could make them feel unsafe.

> "The affordability issue forces you to make a longer journey by bus while you'd prefer a quicker journey on train where it's lit up and you'll feel safer."

Younger Londoners are also more concerned about overcrowding than older Londoners, with 69 per cent of those aged 25-34 (compared to 39 per cent of those aged 65 and over) citing this as a barrier to using the Tube more frequently. This divergence is likely to be related to different patterns of use. Those aged 25-34 are more likely to be economically active, and therefore using the Tube during peak times. Availability was also an issue: 47 per cent of those aged 18-24 (compared to just 13 per cent of over those 65 and over) said that the Tube not being available at specific times was a barrier to using it more – reflecting the limited operation and coverage of the Night Tube. Likewise, 20 per cent of those aged 18-24 said that a barrier to using rail more is that "it is too infrequent", compared to just 4 per cent of over-65s. This highlights some distinct travel patterns and barriers to use for this group.

Although there are low levels of reported physical barriers to cycling, uptake among young Londoners remains low. Young Londoners we spoke to said that cycling felt like a professional sport in the city. According to the survey, just 9 per cent of those aged 18-24 say that they cycle on a weekly basis, and 12 per cent say they cycle at least once a month. This is a significantly lower proportion than those aged 25-54, of whom roughly 20 per cent reported that they cycle weekly. While cycling frequency is particularly low among young Londoners, the biggest barrier is safety, which is in line with the barriers reported by other age groups.

User typologies

To better illustrate some of the complex challenges individuals can face, we created some fictional user profiles, based on input from the focus groups and Transport for London's customer segmentation tool.[80]

The student

Luke is a student who lives in a flatshare in Finchley. He works part-time in a pub to support himself but also receives some financial help from his parents. He holds an 18+ Student Oyster photocard and buys weekly bus passes with 30 per cent discount, as he tends to travel by bus. But he also occasionally takes the Tube, paying the full pay-as-you-go fare. He has additionally invested in a 16-25 Railcard, which gives him a third off fares when he visits friends and family in the holidays. Despite getting discounted travel, Luke's low monthly income and high outgoings mean that he considers the cost of every journey. However, Luke sometimes feels unsafe travelling by bus, especially at night or in an area that he doesn't know. On such occasions, he prefers to take the Night Tube or an Uber.

Net household income: £550/month plus parental support
Housing costs: £400/month
Travel costs: £75/month

The Outer London retired couple

Charles and Ivy are a retired couple living Bromley. Ivy has dementia and Charles is her principal carer. They have grown-up children that visit occasionally. Financially, they are in a relatively sound position with good pensions and the mortgage paid off. But Ivy gets confused and forgetful and must be accompanied at all times. Rather than attempt public transport, which is not very dense or frequent, Charles prefers to drive door-to-door. Charles's travel patterns are mostly determined by his role as carer, including frequent accompanying trips to medical appointments – except for the one day a week when a nurse comes to the house, allowing him to do the weekly shop. Without respite care, Charles is beginning to feel isolated. He used to have a much more active

lifestyle during his working life and he wishes he had more opportunity for social interaction.
Net household income: £1,400/month
Housing costs: £0
Travel costs: £60/month

The Inner London young couple

Jane and Steve are a couple in their mid-30s currently living in privately rented accommodation in Canning Town. Jane works for a creative agency and commutes by Tube every day, while Steve is a council officer and cycles to work. They are members of a car club and occasionally use shared cars for shopping or day trips outside London. The couple would like more space as they are now expecting their first child, and have (with a contribution from their parents) saved for a deposit to buy a property. They are currently considering the options available to them. They would prefer to remain in east London, and could afford a three-bedroom house approximately 1km from Hornchurch station. Jane's Travelcard would increase by £60/month and David would need to take the train for part of his journey, so their travel costs would increase considerably and their door-to-door commute times would double. If they are to live so far from their existing social networks, they wonder whether it might be better to move out of London completely to find a cheaper property. Initially they won't save much due to the cost of National Rail season tickets, but they would look to reorient their careers and social networks over time.
Net household income: £3,500/month
Housing costs: £1,600/month
Travel costs: £260/month

