

Millie Mitchell and Oriane Nermond

Moving with the Times: Financial incentives for sustainable travel

*Part 2: What is the effect of financial incentives
on Londoners' travel costs?*



Moving with the Times: Financial Incentives for Sustainable Travel

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Introduction



The costs of using different types of transport, and how these costs can be spread, are a significant factor influencing individuals' decisions about how to travel. In the first part of the report, we demonstrated how financial incentives can be an effective lever to encourage modal shift. We made some recommendations to boost the effectiveness of financial incentives and recommended some practical policy changes. In this part, we explore how financial incentives and their effects vary for Londoners depending on where they live, what kinds of trips they take and other characteristics that might influence the costs they face. To illustrate how financial incentives influence travel costs, we created nine typical individuals and families (more detail in appendix 2) and modelled their travel costs (more detail in appendix 1). We then produced 12 policy papers illustrating the effects of different policies on these Londoners' travel costs. They are not intended to be full policy proposals, but only examples of how different types of policies influence the costs people face. These papers helped us understand who would stand to win or lose if new policies were to be introduced and how policymakers can level the playing field regarding travel costs to encourage active and sustainable modes of transport. In these papers, we have analysed the costs of using specific modes of transport such as bicycle, car or public transport (including both buses and trains) to compare the total cost of using each mode across different scenarios. However, as we said in the first part of the report, facilitating multi-modal travel is key to providing the alternatives needed to encourage people to shift away from private vehicles.

Limitations

The report does not cover travel for work, so none of the individuals included in the model are currently driving for a living. We think this would require a different model covering the various ways that individuals and businesses pay for work travel, and we are keen to explore this in future work.

Furthermore, the model shows the travel cost for a specific journey, so it does not show how travel costs vary depending on the frequency of the trips people take (e.g. using a shared mode of transport is cheaper for occasional trips than for frequent ones).



Chapter 1

What influences
people's choice of
mode of travel?



Travel costs influence people's transport behaviours. But the relationship between these costs and behaviours is not simple. Many journeys are taken for a specific purpose, such as travelling to work, to school, to the doctor's or to a local grocery store. People have to take these journeys even if the cost increases. However, where somebody has several options of how they can undertake these journeys, cost can be an effective lever for encouraging behaviour change. When journeys are taken for leisure purposes, there is even more scope for behaviour change. Global research from BCG has found that consumers are more likely to be price sensitive when purchasing leisure travel, when compared to nine other consumer goods categories.¹ Journeys taken for leisure purposes accounted for 36 per cent of trips in London in Q1 of 2022/23.² The cost of sustainable transport can be a barrier preventing positive behaviour change. In a recent ONS survey, 39 per cent of people reported that greener forms of transport were "too expensive".³ This survey result also shows that people's perception of cost influences their decisions. Whilst EVs are expensive, walking and cycling are the cheapest modes of transport.

Cost also intersects with other factors – even people who are motivated to reduce their spending will not always choose the lowest cost option. The list below sets out some of the factors involved in the choices people make:

- **The travel environment:** the physical infrastructure available and the convenience of this for the journey a person wants to take.
- **Personal capabilities and needs:** such as if you need to transport your family or just yourself, if you need to combine multiple activities into one journey or if you have additional travel needs as a result of having a disability.
- **Attitude:** transport choices can also be driven by personal values and attitudes. This may take the form of identifying with a given transport mode, such as considering yourself a "car person" or a "cyclist". Attitudes are also often impacted by social norms and the behaviours of people around you.
- **Habit:** people may choose to use a given mode of transport because it is the mode they have always used for that journey and so they do not actively consider alternatives when embarking on the trip.
- **Affordability:** the perceived or real cost of a given transport mode relative to a person's disposable income.

The strength of these motivational factors will vary for everybody. But some groups are more likely to drive than others. Our accompanying report Supporting Sustainable Travel in Outer London explores the differences in travel behaviour between groups. Households in outer London are more likely to own or have access to a car than those in inner London, and driving is used for travel twice as much in outer London as in inner London. The report explores some of the reasons for greater private car use in outer London including lower density development in outer London, poor access to the public transport network, and limited infrastructure for active travel.

Gender, ethnicity, age and income all influence travel behaviours. Here are some examples of how:

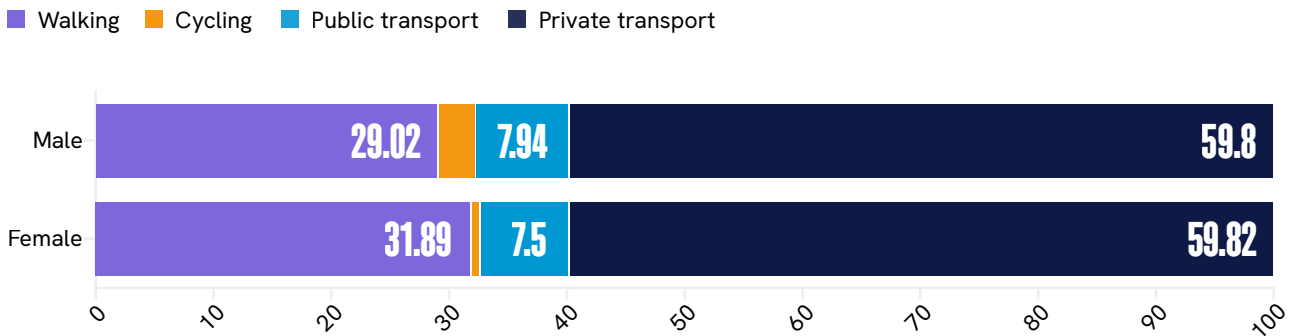
- **Women walk for a greater proportion of trips than men, whilst men cycle for more than three times as many trips as women (see Figure 1).** The gendered nature of domestic and caring responsibilities often means that women make more frequent and shorter trips.⁴ These sorts of short journeys lend themselves to walking, but the additional needs involved in caring whilst on a trip can make cycling an unsuitable transport mode. Research from Sustrans also found that women often do not feel safe when cycling.⁵

- **Black, Asian and minority ethnic Londoners are more likely to use the bus than White Londoners⁶ and less likely to cycle.⁷** The latest Travel in London report found that whilst the proportion of Black Londoners cycling at least once a week has not increased, weekly cycling by Asian Londoners has grown since the pandemic.⁸
- **People over the age of 55 in London are least likely to cycle.⁹** A 2021 TfL survey found that just 12 per cent of Londoners aged over 55 reported having cycled in the last year compared to 36 per cent of 16-34-year-olds.¹⁰ A report from Age UK argues that rates of cycling in over-65s in the UK are low compared to other European countries and implies this is due to poorer cycling infrastructure rather than less physical capability.¹¹
- **People in lower-income households travel by bus far more than households on higher incomes; meanwhile, the inverse is true of train travel (see Figure 2).** One explanation for this pattern is the relative cost of these transport modes; bus fares are typically much cheaper than train fares.
- **Between 2011 and 2021, the proportions of trips on foot made by the wealthiest 40 per cent of households has substantially increased while the proportion for the lowest 20 per cent has remained roughly the same (see Figure 3).** Similarly, the proportion of trips made by car or van has been steadily decreasing for wealthier groups whilst staying the same or increasing for lower-income households (see Figure 4). Households with the lowest incomes are also likely to drive less than wealthier households but drive shorter distances when they do.¹²



