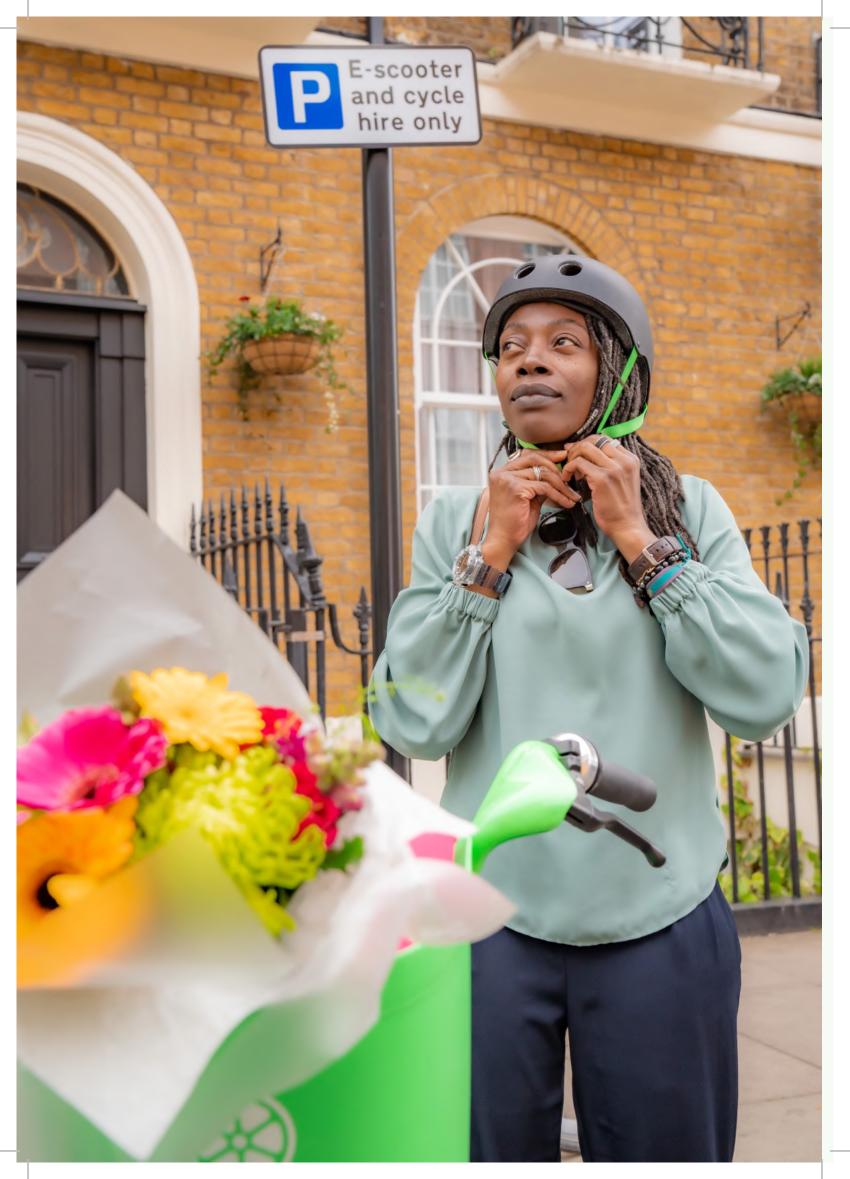


Lime in London:
Assessing the
benefits of shared
e-bike services and
recommendations
for future regulation

**July 2023** 



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## steer

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# **Executive Summary**

Lime is the world's largest and most experienced micromobility provider. Founded in 2017, its mission is to build a future where transportation is shared, affordable and carbon free. It operates shared e-scooter and e-bike services in over 230 cities across 35 countries globally.

Lime has commissioned the independent consultancy Steer to develop this Sustainability Report to analyse how Lime e-bikes support London's transport system, encourage cycle trips and complement the public transport network.

This report uses Lime e-bike service data from January 2019 to March 2023, in addition to rider survey data, to assess the contribution made by Lime e-bikes in London supporting across the following themes:

- → Accessibility
- **→ Connectivity**
- → Active Travel
- → Modal Shift





## Trips and usage

Lime e-bikes provide an important and growing transport option allowing Londoners to travel more sustainably through easy access to shared e-bikes.

During the reporting period:

- Lime e-bikes were used by > 1.25 million
   riders in London
- Lime e-bike riders have taken > 12 million
   e-bike trips travelling over 30 million kms
- Lime e-bike trips in London have increased on average by over 10% each month

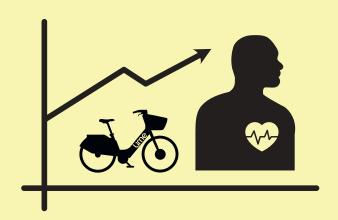
## **Accessibility**

Lime e-bikes are available across a growing service zone currently covering an area of 480 sq. km. - home to over 4 million people. Lime e-bikes provide a range of accessibility benefits for London residents and visitors including:

- About 40% of Lime e-bikes are deployed in areas with low public transport accessibility
- Half of Lime e-bikes are provided in areas of higher deprivation
- 23% of Lime riders think availability of Lime e-bikes has improved access to jobs and has a positive impact on the economy

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## Connectivity

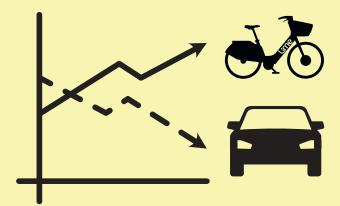
Lime e-bikes enhance the connectivity provided by the public transport network and encourages use of the growing cycle lane network across London with:

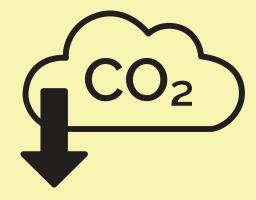
- 97% of the population able to access a Lime e-bike within a two minutes walk (service area of over 4 million people)
- 34% of Lime e-bike riders in London combining their last e-bike trip with public transport
- **69%** of Lime e-bike riders in London using cycle lanes for their last Lime e-bike trip

#### **Active Travel**

Access to Lime e-bikes provide a catalyst to both encourage people to start cycling and to cycle more often, supporting the Mayor's Transport Strategy objectives to increase trips by sustainable modes:

- Almost 60% of Lime riders cycle more often after starting to use Lime e-bikes.
- 73% of female Lime riders cycle more often after starting to use Lime e-bikes.
- Lime ridership can be increased even further through:
  - More bike lanes (recommended by 33% of riders)
  - Greater availability of e-bikes (recommended by 33% of riders)
  - Larger operating area
     (recommended by 27% of riders)





#### **Mode shift**

Lime e-bikes facilitate fewer car trips in London delivering the following benefits:

- 8% of Lime e-bike riders cited that they
  would have used a private vehicle, taxi,
  private hire or car clubs to complete their
  journey if Lime e-bikes were not available.
- Based on this data, the service has helped avoid about 1 million motor vehicle trips (excluding public transport) in London since launch
- Over 2.6 million fewer motor vehicle km (excluding public transport) have been travelled since Lime e-bikes have been launched which is equivalent to London to Paris and back 3,000 times

# Carbon reductions and air quality improvements

Lime e-bikes have enabled riders to reduce their carbon emissions and support a reduction in harmful particulates from motor vehicles (excluding public transport):

- Through a reduction in motor vehicle trips (excluding public transport), 370 tonnes of carbon emissions have been saved which is equivalent to 12,000 trees planted
- In addition, use of Lime e-bikes has reduced PM 2.5 emission by around 50 kgs
- 28% of Lime riders said being healthy was one of their top reasons for using Lime e-bikes

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The record demand for shared e-bikes in London requires a new regulatory approach. Services are currently regulated on a borough-by-borough basis via individual agreements with local authorities. These agreements use different operational and user parking requirements. This creates confusion for riders with regards to where to park which can create obstructions for pedestrians, particularly those with access issues. They also cause operational issues for both local authorities and operators.

#### Recommendations

To improve the management of shared e-bikes in London, plans from Transport for London and London Councils to centrally regulate shared e-bikes London-wide post 2025 are welcomed.

This report identifies clear accessibility, connectivity, active travel and mode shift benefits delivered by shared e-bike services in London. Using insights from service data, user surveys, and stakeholders including disability charities, it makes **five** recommendations (detailed on the following pages) to ensure these benefits are maintained and developed under the new framework.



#### Insight

Dedicated parking locations help to prevent pavement obstructions, particularly for those with access issues.

**27%** of Lime riders would cycle more if Lime had a larger, more standardised service area.

**22%** of Lime riders would cycle more if parking rules were consistent across London boroughs.

#### Recommendation

Transport for London and London Councils should work with operators to introduce a London-wide shared e-bike service with a standardised service area, user parking and riding rules. Users should be required to leave their bikes at designated parking locations across this area only.

**50%** of Lime riders said they wouldn't walk more than 2 minutes to pick up or drop off a Lime e-bike at a designated parking location.

To improve user parking whilst maintaining the convenience and usage levels of these services, a dense, city-wide network of designated parking locations is required.

Based on Lime trip and user survey data, 25 parking locations are needed per sq. km. to ensure strong usage and parking compliance. This means > 10,000 additional parking locations are required across London.

Lime has worked successfully with boroughs like Camden, Hackney, City of London, Hammersmith and Fulham, Ealing and Hounslow to identify, fund and implement designated parking locations for shared e-bikes. Operators must work with local authorities and Transport for London to provide trip data to identify suitable parking locations across the city. Operators should also support in funding the implementation of these parking locations. It is estimated that implementing a full network of > 10,000 designated locations could cost up to £20 million. Use of existing bike racks for shared e-bikes should be considered as a way to limit costs and provide an immediate increase to parking density and availability.

#### Insight

#### Recommendation

**22%** of Lime e-bike riders in London found information about where to park their bike unclear.

To improve user understanding of boroughspecific parking rules in the short term, shared e-bike operators should introduce location specific in-app rider education features which alert users when they cross a borough boundary or enter an area with new parking rules.

**33%** of Lime users would cycle more if more bike lanes were provided.

To improve user experience, overall cycling uptake and contribute towards Transport for London and London boroughs' Vision Zero objectives, shared e-bike operators should provide regular data on usage patterns on cycling infrastructure and where further infrastructure could be required (based on shared bike trip usage).



## Introduction

#### Overview

Lime has operated a shared e-bike scheme in London since late 2018. Within the reporting period (January 2019 -March 2023) > 1.25 million London Lime riders have taken > 12 million e-bike trips travelling over 30 million kms.

Lime currently has operating contracts with 10 London boroughs: Camden, Islington, Hackney, Southwark, City of London, Ealing, Hammersmith and Fulham, Hounslow, Brent and Richmond. These agreements are made with individual boroughs and are based on different operational and parking requirements including mandatory parking zones (Camden, Hackney, City of London, Hammersmith and Fulham, Ealing and Hounslow) where users are required to leave their bikes in designated parking locations, preferred parking zones (Southwark, Richmond) where limited designated parking is provided but users are not required to use it and free floating parking (Islington, Brent) where dedicated parking isn't yet provided and bikes must be parked considerately.

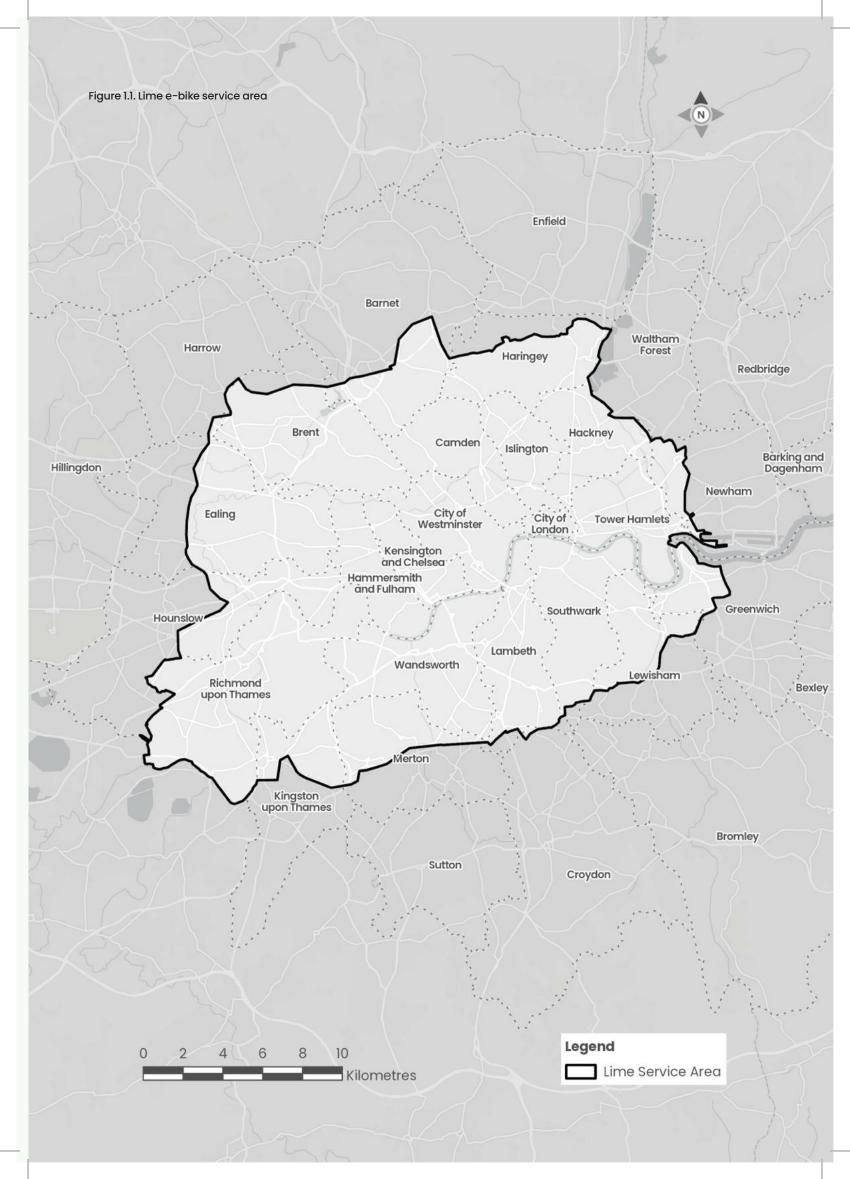
Lime bikes can also be ridden into and parked in some London boroughs where there aren't yet formal agreements in place, including Westminster, Wandsworth and Kensington and Chelsea.