The housing association tenants

The young Davies family lives in a housing association property in Peckham with two children. The parents work full- and part-time for the NHS. The family relies heavily on buses for travel to work, school and local facilities. The bus is affordable and their area is relatively well served, but the service can be unreliable when

juggling work and parental commitments. They also use trains for trips out at the weekends or to get to work faster when running late, and sometimes they rely on lifts from colleagues and minicabs when working early or late shifts. Since one of their children has been diagnosed with asthma, the Davies parents are also increasingly worried about the effects of air pollution on their children because their home and school are both located near major roads.
Net household income: £2,800/month
Housing costs: £1,000/month
Travel costs: £300/month

The council home single parent

Liz is a single parent living in social housing in Tottenham. She has no family living nearby, so there is no one else to drop off and collect her five-year-old daughter Toni from school. She works part-time in a supermarket and takes the bus to and from work. Liz used to walk her daughter to and from nursery in her pushchair, although it took her 30 minutes. Since the Hopper fare was introduced, she can now take the bus for the school run too. Liz cannot afford a car or private transport, so day trips are a very rare luxury. Instead, Toni plays with her school friends in the local playground and Liz volunteers in the community centre.
Net household income: £500/month
Housing costs: £380/month paid for by housing benefit
Travel costs: £63/month

The blind commuter

Rupi is 45, registered blind and has a guide dog. She lives in Tooting and works full time in customer services for a bank in Holborn. She is independent but sometimes finds getting around at peak times a challenge, so she starts and finishes later to avoid the worst overcrowding. Generally Rupi asks for assistance from station staff, but sometimes it can be difficult and time-consuming to wait for staff during peak hours, so she will ask members of the public for help. Rupi doesn't take taxis very often, as she has a Freedom Pass. In her

borough, Freedom Pass holders are entitled to half the Taxicard credits that people without a Freedom Pass receive (approximately 4 trips a month of up to £8.50 or 2 longer journeys of up to £17). Sometimes she needs to take a taxi, as her guide dog is not trained for escalators – meaning that some stations are not accessible for her. Any trips in excess of her Taxicard credits increase costs.
Net household income: £2,200/month
Housing costs: £1,400
Travel costs: £20/month

The disabled cyclist

Helena is a wheelchair user who lives in Stoke Newington with her partner John and works for a charity based near Old Street. Helena mostly uses her adapted bicycle to get to work via the CS1, but will occasionally use the bus, while John travels by Overground and Tube to his office near Tottenham Court Road. They bought a new-build flat three years ago and had to make adaptations for Helena's needs. Helena spent £2,000 on her adapted bicycle, and she acknowledges the cost can be prohibitive for many other disabled people. As Helena has a Freedom Pass, saving money is not her main motivation for cycling, but she finds that cycling to and from work is a good way to get some exercise into her busy day. Despite enjoying cycling to work, Helena feels quite vulnerable on the road compared to other road users. She much prefers segregated routes where she is away from other traffic – yet on some of these routes the pace of cycling can be fast, and other cyclists can be impatient. When visiting places she is unfamiliar with, she prefers to take the bus rather than risk encountering inconsistent cycling infrastructure.
Net household income: £4,200/month
Housing costs: £1,200/month
Travel costs: £130/month

Recommendations

London's transport system does not offer equitable access to all Londoners, nor does provision and use have an equitable impact on all groups. Many campaigns currently underway have made recommendations that will help address equity issues in transport – and which we endorse. These include:

- Increasing access to cycling through improvements to cycling infrastructure and campaigns to increase access and usage among all communities.

- Supporting retired and disabled people with the cost of purchasing electric or adapted bikes as an alternative to the Cycle to Work scheme, and providing cargo bike hire schemes to support people with limited storage space.

- Improving air quality by supporting the move to cleaner vehicles through the Ultra Low Emission Zone and vehicle scrappage for low-income and disabled Londoners.