Men cycle for three times as many trips as women

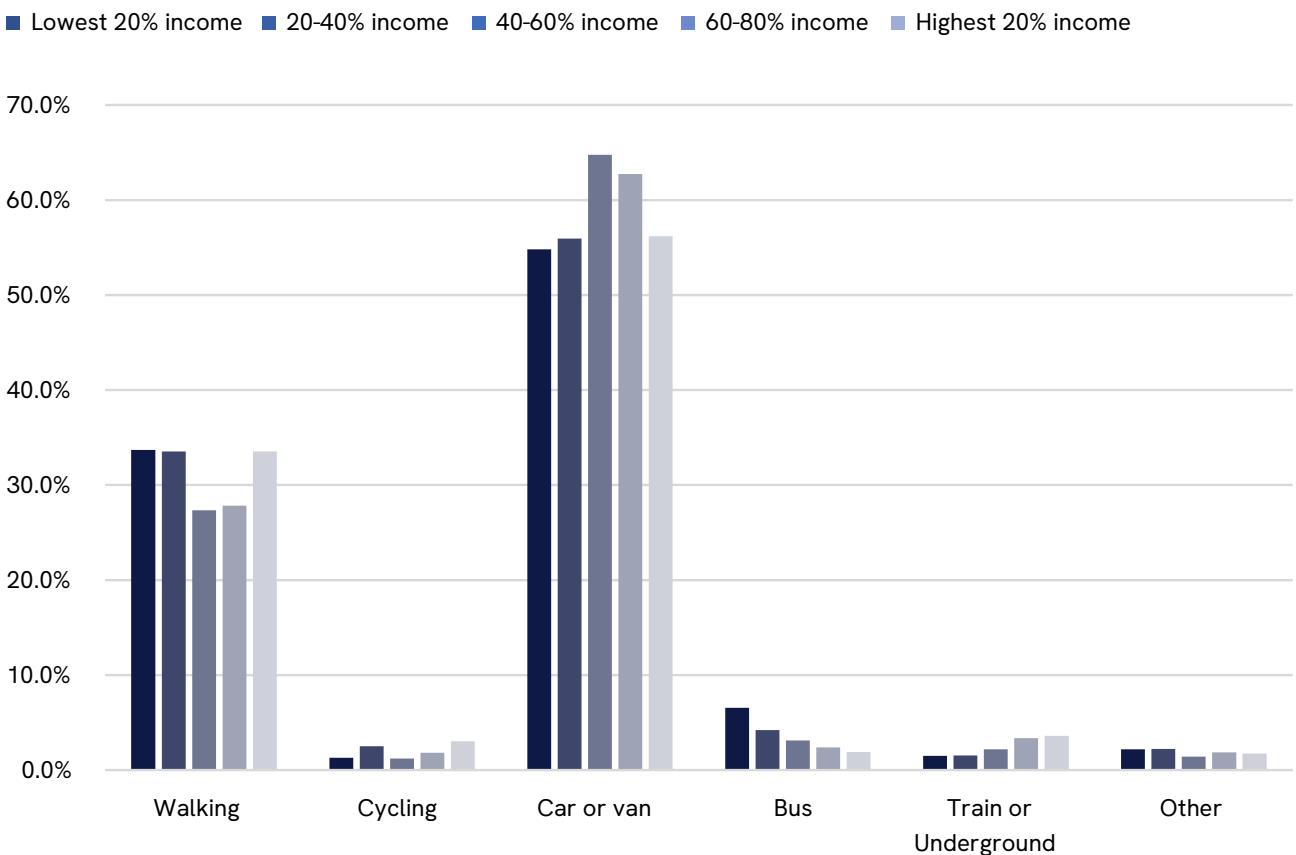
Figure 1: Modal choice as a proportion of average total trips by sex, England



Source: National Travel Survey (2021)

People on low incomes travel by bus much more frequently than people on high incomes

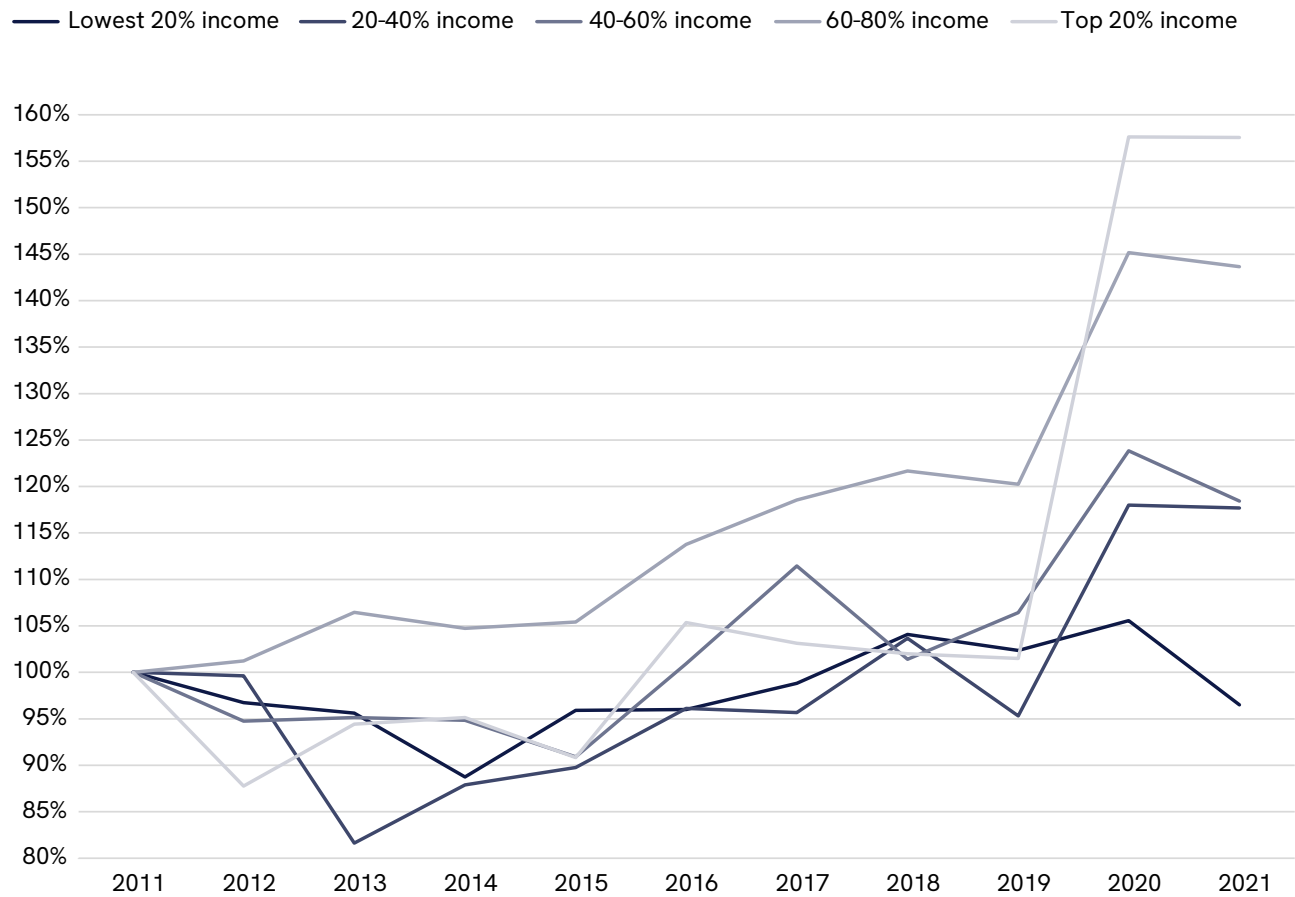
Figure 2: Mode share of travel as a proportion of total trips by real household income quintiles across England (2021)



Source: Department for Transport (2022) National Travel Survey 2021 (NTS0705)

The proportion of trips on foot made by the wealthiest 40 per cent of households has increased since 2011