Lime has commissioned the consultancy Steer to undertake an independent analysis of the extent to which Lime e-bikes support the city's transport system, encourage cycle trips and complement the public transport network.

As Transport for London (TfL) and London Councils develop plans to centrally regulate shared e-bikes London-wide, this research is designed to assess the value the mode provides residents, workers and visitors across the city. In doing so it aims to help inform this upcoming regulation, ensuring a progressive and effective future approach to managing and developing shared e-bike operations here, which delivers for local authorities, transport partners, residents and providers.

## Over 250,000 new cyclists

20% of Lime riders in London had never cycled before they started using Lime e-bikes.



# Improved accessibility for over 325,000 riders

27% of Lime e-bikes riders said availability of Lime e-bikes improves accessibility in London.

#### **Data sources**

#### Lime data

Lime's fleet of e-bikes provide real-time information about their location and trips made by riders. This extensive data source provides an unrivalled evidence base on the use of e-bikes in London. To develop the evidence base presented in this report Steer has worked closely with Lime to review and analyse data about trips made by Lime e-bikes. The usage data in this report is based on an analysis of Lime e-bike trips from January 2019 to March 2023.

#### **Rider survey**

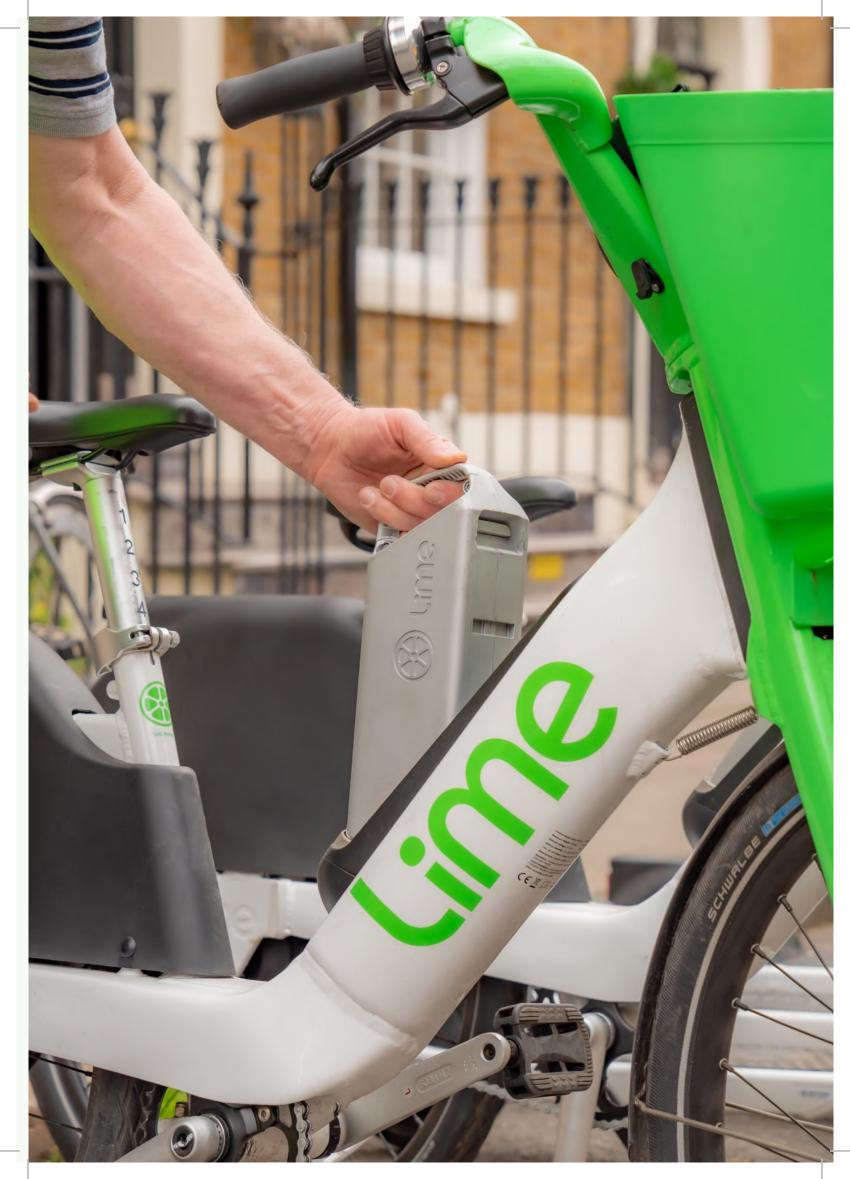
Lime also undertakes regular surveys with riders in cities across the world. To support the evidence base developed for this report, Steer has worked closely with Lime to add additional survey questions to Lime's London rider survey. The rider survey, which this report draws on, was undertaken between 23rd May 2023 and 6th June 2023 with 964 responses received from London Lime e-bike riders.

#### **Analysis and Recommendations**

Through analysis of the data sources detailed above this report assesses the contribution made by Lime e-bikes across London supporting across the following themes:

- Accessibility
- Connectivity
- Active Travel
- Modal Shift

The report concludes with a number of recommendations to maintain and develop this contribution, including recommended actions for bike share operators, London Boroughs, London Councils and Transport for London.



# Trips and usage

# Positive rider experience for over 875,000 riders

70% of Lime riders in London rated their rider experience as positive or very positive.

## Over 10% monthly growth in Lime e-bike trips

Lime provides access to shared e-bikes to over 4.2 million London residents in addition to commuters and visitors to the city.

Lime e-bike trips increased by over 10% on a month by month basis, since 2019 with a short break in service during the Spring 2020 Covid lockdown.