- Improving safety on the roads through lowering speed limits, as well as increased British Transport Police presence and awareness campaigns to help reduce crime and fear of crime on public transport.

- Improving affordability through linking Travelcards, pay-as-you-go caps and rail fares to CPI rather than RPI.

- Widening access to public transport through consistent information, services and announcements.

- Improving step free across the TfL and rail network to make them accessible to all.

Below we make further recommendations on how to build a transport system that offers fair access while supporting the city's prosperity, sustainability and social life.

Re-evaluating how investment decisions are made

To help promote positive impacts and reduce inequality for specific groups, the six factors of equity in transport identified in our framework should be at the centre of transport planning and investment decisions. Central to standard business case appraisals is calculating a Benefit Cost Ratio (BCR) that estimates the financial costs of the project and the monetised value of economic benefits such as journey time savings, job creation, productivity benefits, and access to a wider range of educational and employment opportunities. Appraisals also include an assessment of the scheme's impact on the environment (in terms of noise, air quality, biodiversity, townscape and greenhouse gas emissions) and on groups with protected characteristics (e.g. age, disability, gender reassignment, race, religion, sex, sexual orientation, marriage, civil partnership, pregnancy and maternity status).

Although environmental, equality and social impact assessments can be used to identify potential positive impacts – especially for schemes where this is the main objective – their main purpose is to ensure that any negative impacts are identified and mitigated. In practice, they are not central to the appraisal process, and are not generally a key factor in deciding shortlisted options and whether a project should go ahead or not.

Previous reports have recognised the inadequacy of the existing frameworks in capturing the wider benefits of infrastructure investment.[81] Instead, equity-related and social factors should be proactively considered as a strategic aim in line with the aspirations of the Mayor's Transport Strategy and Equality, Diversity and Inclusion Strategy.[82] As part of their decision-making processes, the Mayor, TfL, boroughs, planners and developers should:

- **Define equity more broadly:** Rather than only focusing on mitigating negative impacts, decision makers should consider strategic objectives like promoting inclusion and reducing poverty, as well as addressing barriers for disabled people, ethnic minorities, seniors, young people and

women. Targeting areas of poor existing transport connections or low air quality would also be in line with wider equity considerations.

- **Prioritise social benefits:** Socio-demographic aims – such as supporting carers, improving access to opportunities for unemployed people, or improving connectivity in areas of high deprivation –should be considered from the early stages of a project alongside economic benefits.

- **Prioritise inclusive design:** Designing for the different needs of children, older citizens or disabled persons from the outset will produce outcomes that are better for everyone. For example, step-free access also benefits people with suitcases or pushchairs, as well as people who simply may not be feeling well that day. Similarly, clearer signage and wayfinding information helps everyone.

- **Prioritise affordable transport:** This report has demonstrated that prioritising affordable transport options is central to increasing opportunities for Londoners on low incomes. However, the current measure of connectivity (PTAL) does not take account of how affordable the available options are. Taking into account only services within certain price levels – or including access to bus services only – could paint a different picture of London's connectivity levels, helping policymakers identify where connections are needed the most.

- **Prioritise active transport:** Quality cycling infrastructure is a main enabler of cycling uptake. When designing new cycle routes, TfL and the boroughs should prioritise roads in areas with high cycling potential, but low take-up and poor existing provision. Similarly, an attractive public realm as well as safe pavements and pedestrian crossings are important for encouraging walking.

- **Prioritise affordable housing:** Improved transport connectivity can help increase housing provision across London, as higher PTAL levels allow building at higher density. However, for major schemes the analysis should consider not only the quantity of housing delivered, but also the type and affordability of this housing – in order to prevent transport investment resulting in displacement of poorer people.

- **Consult better and early:** Improved participation and engagement of local communities at the planning and consultation stages is crucial to understanding the needs of diverse local communities and what would best help local areas.

- **Monitor equity impacts:** The evidence base for the Mayor's Equality, Diversity and Inclusion Strategy includes data on travel behaviour, affordability, accessibility and safety for specific groups,[83] but this is not published regularly or in full. Including such evidence in the annual *Travel in London* reports, as well as other indicators relevant to the Transport and Equity Framework, would enable the regular monitoring of progress.

