



Freight and servicing action plan

Making London's streets safer, cleaner and more efficient

MAYOR OF LONDON



**TRANSPORT
FOR LONDON**
EVERY JOURNEY MATTERS

About Transport for London (TfL)

Part of the Greater London Authority family led by Mayor of London Sadiq Khan, we are the integrated transport authority responsible for delivering the Mayor's aims for transport.

We have a key role in shaping what life is like in London, helping to realise the Mayor's vision for a 'City for All Londoners'. We are committed to creating a fairer, greener, healthier and more prosperous city. The Mayor's Transport Strategy sets a target for 80 per cent of all journeys to be made on foot, by cycle or using public transport by 2041. To make this a reality, we prioritise health and the quality of people's experience in everything we do.

We manage the city's red route strategic roads and, through collaboration with the London boroughs, can help shape the character of all London's streets. These are the places where Londoners travel, work, shop and socialise. Making them places for people to walk, cycle and spend time will reduce car dependency and improve air quality, revitalise town centres, boost businesses and connect communities.

We run most of London's public transport services, including the London Underground, London Buses, the Docklands Light Railway, London Overground, TfL Rail, London Trams, London River Services, London Dial-a-Ride, Victoria Coach Station, Santander Cycles and the Emirates Air Line. The quality and accessibility of these services is fundamental to Londoners' quality of life. By improving and expanding public transport, we can make people's lives easier and increase the appeal of sustainable travel over private car use.

We are moving ahead with many of London's most significant infrastructure projects, using transport to unlock growth. We are working with partners on major projects like Crossrail 2 and the Bakerloo line extension that will deliver the new homes and jobs London and the UK need. We are in the final phases of completing the Elizabeth line which, when it opens, will add 10 per cent to central London's rail capacity.

Supporting the delivery of high-density, mixed-use developments that are planned around active and sustainable travel will ensure that London's growth is good growth. We also use our own land to provide thousands of new affordable homes and our own supply chain creates tens of thousands of jobs and apprenticeships across the country.

We are committed to being an employer that is fully representative of the community we serve, where everyone can realise their potential. Our aim is to be a fully inclusive employer, valuing and celebrating the diversity of our workforce to improve services for all Londoners.

We are constantly working to improve the city for everyone. This means freezing TfL fares so everyone can afford to use public transport, using data and technology to make services intuitive and easy to use, and doing all we can to make streets and transport services accessible to all. We reinvest every penny of our income to continually improve transport networks for the people who use them every day.

None of this would be possible without the support of boroughs, communities and other partners who we work with to improve our services. We all need to pull together to deliver the Mayor's Transport Strategy; by doing so we can create a better city as London grows.

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Foreword



A handwritten signature in black ink, reading 'Sadiq Khan'.

Sadiq Khan
Mayor of London

When Londoners think about transport, we usually picture our everyday travel experiences, such as taking the Tube to work, cycling to meet a friend or walking to the shops. But behind the scenes, a whole industry is at work. Freight can be important business documents being transported in an electric vehicle, large containers on a river barge or essential services like bin collection. The freight and servicing industry keeps our world-class city working and our businesses thriving. This action plan details how we will make freight in London work better for everyone.

My Transport Strategy envisions a London where the streets are pleasant for all who use them. I want 80 per cent of all journeys in London to be made by walking, cycling or public transport by 2041. It's a huge ambition, but it's vital for our city's future health and liveability. That's why I'm investing record amounts to build new cycle routes, create Liveable Neighbourhoods, cut vehicle emissions and make our streets and junctions safer. Together these changes will enable more Londoners to make the switch to greener and healthier transport.

But we still face many challenges. London has seen major growth in van traffic in recent years. This increases congestion and wastes time for both

businesses and people. There are many reasons for this, from changing online shopping habits to growing businesses that require more frequent deliveries. Yet the impacts are clear. Heavy Goods Vehicle (HGV) collisions still account for a disproportionate number of killed or seriously injured on our streets. Vans and HGVs are also responsible for a big chunk of road transport emissions, while road congestion is a huge economic burden. By working together, we can overcome these challenges to make freight safer, cleaner and more efficient for all Londoners.

I want to cut the number of lorries and vans entering central London in the morning peak by 10 per cent by 2026. Things are changing already. London has the UK's first electric cargo bike grocery delivery service – delivering 100 orders a day while cutting pollution. Then there's the West End businesses working together to cut daily vehicle movements from 144 to nine just by coordinating rubbish collection. Construction projects like the Northern line extension and the Thames Tideway Tunnel have made a shift to transporting goods by water. These initiatives have already had a positive impact on our streets. By bringing down costs and improving delivery times, they're good for business too.

This plan sets out how we'll work with partners to scale up these examples of best practice. It also shows how we'll protect land for logistics so space will be available for consolidation. Having depots in the right places will reduce the miles travelled by freight vehicles. Local planning policies can ensure that deliveries and servicing are planned into developments from the start. There are many competing demands for space in our growing city. We will work together across City Hall, Transport for London, the boroughs and the freight industry to make the best decisions about how this space is used.

Online shopping is increasing year on year. Many Londoners don't know the impact personal deliveries can have on congestion, air quality and the health of our streets. This action plan brings together measures to encourage people and businesses to choose better delivery options, including alternatives for personal deliveries such as 'click and collect'. These can both support local businesses and reduce the number of vehicles on the road.

My vision is for our thriving, growing Capital to have the safest, cleanest and most efficient freight transport of any city in the world.

Foreword



A handwritten signature in black ink, consisting of a stylized 'M' followed by a horizontal line and a shorter horizontal line below it.

Mike Brown MVO
Commissioner

Freight and servicing is crucial to London's success. It gets food and drinks to shops, it supplies our restaurants and cafés, and ensures the delivery of other supplies ranging from clothes and household goods to London's stores, and blood and other critical supplies to hospitals. Safe, clean and efficient freight and servicing is essential to every aspect of life in London and to support Good Growth.

Tackling road danger, poor air quality and the overall number of motor vehicles will be vital in achieving the aim set out in the Mayor's Transport Strategy for 80 per cent of all trips in London being made on foot, by cycle or using public transport by 2041. To achieve this, our Healthy Streets Approach puts people at the heart of planning. This approach, alongside other changes happening in our city, such as evolving consumer habits, new technology and the growth of the service sector, is significantly changing the operating environment for freight and servicing. We therefore need a fresh approach to the way we manage freight and servicing in London.

Safety is our priority. It is neither inevitable nor acceptable that anyone should be killed or seriously injured when travelling in London. The challenge

is immense and the actions in this plan are designed to support our Vision Zero ambition of eliminating all death and serious injury on London's streets by 2041. The freight and servicing industry has taken significant strides to improve safety, but with HGVs involved in a disproportionate number of collisions on our roads, we must do more.

Air pollution affects the health of all Londoners, and road transport is the biggest source of the emissions causing this damage. We need action now to clean up our city. Everyone, including those in the freight and servicing industry, has a role to play in tackling this crisis. The introduction of the Ultra Low Emission Zone in central London in April 2019, and then its extension to the North and South Circular Roads in 2021, is a key step and encouraging a switch to ultra low emission freight vehicles will be crucial. We will be supporting the industry to comply with the Ultra Low Emission Zone through the new van scrappage scheme aimed at the smallest businesses.

Congestion impacts all road users, including those involved in delivery, servicing and construction trips needed to enable our city to operate.

Our analysis shows that current and projected congestion hotspots broadly match with key freight routes. Managing our streets better will, therefore play an essential role in allowing our city to grow and thrive.

As a result of significant dialogue, we have a better understanding now of the challenges facing the freight industry. With safety, environment and economic changes, we also need to address issues such as a shortage of industrial land and land for consolidation centres.

This Freight and servicing action plan details how we can continue to work together to address these challenges, ensure solutions are sustained and enhanced over time, and acknowledge and extend good practice already happening.

Partnership working has been at the core of the development of this plan. Continuing this will be vital to achieving its ambition. I look forward to working with you and the wider industry to keep London delivering for all.



Introduction

Freight is essential to London. It supports almost all aspects of life in the city. Without freight and servicing, our city would seize up.

Around half of the value of household expenditure in London (£79bn in 2013) relies on freight and it contributes £7.5bn to London's economy.¹ By 2041, there will be more than two million additional people living in London and an estimated six million extra journeys made every day so we need to ensure deliveries and collections can still be made, and buildings can still be serviced.

The Mayor's Transport Strategy, published in March 2018, sets out a vision for a London that is not only home to more people, but is a better place to live, work and visit. It contains bold new policies which aim to have 80 per cent of personal trips in London made on foot, by cycle or using public transport by 2041. To achieve this, we must improve the experience for people who use London's streets. This will provide huge economic benefits, not only through revitalising town centres

and attracting business, but also by freeing up space for the essential freight and commercial journeys that keep London's businesses functioning. Improving the efficiency of freight and commercial traffic, alongside reductions in car use, will help to keep London's streets operating for the benefit of the city's businesses and the people who rely on them.

Changes to London's economy, land use, purchasing habits, new technology and the growth of the service sector are contributing to a significant shift in the way that deliveries and servicing trips are made. We therefore need a fresh approach to the way that we manage freight by embracing innovation, ensuring that trips are made as safely, cleanly and efficiently as possible, while also maintaining good access and supporting productivity.

¹ Oxford Economics Ltd. (2017) The economic value of freight transport in London, a study for TfL (unpublished)

As the integrated transport authority for London, we have an important role to play in enabling freight and servicing trips that continue to support the economy while contributing to creating a safer, cleaner and more liveable environment. We manage and operate our road network, or 'red routes', which make up five per cent of London's roads but carry up to 30 per cent of traffic, and all the city's traffic lights 24 hours a day through our Network Management Control Centre. We can adjust signal timings, implement regulations and restrictions, create new infrastructure on our managed roads and work with boroughs to help shape the design of infrastructure on local roads. We can use detailed data and other tools to manage the road network to support efficient freight and servicing trips and the creation of safer, cleaner, more pleasant streets.

This Freight and servicing action plan provides clarity on future policies and sets out the actions we can take now and in the future to support safe, clean and efficient freight operations. These actions are fundamental to achieving the Mayor's vision for London – a city which is better to live and work in for all Londoners.

We have developed this plan with our partners, including the freight industry, business representation groups, London boroughs and individual businesses. We have done this through regular engagement, including the Freight Policy Advisory Panel, the Freight External Partners Group, Business Congestion Steering Group, The Freight Forum and



Borough forums. Through these groups, we engage some of the most influential Business Improvement Districts (BIDs), business groups and individual businesses as consumers of delivery and servicing activities in London.

Forward-looking businesses are already creating and trialling new ways of working, new technologies and new ideas. We also expect global trends, such as greater automation or use of big data, to have an increasing impact on how the freight industry operates.

We will also work with our partners in other cities, nationally and internationally, through groups



such as the Urban Transport Group. Collaboration between cities is vital for sharing best practice and new solutions, helping to drive innovation and achieve consistency between regions and countries.

We want to continue to work with our partners to gain their input to our policy development, share best practice, harness the benefits of innovation and understand the trends and challenges facing the industry in delivering the actions set out in this plan.

This is a complex sector. For the purposes of this document, we will use the generic terminology 'freight and

servicing' to cover all and any types of delivery, servicing, collection, recovery and construction, using the more specific terms where necessary.

This action plan is one of a number of subsidiary documents to the Mayor's Transport Strategy, which include the Cycling action plan, Walking action plan and Vision Zero action plan, as well as our plans for the public transport system. Together, they form a comprehensive approach to making transport in London more active, efficient and sustainable, presenting the latest evidence and outlining the transformational changes that will be delivered on our streets.



Policy context

Safer, cleaner and more efficient freight will support achieving the Mayor's ambitions for London.