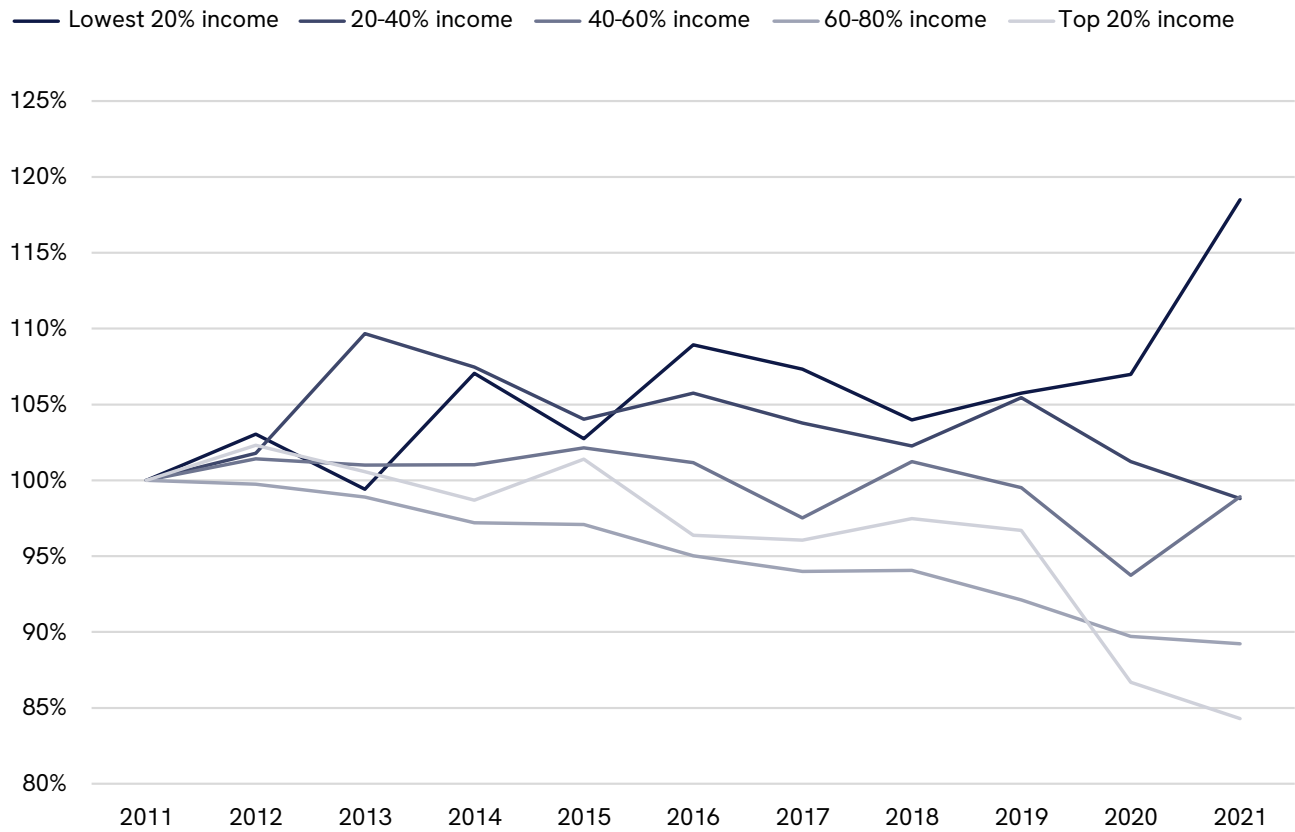
Figure 3: Walking as a proportion of total trips by household income quintile, indexed against 2011 levels



Source: National Travel Survey (2021)

The proportion of journeys made by driving has decreased for the highest 40 per cent by income since 2011

Figure 4: Driving as a proportion of total trips by household income quintile, indexed against 2011 levels



Source: Department for Transport (2022), National Travel Survey (2021)

Chapter 2

What influences travel costs in London?



Travel costs are made up of many components that in turn vary according to numerous factors.

Use vs availability costs

The costs associated with transport can be divided into two overarching categories: use costs and availability costs. This distinction is important for policymakers to consider because the two types of costs are perceived and experienced differently and so have different impacts on transport behaviours.

Use costs refer to the charges associated with using a transport mode to undertake a given journey, such as the cost of train fares or destination car parking charges. Typically, these costs are encountered on a per journey basis, but some use costs (such as fuel costs) are encountered less frequently. Evaluating the potential impact of policies targeted at use costs is typically straightforward as the benefits (or disbenefits) to the individual are cumulative. That is to say that the less they engage with a given travel behaviour, the more money they save (and vice versa).

Availability costs are the costs associated with having access to a given transport mode – for example, the cost of owning a car or bike, or the cost of a car club subscription. Availability costs are typically encountered infrequently, on an annual or multiyear basis, although some can be more frequent (such as monthly finance payments). The potential impact of policies aimed at increasing availability costs is not so straightforward to predict. This is because whilst high availability costs should disincentivise people from paying for access to a given transport mode, they may also mean that those who do choose to pay the higher cost are incentivised to use that transport mode more frequently to get their money's worth.

For some transport modes, such as public transport or shared bikes, use costs are the only component making up the cost of a journey. But for most modes, the total cost is made up of a combination of both types.

Factors that influence the costs

Some of the costs associated with travelling are specific to the journey that is being undertaken – for example, the distance of a journey, the time of day when it is taken (e.g. peak or off-peak) and the destination.

Other factors depend on the characteristics of the individual undertaking the journey, such as age, housing type or employment status. Age directly influences the costs of using public transport via concessionary schemes. Some financial incentives are means tested or based on employment status, such as the cycle to work scheme.

Other elements, such as the place where people live and the type of housing, can also impact travel costs. For instance, people with space to store their bike or park their car may have a lower travel cost.

Other factors are linked to the way people pay for a service. Pay as you go or subscription are the two main models used by transport providers in London. This influences the price for the end user, and it can also influence the way people engage with a service (e.g. people can try to maximise their use of a service when they have subscribed to it).

Walking and travel cost

Encouraging a greater take-up of walking is key to achieving the modal shift that London needs. Not only is walking the most sustainable travel mode, it also offers an abundance of benefits:

- Boosting high streets and local businesses: walkers are more likely to stop in a local shop than drivers. A TfL study found that people spend on average 40% more when they walk to their destination than when they drive.¹³
- Improving people’s physical and mental health: it’s estimated that the NHS could save £1.7 billion if every Londoner walked for 20 minutes each day.¹⁴
- Reducing air pollution and traffic by reducing driving, and reducing overcrowding on public transport by encouraging people to switch to walking.
- Saving people money: walking is the least expensive mode of transport. Improving London’s walkability is one of the most effective transport strategies to support people with the cost-of-living crisis.

Because walking has no monetary costs associated with it, it isn’t addressed directly in the following analysis. However, more walking can be encouraged by policies to disincentivise journeys that are otherwise walkable.



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Chapter 3

What does it cost Londoners to travel?



Based on TfL's Transport Classification of Londoners,¹⁵ we created nine typical London individuals and families (referred to as "personas") to understand the costs that Londoners face at present for a specific journey:

Mike is retired and lives in Bromley. He travels every week to see his grandchildren who live in Southwark.



Sophia lives in Redbridge, and she is looking for a job. She has two children aged 16 and 14 years old.



Paul lives by himself and works in Kensington and Chelsea. He walks to his workplace, but he travels every day to central London for leisure.



Leila lives in Newham, and she has just started a new job in Westminster. She commutes five days a week after dropping her two children at nursery and primary school.



Luke lives in Lewisham and works in Southwark. He travels to look after his mother who lives in Stone Street (near Sevenoaks) every other week.



Peter and Zara live in Havering and visit Zara's parents in Bromley every week. They have three children aged 3, 10 and 12 years old.



Lena lives in Islington and works in Canary Wharf. She lives by herself.



Nikhil lives in Clapham Junction, and he studies at Roehampton University. His parents gave him a car six years ago which isn't ULEZ-compliant.



Matt lives in Enfield and works in Islington. He has two children aged 11 and 14 years old.



More details about the persona can be found in appendix 2.

What is the cost of cycling in London?

Cycling in London is one of the cheapest modes of transport, but not all trips are cyclable. In this report, we used the TfL definition of a “cyclable trip” and consider all trips under five miles to be cyclable.¹⁶ Three of our personas can travel by bike. One of them is more likely to already cycle than the others. The variations in the cost of cycling can be explained by the price differences of cycle hangars between boroughs and the number of bikes that need to be stored.

- Paul, who is a high earner, has space to store his bike at home, so the cost of cycling is low (£0.60 per trip). He also has access to free off-street car parking.
- Sophia, who is on a low income, will need to pay £216 per year for a secure storage space for her bike and her children’s bikes. In comparison, a residential car permit will cost her only £22.50 per year. However, her trip to the shop by cycle will cost her £1 – this remains her cheapest option after walking due to the other cost associated with owning a car.
- In Matt’s borough, a space in a cycle hangar costs £72 per year – much cheaper than a residential car parking permit. However, as Matt acquired a bike recently and is still finishing paying off the purchase of the bike, his travel to work will cost him £1.70 – this remains the cheapest option after walking.