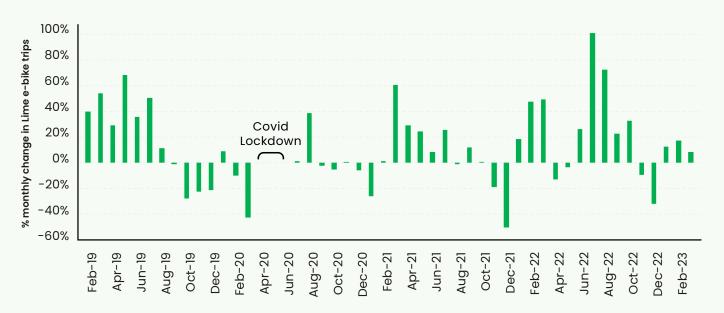


Figure 2.1. Changes in Lime e-bikes monthly trips since 2019

## Over one-third of Lime e-bike trips are made for commuting purposes

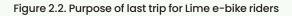
When shared micromobility first launched, e-bikes were viewed by some as primarily for fun and recreational activities.

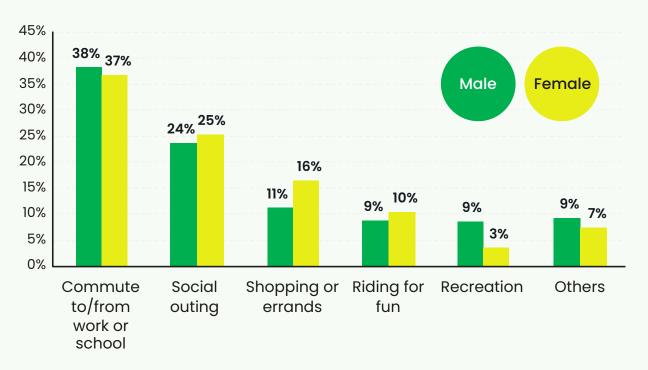
The Lime e-bike rider surveys disproves this. In London, commuting and travel to education is the most common reason to use Lime e-bikes. This is true for both male and female riders.

Female riders are more likely to use Lime e-bikes compared to their male or other counterparts for shopping or errands and social outing purposes.

# Almost 500,000 riders use Lime e-bikes for commuting purposes

39% of Lime e-bike riders said that commuting to/or from work or school was the purpose of their last trip.





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# Accessibility

## Lime e-bikes enhance transport accessibility across London

A key role of shared e-bikes in a city (including in London) is to strengthen the public transport network by providing first and last mile connectivity to public transport, and to encourage people to take fewer car trips.

Lime provides access to shared e-bikes across the service area both in areas of low public transport accessibility and areas of high public transport accessibility.

The map on the top right shows the location of Lime e-bikes at 7am on a typical weekday morning, demonstrating a broad spread of e-bikes available for riders across the service area. The map on the bottom right shows the level of access to public transport options including bus, tube and rail across the Lime e-bike service area.

Based on this analysis, more than a third of Lime e-bikes were available in areas with low public transport accessibility, which improves access to public transport by e-bikes for residents (See Figure 3.1 and Figure 3.2).

During strike events or public transport network disruption, Lime's e-bike service also helps to maintain accessibility and improves London's transport network resilience with an average trip increase of over 100% on tube or rail strike days.

# Improved access to alternate and sustainable transport

38% of Lime e-bikes in London are available in areas with lower access to public transport.

"I first tried Lime about two years ago. It was just out of lockdown and I cycled to the Tate Modern one day as I wasn't comfortable using the tube. After that I was quickly addicted."

### Jules, 28, Clapham

Name: Jules

Age: 28

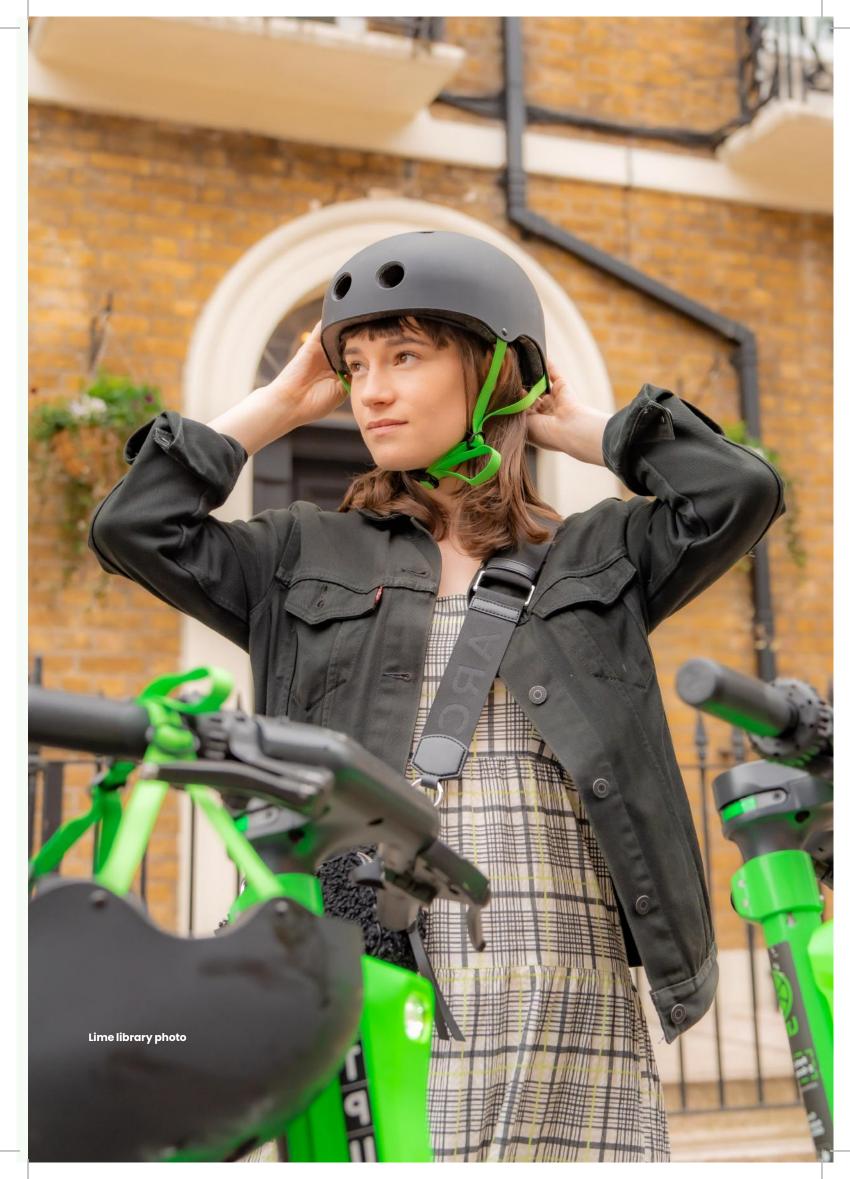
Lives in: Clapham (Lambeth)

Occupation: Corporate Partnerships

Manager at The Design Museum, and part
time Yoga teacher at Oncore

"During the train strikes in September and October, I used Lime to get from Clapham to Fulham for my advanced yoga teacher training. It took place every weekend and of course, almost every time there was a strike or repairs, so I could never get the District line. The tube also meant I would have to go into central London just to go West again, so it didn't make a lot of sense time wise. It would have actually taken the same time to walk there as it did to take the tube. Cycling really was the only way I could get to my training at the time, so without Lime, I suppose I'd be jobless!"