Recommendation 1: When preparing business cases, the Mayor, TfL, boroughs, planners and developers should consider wider social benefits early on in the process alongside economic benefits. They should also prioritise inclusive design, affordable and active transport investment, and affordable housing development.

Improving affordability

In addition to putting equity at the core of investment decisions, it is also important to look into removing existing barriers to walking, cycling and accessing public transport. As this report showed, affordability is one of the biggest barriers. The current Mayor has attempted to address this through a fares freeze and the Hopper fare.

The Hopper was introduced in September 2016 and allows an unlimited number of bus and tram changes within an hour for a single bus fare. Recent figures show that 368 million Hopper journeys have been made since its launch, with more than 450,000 "hops" now being made each day. [84] Although there is no data on the type of passengers that have benefited, the Hopper fare is designed to help people on low incomes who rely on the buses more (and may previously have been disadvantaged by having to use more than one bus to reach their destination).

The fares freeze was one of Sadiq Khan's key pledges in the 2016 election. However, as previously discussed, this only applies to single fares: Travelcard and Oyster caps continue to be set nationally. These prices have increased in line with RPI – the same as rail fares.[85] For example, since the freeze was implemented, the cost of a weekly Travelcard for zones 1-4 has risen by nearly 10 per cent. This disadvantages regular travellers and commuters, while benefiting less regular travellers and visitors.

Without a boost to ridership, fare freezes or reductions are costly. With the loss of government grant towards operations, TfL's budget was already under strain. A simple calculation based on the number of journeys made shows the Hopper fare has cost £552 million in the three years since its introduction, assuming the same trips would have been made without the Hopper (although it is argued that it may have increased ridership). The Mayor's current fares freeze is also estimated to cost around £640 million over the four-year term.[86]

Yet there are a number of revenue-neutral ways to support disadvantaged groups. We argue that the Mayor should review concessions, along with fares, caps and zone structures, and the scope and application of any future fares freeze.

Concessions

TfL argues that an extensive range of concessions helps mitigate the cost of public transport for certain groups. However, concessions are costly (around £320 million in

total)[87] and are currently subsidised by public transport fare payers, local authorities, and other TfL income such as retained business rates.

We argue that any concessions and discounts, along with other policies, should be justified on equity grounds. Most concessions are targeted at people with low income who may otherwise be unable to pay for their own travel (such as children, students, benefit claimants and pensioners), while for others it helps bridge the gap to employment (e.g. apprentices and job-seekers). Yet most are not means-tested, which means that some recipients may be receiving a benefit at the taxpayer's expense that they could otherwise easily afford.

So how can concessions be made fairer? The different concessions available should be reviewed on the extent to which they enhance fairness and other social benefits, while also considering whether other groups may benefit from targeted discounts or restructured fares to support struggling Londoners.

For example, the Freedom Pass is part of a national policy, funded by London boroughs (with a partial grant from central government and some TfL contribution) and administered by London Councils on their behalf. Londoners used to be eligible for a Freedom Pass upon turning 60. However, from April 2010 eligibility was aligned with the state pension age for women, so has been gradually moving from those over 60 (on 6 April 2010) to those over 65 (on 5 April 2020).[88]

Should the Freedom Pass be means-tested? There are many rich pensioners who could easily afford to pay for travel. But means testing is expensive and would put London pensioners in a different situation from their counterparts outside the capital. The Freedom Pass can also enable pensioners to be less car-reliant (potentially reducing road accident rates) and more physically and socially active, maintaining health and wellbeing for longer. On balance, the downsides of introducing means testing for the Freedom Pass outweigh the benefits, though wealthier pensioners can choose to pay their own way.