The Mayor's vision is to create a future London that is not only home to more people, but is also a better place for all of those people to live.

Mayor's Transport Strategy

The central aim of the Mayor's Transport Strategy is to increase the use of active and efficient modes of transport to accommodate this growth, with 80 per cent of trips in London to be made on foot, by cycle or using public transport by 2041.

The key themes at the heart of the strategy are Healthy Streets and healthy people, a good public transport experience, and new homes and jobs.

Healthy Streets and healthy people

The Healthy Streets Approach provides the framework for putting human health and experience at the heart of planning the city. Streets make up 80 per cent of the city's public space and are places where people live, shop and work, where communities connect and businesses can thrive.

Creating streets where people feel safe is an important part of the Healthy Streets Approach. The Mayor has adopted Vision Zero for road danger in London, aiming for all deaths and serious injuries from road collisions to be eliminated from London's streets by 2041. Vision Zero means ensuring the street environment incorporates safe speeds, safe behaviours, safe street design and safe vehicles to target road danger at its source. The Mayor will also seek to make London's transport network zero emission by 2050, contributing to the creation of a zero carbon city. Further improvements will be made to air quality to help meet tighter standards.

London's continued success relies on safe, reliable, sustainable and efficient goods deliveries and servicing. It is important that freight and servicing trips are accommodated on London's streets, with adequate loading space and lower congestion, and at appropriate times. Cross-partnership working and the involvement of the whole supply chain will be essential to make more efficient use of London's street network.

A good public transport experience

London has one of the most extensive public transport networks in the world, with more than nine million trips made every day by bus, tram, Tube, train and river boat. Use of the public transport system has increased by 65 per cent since 2000, largely because of expanded, more frequent and more reliable services, as well as an improved customer experience.

A vital part of a good transport experience is safety. Londoners rightly expect their public transport services to be operated safely and to be managed and policed to ensure their personal security. They also require their journeys to be reliable, which means reducing delays caused by congestion and disruption.

New homes and jobs

More people than ever want to live and work in London. To meet the demands of the growing population, at least 66,000 new homes will be needed every year between now and 2041. Applying the Healthy Streets Approach to planning for growth creates a set of transport principles for Good Growth that will help London grow in a way that works for Londoners. As set out in the Mayor's Transport Strategy, these principles are:

- Good access to public transport
- High-density, mixed-use developments
- People choose to walk and cycle
- Car-free and car-lite places
- Inclusive, accessible design
- Carbon-free travel
- Efficient freight

New developments will be expected to be designed to encourage safe, low emission and efficient delivery and servicing trips.

Mayor's Transport Strategy Proposals relevant to freight and servicing

Proposal 9

The Mayor, through TfL, the boroughs and enforcement partners, will seek to reduce danger posed by vehicles.

Proposal 10

The Mayor, through TfL and the boroughs, will set out a programme to achieve the Vision Zero aim of reducing the number of people killed or seriously injured on London's streets to zero.

Proposal 11

The Mayor, through TfL, the boroughs, police and stakeholders, will seek to improve motorcycle safety.

Proposal 15

The Mayor, through TfL, will work with the boroughs, businesses and the freight and servicing industry to reduce the adverse impacts of freight and service vehicles on the street network. The Mayor aims to reduce the number of lorries and vans entering central London in the morning peak (07:00–10:00) by 10 per cent by 2026.

Proposal 16

The Mayor, through TfL, and working with the boroughs and the Freight Forum, will improve the efficiency of freight and servicing trips on London's strategic transport network by:

- a. Identifying opportunities for moving freight by rail where this will not impact passenger services and where the benefits will be seen in London

- b. Increasing the proportion of freight moved on London's waterways
- c. Reviewing the potential benefits of a regional freight consolidation and distribution network, and completing the network of Construction Consolidation Centres in London

Proposal 17

The Mayor, through TfL, working with the boroughs and the Freight Forum, will work with landlords and all parts of the supply chain, including the freight industry, BIDs and individual businesses, to improve the efficiency of last-mile deliveries and servicing.

Proposal 33

The Mayor, through TfL and the boroughs, will introduce regulatory and pricing incentives to support the transition to the use of Ultra Low Emission Vehicles in London.

Proposal 35

The Mayor, through TfL and the boroughs, and working with Government, will seek to implement zero emission zones in town centres from 2020 and aim to deliver a zero emission zone in central London from 2025, as well as broader congestion reduction measures to facilitate the implementation of larger zero emission zones in inner London by 2040 and London-wide by 2050 at the latest.



The London Plan

The Draft London Plan (published with minor suggested changes in August 2018, and subject to statutory procedures before adoption) is the Mayor's spatial development strategy and provides strategic direction for new development in London, as well as direction for the Boroughs' Local Plan preparations and for individual planning decisions. It integrates the Mayor's various strategies into an overarching one that shapes how and where growth happens.

Population growth means a huge demand for new housing, putting pressure on industrial land. In the high-value land market within the Central Activities Zone there is very limited industrial and logistics capacity.

The Draft London Plan will ensure that sufficient land and premises are available to meet the needs of a range of industrial, logistics and related activities. It includes a policy objective of no overall net loss of industrial floorspace capacity within designated industrial areas. This enables critical space to be protected and intensified while allowing for some co-location with other uses where certain criteria are met.

Policies

Draft London Plan policies specific to freight and servicing:

Policy E4

Land for industry, logistics and services to support London's economic function – Promotes the maintenance of a sufficient supply of land and premises in different parts of London for industrial and related functions.

Policy E7

Industrial intensification, co-location and substitution – Encourages the intensification of business uses in Use Classes B1c, B2 and B8 occupying all categories of industrial land, and sets out how residential uses can co-locate with industrial uses to make the best use of land in line with Policy GG2.

Policy S115

Water transport – Supports increased use of wharves for freight, reactivation of wharves currently not in use and protects activities at wharves through the Agent of Change principle.

Policy T7

Deliveries, servicing and construction – Promotes freight strategies in area-based plans, encourages railheads to be safeguarded and ensures freight is catered for through design in line with the principles in this action plan and Healthy Streets.

London Environment Strategy

The London Environment Strategy is the Mayor's integrated environment strategy. The Mayor's ambition is for London to be the greenest city in the world. The strategy sets out how this can be realised through three key themes:

- To make London a greener city, improving people's health and quality of life
- To make London cleaner by improving people's living conditions
- To make London ready for the future by managing resources and ensuring London resources are safeguarded for future generations

The strategy, along with its implementation plan, sets a number of ambitious targets to cut emissions and reduce the amount of freight movement in central London. This includes reducing construction traffic by five per cent by 2020, reducing the number of freight trips during the morning peak by 10 per cent by 2026, and examining other ways in which freight can be delivered and moved around.

Proposals

Proposal 4.2.1.e

The Mayor aims to reduce emissions from freight through encouraging a switch to lower emission vehicles, adopting smarter practices and reducing freight movements through better use of consolidated trips.

Proposal 9.1.1.c

The Mayor will work with key stakeholders to reduce noise from freight activity in London.

Economic Development Strategy

This strategy sets out plans to create a fairer, more inclusive economy that works for all Londoners and businesses.

The strategy sets out the importance of sustainable growth in London, which underpins the success of London's economy. In line with the Mayor's Transport Strategy, a move away from car dependency towards more walking, cycling and public transport use is the only way to tackle London's congestion problem, free up space for more efficient freight journeys to run more

reliably and keep the city functioning for people and businesses. The strategy sets out the need to create streets that cater better for space-efficient freight and servicing trips that work for local business, and that support the vitality of town centres.

Goals

The three main goals of the Economic Development Strategy are:

Opening up opportunities

To enable everyone to benefit from all that our city offers.

Growth

To ensure our economy will continue to thrive and is open to business.

Innovation

To make London a world leader in innovation and technology, and a hub of new ideas and creativity.

33%



of NO_x emissions from road transport in London came from freight vehicles

29%



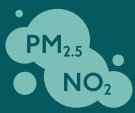
of PM_{2.5} emissions from road transport in London came from freight vehicles

23%



of road-related carbon dioxide emissions in London came from freight vehicles

9,400



estimated premature deaths from long-term exposure to PM_{2.5} and NO₂ in London

Source: Greater London Authority (2013) London Atmospheric Emissions Inventory 2013



Freight in London

What we know about freight and servicing trips in London comes from detailed analysis of our data, published statistics from the Department for Transport and extensive, ongoing engagement with the freight and servicing industry.

This has provided us with a comprehensive, though not complete, understanding of how, where and when freight and servicing vehicles move around London, and the associated challenges for the city and industry.

Throughout this plan, light goods vehicles (LGVs) or vans are defined as commercial vehicles of no more than 3.5 tonnes and HGVs as commercial vehicles more than 3.5 tonnes. This matches the definition used by the Department for Transport.

In London, 90 per cent (131 million tonnes) of all goods handled are transported by road. The kilometres travelled by freight and servicing vehicles in London have increased by

approximately 39 per cent over the last 25 years.² This is due to the substantial increase in LGV kilometres (up 54 per cent between 1993 and 2017), while HGV kilometres have actually declined slightly over this period (six per cent between 1993 and 2017).

Freight levels in central London in the morning peak have remained close to flat since the Mayor's Transport Strategy set out the aim of reducing the number of lorries and vans entering central London, against a background of a growing population and economy. This means we still have a way to go to achieve our aim of reducing this figure by 10 per cent by 2026. There are a number of factors affecting HGV and LGV kilometres.

² Department for Transport National Road Traffic Survey

Recent trends

The impact of the 2008/09 financial crisis on the freight and servicing industry can be seen by the sharp decline in freight and servicing vehicle kilometres in London into 2009. Since then, LGV kilometres have returned to their long-term upward trend and HGV kilometres have continued their long-term downward trend. Vans now make up 80 per cent of freight vehicles in London.

The structure of London's economy has changed over recent years, which has had an impact on trends in freight and servicing vehicle kilometres not seen in non-freight traffic. A sustained period of growth in the services sector and, to a lesser extent, construction activity (based on Office of National Statistics employment figures) since 2004 has coincided with the overall growth in LGV kilometres over this period.

Population growth

Population growth is likely to have been a significant driver of the observed increase in freight and servicing vehicle kilometres in recent decades, with more people requiring more goods and services. Indeed, over the same period in which freight and servicing

vehicle kilometres have grown 39 per cent (between 1993 and 2017), London's population has grown 28 per cent.³

Increasing land prices

Changing land use could also have contributed to increasing freight and servicing vehicle kilometres in London. Between 2000 and 2012, the proportion of industrial floor space in London fell by almost 20 per cent, while retail and office floor space grew by approximately five and 10 per cent respectively, according to Valuation Office Agency figures.

This change in land use reflects the changing structure of London's economy, shifting from industrial activity towards the service sector. One driver of this change could be the increasing cost of land in London over recent decades. For example, house prices increased by approximately 600 per cent in London between 1993 and 2017, according to the Land Registry UK House Price Index.

Relocation of industrial sites

As prices have increased, industrial activity, including freight facilities, has been pushed further out of the city to more affordable locations, increasing the vehicle kilometres travelled to deliver the same value of goods and services.

³ Greater London Authority (2017) Population estimates

⁴ Office of National Statistics (2018) Retail sales, Great Britain: October 2018

⁵ TfL Roads Task Force (2013) Technical Note 5

⁶ McKinsey & Company (2014) Same-day delivery: The next evolutionary step in parcel logistics

LGV kilometres have not increased at the same rate across all of London. Outer London has seen the most growth, with nearly 40 per cent between 2000 and 2017, although growth was fastest in central London from 2000 up until the 2008/09 financial crisis.

Recent growth rates in LGV kilometres in different parts of London could reflect the shift of industrial land further out of London, with more vans coming from outside the Greater London boundary and therefore driving more kilometres within outer London to reach their destinations.