"Nowadays, I use Lime weekly - mostly to go to my run club and my friends' houses around South London - as it's the perfect way to get to different places. I just clip my helmet to my backpack so it is always with me! I'm also planning to start using them to get to work - I'm slightly claustrophobic and hate how busy the tube is at 8am so I'm keen to find an alternative method of commuting."



# Lime e-bikes support access to transport in areas with high levels of deprivation

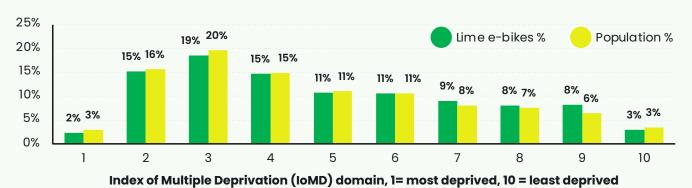
Easy access to safe and affordable transport is critical to ensuring equality for all. People living in more deprived areas often have less access to services including trasnport options. This can reduce their economic opportunities as well as their quality of life.

Analysis of the location of Lime e-bikes on a typical weekday morning demonstrates that Lime e-bike availability mirrors the proportion of population residing in each of the Index of Multiple Deprivation (IoMD)<sup>1</sup> domains. This ensures uniform access to shared e-bikes in both more deprived areas and less deprived areas of London.

## Reduced transport disparity

50% of Lime e-bikes in London are available in areas with higher levels of deprivation.

Figure 3.3. Distribution of Lime e-bikes by deprivation level and corresponding population share



<sup>1</sup> The Indices of Multiple Deprivation are a unique measure of relative deprivation at a small local area level across England, based on seven different domains, or facets, of deprivation: Income Deprivation, Employment Deprivation, Education, Skills and Training Deprivation, Health Deprivation and Disability, Crime, Barriers to Housing and Services and Living Environment Deprivation.

# Improved access to jobs and employment for over 300,000 riders

Almost one in four Lime riders said that Lime e-bikes have improved access to jobs and have created a positive economic impact.

## Lime e-bikes have a positive economic impact

Riders think that Lime e-bikes have improved access to jobs and created a positive economic impact..

Lime launched its Lime Access programme in London in October 2021. The initiative offers TfL and borough concession pass holders 50% off all trips with > 25,000 Londoners now signed up to receive the discount, helping to ensure the service is affordable and accessible to all. Eligible passes include the Blue Light Card, student cards and the Freedom Pass.

Lime has also worked with partner boroughs to create "Access Zones" in areas of high deprivation in the service zone. These zones automatically reduce pricing for residents without requiring them to sign up to Lime Access.

Additionally, Lime offers a range of time-based passes to ensure affordability for users not eligible for Lime Access pricing. Passes start at £5.99 for 1 hour of riding and can be purchased within the app.



# Connectivity

## Increased connectivity to public transport for over 425,000 riders

34% of riders used Lime e-bikes to access public transport on their last trip.

## Lime e-bikes improve access to London's public transport network

Public transport accessibility varies across London, with some areas very well connected and other areas less well supported by a limited tube or rail network. Through Lime's provision of e-bikes across the service area, 97% of the population are typically within a two-minute walk of a Lime bike, this supports last mile or onward travel from tube and rail stations.

Within Lime's service area, only 37% of the population (around 1.6 million Londoners) live within a five-minute walk to a tube/rail station. Lime e-bikes, that are available near all the stations, improve last mile connectivity by e-bikes for 99.9% of the population (4.2 million Londoners) providing access to tube/rail within five-minute cycle.

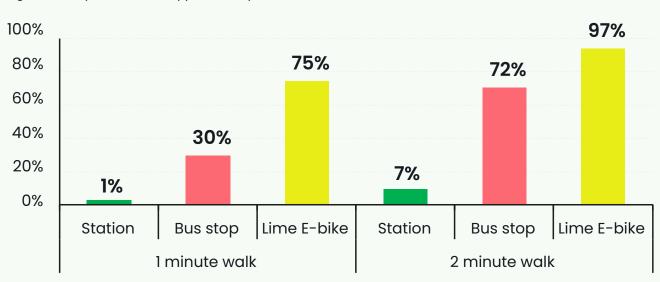


Figure 4.1. % Population served by public transport and Lime

## Over 850,000 riders use the TfL cycle network

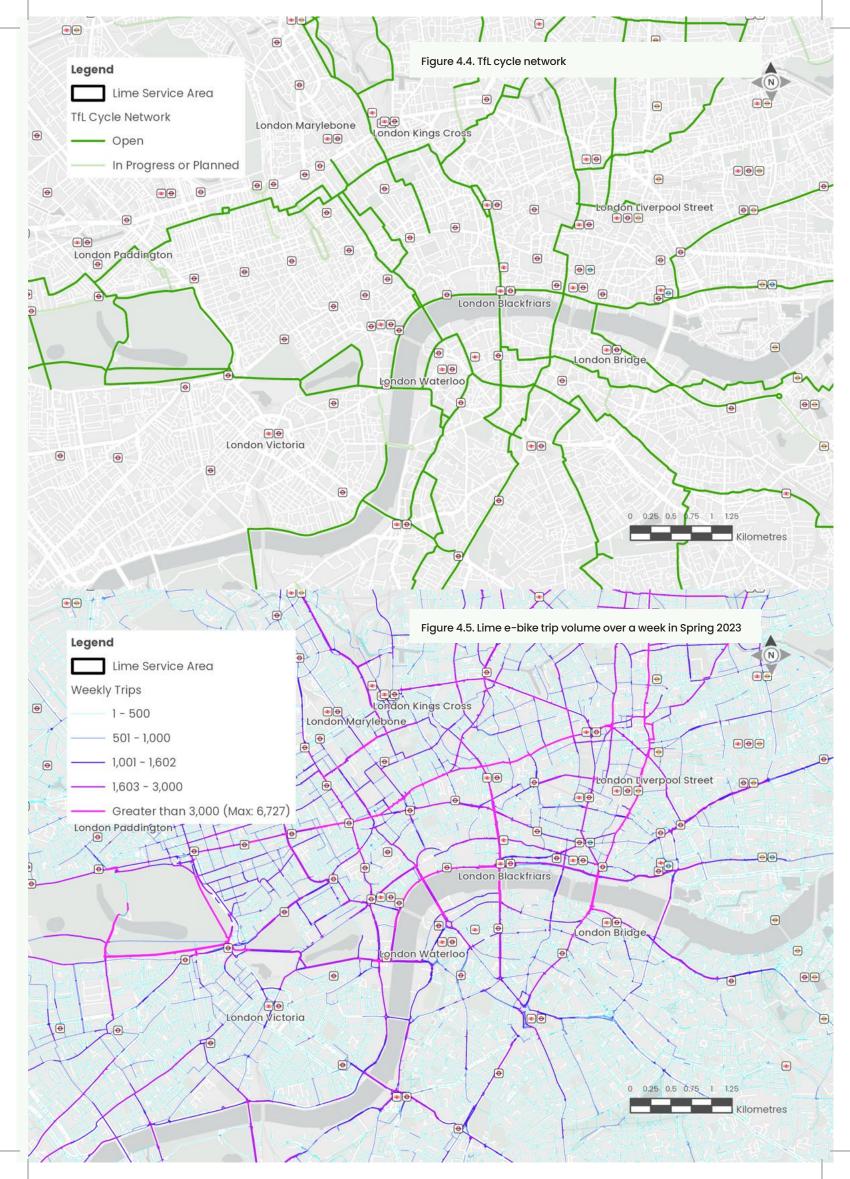
Two-thirds of Lime riders in London used bike lanes for all or part of their trip.