The 60+ London Oyster photocard was introduced in 2012 by then-Mayor Boris Johnson, making good his manifesto pledge to bridge the gap with the Freedom Pass for over-60s again. It is funded entirely by TfL – currently at nearly £70 million – and the cost will continue rising as the pension age eligibility for the Freedom Pass increases. It is projected to increase to around £130 million by 2023-24.[89]

Like the Freedom Pass, the 60+ Oyster card could encourage drivers to switch to public transport. Unlike the Freedom Pass, however, the people that receive them are not pensioners: the vast majority of people aged 60-65 are still at work, and also tend to be wealthier than younger age groups.[90] So there is certainly justification for the 60+ Oyster card to be reviewed. It could be phased out by closing it to new applicants – or gradually increasing the age of eligibility one year at time while protecting those who are already receive it. An alternative is for the scheme to remain open but with increased application and renewal charges, bringing in at least some additional revenue to TfL.

In addition to formal concessions, the rewards package for TfL employees could also be reviewed. This typically includes free travel on the TfL network, not only for the employee but also for a nominated partner or anyone else living at the same address.[91] Although many current vacancies advertised at TfL only list a free pass for the employee among the benefits, others still offer the "plus one" perk.[92] More than 52,000 nominee passes were issued in 2018 and, while there is no direct cost to TfL (as no additional services need to be run), there would be an estimated £42 million in extra revenue if these journeys were paid.[93] As it seems that phasing out this perk for new employees has already begun, TfL should continue with this process.

Recommendation 2: The Mayor and TfL should review the fares freeze and concessionary fares, and should specifically consider gradually phasing out the 60+ London Oyster photocard, as well as the additional nominee pass for new TfL employees.

Zone and fare structure

The public transport fare structure in London is based on travel zones (from 1 to 9) that allow those travelling shorter distances to pay less than those making longer trips. Single fares currently range from £2.40 within zone 1, to £7 from zone 9 to zone 1 at peak times; and for weekly Travelcards/caps prices range from £35.10 (zones 1-2) to £91.50 (zones 1-9).[94] However, as Chapter 1 showed, many Londoners who may have moved further away from central London for lower house prices find themselves paying much higher travel fares in return – as well as sacrificing time to a longer commute.

There are a number of ways in which the zone structure could be reviewed to increase fairness and minimise the burden on travellers from Outer London.

1. Reduce the difference in fares between Travelcard zones

One option is to review the prices for each zone and reduce the price differences between the individual zones. For example, the prices for zones 4, 5 and 6 could be progressively lowered. Another option is to reduce the number of zones to even out fare differences (e.g. by merging zones 3 and 4, and zones 5 and 6).[95] However, to keep such measures revenue-neutral, the prices for other zones would need to be increased by a similar magnitude – or revenue would need to be found from elsewhere.

In a recent report, Centre for London recommended that the Mayor should replace the Congestion Charge and Ultra Low Emission Zone (as well as any local road tolls) with a city-wide distance-based system of road user charging – and that the proceeds should be invested in road maintenance, public transport provision and environmental and

public realm measures supporting walking and cycling.[96] The way that London's roads are currently funded is inherently unfair: direct income from motorists (from the Congestion Charge and Ultra Low Emission Zone) is insufficient to cover road maintenance and investment on the TfL road network, so it must be supported by Underground fares revenue and other income. It can be argued that using an enhanced road user charge to support Underground fare payers would correct that injustice.

2. Review zone boundaries and re-zone stations

In the past, zones have been added or boundaries moved to reflect the shifting economic geographies of the city. For example, with the extension of Contactless and Oyster payments to suburban rail services, Dartford station and Swanley stations moved into zone 8 in September 2015. And in January 2016, Stratford, Stratford High Street, Stratford International, West Ham, Canning Town, Star Lane and Abbey Road were all moved from zone 3 to the zone 2/3 boundary. This change meant that journeys from these stations towards central London would now be charged from zone 2, while those heading east would be charged from zone 3 – thus saving passengers money.[97]

A recent analysis reviewed the fare zones based on distance from central London (as defined by zone 1). It established that some stations in more central zones are actually further away from the nearest zone 1 station than others in less central zones. The author found that, if boundaries were redrawn purely on the basis of distance, many stations (including all three Croydon stations, Balham, South Tottenham and Tottenham Hale) would move to a more central zone – while some like Kingston and Surbiton would move more than one zone (from zone 6 to zone 4). Several would also move from outside zones to zone 6, such as Dartford, Swanley, Watford and Potters Bar.[98] While distance is far from the only factor to be considered, an argument can certainly be made on a case-by-case

basis, especially for stations that are in poorer areas (such as those identified as low-affordability areas in Figure 12).