Personas	Residential car parking	Bike Parking
Paul	£0.00	£0.00
Sophia and her children	£22.50	£216.00
Matt	£175.00	£72.00

What is the total cost of driving for our personas?

Our analysis found that for all but two of the personas, driving was the most expensive transport mode for their journey.

- Whilst the total cost for Peter and Zara to drive to visit Zara’s parents is £4.40, it would cost them £9.95 to use public transport. They have paid off their car finance, and live in a detached house in outer London, so they have access to free off-street parking. Their car is also ULEZ-compliant, and on their journey in outer London, they don’t enter the Congestion Charging zone. The only charge they have to pay is the Dartford crossing, which costs them £2.50. They wouldn’t be able to walk or cycle to take this trip because of the length (21 miles). Thus, for this family, driving is the most cost-effective option.
- It’s also less expensive for Luke to travel outside London. He is more likely to drive to care for his mother who lives in a small village near Sevenoaks. It costs him around £8.80 to drive as he bought a car relatively recently. As a comparison, a train from London Bridge to Sevenoaks costs around £11.50.¹⁷
- However, the story for most of our personas is different. For example, the policy interventions in place strongly disincentivise Mike from driving from Bromley to visit his grandchildren in Southwark. The total cost to drive for this journey would be £66.50 per trip. This is driven by high use cost as he would need to pay for both the ULEZ and the Congestion Charge. He would also need to pay for parking in one of Southwark’s Controlled Parking Zones, which would cost him around £6 per hour.

Chapter 4

Policy papers



Comparing the effects of financial incentives on individuals and families from different socioeconomic backgrounds, travelling across London and outside London, for different purposes allows us to illustrate how such incentives affect Londoners differently. These policy papers also illustrate how these financial incentives would interact with existing financial incentives in place in London.

We reviewed the impact of the following policies:

Policies encouraging more people to cycle

[Policy paper 1](#): **Subsidised annual membership of bike hire scheme for people on low incomes**

[Policy paper 2](#): **Free bike for people on low incomes**

[Policy paper 3](#): **Cycle scheme for all Londoners**

[Policy paper 4](#): **Lower the cost of cycle hangars**

- Option 1: Free cycle hangar space for people on low incomes
- Option 2: Discounted cycle hangar space for people on low incomes
- Option 3: Cycle hangars at £30

Policies discouraging people from driving or owning a private car

[Policy paper 5](#): **Include electric vehicles in the Congestion Charge**

[Policy paper 6](#): **Double fuel duty**

[Policy paper 7](#): **Norwegian-style vehicle excise duty**

[Policy paper 8](#): **Distance- and emission-based road user charging**

[Policy paper 9](#): **Increase the price of residential parking permits**

[Policy paper 10](#): **Mandate emission-based parking permits across all boroughs**

Policies encouraging public transport use

[Policy paper 11](#): **Low-income concessionary fares**

[Policy paper 12](#): **£1 bus fare**

Policy paper 1: Subsidised annual membership of bike hire scheme for people on low incomes

Policy objective: To encourage more people to cycle.

Policy description: Shared bike hire schemes are popular among Londoners. This measure will provide a 90 per cent discount on an annual subscription to Santander bikes for people on low incomes.

What is the effect on Londoners?

This measure targets low-income households. In our model, only Sophia and her children, and Peter and Zara would be eligible for this scheme. However, Peter, Zara and their children are unlikely to cycle to visit their family as the journey is 21 miles and their children are too young to use Santander bikes.



On the other hand, Sophia can cycle to the shop, and her children – aged 14 and 16 – are both allowed to use Santander bikes. Looking at the cost per trip isn't telling for this measure, as the Santander annual subscription already reduces considerably the cost of cycling per trip. But an annual subscription is paid upfront, meaning a family of four individuals will need to pay £480 to allow them all access.

Personas	Is this trip under five miles?*	Current cost to cycle (PAYR)**	Current cost (Annual subscription)	Impact of the policy on cycling cost
Leila and her children	N	£4.95	£0.08	0.0%
Paul	Y	£1.65	£0.06	0.0%
Mike	N	£3.30	£0.11	0.0%
Sophia and her children	Y	£4.95	£0.33	-90.0%
Lena	N	£3.30	£0.08	0.0%
Peter, Zara and their children***	-	-	-	-
Nikhil	Y	£3.30	£0.08	0.0%
Matt	N	£4.95	£0.08	0.0%
Luke****	-	-	-	-

*This indicates whether a trip is cyclable using the TfL definition.

**PAYR – pay as you ride.

*** Peter and Zara's children are too young to use Santander bikes.

****Luke is travelling outside London, so he wouldn't have access to Santander bikes.

■ Personas eligible for the discount

Equalities impact

This policy would not have any direct negative impacts on groups with protected characteristics.

Policy paper 2: Free bike for people on low incomes

Policy objective: To incentivise people on low incomes to cycle.

Policy description: Travelling by bike is one of the cheapest modes of transport. But purchasing a bike and the right equipment can be costly and can be a barrier for people on low incomes. This policy will provide people on low incomes with free bikes.

What is the effect on Londoners?

Only Sophia and her children will benefit from this scheme as it only helps low-income people who haven't yet bought a bike. However, our model only captures a specific moment in time, and this measure could benefit other families and individuals in the model – such as Peter, Zara and their children – as and when they are eligible for the scheme.



This policy would be more effective if introduced with affordable cycle hangar spaces as Sophia doesn't have any space to store her family's bikes at home. Alone, this measure isn't likely to encourage her and her family to cycle ([see policy paper 4](#)).

Personas	Is this trip under five miles?*	Current cost to cycle	Impact of the policy on the cost of cycling
Leila and her children	N	£4.95	0.0%
Paul	Y	£0.60	0.0%
Mike	N	£0.41	0.0%
Sophia and her children	Y	£1.07	-28.6%
Lena	N	£1.33	0.0%
Peter, Zara and their children	N	£2.90	0.0%
Nikhil	Y	£1.71	0.0%
Matt	N	£3.16	0.0%
Luke	N	£1.15	0.0%

*This indicates whether a trip is cyclable using the TfL definition.

■ Personas eligible for the scheme

Equalities impact

This policy would not have any direct negative impacts on groups with protected characteristics.

Policy paper 3: Cycle scheme for all Londoners

Policy objective: To incentivise people on low incomes to cycle.

Policy description: Travelling by bike is one of the cheapest modes of transport. But purchasing a bike and the right equipment can be costly and can be a barrier for people on low incomes. This policy will offer a 32 per cent discount when purchasing a bike. This could be modelled on the cycle to work scheme, allowing individuals to spread the cost of purchasing a bike over several months.

What is the effect on Londoners?

Mike, Sophia and Nikhil would benefit from the scheme as they are currently ineligible for the cycle to work scheme, and they are either going to purchase a bike or have purchased one. Whilst people who have owned a bike for a long time, such as Luke, Matt, and Peter and Zara, wouldn't experience any immediate benefit from the scheme, it could support them when replacing their bikes in the future. Leila, Paul and Lena are already eligible for the cycle to work scheme, so they wouldn't benefit from this scheme.



Personas	Is this trip under five miles?*	Current cost to cycle	Impact of the policy on the cost of cycling
Leila and her children	N	£4.75	0.0%
Paul	Y	£0.60	0.0%
Mike	N	£0.41	-32.0%
Sophia and her children	Y	£1.07	-32.0%
Lena	N	£1.33	0.0%
Peter, Zara and their children	N	£2.90	0.0%
Nikhil	Y	£1.71	-32.0%
Matt	N	£3.16	0.0%
Luke	N	£1.15	0.0%

*This indicates whether a trip is cyclable using the TfL definition.

■ Personas eligible for the discount

Equalities impact

This policy would not have any direct negative impacts on groups with protected characteristics.

Policy paper 4: Lower the cost of cycle hangars

Policy objective: To provide affordable cycle hangars for all Londoners.