Changing customer behaviours


The way customers access the goods and services they require has also changed over time. For example, in 2018 online sales comprised 18 per cent of total sales across all retail in the UK, up from 16 per cent in 2017.⁴ These goods will be received by the customer through a combination of click and collect, home deliveries and deliveries to workplaces. This is likely to drive growth in deliveries made by LGVs to locations across London, as opposed to the historic pattern in deliveries to retailers concentrated within central London and major town centres.⁵

Customer expectations have also changed, with demand for deliveries to be made within increasingly tight timescales and to more dispersed locations. This presents a challenge for delivery services and can require running more vehicles to be able to meet demand.⁶

90% 
of all goods handled in London are transported by road

39% 
increase in freight and servicing vehicle kilometres in London in the last 25 years

3% 
of vehicle kilometres in London in 2017 were HGVs

16% 
of vehicle kilometres in London in 2017 were LGVs

Source: Department for Transport National Road Traffic Survey

Figure 1: Freight and servicing vehicle kilometres in Greater London, indexed against 2009 levels



Figure 2: Population and total freight and servicing vehicle kilometres in London, indexed against 1993 levels

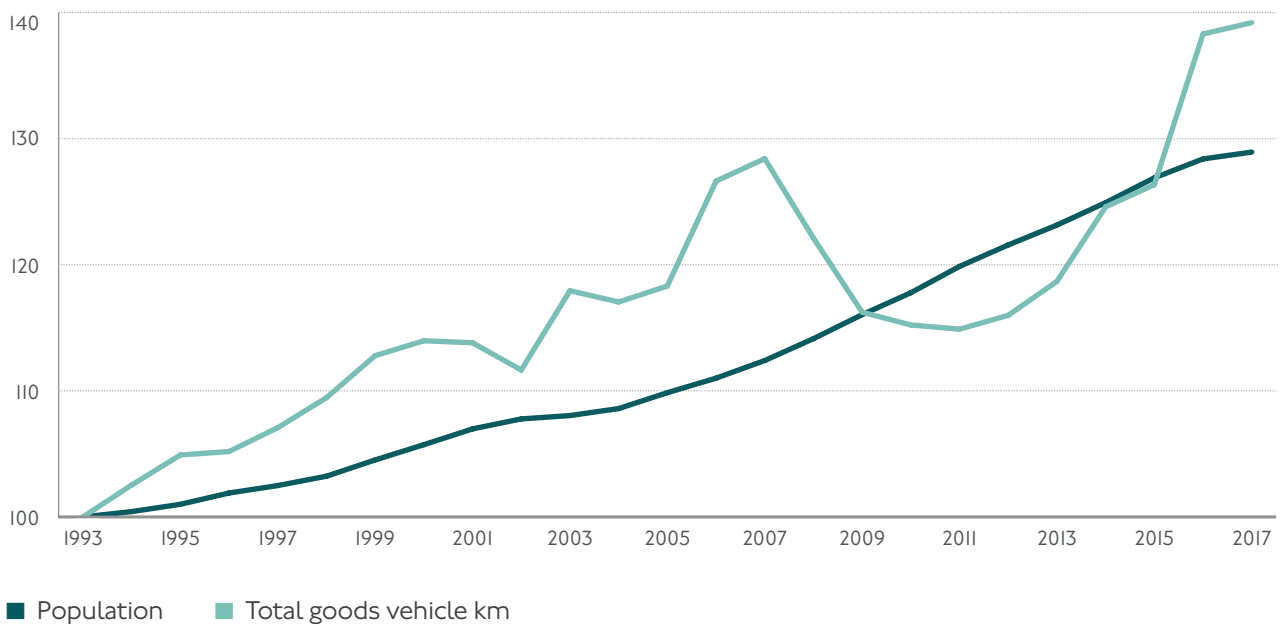


Figure 3: Total floor space (metres squared) per sector in London, indexed against 2000 levels

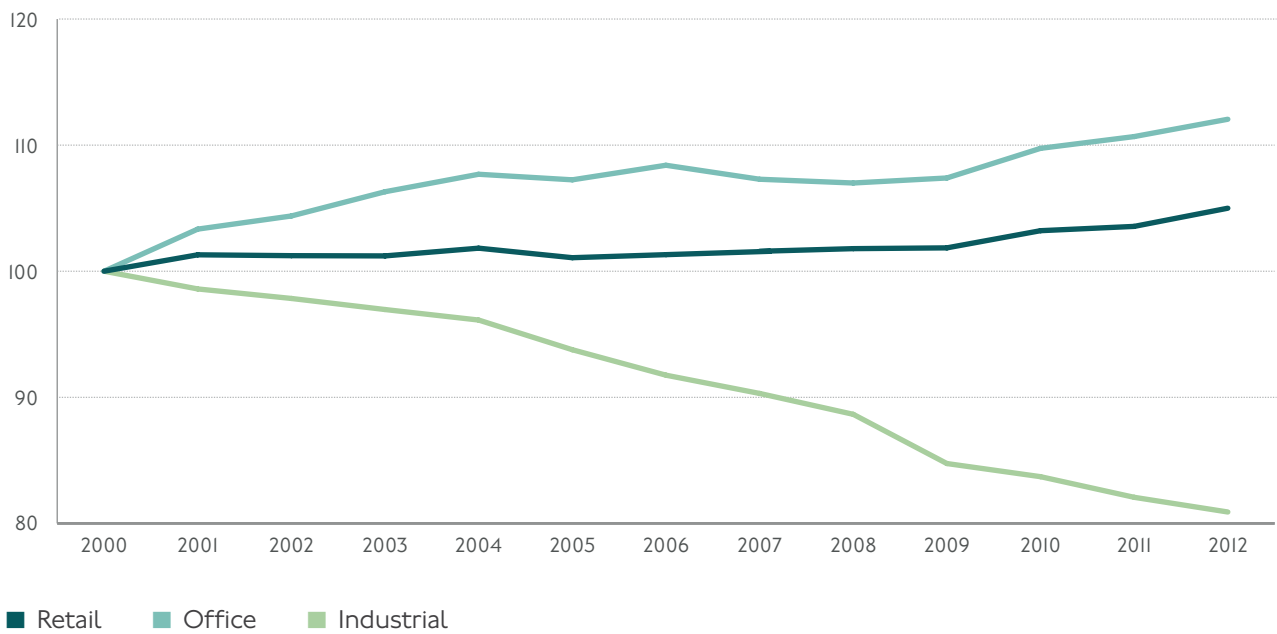
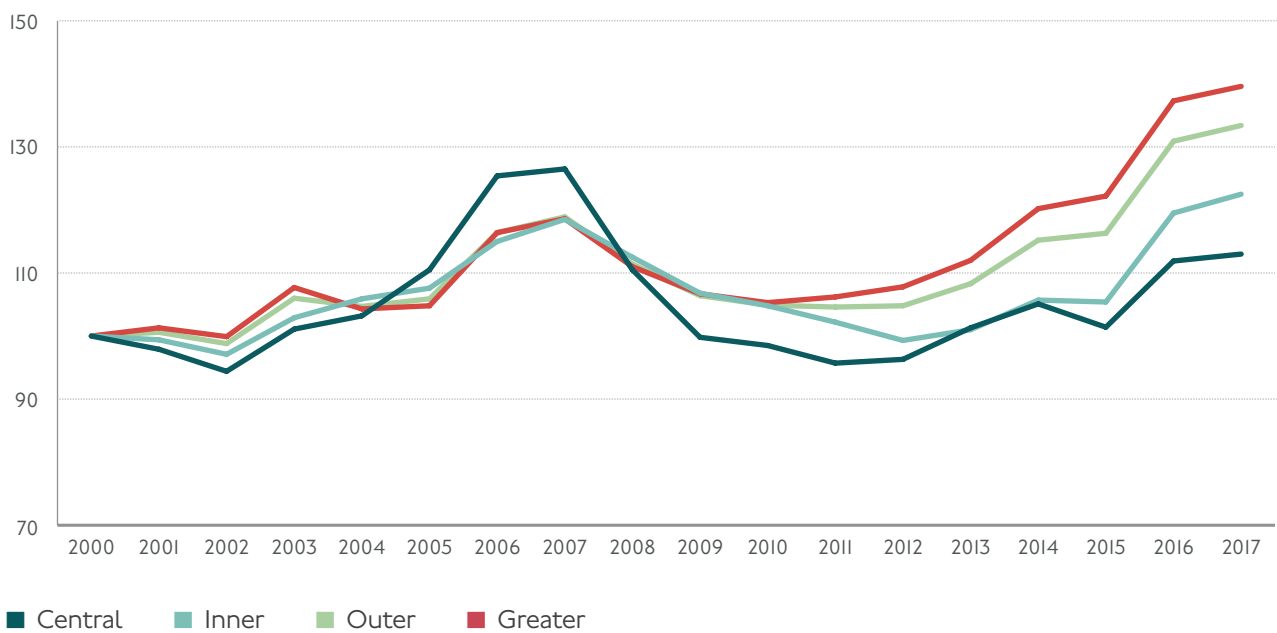


Figure 4: LGV kilometres in London by area, indexed against 2000 levels



Future projections

We have analysed the key drivers of trends in freight and servicing activity to understand how they affect each other and how they combine to impact freight and servicing vehicle kilometres in London. Using this analysis and expected future trends, we have forecast LGV and HGV kilometres within a range. These forecasts suggest that we can expect historically observed trends to continue in future.

Our analysis shows HGV kilometres are expected to continue a steady decline to 2041 – decreasing by six per cent at most on 2015 levels. Van kilometres are forecast to grow by up to 43 per cent over the same period. Monitoring from 2016 and 2017 shows growth in LGVs and decline in HGVs are outside our forecasted trajectory. We are not sure if this is due to a short-term variation or if it is part of a wider trend. We will continue to monitor and if the trend continues we will update our forecasts accordingly.

Figures 5 and 6 show the historic and projected kilometres traveled by LGVs and HGVs in London from 1993 to 2041. They are based on Department for Transport data and estimates, and include a projected range that we have calculated based on the possible changes in the key drivers of demand over the coming years.

Anecdotal evidence suggests deliveries by motorcycle, cycles and last-mile deliveries on foot have increased in recent years. While the total volume of goods transported by these modes is likely to be relatively small at this stage, we will seek to gain a better understanding of their growing contribution to deliveries and servicing in London.

The continued growth of goods vehicle kilometres on London's roads presents a number of challenges including road danger, emissions and congestion. The following sections describe these challenges and set out actions to support safer, cleaner and more efficient freight and servicing in London.