In general, the government considers station rezoning as an issue for TfL. The current Mayor has resisted such suggestions due to revenue impacts and the need to agree such changes with the rail operators and the Department for Transport.[99] The main barrier to rezoning is revenue loss to TfL and to train operators, who would expect compensation – though rezoning may also generate additional journeys due to more people moving in and travelling to and from the area for work and leisure. Transferring the operation of commuter rail services to TfL – as Centre for London and the Mayor have repeatedly called for – would enable TfL to make such decisions, as well as improve the frequency and reliability of the services (similar to the transformation of TfL Rail north of the river).[100]

Recommendation 3: The Mayor and TfL should review the zone and fare structure to improve affordability – including reducing the difference in fares between zones, reducing the number of zones, or rezoning particular stations in low-affordability areas. In doing so, they should also consider how fares freezes help different groups, and whether there are better ways of targeting support.

Improving the travel experience

Technology has changed the way people travel in recent years, with smartphone connectivity and a proliferation of travel-related apps enabling people to access new mobility services and journey planning tools.

TfL currently has an online Journey Planner tool, which enables travellers to plan a journey across the full range of public transport options (bus, tram, Tube, DLR, National Rail, Overground, TfL Rail, River Bus, Emirates Air Line, coach) as well as walking and cycling. Users can customise journey options – such as preferred modes of transport, step-free access or walking ability – and save these preferences for future use.[101] There is a

separate app for the TfL-operated docked Santander hire bikes.

However, TfL's tool does not itself allow real-time journey navigation. Instead, TfL's approach is to provide open access to its data for private providers – leading to the emergence of tools such as Citymapper, which helps users navigate their journey with step-by-step instructions, real-time departure boards and disruption alerts. In addition, privately operated platforms like Citymapper and Uber integrate private services, such as ride hailing, bike hire and car clubs. Such platforms are known as "Mobility as a Service (MaaS)" providers, as they facilitate access to a range of mobility services beyond public transport.

Centre for London's recent *Green Light* report suggested that TfL should create its own MaaS-style multi-modal journey planner app (dubbed "City Move").[102] There are a number of benefits to a TfL-operated planner as opposed to privately operated ones:

- It could integrate a wide range of service providers, so travellers could mix and match public transport and other mobility services using a single platform.

- It would enable travellers to compare, plan, navigate and pay for journeys across all modes.

- It would compare the cost, emissions and pollution impact of different travel options to enable people to make informed choices.

- It would enable TfL to integrate a smart system of road user charging. This would redress the pricing balance in favour of public transport, and raise additional funding for investment in public transport connectivity/road redesign that would benefit all road users.

In addition, the platform would be based on an individual account that would allow for personalised features, including:

- Personalised journey planning, such as tailored step-free access or mode preferences.

- Enhanced accessibility features such as audio directions for blind and visually impaired people, the selection of less busy routes for people with autism, etc.

- Targeted discounts and exemptions.

TfL already offers bus and Tube concessions for people on certain benefits such as Jobseekers Allowance. However, a personal subscription platform would allow for such discounts to be extended to other modes of transport. For example, to promote cycling among low-income groups, TfL and the Mayor could offer subsidised bike shares to people on income-related benefits. Similar schemes are in operation in the US and have been piloted in Scotland and Wales (see case study below).

The Mayor of London recently announced a vehicle scrappage scheme for people claiming certain income-related or disability benefits whose vehicles do not comply with the Ultra Low Emission Zone standards. As well as receiving £2,000 towards the cost of a new vehicle, eligible applicants will also be entitled to a year's free membership of the Santander bike hire scheme, with all rides up to 30 minutes included.[103]

To further promote a switch away from motor vehicles towards public transport, walking and cycling, TfL and the Mayor should launch a system of mobility credits – a form of currency that can be spent on public transport or any other travel option available within the City Move platform. Mobility credits could be used in many ways:

- They could be given to people who are scrapping a vehicle or giving up a parking permit – to spend on public transport or shared mobility services instead of purchasing a new vehicle.