Policy description: Travelling by bike is one of the cheapest modes of transport. But having a secure space to store a bike is necessary, and many people don't have this at home. Cycle hangars have been installed to address this issue, but a hangar space can be expensive. The cost can be as much as £100 a year per bike, making cycling unaffordable for people on low incomes and families.

There are two types of policies: those that lower the price for every Londoner and those that target specific demographics. In this policy paper, we analyse the effect of:

- Free cycle hangar space for people on low incomes;
- Discounted cycle hangar space for people on low incomes;
- Cycle hangars at £30.

1. Free cycle hangar space for people on low incomes

Policy description: This policy provides free cycle hangar space for people on low incomes.

What is the effect on Londoners?

Sophia and her children will benefit from this measure as she is on a low income, and she doesn't have any space to store the family's bikes at home. Looking at this policy on a per trip basis isn't really telling as the cost of a cycle hangar is paid upfront every year. In Sophia's borough, a cycle hangar costs £72 per year. This means Sophia could save up to £216 a year on cycle parking. However, our analysis found that some local authorities oppose free cycle parking on the basis that people could leave their bikes in the hangars and not necessarily use them more.



Personas	Do they need to use a cycle hangar?	Current cost to cycle	Impact of the policy on the cost of cycling
Leila and her children	Y	£4.75	0.0%
Paul	N	£0.60	0.0%
Mike	N	£0.41	0.0%
Sophia and her children	Y	£1.07	-37.1%
Lena	N	£1.33	0.0%
Peter, Zara and their children	N	£2.90	0.0%
Nikhil	Y	£1.71	0.0%
Matt	Y	£3.16	0.0%
Luke	N	£1.15	0.0%

*Green coloured cell shows the personas who would benefit from the scheme as it would lower their travel cost.

**Red coloured cell shows the personas who wouldn't benefit from the scheme as it would increase their travel cost.

■ Personas eligible for the scheme

2. Discounted cycle hangar space for people on low incomes

Policy description: This policy introduces a 10 per cent discount on the annual price of a cycle hangar space for people on low incomes.

What is the effect on Londoners?

Sophia and her children will benefit from this measure as she doesn't have any space to store bikes at home. Looking at the price saving on a per trip basis, the policy doesn't make a big difference. But this isn't really telling as cycle hangars are paid upfront every year. With this measure, Sophia could save £21.60 on cycle parking. This saving may sway her decision making if she is considering purchasing bikes for her family but would be more effective if combined with another measure to reduce the cost of owning bikes.



Personas	Do they need to use a cycle hangar?	Current cost to cycle	Impact of the policy on cycling cost
Leila and her children	Y	£4.75	0.0%
Paul	N	£0.60	0.0%
Mike	N	£0.41	0.0%
Sophia and her children	Y	£1.07	-3.7%
Lena	N	£1.33	0.0%
Peter, Zara and their children	N	£2.90	0.0%
Nikhil	Y	£1.71	0.0%
Matt	Y	£3.16	0.0%
Luke	N	£1.15	0.0%

■ Personas eligible for the discount

3. Cycle hangars at £30

Policy description: This policy sets a standard price for cycle hangars of £30 per year.

What is the effect on Londoners?

Half of the Londoners in the model don't have space to store their bikes at home and could benefit from this scheme. The biggest benefit is experienced by the individuals or families living in the boroughs that currently charge a higher price than £30 per year for cycle hangars.



However, Matt lives in a borough that currently charges less and so would see his costs increase. Sophia is unemployed and would benefit from this measure. In fact, Sophia and her children would experience the largest decrease (from £216 a year to store all their bikes to £90). This measure benefits people who have the least space at home, which is usually people on lower incomes.

Personas	Do they need to use a cycle hangar?	Cost to cycle with this measure	Impact of the policy on cycling cost
Leila and her children	Y	£3.90	-17.9%
Paul	N	£0.60	0.0%
Mike	N	£0.41	0.0%
Sophia and her children	Y	£0.84	-21.6%
Lena	N	£1.33	0.0%
Peter, Zara and their children	N	£2.90	0.0%
Nikhil	Y	£1.52	-11.3%
Matt	Y	£3.75	+18.9%
Luke	N	£1.15	0.0%

Equalities impact

These policies would not have any direct negative impacts on groups with protected characteristics.

Policy paper 5: Include electric vehicles in the Congestion Charge

Policy objective: To disincentivise all forms of driving within the Congestion Charging zone.

Policy description: EVs are currently exempt from paying the Congestion Charge, but they still contribute towards congestion and air pollution in central London. This policy would charge EVs the same rate as other cars (£15) for driving in the zone.

What is the effect on Londoners?

Only one of the Londoners in the model, Paul, drives an EV and so would be affected by the scheme. For Paul, the cost of driving from Kensington to see a musical in central London would increase by 63 per cent. This would discourage him from driving for this journey, because whilst Paul is relatively affluent, using active or sustainable travel for this journey is convenient and cheaper. His current cost of driving is increased by the parking tariff at his destination; however, if Paul were to find cheaper parking, the use cost of the journey could currently be close to £0. This measure would disincentivise Paul from driving short journeys.

EVs are growing in popularity in London, accounting for 25 per cent of newly registered vehicles in 2022.¹⁸ But this popularity is not distributed evenly. More than half of the EVs sold in the UK in 2015-17 were purchased by households in the richest 20 per cent income bracket whilst just 4 per cent were purchased by the lowest 20 per cent.¹⁹ This means that this policy would be most likely to impact wealthier Londoners.



Personas	Current cost of driving	Impact of the policy on the cost of driving
Paul	£23.84	+62.9%

Equalities impact

This policy would not have any direct negative impacts on groups with protected characteristics.

Policy paper 6: Double fuel duty

Policy objective: To disincentivise driving by increasing the cost of car journeys.

Policy description: Fuel duty has been frozen since 2011 and cut by £0.05 per litre since March 2022. This measure looks at what would happen to Londoners' driving costs if fuel duty were to be doubled, from £0.53 to £1.06 per litre.

What is the effect on Londoners?

We calculated the total cost of driving for all journeys in our model. In practice, many individuals and families would use other modes (more detail in appendix 2).

Peter and Zara's family are most impacted by this measure; their costs of driving to visit Zara's parents every week would increase by 25 per cent. Peter and Zara's family have a low household income, so the increase would have a significant impact. However, their costs of driving are still much lower than the costs of other Londoners' modelled journeys.

Luke's costs of driving would also increase – by 14 per cent. Luke's trip is for caring purposes outside of London, and he doesn't have access to alternative modes of travel for this journey, so the impact could be considered inequitable. However, he is relatively affluent and makes the trip infrequently. His costs of driving are also much cheaper than the other Londoners modelled.

All other modelled journeys increase by less than 2 per cent as the cost of fuel represents only a small share of people's total costs of driving. Of the people who drive, only Paul isn't impacted by this measure, as he drives an EV.



Personas	Current cost of driving	Impact of the policy on the cost of driving
Leila and her children	£41.72	+1.2%
Paul	£23.84	0.0%
Mike	£66.56	+0.5%
Sophia and her children	£12.87	+0.7%
Lena	£27.09	+1.5%
Peter, Zara and their children	£4.40	+25.2%
Nikhil	£13.50	+1.6%
Matt	£35.01	+1.8%
Luke	£8.68	+13.8%

Doubling fuel duty would be a dramatic change from government policy over the last 12 years, but there are many options for increasing fuel duty that lie between keeping it frozen and doubling it.

Equalities impact

This policy could have some negative impact on low-income households where there are no alternative forms of travel available.

Policy paper 7: Norwegian-style vehicle excise duty

Policy objective: To disincentivise ownership of high emission cars.

Policy description: Compared to other European countries such as Norway, the Netherlands or France, the UK has relatively low levels of vehicle tax.²⁰ This measure looks at what would happen if VED in the UK was at similar rates to those in Norway in the first year of ownership. See more detail about Norwegian-style VED in the methodology (appendix 1).

What is the effect on Londoners?