## Lime e-bikes support the growth of cycle infrastructure

Lime e-bike riders make extensive use of the growing cycle network in London. Almost 70% of Lime riders surveyed used the bike lanes for a part of their trip or the whole trip.

This is also evident from the review of Lime e-bike trip volume over a week in Spring 2023 (See Figure 4.5), that Lime e-bike riders are making extensive use of cycle lanes (See Figure 4.4).

Lime trip volume data can also be used to plan for further cycle network expansion in London.



"I use Lime daily to commute to work. Working as a sous chef, I have to travel to-and-from my house and the restaurant early in the morning and late at night. Riding a Lime is quicker than other available options. Ordinarily, I'd have to take a bus and walk to Kensal Rise, taking roughly 40 minutes door-to-door. But now I hop on a Lime, and can be at work in less than 15 minutes!"

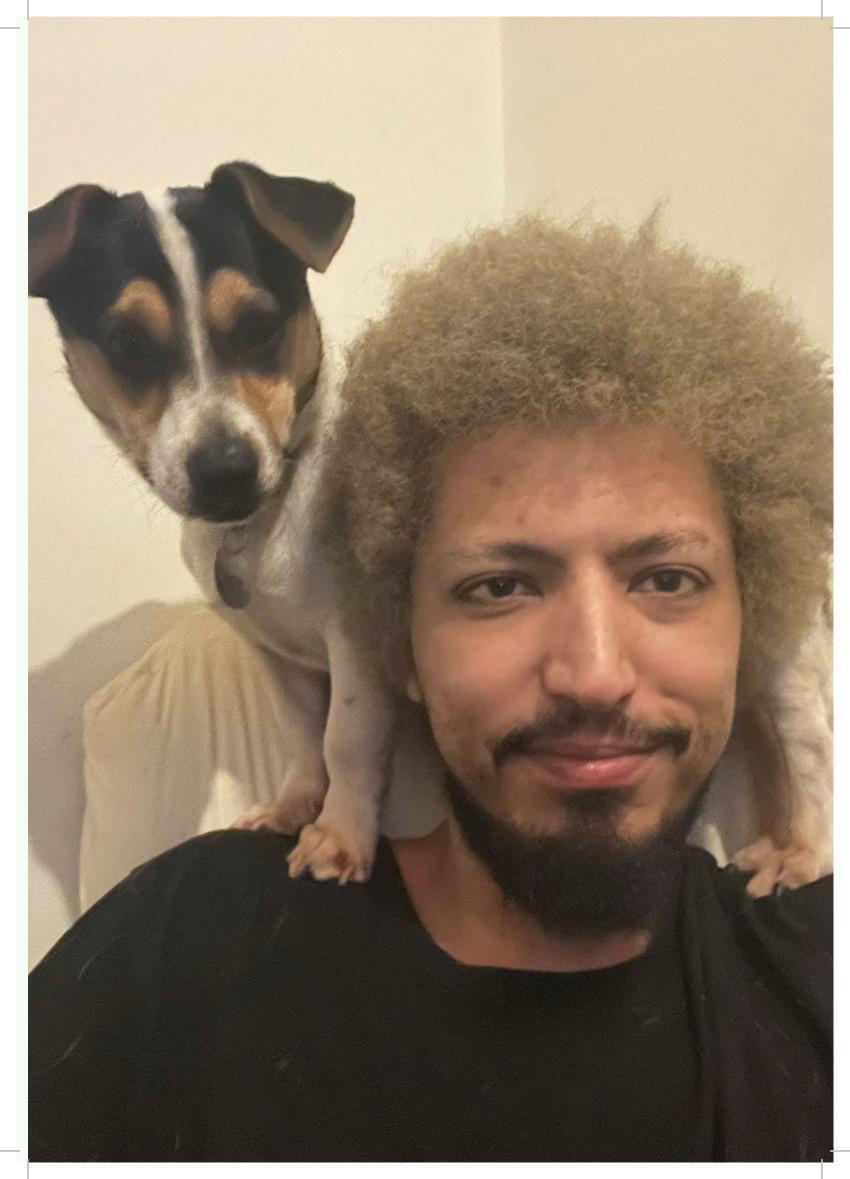
## Tadeas, 29, Kensington & Chelsea

Name: Tadeas

Age: 29

Lives in: Kensington and Chelsea Occupation: Sous Chef

"Before my current job I was working as an agency chef, which required me to work outside of London frequently, commuting close to three hours a day. When I'd get in late at night, the tubes had often stopped running, so I would cycle a Lime home from Clapham Junction or Victoria as it was faster than taking a bus. It saved me a lot of time."



## **Active Travel**

## Over 700,000 more regular cyclists

Almost 60% of Lime riders said they have never cycled before or are now cycling again after a break.

# Convenience encourages cycling

45% of Lime e-bike riders in London chose to ride a bike because it was convenient.