Figure 5: LGV vehicle kilometres growth, normalised to 2015

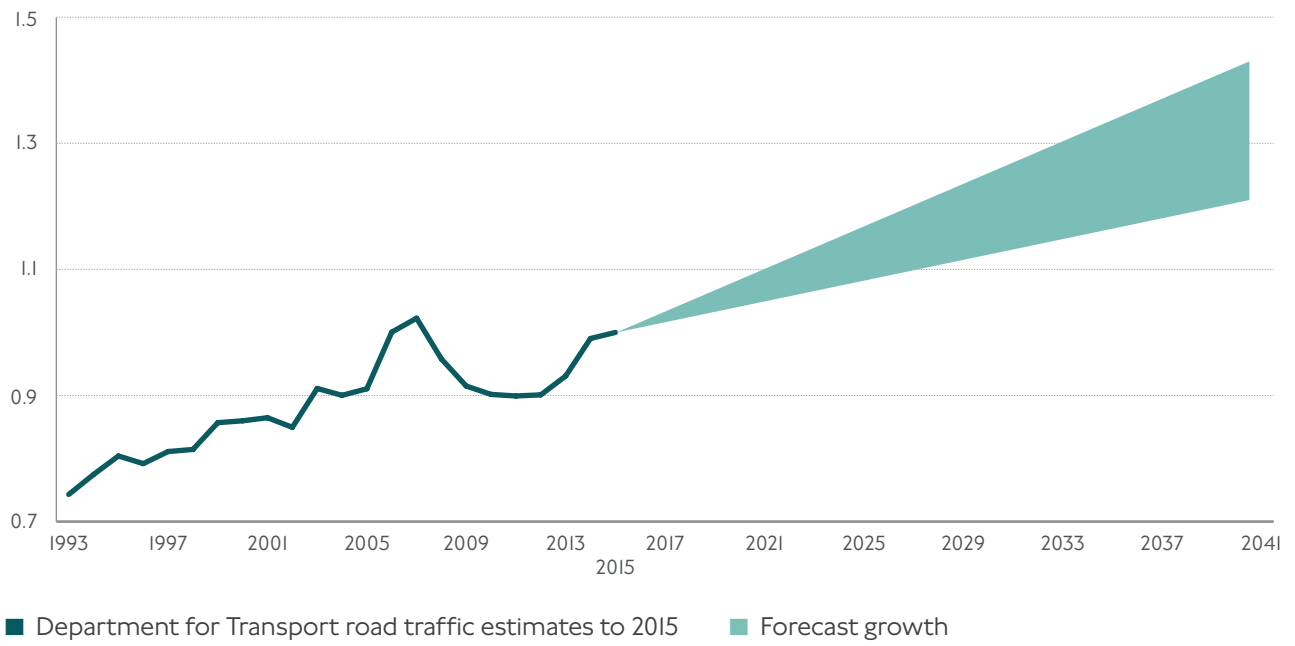
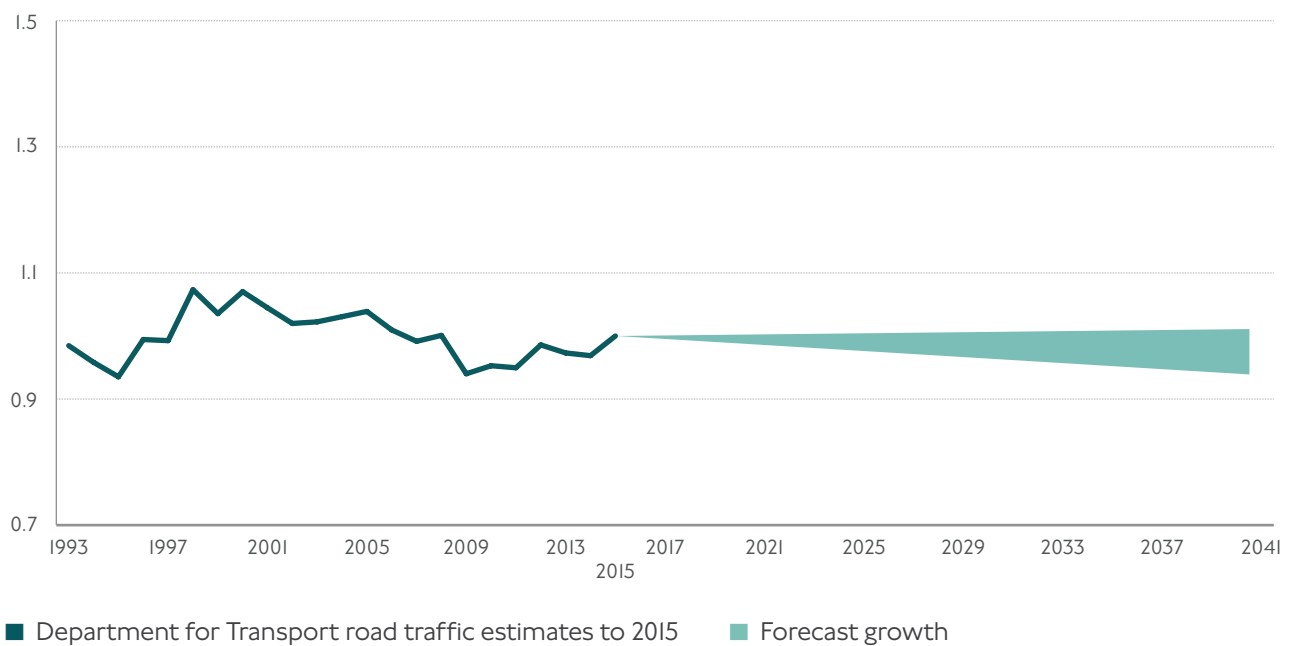


Figure 6: HGV vehicle kilometres growth, normalised to 2015



Road danger impact

No death or serious injury on London's streets is inevitable or acceptable. It is clear from our engagement with freight and servicing operators that road danger is a shared concern, not least for the drivers, riders and operators in the freight and servicing sectors.

We are committed to achieving Vision Zero. This will require us to work in partnership with the freight and servicing operators and drivers to create safe vehicles and fleet operations, raise driving standards and reduce exposure to road danger of other road users, particularly those at most risk.

Between 2015 and 2017 there were 123 fatalities and 985 serious injuries involving goods vehicles on London's streets, representing 32 per cent of the total number of people killed in collisions, based on Metropolitan Police Service data. Each death and serious injury is a tragedy for the people affected and takes a heavy toll on the driver involved.

While represented across London, collisions involving goods vehicles were concentrated in central London. This reflects the area with many of the busiest streets with a mix of users, increasing the exposure of people to goods vehicles.

The greatest number of fatalities following a collision involving a goods

vehicle in London is among people walking, followed by people cycling and riding a motorcycle. This reflects the vulnerability of these road-user groups and the large number of people walking on London's streets.

Of the fatalities following a collision involving a goods vehicle, the majority involve HGVs, despite comprising less than 20 per cent of all road freight mileage in London between 2015 and 2017. However, the number of serious injuries for people walking, in particular those involving vans, increased in 2017, which was likely linked to the increase in van traffic in London.

Although they make up less than five per cent of total vehicle kilometres driven in London, between 2015 and 2017 HGVs were involved in 25 per cent of pedestrian and 63 per cent of cyclist fatalities.

The busiest times for people walking, cycling and riding motorcycles overlaps with peak times for freight and servicing vehicles. This pattern of demand increases exposure to road danger, which contributes to the number of deaths and serious injuries on our streets. In London, between 2012 to 2017, collisions occurring between 08:00 and 09:00 that resulted in the death of someone who was walking, cycling or riding a motorcycle were more likely to involve an HGV than any other vehicle, according to Metropolitan Police Service data.

Figure 7: Locations of collisions involving goods vehicles resulting in deaths or serious injuries in London, 2015-2017



Key

Volume of collisions

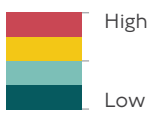


Figure 8: People killed following collisions involving goods vehicles in London, 2015-2017

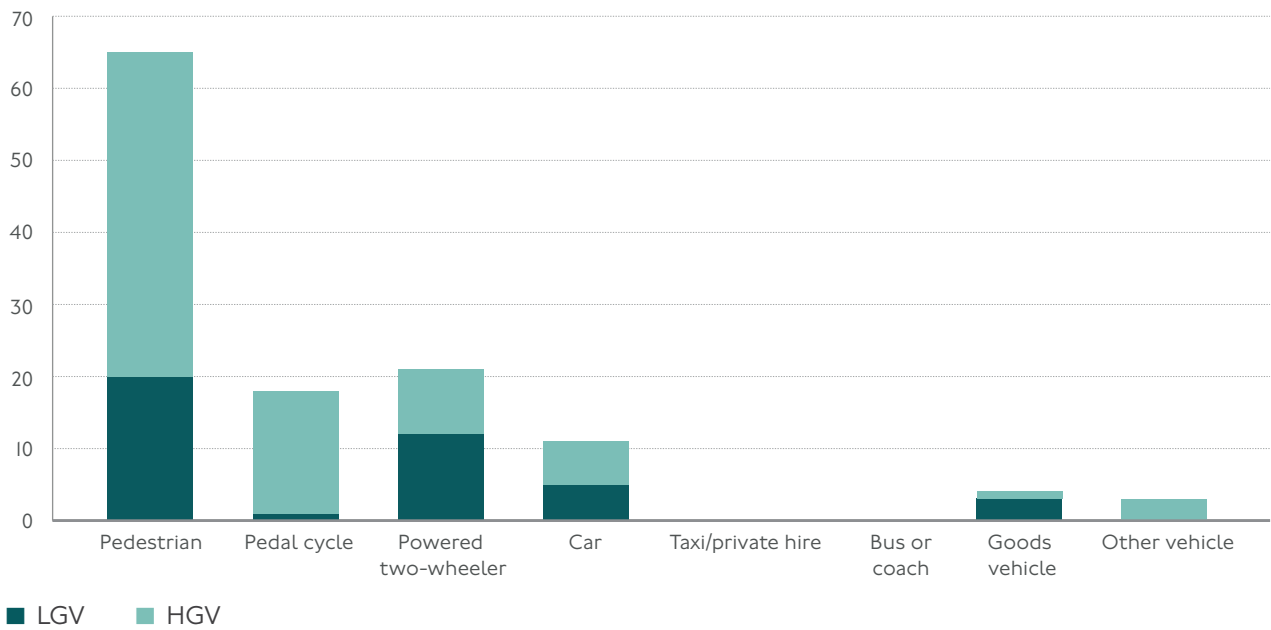
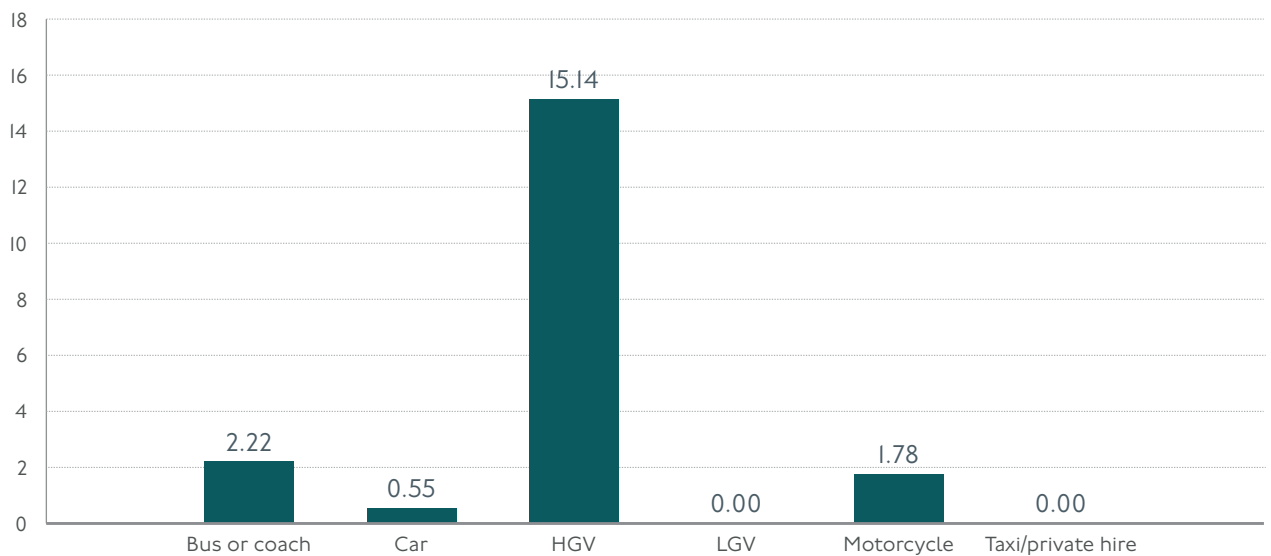


Figure 9: Risk of vehicles being involved in fatal collisions with people cycling*



* A risk rating of 1.00 would be proportionate to the share of total vehicle kilometres for that vehicle type

Figure 10: Hourly flow of traffic and pedestrians in London (%)