Only Leila's family and Lena are impacted by this measure because they have both purchased a new car in the last year. For Leila and her children, this policy would see the costs of driving to school then on to Leila's work increase by 40 per cent. Therefore, this policy may have encouraged Leila to choose a vehicle with lower emissions.



In contrast, Lena's car has ultra-low emissions, so she sees a very small cost saving with this measure.

Personas	Current cost of driving	Impact of the policy on the cost of driving
Leila and her children	£41.72	+40.7%
Paul	£23.84	0.0%
Mike	£66.56	0.0%
Sophia and her children	£12.87	0.0%
Lena	£27.09	-0.02%
Peter, Zara and their children	£4.40	0.0%
Nikhil	£13.50	0.0%
Matt	£35.01	0.0%
Luke	£8.68	0.0%

Whilst this policy will encourage Londoners to buy low emission cars, it could also lead to an increase in the purchase of secondhand vehicles which do not pay registration fees. However, national government could explore the replacement of VED with road user charging.

Equalities impact

This policy would not have any direct negative impacts on groups with protected characteristics.

Policy paper 8: Distance- and emission-based road user charging

Policy objective: To encourage people to drive less and choose cleaner cars.

Policy description: This policy replaces the ULEZ and Congestion Charge with distance- and emission-based road user charging.

EVs will be charged £0.03 per mile. Using the existing VED band, the rate will increase by £0.10 to encourage people to choose cleaner cars. In this model, people driving low emission cars, emitting between 1g/km and 50g/km, would pay £0.13. People would pay up to £1.23 per mile for driving the most polluting cars (see appendix 1 for more detail).

What is the effect on Londoners?

Londoners who drive longer distances with high CO₂ emissions would be the most negatively impacted by this measure. Peter and Zara would experience the highest increase, which can be explained by the relatively low travel cost they currently face. Lena and Paul would experience marginal increases of 0.4 per cent and 2.9 per cent respectively.



Some people would benefit from it, such as Sophia and her children, and Nikhil. It would cost them approximately £2 to drive to their destinations compared with £13 in the current situation. In both cases, they are taking shorter trips, and they have paid off their car finance. Leila and her children, and Matt would also benefit from the measure.

Whilst most Londoners would still have a financial incentive to use public transport compared to the total cost of driving, this incentive would be lower for Sophia and Nikhil than with the current system. The pricing structure should ensure that using public transport remains less expensive than driving.



Personas	Cost to use public transport	Current cost of driving	Impact of the policy on the cost of driving
Leila and her children	£6.15	£41.72	-16.7%
Paul	£2.70	£23.84	+0.4%
Mike	£0.00	£66.56	-35.6%
Sophia and her children	£1.75	£12.87	-85.8%
Lena	£3.40	£27.09	+2.9%
Peter, Zara and their children	£9.95	£4.40	+157.5%
Nikhil	£1.75	£13.50	-84.6%
Matt	£6.15	£35.01	-27.8%
Luke*	£11.50	£8.68	0.0%

*Luke is travelling outside London, so he wouldn't be impacted by road user charging inside London.

Equalities impact

This policy would not have any direct negative impacts on groups with protected characteristics

Policy paper 9: Increase the price of residential parking permits

Policy objective: To disincentivise car ownership.

Policy description: This policy increases the cost of a residential parking permit by 20 per cent across London.

What is the effect on Londoners?

The people impacted by this measure are those who don't have access to off-street parking. Luke is most impacted as a percentage of current costs, both because he drives a high emission vehicle and because his current costs are lower.



Personas	Current cost of driving	Impact of the policy on the cost of driving
Leila and her children	£41.72	+0.047%
Paul	£23.84	0.000%
Mike	£66.56	0.000%
Sophia and her children	£12.87	+0.006%
Lena	£27.09	+0.013%
Peter, Zara and their children	£4.40	0.000%
Nikhil	£13.50	+0.115%
Matt	£35.01	0.000%
Luke	£8.68	+0.740%

Overall, this measure has very little impact on the cost of driving for Londoners. This is because parking permits account for a relatively small proportion of the total cost of driving. Unless they are dramatically increased, the costs of parking permits alone are unlikely to discourage car ownership. By law, local authorities cannot increase parking permit prices just to generate revenue, but we know from a previous Centre for London report²¹ that in many boroughs, parking permits do not cover operational costs. Interventions such as emission-based charging structures can incentivise the take-up of cleaner vehicles. Discounted or preferential parking for rideshares and escalating charges for second vehicles could also be explored to further disincentivise car ownership.

Equalities impact

Private cars are often a necessity for people with mobility difficulties, such as older people or people with a disability. To mitigate the potential negative impact, discounts and exemptions can be introduced to ensure no groups with protected characteristics are unfairly burdened.

Policy paper 10: Mandate emission-based parking permits across all boroughs

Policy objective: To encourage people to own lower emission vehicles.

Policy description: This policy introduces emission-based parking permits across all boroughs. At present, only some boroughs have established parking permits on this basis.

What is the effect on Londoners?

The people impacted by this measure are those who need a residential parking permit. Luke is most impacted as a percentage of current costs, both because he drives a high emission vehicle and because his current costs are lower.



Personas	Current cost of driving	Impact of the policy on the cost of driving
Leila and her children	£41.72	+0.023%
Paul	£23.84	0.000%
Mike	£66.56	0.000%
Sophia and her children	£12.87	+0.120%
Lena	£27.09	+0.034%
Peter, Zara and their children	£4.40	0.000%
Nikhil	£13.50	-0.377%
Matt	£35.01	0.000%
Luke	£8.68	-0.893%

Overall, this measure has very little impact on the cost of driving for Londoners. This is because parking permits account for a relatively small proportion of the total cost of driving. This policy alone is unlikely to encourage more people to drive cleaner vehicles. However, this measure would work in synergy with additional financial disincentives. This measure would be even more effective if introduced with a clear communication strategy and staggered over several years with a gradual increase in the cost of parking permits to further encourage the take-up of cleaner vehicles.

Equalities impact

People with mobility difficulties, including older people and people with a disability, could be impacted by this measure as they would still need to use private cars in the short term. This measure could be introduced alongside targeted exemptions and discounts.

Policy paper 11: Low-income concessionary fares

Policy objective: To encourage public transport use.

Policy description: This policy introduces a concessionary scheme for people on low incomes, set at a 10 per cent discount on bus and tube fares.

What is the effect on Londoners?

Sophia and her children benefit from a 10 per cent reduction in their public transport costs with this measure. For this household, public transport was already substantially cheaper than driving for their journey. Whilst this might not prompt a modal shift for them, as a family on a low income, there are still other benefits associated with reducing their public transport costs.



Peter, Zara and their children also experience a 9.1 per cent reduction in the public transport costs for their journey. This is less than 10 per cent as the discount doesn't apply to their 12-year-old's tube fares. For this family, public transport is still more expensive than driving this journey, so they would also be unlikely to change their behaviour as a result.

Personas	Current cost of driving	Current cost of public transport	Impact of the policy on the cost to use public transport
Leila and her children	£41.72	£6.15	0.0%
Paul	£23.84	£2.70	0.0%
Mike	£66.56	£0.00	0.0%
Sophia and her children	£12.87	£1.75	-10.0%
Lena	£27.09	£3.40	0.0%
Peter, Zara and their children	£4.40	£9.95	-9.1%
Nikhil	£13.50	£1.75	0.0%
Matt	£35.01	£5.10	0.0%
Luke	£8.68	£11.50	0.0%

■ Personas eligible for the concession

Equalities impact

This policy would not have any direct negative impacts on groups with protected characteristics.

Policy paper 12: £1 bus fare

Policy objective: To encourage people to use public transport.

Policy description: This policy lowers the standard bus fare to £1 instead of £1.75.

What is the effect on Londoners?

Only Londoners who use the bus will benefit from this measure. Sophia and her children, and Nikhil will experience the highest decrease as the bus is the only public transport mode they use. Mike already travels free on buses with his Freedom Pass, so he wouldn't benefit from this measure. Paul and Matt are only using the tube, so they won't benefit from this measure either.