- They could be given as an incentive for signing up to the City Move scheme.
- A subsidised bike share scheme could operate through mobility credits (see case study below).
- They could be given to disabled people who wish to take up cycling, as a contribution towards adapted cycles.
- They could replace the Taxicard scheme, allowing disabled people to spend them on any service operator they wish.
- They could be given to specific groups (such as NHS shift workers) who work at less accessible sites or at times when public transport is not available, to use for private cabs.

Case study: Subsidised bike share

To increase cycling take-up among low-income groups, several US cities have established subsidised bike share schemes that offer heavily discounted membership. For example, Philadelphia's Indego30 Access offers Indego bike hire membership for $5/month rather than $17/month, and allows cash top-up at certain stores using the electronic cards used to transfer social benefit payments (to verify eligibility). As a result, non-white populations in the US are one of the fastest-growing cycling groups and the most likely to cycle for transportation as well as for recreation, while low-income groups are also more likely to commute by bike.[104]

The subsidised bike hire model has now been trialled in the UK. The Bikes For All project in Glasgow offers subsidised bike hire membership to people on very low or no income who would struggle to afford a bicycle and related costs. Eligible people can sign up for annual membership with nextbike for only £3 rather than the usual cost of £60, with inclusive rides of 60 minutes rather than 30 minutes. The scheme allows payment by cash, so does not require a bank card or a smartphone to access the bikes – and it also offers individual confidence-boosting cycle training.

Typical users are unemployed and homeless people, those in temporary accommodation, refugees, and asylum seekers. The majority of users had not considered cycling before signing up. Bikes For All was initiated and led by CoMoUK in partnership with Bike For Good and the Glasgow Centre for Population

Health, backed by Glasgow Council and funded by the Smarter Choices, Smarter Places Open Fund from charity Paths for All.

In May 2019, nextbike also partnered with the Cardiff and Vale Health Board in Wales for a pilot that allowed GPs at two practices to prescribe six months of nextbike membership for people who need to do more exercise or lose weight. Through prescriptions, patients are given a unique access code that will entitle them to unlimited free 30-minute nextbike hire sessions for six months. If the pilot proves successful, it will be made more widely available across Cardiff.

We recognise that there are issues with digital inclusion. Smartphone ownership and Internet usage rates have been rapidly increasing, yet an estimated 12 per cent of adults across the UK – and 20 per cent of people aged 55-75 – still do not have a smartphone.[105] Although usage rates will increase further with time, TfL should continue investing in traditional forms of communication, journey information and ticketing, alongside the development of a digital journey planner platform. "Fixing the basics first" would include steps such as building in step-free access and healthy street features when designing new stations and public spaces, as well as providing journey information at stations and bus stops in a variety of formats.

Recommendation 4: The Mayor and TfL should create a multi-modal journey planning platform alongside a system of mobility credits. These would allow for tailored accessibility features, targeted discounts like subsidised bike share, and more flexible services for disabled people.

Conclusion

Transport systems enable people to move around a city, but they should also enable social and economic mobility so that people can participate fully in urban life. Yet some people continue to be shut out.

Many people living further away from the city centre do not have access to dense public transport connections, which limits their movements. Others may have access to transport but are still unable to afford it. Specific mobility requirements may prevent people from being able to walk, cycle, or use public transport. Young, older people, disabled, ethnic minority, female and low-income Londoners face specific barriers to access and can be more affected by negative impacts of transport provision such as air pollution, crime and road danger.

The Mayor and Transport for London may have limited power over Londoners' incomes or life circumstances, but there is much they can do to make transport truly inclusive. Ensuring that equity is a central consideration in all transport planning and investment decisions would create fairer access to the transport system for everyone.

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