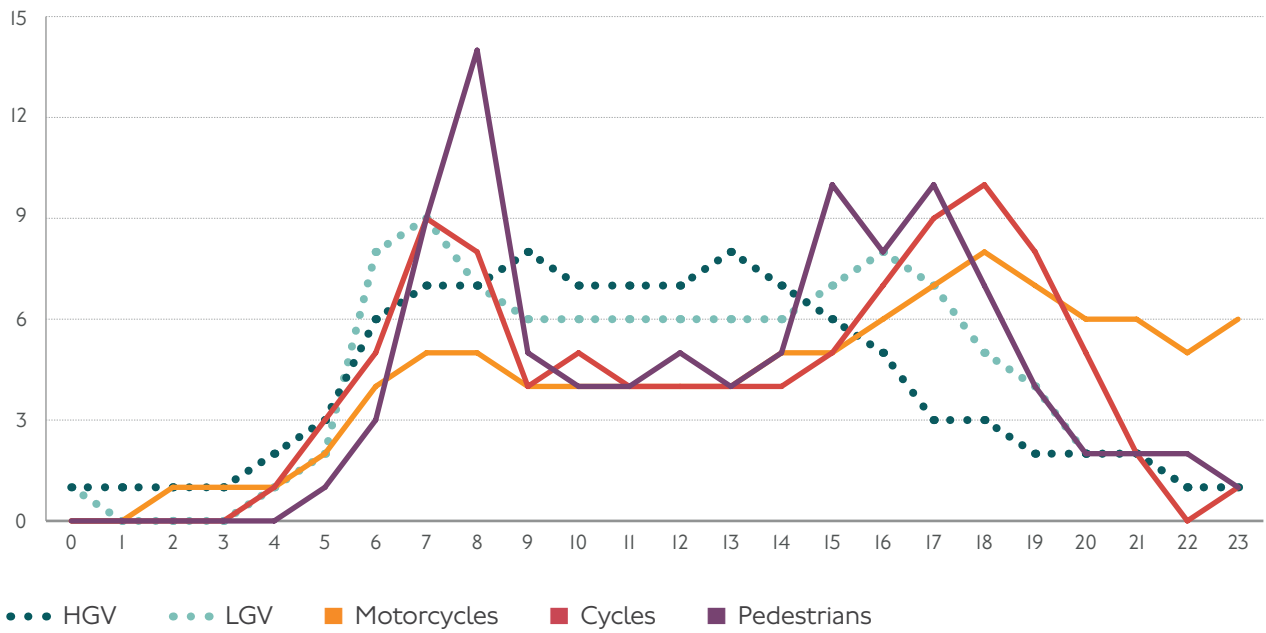
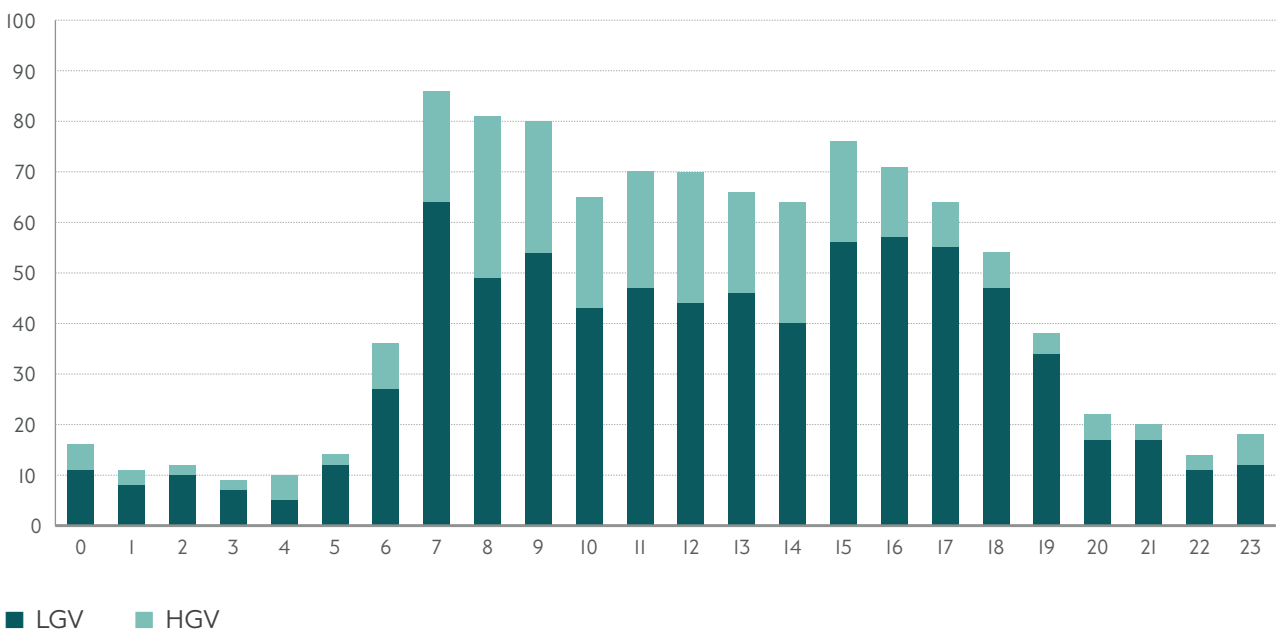


Figure 11: Time of collisions involving goods vehicles resulting in death or serious injury in London



Air quality and carbon emissions

Every year, long-term exposure to poor air quality causes thousands of premature deaths in London. Across Greater London, road transport is responsible for more than half of the most dangerous air pollutants, including nitrogen oxides (NO_x) – such as nitric oxide (NO) and nitrogen dioxide (NO₂) – and particulate matter (PM).

In 2013, freight emissions contributed 33 per cent of road-related NO_x, 29 per cent of PM less than 2.5 microns in diameter (PM_{2.5}) and 23 per cent of carbon dioxide, despite comprising only 17 per cent of total vehicle kilometres in London in the same year.⁷

NO₂ levels significantly exceed the legal limit of 40µg/m³ across much of the arterial road network and central and inner London. Although London currently meets legal limits for PM, all Londoners live in areas exceeding the World Health Organisation guidance limit of 10µg/m³ for PM_{2.5} with 95 per cent of Londoners living in areas exceeding this limit by 50 per cent.

Freight vehicles also contribute to noise pollution. According to the Department for Environment, Food and Rural Affairs, the social cost of noise

pollution in England from road traffic alone is between £7bn and £10bn per year.⁸ With London's extensive road network spread across the city and extending into and through residential areas, road traffic is the main source of noise pollution in London. Given freight and servicing vehicle kilometres comprise almost one-fifth of all vehicle kilometres in London, the contribution of freight and servicing to noise pollution must be managed.

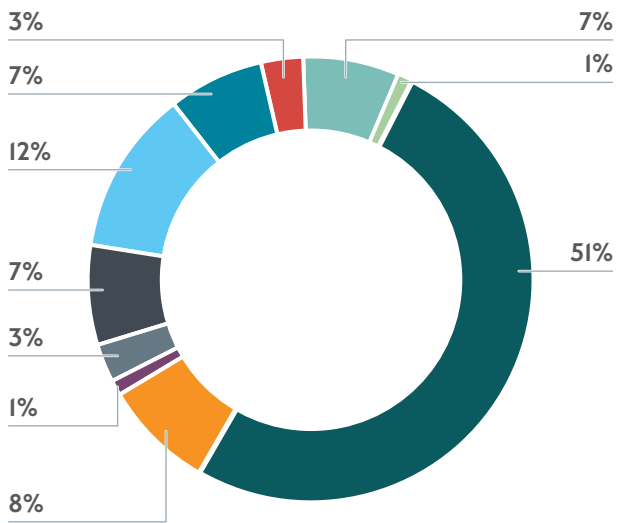
With forecasts predicting increasing freight kilometres in London, we need to mitigate the impacts of freight and servicing on noise pollution, air quality and carbon emissions. Clean freight is integral to the Mayor's vision for Healthy Streets.

London is committed to being zero carbon by 2050, which means deep decarbonisation is needed from all types of transport as we seek to make the transport network zero emission. Actions that improve air quality in London and improve efficiency will also be central in tackling our carbon emissions. The increasing electrification of transport is a key example of this, as long as our electricity grid continues to decarbonise. Freight consolidation and moving to less carbon-intensive transport modes such as rail and river, also have the potential to reduce carbon emissions from freight.

⁷ Greater London Authority (2013) London Atmospheric Emissions Inventory 2013

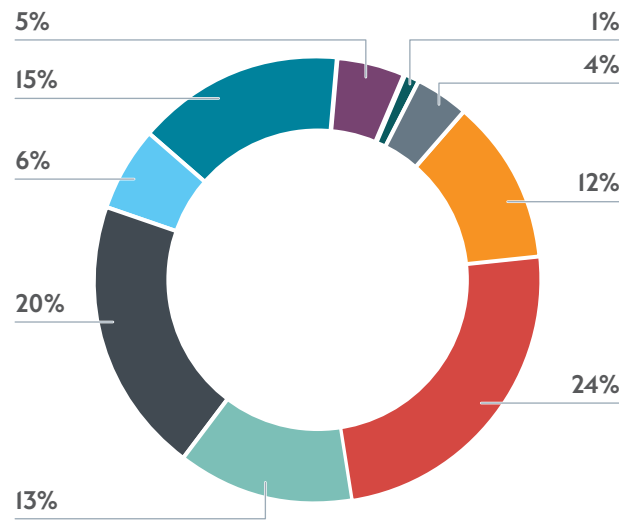
⁸ DEFRA (2013) Protecting and enhancing our urban and natural environment to improve public health and wellbeing

Figure 12: Sources of NO_x in London



- Road transport
- Aviation
- River
- Rail
- Non-road mobile machinery
- Domestic gas
- Commercial gas
- Fuels
- Industry
- Other

Figure 13: Sources of transport NO_x in London



- Taxis
- Petrol cars
- Diesel cars
- Vans/minibuses
- London Buses
- Coaches
- Rigid HGVs
- Articulated HGVs
- Motorcycles

Congestion

Congestion causes delays that contribute to increasing fuel and time costs and make doing business more challenging. Freight and servicing trips are both impacted by and contribute to congestion. In 2017, drivers in London spent an average of 71 hours in gridlock during peak hours. This contributed to congestion costing London drivers the equivalent of £2,430 each and the Capital as a whole £9.5 billion from direct and indirect costs in 2017.⁹

As the Mayor's Transport Strategy explains, most congestion in London is caused by demand exceeding the finite supply of street space. The amount of space available to vehicles, including freight and servicing, will further reduce in areas where we are reallocating road space to more space-efficient modes, such as walking, cycling and using public transport. Also, in response to congestion, operators might run additional vehicles to meet the same level of customer demand within the same time period, putting more pressure on the network.

The peaks in the number of freight and servicing vehicles on London's roads overlap with the busiest times of day for other road users, particularly during the morning peak. This exacerbates congestion during peak times and increases the exposure to road danger



and poor air quality of other road users. These factors also make the road environment more stressful for drivers, creating a challenge for operators in attracting and retaining professional drivers in London.

Proposal 15 in the Mayor's Transport Strategy aims to address this issue in central London by committing to reduce the number of freight and servicing vehicles entering the Congestion Charging zone in the morning peak time by 10 per cent by 2026 (on 2016/17 levels). Our analysis suggests this number has remained relatively unchanged in the last two to three years.

Addressing the challenges

Through partnership working we have already seen improvements in safety

⁹ INRIX (2017) Global Traffic Scorecard report



and environmental impacts and helped enable the industry to operate more efficiently, but we need to do more.

The trends and challenges discussed highlight the need for a fresh approach to the way we manage freight in this changing environment: one that embraces innovation and ensures trips are made as safely, cleanly and efficiently as possible while maintaining good access and supporting productivity.