Research has demonstrated that people on low incomes are more likely to use the bus than other modes of transport, meaning that this measure is likely to benefit low-income households.²²

For Peter, Zara and their children, it would still be cheaper to drive than to use public transport to complete their trip. But this measure would lower the difference between the cost of driving (£4.40) and using public transport. This measure would be most effective if packaged with other policies disincentivising driving.

Personas	Cost to use public transport	Impact of the policy on the cost to use public transport
Leila and her children	£6.15	-12.2%
Paul	£2.70	0.0%
Mike	£0.00	0.0%
Sophia and her children	£1.75	-42.9%
Lena	£3.40	0.0%
Peter, Zara and their children	£9.95	-15.1%
Nikhil	£1.75	-42.9%
Matt	£5.10	0.0%
Luke	£11.50	0.0%

Equalities impact

This policy would not have any direct negative impacts on groups with protected characteristics.

Conclusion

In the first part of the report, we demonstrated that policy packages are more effective than standalone policies. The policy papers included in this part describe individual policies, but they could be packaged together to maximise their effectiveness and boost their public acceptability. Our recommendations for practical policy changes were detailed in part 1, and we have made some practical recommendations to encourage modal shift in outer London in our accompanying report *Sustainable Travel in Outer London*. We will also publish a summary recommendations paper in autumn that compiles both sets of recommendations.

Appendix 1: Methodology

This appendix explains in more detail the methodology used in this report to analyse the potential impact of a range of policies targeted at financially incentivising or disincentivising transport mode choices.

Qualitative research

We conducted a literature review of existing research from across policy, academia and the private sector, and analysed publicly available datasets. We carried out 14 interviews with policymakers at local, regional and national levels, within and outside London. The interviews were semi-structured and lasted from 30 to 60 minutes. Topic guides were tailored to the field of expertise of each individual and to address knowledge gaps identified during the literature review. The qualitative research was also used to identify policies to be tested in the financial modelling.

Financial modelling

Our quantitative analysis set out to model the impact of selected financial measures on the travel costs of a range of representative personas, explained in appendix 2. As such, the modelling was able to reveal potential “winners” and “losers” under these policies, as well as illustrate the scale of financial impact that these policies could have on the costs of travelling in London. The model does not tell us the modal shift implications of the measures. It was not possible to test every kind of policy using the model, but we have evaluated these elsewhere in the report using the qualitative research (e.g. mobility credits).

Modelled personas

The personas were created based on TfL’s Transport Classification of Londoners. We determined their residence by using the borough with the highest concentration of relevant residents. We also used the segment summary profile (including their life stage and preferred modes of transport) to determine their age, whether they have children, and the age of any children. We also determined the annual household income for the personas. Based on this information, we estimated the price of their cars and their VED bands. The price and age of the cars were then used to calculate whether the personas would need to pay the ULEZ charge when driving in London.

Modelled journeys

For each persona, we modelled the cost associated with a specific journey to understand the policy impacts on a range of journey purposes. These included trips to visit family, to undertake caring responsibilities, for evening leisure activities, to commute to work or university, and “trip chaining” journeys that go to multiple destinations. The journeys modelled also included a range of areas of London, with trips entirely in outer London or inner London, radial trips from outer London into inner London and a trip made to a destination outside London.

For each journey, we decided on the following:

- Starting point;
- Destination;
- Distance of journey;
- Whether the journey is possible via tube or bus;
- Whether the journey is cyclable.

To determine if a trip is cyclable, we used TfL's 2016 cycling potential criteria and considered that all trips below eight kilometres (approximately five miles) were cyclable.²³

Costs of driving

The model calculated the cost of driving for each given journey. This cost incorporates both the use costs of undertaking that journey and the overall availability costs of owning the car.

Use costs of driving

The following variables were used to calculate the use costs of driving:

Fuel price and fuel duty	Fuel price is set at £1.47 per litre, correct as of 26 April 2023. ²⁴ Fuel duty is a variable in the model, but as a default was set at the current rate of £0.53 per litre. Fuel duty forms part of the above price of fuel.
Electricity	For EVs, the model assumes an energy efficiency of four mile per kWh based on a Volkswagen ID.3. ²⁵ Electricity price is calculated using a rate of £0.33 per kWh, correct as of 26 April 2023, assuming the vehicle is charged at home. ²⁶
Congestion Charge	Congestion Charge is a variable in the model, but as a default was set at the current rate of £15.00 per trip in the zone.
ULEZ	ULEZ charge is a variable in the model, but as a default was set at the current rate of £12.50 per trip for eligible cars. It was assumed that the proposed ULEZ expansion has been implemented.
Destination parking	Cost of destination parking varies by persona as each borough manages its parking tariffs differently. For each persona, the parking cost at the destination was estimated assuming the time they would stay at their destination and searching the relevant borough's website to confirm the tariff.
Road user charging	We assumed that the introduction of smart road user charging will need to generate at least a similar revenue to the charges it replaces (i.e. ULEZ and the central London Congestion Charge). ULEZ expansion is assumed to generate between £100 million and £300 million in the first year and be equivalent to zero after four years. ²⁷ The revenue generated by the Congestion Charge in 2022/23 was £84.4 million. ²⁸ In 2021, the vehicle miles in London amounted to 14 billion (excluding buses, LGVs, HGVs, motorcycles and pedal cycles). ²⁹ The minimum price per mile was determined by dividing the revenue generated by the ULEZ (expectation of £300 million a year) and the Congestion Charge by the vehicle miles. This equates to £0.03 per mile. This type of charging aims to encourage people to drive less, but also to drive cleaner vehicles. Using the existing VED, the charge per mile was increased by £0.10 for each VED band (so B is £0.13 per mile, C is £0.23 up to M at £1.23).

Availability costs of driving

The following variables were used to calculate the availability costs of driving on an annual basis:

Ownership costs	<p>For each persona, we attributed a purchase cost for their vehicle ranging from £4,000 to £50,000. We also assumed the number of years that the persona had owned the vehicle.</p> <p>If the vehicle was purchased more than four years ago, then the model assumes that the owner is no longer paying towards ownership costs.</p> <p>For vehicles purchased less than four years ago, the model assumes that they are paying for the car on finance using a personal loan over four years with an APR of 12 per cent.^{30,31}</p>
Insurance	<p>The insurance cost was calculated at £470 per year based on the average cost of UK comprehensive car insurance.³²</p>
MOT	<p>The MOT cost was assumed to be the maximum price of £54.85, as set by the government. This cost applies to vehicles three years or older.</p>
VED	<p>Registration year VED: Each car was attributed to a VED “band” that was used to calculate its first year VED. This was a variable in the model, but as a default was set according to current rates.³³</p> <p>Subsequent years VED: This was a variable in the model, but as a default was set to the current rate of £180 per year for petrol or diesel cars, and £0 per year for EVs.</p> <p>Vehicles owned for less than five years and that cost over £40,000 are subject to an additional £390 of VED per year.</p>
Norwegian-style VED	<p>In policy paper 7, we tested a “Norwegian-style” model of VED for the first year of new car ownership. The values were modelled using only the CO2 tax, although in Norway they would also consider NOx and weight in determining the overall tax rate. Rates were taken from the 2023 tax rates on the Norwegian government website.³⁴</p> <p>The CO2 tax is stepped, with rates calculated per g/km at increasing amounts. In the model, VED Bands A-C were set to zero, to account for the tax rebate that is applied in Norway up to 82g CO2/km.</p> <p>In each VED band thereafter, the tax was calculated assuming the cars’ CO2 emissions were at the upper limit of the VED band.</p> <p>An exchange rate of 1 NOK = 0.078 GBP was used, correct as of 13 March 2023.</p>
Residential parking permit	<p>Residential parking permit costs vary by borough. The model used the VED band of the car and the borough of residence to calculate the annual cost of a residential parking permit for personas who don’t have access to off-street parking.</p>

To convert these annual availability costs into a cost per trip, the average number of miles driven each year by drivers in London (11,283.1 miles) was used to calculate an average cost per mile for each persona.³⁵ This was then multiplied by the distance of the journeys being modelled.

Costs of public transport

Public transport fares were variables in the model, but as a default they were set at current rates, correct as of 26 April 2023.