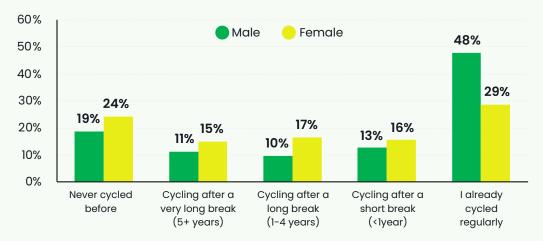
## Figure 5.1. Lime e-bike impacts on rider cycling frequency

## Lime e-bikes encourage people to start cycling again

Shared bikes have a role to play in facilitating access to cycling for more people who may be deterred from buying their own bike due to issues with storage space, maintenance costs and theft. Many riders appreciate this convenience and the ability to pick-up and drop-off the bikes both for one-way and/or for first and last mile trips.

Lime e-bikes played a significant role in encouraging people to cycle again or for the first time in London, and particularly amongst female users (see Figure 5.1):

- 71% of female riders were not regular cyclists before using Lime e-bikes compared to 52% male riders.
- 32% of female riders were cycling after a long or very long break (1+ years) compared to 21% male riders.
- 24% of female riders cited that they had never cycled before using Lime e-bikes compared to 19% male riders.



#### Lime e-bikes encourage more cycling

Alongside encouraging Londoners to start cycling again, Lime e-bikes are encouraging more cycling amongst existing cyclists. 60% of respondents either cycle much more often or more often since using Lime e-bikes.

Using Lime e-bikes has encouraged 73% of female riders to cycle more, compared to 53% of male riders (see Figure 5.2).

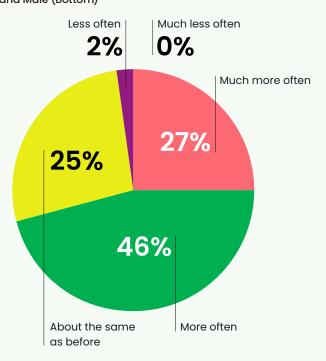
Increasing the size of the operating zone for Lime e-bikes has the potential to encourage even more Londoners to become regular cyclists.

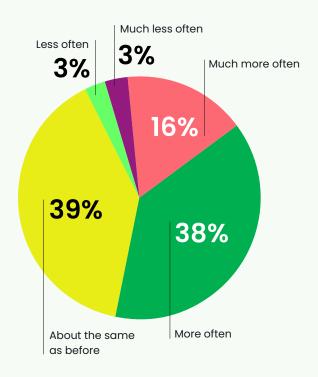
In 2023, Lime has partnered with cycle training provider Bikeworks to fund and deliver regular training sessions across London to help even more people get into - or back into - cycling.

Sessions are free to attend and are delivered by Bikeworks Bikeability trained cycle instructors. They are designed to teach attendees how to ride confidently and safely on the road. Lime bikes are provided for training purposes and each attendee receives a free Lime helmet.

Lime and Bikeworks conduct monthly rider training sessions and Lime will continue to offer this service in 2024. Lime also works directly with its partner boroughs to fund cycle training programmes.

Figure 5.2. Lime e-bike riders cycling frequency: Female (Top) and Male (Bottom)





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"For me, Lime e-bikes help me to feel safe travelling around London as a woman, especially at night. Taking a bus can be time-consuming, and the alternative of walking through eerie streets is far from ideal as I don't always feel safe alone in the dark."

### Clare, 28, South West London

Name: Clare

Age: 28

## Lives in: South West London Occupation: Research

"Many aren't aware of how common it is for women and other vulnerable groups to feel 'on alert' when walking alone at night based on the worrying statistics in London and the UK - it is exhausting. Cycling on Lime feels so much safer, and means I often get to my destination much quicker too.

"I first used Lime last summer to get to a birthday picnic with a group of friends on a sunny day. Now, I use Lime bikes weekly to travel around London for social occasions - many after dark - like going to a friend's house, or one of my yoga classes. Lime is a great way to get around during my week."



# Mode shift and air quality

## Car and taxi trips replaced

Equivalent to 3,000 trips from London to Paris and back.

### Carbon savings

Equivalent to 12,000 trees planted.

### Health benefits for over 350,000 riders

28% of Lime riders said being healthy was one of their top reasons for using Lime.

## Lime e-bikes helped remove 1 million car, taxi or moped trips

Shared e-bikes can facilitate mode shift from trips which would have otherwise been made by cars, had bike share not been available.

As such, Lime e-bikes help to support policy goals such as the London Mayor's ambition for 80% of trips in London to be made by walking, cycling or public transport by 2041.<sup>2</sup>

8% of Lime riders would have used a private vehicle, taxi, private hire, or car clubs if Lime e-bikes were not available. Based on Lime usage data, its e-bike service has therefore helped to avoid about 1 million motor vehicle trips in London.

There is potential for greater car trip replacement given further expansion of the Lime operating zone in Outer London where car mode share is higher than the London average of 40%<sup>3</sup> (which in turn is lower than the UK average of 67%<sup>4</sup>).

Standardised e-bike parking and riding rules across London would also make it easier to take trips between boroughs, boosting potential for mode shift away from cars.

<sup>2</sup> https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/encouraging-cycling-andwalking#:~text=The%20overarching%20goal%20of%20the,of%20active%20travel%20each%20day

<sup>3</sup> https://tfl.gov.uk/cdn/static/cms/documents/travel-in-london-report-15-data.xlsx

<sup>4</sup> https://www.gov.uk/government/statistics/national-travel-survey-2021/national-travel-survey-2021-mode-share-journey-lengths-and-public-transport-use#mode-share-of-trips

## Lime e-bikes helped reduced carbon emissions of 370 tonnes

Given that Lime riders travel between two and three kms on a Lime e-bike, it is estimated that Lime e-bike trips replaced over 2.6 million vehicle km in 2022. This corresponds to a reduction in CO<sub>2</sub> emissions of 370 tonnes. <sup>5</sup>

## Lime e-bikes led to air quality improvements

Lime e-bikes also help towards improving air quality in London by replacing car trips with cycling trips in alignment with objectives of London Local Air Quality Management Action Plan.<sup>6</sup> Through reductions in car or taxi kms, and, subsequent reductions in air pollution caused from wear and tear of tyres, brakes and exhaust emissions from cars and taxis, Lime e-bikes helped reduce particulate matter (PM 2.5) of 48 kgs from London air in 2022.