This Freight and servicing action plan provides a clear roadmap for change. The plan brings together existing programmes, identifies new innovations and opportunities, and provides the clarity needed to inform business decisions and meet our aim for safe, clean and efficient freight and servicing in London.

The evidence-based actions in this plan have been developed in collaboration with industry, the boroughs and BIDs. The following chapters set out actions to support:

- Safe freight
- Clean freight
- Efficient freight
- Protecting land for freight

In addition, we will work in partnership with operators, businesses, public sector organisations and the boroughs to deliver these actions to set us on the path to our long-term ambitions for 2041.



Safe freight

Safety is our main priority and underpins all our plans for the freight and servicing industry.

A single death or serious injury is an unacceptable price to pay for the movement of goods and services, but between 2015 and 2017 police data shows that more than 1,000 people were killed or seriously injured in collisions involving goods vehicles in London. This is also devastating for the drivers. Of those casualties, four drivers of goods vehicles were killed and 76 were seriously injured. Many more drivers continue to live with trauma following collisions.

Metropolitan Police Service data shows that between 2015 and 2017, goods vehicles were involved in one-third of the total number of deaths resulting from collisions on London's streets. This is despite LGVs and HGVs comprising less than one-fifth of the total vehicle kilometres travelled by all motorised road vehicles in London. The street is the workplace for freight and we should strive to make this workplace as safe as any other.

Realising the Mayor's Vision Zero ambition will require a Safe Systems approach to road danger. This takes human fallibility and vulnerability into account, and aims for a more forgiving road system. It means developing:

- Safe vehicles
- Safe speeds
- Safe streets
- Safe behaviours

Safe vehicles

Vehicles driven on our streets should be designed, built and maintained to minimise the occurrence and consequences of collisions in an urban environment.

Direct vision

The majority of HGVs driven in London have an elevated driver's seat, which creates large 'blind spots' where the driver cannot easily see key areas around the vehicle. They must therefore check an array of mirrors before making manoeuvres, increasing the driver's cognitive load and contributing to stress. Other people sharing the street may find themselves, often unwittingly, in a very dangerous position. To tackle this danger, we need to ensure the use of better designed vehicles more appropriate for urban environments, by implementing the world's first Direct Vision Standard for HGVs.

Using a star system, the Direct Vision Standard rates HGVs from zero (lowest) to five (highest), based on how much a driver can see directly through their cab windows. The standard forms part of a proposed HGV Safety Standard Permit Scheme, which will require all HGVs more than 12 tonnes to hold a safety permit when entering or operating in London from 2020.

HGVs rated one-star and above would be granted a permit, while those rated zero-star would have to meet a safe system of mitigating measures, such as cameras, sensors and audible alerts. The specifics of this system are being consulted on and will be aligned with existing best practice schemes, such as Fleet Operator Recognition Scheme (FORS), to assist operators and ensure a consistent approach to road danger reduction.

From October 2024, the minimum direct vision threshold will rise from one-star to three-stars. HGVs more than 12 tonnes that are rated zero, one or two-stars will be banned from entering London unless they are compliant with a progressive safe system. This is to ensure any advances and developments in technology are considered. It is envisaged that the key safe system components will remain the same and any changes will follow the same principles as the current proposals. A full consultation on any changes to the safe system will be held in advance of the 2024 policy change.

A safe system has also been developed for HGVs more than 3.5 tonnes and is embedded in TfL and GLA contracts as a responsible procurement initiative. We encourage other organisations to adopt a similar approach.

Figure 14: High vision HGVs increase drivers' ability to see other road users directly through their cab windows



HGV Safety Permit Scheme timeline:

2019



October 2019

Go Live – permit issuing commences

2020



October 2020

All zero-star HGVs banned unless they can prove a safe system is in place (this date is aligned with timescales for the planned tightening of Low Emission Zone requirements for heavy vehicles)

2024



2024

All zero to two-star HGVs banned unless they can prove that they have been fitted with a progressive safe system*

* At the time of publication, the HGV Safety Standard Permit Scheme is a proposal subject to statutory consultation and confirmation (with or without modification).

Test drives of higher vision HGVs carried out for us showed that drivers were impressed with the increased vision that makes it easier for them to see and identify people walking, cycling and riding motorcycles near the vehicle. Large contractors, such as Thames Tideway, are leading the way by procuring HGVs with the highest level of direct vision and improving the standards of their work sites to facilitate the increased use of these direct vision cabs.

Enforcement

The HGV Safety Permit is fully enforceable. It will become an offence, for which a penalty charge notice will be issued, for vehicles to operate without a permit or without complying with safe system permit conditions. It is proposed that HGV Safety Permits will be issued from October 2019 on a voluntary basis with enforcement starting from 26 October 2020. This allows a year for operators to obtain permits and ensure compliance.

Improving HGV design

As many of the HGVs driven in London are made in the EU, it is important that we help create national and international consistency with regard to regulation. We have been working with other cities and representative organisations to ensure direct vision requirements for HGVs and buses are included in revisions to EU vehicle safety and design regulation, and the detail of this is now being worked on at an

international level via the United Nations Economic Commission for Europe. With the support of the EU, we are able to progress quicker.

Site suitability

Many HGVs being driven in London have elevated chassis and driver seats – and, as a result, large blind spots – because they are designed to be driven on uneven, off-road surfaces such as waste sites, tips and quarries. Improved surface conditions at these off-road sites would mean there would be no need for vehicles with elevated cabs and poor direct vision.

To encourage improved site conditions, particularly in light of the Direct Vision Standard, the Construction Logistics and Community Safety (CLOCS) Standard requires clients to ensure construction, supply and waste sites are suitable for vehicles fitted with enhanced safety features.

We have developed an assessment for on-site ground conditions so that site operators can rate their sites using online CLOCS tools and guidance. Users can communicate via an online directory to assist fleet operators in selecting the most appropriate sites for their vehicles. We will encourage the use of the assessment tool by writing directly to site managers, and promoting it as part of Direct Vision Standard communications and through the CLOCS network and the Construction Logistics Improvement Group.



Safe speeds

Technology for safer vehicles

Alongside our wider safe speed measures in the Vision Zero action plan, speed-limiting technology is an important way to ensure freight vehicles are travelling at safe speeds. A Transport Research Laboratory study found that Intelligent Speed Assistance, along with Pedestrian and Cyclist Autonomous Emergency Braking, and alcohol interlock systems are among the vehicle technologies to have the most potential for reducing casualties in London.

These technologies are not commonly found in freight and servicing vehicle fleets, but would be a welcome addition to vans and heavier vehicles at the point of manufacture, and would lessen drivers' responsibility for others' safety.

Looking further into the future, the increasing use of autonomous technologies, including fully autonomous vehicles, driver assistance and pedestrian protection systems, may also help reduce the number of collisions that result from human error. They may also be particularly effective in reducing the prevalence of high-risk driver behaviours, such as speeding and impaired driving.

Action 1

We will ensure safe freight vehicles by:

- a. Launching the HGV Safety Permit Scheme incorporating the world's first Direct Vision Standard for HGVs, with permits issued from 2019 and enforcement starting from 2020. The scheme will be further rolled out and the standards tightened by 2024
- b. Supporting the industry in preparing for the Direct Vision Standard and associated HGV Safety Permit Scheme by consulting on a final proposal for the permit scheme's safe system in 2019 and running early engagement, marketing and communications to ensure operators understand the requirements ahead of enforcement in 2020. We will also encourage higher surface standards at construction, waste and tip sites to remove the need for off-road HGVs, by promoting the site assessment tool in 2019
- c. Driving compliance with the Direct Vision Standard by encouraging the requirements in public and private sector supply chain contracts London-wide, and aligning the permit scheme with the Freight Operator Recognition Scheme (FORS). In-scope TfL and GLA contracts will require one-star Direct Vision Standard ratings by October 2019, increasing to a three-star minimum by October 2023. We will work with other cities and representative organisations to ensure Direct Vision is included for the first time in vehicle design and safety standards for HGVs and buses
- d. Encouraging the fitting of safety technology to vans and HGVs as standard by urging appropriate regulators to legislate for mandatory requirements for Pedestrian and Cyclist Autonomous Emergency Braking, Intelligent Speed Assistance and alcohol interlock systems in new vehicles. We will work with FORS to encourage the fitting of speed-limiting technology and Pedestrian and Cyclist Autonomous Emergency Braking to vehicles as a requirement for FORS Gold membership by 2023 when this technology will be more widely available in new vehicles

Managing work-related road risk

We are placing road danger reduction at the heart of everything we do and this includes our supply chains. TfL and the GLA family embed the management of work-related road risk in relevant contracts as a responsible procurement initiative. Operators of HGVs or vans in our supply chains need to meet enhanced work-related road risk standards for safe operations, safe vehicles and safe drivers. The TfL-sponsored Construction Logistics and Community Safety (CLOCS) scheme and the Fleet Operator Recognition Scheme (FORS) are two initiatives that encourage and support other organisations to adopt this approach to managing work-related road risk.

CLOCS

Clients in the construction sector, including planning authorities, developers and contractors, can manage work-related road risk through the national CLOCS standard. For example, the London Borough of Camden saw collisions involving HGVs reduce by 47 per cent through progressive planning and procurement policies using CLOCS.

A new version of the CLOCS Standard, which came into force in January 2019, includes a requirement to report collision data through the supply chain. This ensures that action plans can be put in place to prevent recurrence. The CLOCS standard takes a consistent approach to

the measures set out in TfL and GLA contracts.

FORS

Fleet operators are encouraged to adopt safer, cleaner and more efficient fleet operations through voluntary accreditation of FORS. The scheme focuses on training drivers in best practice and equipping fleet managers with the knowledge and skills to operate and manage safe and roadworthy vehicles.

The new, revised FORS Standard, launched in October 2018, aims to minimise the probability and severity





of collisions involving people walking, cycling and riding motorcycles. Its remit now encompasses more vehicle types, including passenger-carrying vehicles and powered two-wheelers. It also addresses the need for air quality improvements and sets out requirements to help operators guard against threats of terrorism. FORS operators are also required to have policies and procedures in place to ensure their drivers are medically fit to drive and have their eyesight checked every six months.

FORS Silver operators are independently audited and accredited as meeting

the measures set out in TfL and GLA contracts, as well as those set out in the CLOCS standard and the HGV Permit Scheme. TfL retains an integral role in FORS as a member of its governance board along with other key industry representatives.

Both FORS and CLOCS are past winners of the prestigious Prince Michael International Road Safety Award.

Safe streets

Working with London's boroughs, we aim to create safe streets by reducing speed limits, redesigning junctions as part of the Safer Junctions programme, providing safe cycle routes and crossings, and ensuring danger reduction is central to all changes to the street environment.

Reducing danger on our streets involves the creation of environments that enable the freight, servicing and construction sectors to operate as safely as possible. New schemes on our managed road network undergo a Healthy Streets Check for Designers to ensure they help people to feel safe and secure when walking, cycling and using public transport. Schemes that fail to address road danger are flagged for further investigation.

Construction Logistics Plans

These specify the safest direct route for construction vehicles to and from a site, avoiding left-turning manoeuvres and locations where people are more vulnerable, such as around schools and cycling routes. All construction vehicles of FORS members must only be driven on the route identified in the

relevant Construction Logistics Plan, or their membership can be suspended or terminated. We fund additional training for construction logistics planners and developers.

Changes to the road layout to accommodate construction and roadworks are inevitably disruptive to road users. To enable people to move safely past large development sites, we have published a Temporary Traffic Management Handbook to guide developers and contractors. We can also facilitate workshops with developers, contractors, consultants and all key stakeholders during early engagement in the Construction Logistics Plan process. Each workshop enables a more efficient collective group assessment of proposals. The outcomes from the workshops highlight what should be considered with all associated highway interventions and the approval processes that should be followed.