Journeys modelled were either taken by bus or tube and either during peak or off-peak hours. The model also considered current concessionary schemes and child rates.

Costs of cycling

To calculate the costs of cycling, we compared three cost options: Santander cycle hire, personal bike ownership, and personal bike ownership if purchased using the cycle to work scheme.

Santander cycles

The model compared three ways of paying for Santander cycle hire: PAYR, monthly subscription and annual subscription.

PAYR was set at £1.65 for each 30 minutes.³⁶ An assumed speed of six minutes per mile was used to calculate the multiplier applied to the PAYR rate.

The **monthly subscription** was set at £20 per month.³⁷ The average distance cycled per year by cyclists in the UK (1,087 miles) was used to calculate an average cost per mile.³⁸ This was then multiplied by the journey length.

The **annual subscription** was set at £120 per year.³⁹ This was also converted into an average cost per mile and multiplied by the journey length. The model also incorporated discounts for the cycle to work scheme, NHS staff, students and recipients of ULEZ scrappage grants. Discounts were also used as potential variables but were set at current rates.

Personal bike ownership

For each modelled persona, we calculated the cost of purchasing the necessary bikes. The cost of owning a bike was treated similarly to the costs of owning a car, with costs split over four years and then written off after that.

It was assumed that servicing each bike would cost £50 per year.⁴⁰

The model also accounted for the cycle hangar cost in their borough of residence if they didn't have space to store their bikes at home.

The total annual cost was then divided by the average distance cycled annually (1,087 miles) to calculate a cost per mile.⁴¹ This was then multiplied by the journey length.

Cycle to work scheme

For personas eligible for the cycle to work scheme, we also looked at the impact using the scheme would have on their costs for cycling.

This was done by applying a discount of 35 per cent for personas earning £50,000 per year or more, and a discount of 25 per cent for personas earning less than this. This discount was only applied to adult bikes.

The discounted ownership costs were then combined with servicing and parking costs and converted into a cost per mile as outlined above.

Appendix 2:

Persona descriptions

These personas have been created using the Transport Classification of Londoners, as explained in the previous appendix. The red personas are the individuals and families who use their private car more than the average, and the green personas are the individuals and families who use their private car less than the average.

TfL segment	Description
<p>Affordable Transitions</p> <p>11 per cent of London's population</p> <p>57 per cent have no car</p> <p>This segment is more likely to use public transport.</p>	<p>Leila lives in Newham and has just started a new job in Westminster. She has two children who are going to nursery and primary school. She commutes five days a week after dropping her children at nursery and school. She lives in a semi-detached house, and she doesn't have any space to store her bike at home.</p> <p>This persona is more unlikely to drive to complete this journey. But in the model, we assumed she acquired a £15,000 car last year. The car is ULEZ-compliant and emits between 111 and 130g/km of CO₂.</p> <p>Annual household income: £39,500</p> <p>Trip in the model: Commute from Newham to Westminster, 11 miles</p>
<p>City Living</p> <p>7 per cent of London's population</p> <p>47 per cent have no car</p> <p>This segment is more likely to use public transport.</p>	<p>Paul lives by himself, and he works in Kensington and Chelsea. He walks to his workplace, but he travels every day to central London for leisure. He owns a £45,000 EV that he purchased two years ago. He parks his car in a private parking space he owns with his flat, and he has space to store his bike at home.</p> <p>Annual household income: £62,000</p> <p>Trip in the model: Travel to see a musical, 2.8 miles</p>
<p>Detached Retirement</p> <p>21 per cent of London's population</p> <p>19 per cent have no car</p> <p>This segment is more likely to drive.</p>	<p>Mike is retired and lives in Bromley. He travels every week to see his grandchildren who live in Southwark. He owns a £45,000 car he bought seven years ago which isn't ULEZ-compliant, and it emits 131-150g/km of CO₂. He can park in his driveway, and he can store his bike at home. He is also eligible to the Freedom Pass as he is 70 years old.</p> <p>Annual household income: £55,700</p> <p>Trip in the model: Travel from Bromley to Southwark to see his family, 8.9 miles</p>
<p>Family Challenge</p> <p>7 per cent of London's population</p> <p>50 per cent have no car</p> <p>This segment is more likely to use the bus.</p>	<p>Sophia lives in Redbridge, and she is looking for a job. She has two children aged 16 years old and 14 years old. It was assumed that she owns a £5,000 car, acquired 10 years ago, which isn't ULEZ-compliant. She needs off-street parking, and she doesn't have any space to store her bike and her children's bikes at home.</p> <p>Annual household income: £31,500</p> <p>Trip in the model: Going to the shop within Redbridge, 2.0 miles</p>

TfL segment	TfL segment
<p>Educational Advantage</p> <p>6 per cent of London's population</p> <p>74 per cent have no car</p> <p>This segment is more likely to use public transport and walk.</p>	<p>Lena lives in Islington and works in Canary Wharf. She lives by herself. She can store her bike at home.</p> <p>It was assumed she owns a £10,000 car, acquired last year, which is ULEZ-compliant. She doesn't have any car parking space at home. Her car's CO2 emissions are lower than 50g/km.</p> <p>Annual household income: £45,000</p> <p>Trip in the model: Commute from Islington to Tower Hamlets, 6.1 miles</p>
<p>Settled Suburban</p> <p>9 per cent of London's population</p> <p>35 per cent have no car</p> <p>This segment is more likely to drive.</p>	<p>Peter and Zara live in Havering and visit Zara's parents in Bromley every week. They have three children aged 3, 10 and 12 years old. They acquired a £15,000 car last year, which is ULEZ-compliant. They can park their car in their driveway, and they can store their bikes at home.</p> <p>Annual household income: £36,400</p> <p>Trip in the model: Travel from Havering to Bromley to see their family, 21 miles</p>
<p>Students and Graduates</p> <p>13 per cent of London's population</p> <p>58 per cent have no car</p> <p>This segment is more likely to use public transport.</p>	<p>Nikhil lives in Clapham Junction, and he studies at Roehampton University. His parents gave him a £5,000 car six years ago which isn't ULEZ-compliant. Roehampton University has free on-campus parking for students, so he doesn't have to pay to park his car when going to the university. However, he needs to purchase an on-street residential parking permit. He has some space to store his bike.</p> <p>Annual household income: £20,000</p> <p>Trip in the model: Travel to university within Wandsworth, 5 miles.</p>
<p>Suburban Moderation</p> <p>19 per cent of London's population</p> <p>36 per cent have no car</p> <p>This segment is more likely to drive.</p>	<p>Matt lives in Enfield and works in Islington. He has two children aged 11 and 14 years old. His car use is high, and his use of public transport is below average. He acquired a £15,000 car 15 years ago which isn't ULEZ-compliant. He needs to purchase an on-street residential parking permit. He doesn't have space to store three bikes at home.</p> <p>Annual household income: £40,700</p> <p>Trip in the model: Commute from Enfield to Islington, 12 miles</p>
<p>Urban Mobility</p> <p>11 per cent of the population</p> <p>57 per cent have no car</p> <p>This segment is less likely to drive.</p>	<p>Luke lives in Lewisham and works in Southwark. He travels to look after his mother who lives in Stone Street (five miles away from Sevenoaks) every other week. He acquired a £5,000 car three years ago that is ULEZ-compliant. He doesn't need an on-street parking permit.</p> <p>Annual household income: £40,700</p> <p>Trip in the model: Travel from Lewisham to outside London (Sevenoaks), 25 miles</p>

Endnotes

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House of Sport,
190 Great Dover St,
London SE1 4YB
T: 020 3757 5555
hello@centreforlondon.org
centreforlondon.org
Company Number: 8414909
Charity Number: 1151435

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Research and evidence: conducting robust, unbiased research and analysis, and collaborating with Londoners and stakeholders across all sectors, to generate new ideas and recommendations.

Convening and collaborating: bringing together citizens, experts and decision makers from diverse standpoints to discuss complex issues in a safe space, devise solutions and work out how to implement them.

Awareness raising and advocacy: being an authoritative policy voice on London and promoting our research and ideas to those with the power to act on them – from the grassroots to London's and the nation's leaders – through briefings, publications, social media, press and events.