Fraunhofer Institute for Systems and Innovation Research (ISI) conducted a detailed study to evaluate the impact of shared e-bikes and e-scooters on reducing life cycle carbon emissions of urban transport systems considering findings on six different cities around the world. The study analyses the differences between the life cycle assessment of emissions per passenger kilometre (pkm) of shared micromobility mode and the modes people would have used if shared e-scooters or e-bikes would not have been available. The study's findings confirm that the latest generation of Lime shared e-scooters and e-bikes can reduce net carbon emissions by -14g/ pkm to up to -42g/pkm depending on the emission level of cars used in a city, mostly replacing private hire and car trips.7

<sup>5</sup> Assuming average car in the UK emits 138.4g CO2 per km. Transport and environment statistics 2022 - GOV.UK (www.gov.uk)

<sup>6</sup> air\_quality\_action\_matrix.pdf (london.gov.uk)

<sup>7</sup> https://www.isi.fraunhofer.de/en/presse/2022/ presseinfo-24-shared-micromobility-geteilte-e-scooterbikes-emissionen-verkehr-staedte.html

## Recommendations

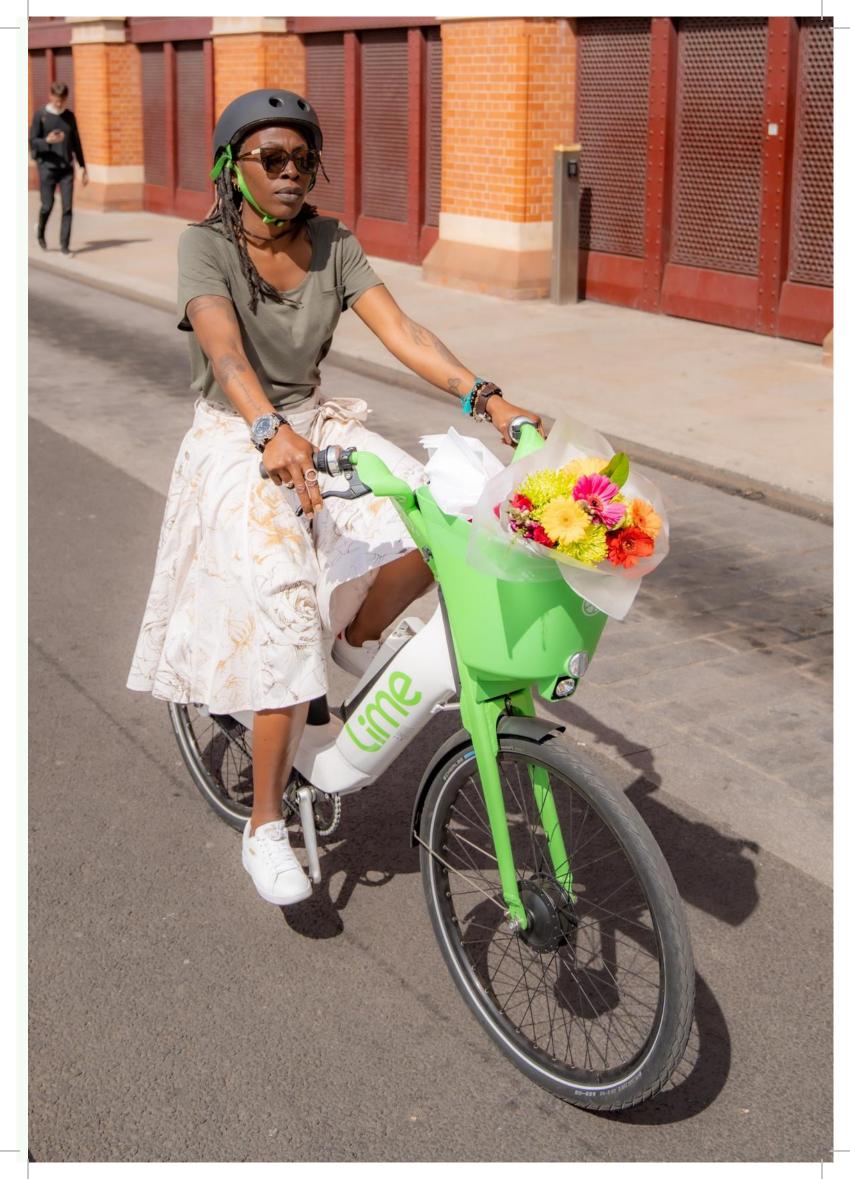
### The way forward...

This report has identified clear accessibility, connectivity, active travel and mode shift benefits delivered by Lime's shared e-bike service in London. However, there is still room for improvement to deliver a service which maximises the benefits for both riders and non-users.

The record demand for shared e-bikes in London requires a new regulatory approach. Services are currently regulated on a borough-by-borough basis via individual agreements with local authorities. These agreements use different operational and user parking requirements. This creates confusion for riders with regards to where to park which can create obstructions for pedestrians, particularly those with access issues. They also cause operational issues for both local authorities and operators.

To improve the management of shared e-bikes in London, plans from Transport for London and London Councils to centrally regulate shared e-bikes London-wide post 2025 are welcomed.

This report identifies clear accessibility, connectivity, active travel and mode shift benefits delivered by shared e-bike services in London. Using insights from service data, user surveys, and stakeholders including disability charities it makes five recommendations (detailed on the following pages) to ensure these benefits are maintained and developed under the new framework.



#### Insight

Dedicated parking locations help to prevent pavement obstructions, particularly for those with access issues.

**27%** of Lime riders would cycle more if Lime had a larger, more standardised service area.

**22%** of Lime riders would cycle more if parking rules were consistent across London boroughs.

#### Recommendation

Transport for London and London Councils should work with operators to introduce a London-wide shared e-bike service with a standardised service area, user parking and riding rules. Users should be required to leave their bikes at designated parking locations across this area only.

**50%** of Lime riders said they wouldn't walk more than 2 minutes to pick up or drop off a Lime e-bike at a designated parking location.

To improve user parking whilst maintaining the convenience and usage levels of these services, a dense, city-wide network of designated parking locations is required.

Based on Lime trip and user survey data 25 parking locations are needed per sq. km. to ensure strong usage and parking compliance. This means >10,000 additional parking locations are required across London.

Lime has worked successfully with boroughs like Camden, Hackney, City of London, Hammersmith and Fulham, Ealing and Hounslow to identify, fund and implement designated parking locations for shared e-bikes. Operators must work with local authorities and Transport for London to provide trip data to identify suitable parking locations across the city. Operators should also support in funding the implementation of these parking locations. It is estimated that implementing a full network of > 10,000 designated locations could cost up to £20 million. Use of existing bike racks for shared e-bikes should be considered as a way to limit costs and provide an immediate increase to parking density and availability.

#### Insight

**22%** of Lime e-bike riders in London found information about where to park their bike unclear.

#### Recommendation

To improve user understanding of boroughspecific parking rules in the short term, shared e-bike operators should introduce location specific in-app rider education features which alert users when they cross a borough boundary or enter an area with new parking rules.

**33%** of Lime users would cycle more if more bike lanes were provided.

To improve user experience, overall cycling uptake and contribute towards Transport for London and London boroughs' Vision Zero objectives, shared e-bike operators should provide regular data on usage patterns on cycling infrastructure and where further infrastructure could be required (based on shared bike trip usage).



Recommendations 41



Lime in London:
Assessing the
benefits of shared
e-bike services and
recommendations for
future regulation