We will regularly inspect temporary traffic management arrangements and if there are changes during the build phase, we will provide guidance on the best approach to minimise risk to road users.

Action 2

We will improve streets to accommodate safe freight movement by:

- a. Reducing conflict between goods vehicles and people walking, cycling and riding motorcycles through the Safer Junctions programme, and ensuring new schemes reduce danger through the Healthy Streets Check for Designers
- b. Working with FORS to encourage wider use of, and adherence to, Construction Logistics Plans through a three-day training course for construction logistics planners and developers, increasing workshop attendance by 100 per cent in 2020
- c. From 2019, facilitating planning workshops for development site stakeholders, to better spread guidance in the new Temporary Traffic Management Handbook



Safe behaviours

HGV and LGV driver training

Enhanced training can help freight and servicing vehicle drivers to reduce danger on our streets. Approximately one-third of HGV drivers involved in fatal collisions between 2012 and 2017 had not completed any road safety modules as part of their Certificate of Professional Competence. TfL, the GLA family and CLOCS have embedded approved driver training requirements in relevant contracts. These are consistent with the FORS Silver standard.

The Safe Urban Driving course is suitable for commercial drivers operating HGVs regularly in the urban environment where there are high volumes of people walking, cycling and riding motorcycles.

Van drivers are not subject to the same licensing requirements as HGV drivers. The Van Smart initiative aims to raise standards in van driving through training, a driver handbook, a manager's toolkit, e-learning and a competency framework.

These courses are delivered in two sections, a classroom theory module and a practical on-street cycling module, where drivers ride bicycles to get a cyclist's perspective.

Motorcycle delivery rider training

Relative to their share of traffic, motorcycles pose the highest risk of collisions that result in death or serious injury for people walking. We urge the Government to implement its proposals to improve the way mandatory



motorcycle training is regulated and delivered nationally. To raise the quality of motorcycling training and education for people riding in London, we support the Motorcycle Industry Accreditation Centre's scheme for accrediting companies and instructors who provide Compulsory Basic Training (CBT), the minimum required training to ride a motorcycle on the road. We have also developed and fund a suite of courses to raise the training available in London above the nationally prescribed standard and to meet varied needs. To improve motorcycle delivery safety, there is a new FORS standard for that sector, including approved safety training for riders. Beyond CBT is a one-day course,



delivered by qualified instructors, aimed at those delivering goods and services for a living. The training includes planning and riding a route through a busy urban environment, which takes in a number of locations.

Managing driver fatigue

As part of developing training and toolkits, we will also develop resources to help manage driver fatigue. According to the Driver and Vehicle Standards Agency, 90,000 checks on commercial vehicles in 2016/17 identified that one in 20 drivers exceeded allowable hours, which can lead to driver fatigue and increased levels of road risk.

In order for operators to meet legal requirements to manage commercial vehicle driver fatigue, adequate availability of places to stop and rest are needed. There are existing lay-over and resting bays for drivers in London, but we need to better understand how many there are and where they are located, to ensure they are known to operators and well-utilised. We will use this information to encourage boroughs to review and improve the provision of resting places, to help manage fatigue and enable operators to be more flexible about retiming trips.

Focus on

Exchanging Places

We deliver the Exchanging Places programme alongside officers from the Metropolitan Police Service and City of London Police. This innovative scheme gives people the chance to sit in the cab of a lorry to better understand the hazards and blind spots lorry drivers deal with. The experience helps people take steps to better protect themselves when cycling or walking near an HGV.

Since its introduction in 2007, the number of sessions run per year has risen from 40 to 200, with more than 35,000 people taking part. After completing the programme, 96 per cent of cyclists said they will change the way they ride. The programme has also won the Prince Michael International Road Safety Award.

To expand the reach of the programme, we have developed a virtual reality version, which consists of a four-minute video and a presentation from officers on the laws of cycling.





Action 3

We will encourage the highest standards of safe driving in the freight and servicing sector by:

- a. Improving driver training through FORS by launching a new pedestrian safety e-learning module in 2019
- b. Calling on the EU to make Safe Urban Driving a compulsory part of the Driver Certificate of Professional Competence
- c. Calling on the Government to bring vans into the operator licence regime
- d. Working with CLOCS to include vans in the next version of the CLOCS standard by December 2020
- e. Promoting Van Smart training and resources, and FORS to companies with large van fleets by working with partners, such as the Institute of Couriers and large servicing companies
- f. Calling on Government to implement its proposals to improve the way mandatory motorcycle training is regulated and delivered nationally
- g. Encouraging motorcycle delivery companies to join FORS and more delivery riders to attend the FORS approved training course, aiming for 250 motorcycle fleets accredited within FORS by 2021 and 1,000 delivery riders trained by 2021
- h. Working with boroughs to review existing lay-over resting points for HGV drivers in 2019, with a view to expanding their availability, to help tackle driver fatigue
- i. Developing resources and training for operations managers to tackle driver fatigue to be published in 2020

Staying safe when sharing the road

The Vision Zero approach to safe behaviours focuses on tackling the source of road danger and raising the standard among those driving the most dangerous vehicles. However, the road danger reduction programme must also equip those most at risk with the skills and knowledge to help them avoid danger, including the danger posed by freight vehicles.

Awareness of HGV blind spots has increased significantly, particularly among people who cycle. We will continue working with the police to deliver Exchanging Places, which allows people to experience the blind spots from an HGV driver's seat. However, most collisions involving HGVs that result in the death of people walking occur in slow moving traffic. Older people, particularly those over the age of 70, are significantly more at risk of these collisions. This suggests that, while we improve vehicle design and driver awareness, it is also vital to widen public awareness of this issue and target those groups who are most at risk, using virtual reality technology and other communication channels.

Action 4

We will provide improved and better targeted skills training and education on how to avoid danger posed by freight vehicles by:

- a. Increasing awareness of HGV blind spots, particularly for older people and anyone who walks or cycles in London, through increased press coverage, use of virtual reality technology and Exchanging Places events, and by working with partners, such as London Councils and charities, to communicate safety messages
- b. Raising the quality and availability of motorcycle training and education available to people riding in London by supporting the Motorcycle Industry Accreditation Centre's scheme for accrediting companies and instructors, and providing a broad range of training interventions to meet the varied needs of London's riders
- c. Doubling the number of adults completing cycle skills training by the end of 2021 and increasing the number of children trained by 50 per cent by the end of 2022, based on levels of training in 2017

Safe vehicle and safe behaviour compliance

Enforcement

Metropolitan Police Service data from 2012-17 shows that in 16 per cent of fatal collisions involving HGVs, vehicle defects or driving offences were deemed to be likely contributory factors. The London Freight Enforcement Partnership, which consists of us, the Metropolitan Police Service, City of London Police and the Driver and Vehicle Standards Agency, targets enforcement activity against the most dangerous and serially non-compliant drivers, vehicles and operators in London. This improves the safety of all road users, reduces congestion and improves air quality. The partnership is the first of its kind and is supported by the UK's first joint intelligence Freight Compliance Unit focused on HGV non-compliance.

Approximately 300,000 goods vehicles enter London at least once every year. To remove as many dangerous vehicles as possible, the partnership takes an intelligence-led approach to target

seriously non-compliant operators who flout the rules, have low regard for safety and undercut legitimate and law-abiding competitors. Less than half of the approximately 11,500 large and heavy goods vehicles and their drivers inspected every year are found to be fully compliant with the law. The partnership works closely with the Office of the Traffic Commissioner to remove rogue operators from London's streets and help to create a level playing field.

Work-related road risk compliance

We call on all specifiers of large contracts in London, including boroughs, large construction and infrastructure projects, and Opportunity Areas to embed work-related road risk in their contracts to ensure only the safest and most efficient operators are working within their supply chain. TfL monitors and reports non-compliance with work-related road risk requirements embedded in our contracts. We support other organisations looking to do the same. We have been refusing access to our sites where these standards are not met.

Action 5

We will raise standards for safe vehicles and safe driving by:

- a. Working as part of the London Freight Enforcement Partnership, using intelligence to target non-compliant drivers, vehicles and operators, and enhancing this activity by close working with the Office of the Traffic Commissioner and Highways England
- b. Calling on specifiers of large contracts to adopt our Work-Related Road Risk requirements for their supply chains





Clean freight

Across the country, toxic air leads to 40,000 premature deaths annually, and increases the risk of asthma, cancer and dementia.

A report from the Royal College of Physicians suggests this imposes a financial burden of £20bn on the economy every year, with children and older people particularly at risk.¹⁰ A recent British Lung Foundation report found that more than 2,000 GP surgeries and 200 hospitals are in areas exceeding legal air quality limits across the country, while in London more than 400 schools are estimated to be in areas of exceedance.¹¹ Everyone, including the freight industry, has a role to play in tackling this crisis and cleaning up London's toxic air.

Road transport is the single biggest source of some of the most dangerous air pollutants in London. As a proportion of this, freight contributed 33 per cent of NO_x, 29 per cent of PM_{2.5} and 23 per cent of carbon dioxide in 2013, despite comprising only 17 per cent of total vehicle kilometres in London in the

same year.¹² Freight journeys have been increasing and are expected to continue growing, further contributing to poor air quality and CO₂ emissions if no action is taken.

The Mayor aims to reduce emissions from freight by encouraging a switch to ultra low emission vehicles (which include battery electric, plug-in hybrid and range-extended electric vehicles), providing incentives to freight services to assist in making the switch, adopting smarter delivery practices and reducing freight movements through better use of consolidated trips. This chapter on clean freight specifically deals with the switch to ultra low and zero emission vehicles – actions proposed in the efficiency chapter will also play a significant role in reducing freight emissions by encouraging consolidation, collective procurement and a switch to sustainable modes.

¹⁰ Royal College of Physicians (2016) Every breath we take: the lifelong impact of air pollution

¹¹ British Lung Foundation (2018) Toxic air at the door of the NHS

¹² London Atmospheric Emission Inventory (2013 Update)

Focus on



Commercial electric vehicle trial

The Mayor has partnered with Gnewt Cargo in a 30-month commercial electric vehicle trial, which started in mid-2017. This is part of the low emission freight and logistics trial, which is part-funded by the Office for Low Emission Vehicles and managed by Innovate UK.

Twenty-six of Gnewt's electric vans are operating in central London for the trial. Telematics have been installed in the vehicles, with data being analysed by Arup to assess the environmental and cost benefits compared to equivalent diesel vans.

Initial results show that electric vans are almost 50 per cent cheaper to run than diesel equivalents as well as delivering significant environmental benefits from having zero tailpipe emissions and reduced emissions of particulate matter.

Focus



Thames Air Quality Strategy

The Port of London Authority published their Air Quality Strategy for the Tidal Thames in June 2018, the first such strategy of any port in the UK. It was prepared following extensive evidence gathering, including monitoring the emissions from vessels on the river and the inclusion, for the first time, in the 2013 London Atmospheric Emissions Inventory, of contributions from river-based activities on the Thames.

This suggests that the river contributed around one per cent of total emissions, with NO_x emissions from the river estimated to be 1.05 per cent and PM at 0.63 per cent. The 2013 London Atmospheric Emissions Inventory projected that the levels of NO_x and PM could increase to 2.66 per cent and 0.95 per cent respectively in 2030, owing to improvements in road engines and an expected growth in emissions as a result of increased river traffic.

The Air Quality Strategy sets a target to reduce NO_x and PM by 50 per cent by 2041, together with an overarching target to reduce CO₂ and other emissions. To achieve these ambitious targets, the strategy sets out 19 actions to be carried out in partnership with a range of stakeholders, including us. The strategy itself will be reviewed in 2023 in light of progress.

Ultra Low Emission Zone

We have a comprehensive plan to reduce road transport emissions and clean up London's air. On 8 April 2019, the world's first Ultra Low Emission Zone (ULEZ) will launch in central London. The ULEZ will be in operation 24 hours a day, every day of the year. Like buses, HGVs will need to comply with Euro VI standards,¹³ which has been shown to have reduced bus NO_x emissions by an average of 90 per cent.¹⁴

Most vehicles, especially vans and lorries, will need to meet tighter exhaust emission standards. For diesel vans this will mean complying with Euro 6 standards (or Euro 4 standards for petrol vans).

From autumn 2020, larger vehicles, including HGVs, will need to comply with strengthened London-wide standards. The London-wide Low Emission Zone (LEZ) for lorries and heavy vehicles more than 3.5 tonnes will be tightened to Euro VI. Non-compliant vehicles will need to pay a daily charge of £100 to travel within the city. Additionally, the daily charge for vehicles not meeting the original Euro IV standards will be increased to £300.

Tightening the LEZ is considered the most effective way to deal with pollution hotspots in outer London, which are largely along main roads with a high proportion of freight traffic.

From autumn 2021, the ULEZ will be expanded to the wider area of



inner London bounded by the North and South Circular Roads. The ULEZ expansion will also operate 24 hours a day, every day of the year, and will apply to all motorcycles, cars and LGVs. For freight operators, this will include small vans and larger vans up to and including 3.5 tonnes in gross vehicle weight.



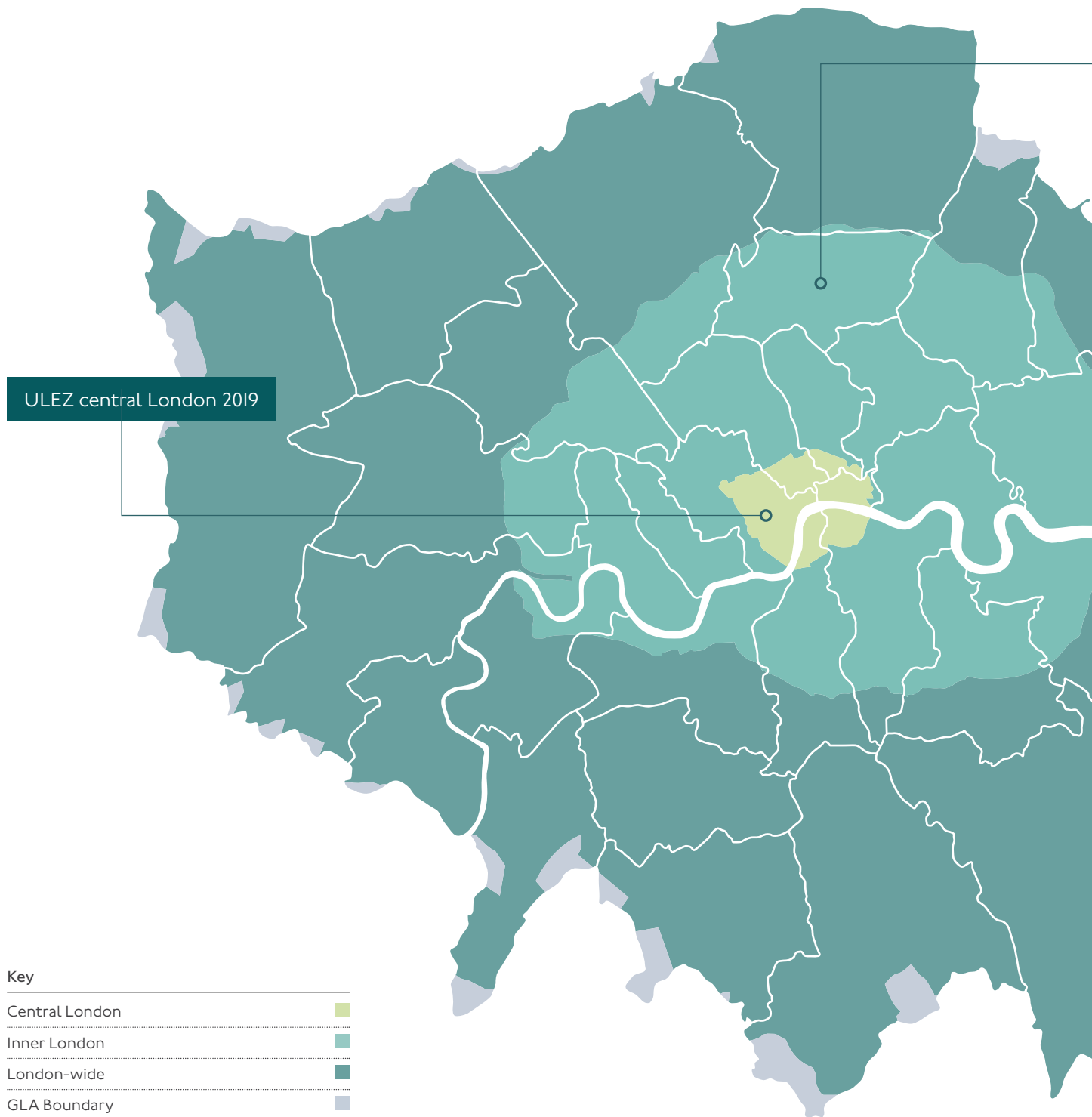
These programmes will have a significant impact on reducing road NO_x emissions and cleaning up air pollution (see

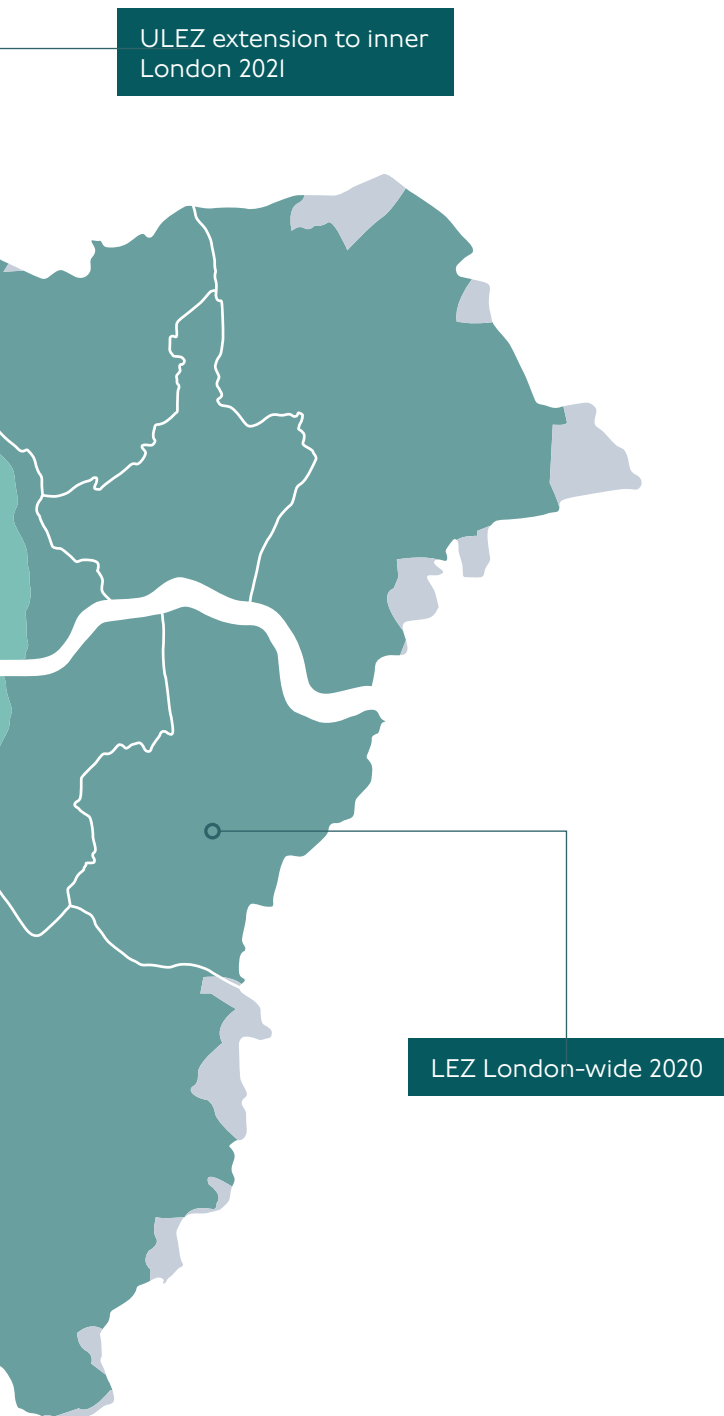
Figure 16). By 2021, 64 per cent fewer road-kilometres will exceed the legal NO₂ limit (see Figure 17).

13 Euro 6 emission standards cover all passenger cars and LGVs under 3.5 tonnes, while Euro VI covers all heavy vehicles more than 3.5 tonnes, such as HGVs, coaches and buses

14 GLA (2018) Low Emission Bus Zones: Evaluation of the First Seven Zones


Figure 15: Launching the ULEZ






ULEZ delivery timeline:

- 2019** ○ **ULEZ central London**
8 April 2019
 In the same area as the Congestion Charging zone
- 2020** ○ **LEZ London-wide**
26 October 2020
 Lorries and other vehicles more than 3.5 tonnes


- 2021** ○ **ULEZ extension to inner London**
25 October 2021
 Up to North and South Circular Roads, including existing central London zone (all vehicles)



For a full list of affected vehicles visit tfl.gov.uk/ulez


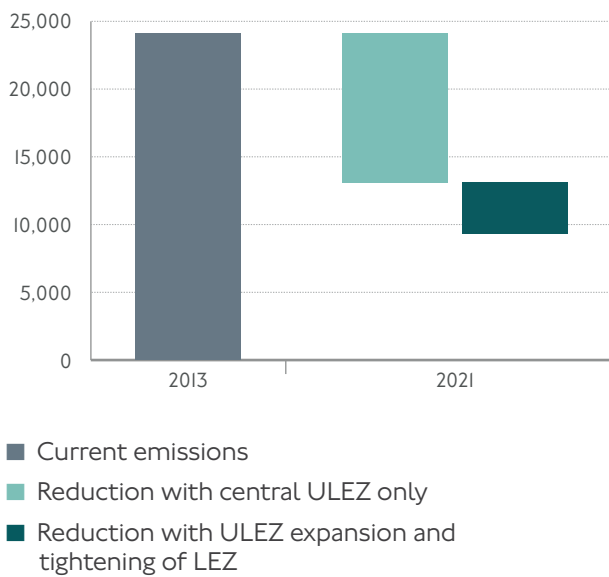
 **Operating 24/7**
 The ULEZ will be operating 24/7

Figure 16: Reductions in road NO_x emissions (tonnes)



Euro standards are progressively tightened over time to ensure vehicle manufacturers are using the latest emission reduction technology. LGVs were the last to transition to the Euro 6 standard, which makes it more challenging for operators of these vehicles.

This was considered in the development of the ULEZ. The daily charge for vehicles less than 3.5 tonnes is much lower to provide more flexibility. We have launched a bold new scrappage scheme to support microbusinesses that will find it especially difficult to source a newer vehicle ahead of time.

To proactively address the need for the transition of vehicles, we have been running a multi-year campaign of engagement through our LoCITY programme, providing forums for policy makers and the freight and servicing operators to work together to improve London's air quality. We have also run an extensive marketing campaign to prepare drivers for the ULEZ, with communications ramped up in the three-months prior to its launch in April. The marketing campaign includes our online ULEZ vehicle checker, which has received more than two million visits since publication. Our engagement work has extended to liaising with manufacturers and the van leasing and rental trade to encourage them to provide cost-effective options for vehicle replacement and to support the development of a retrofit solution for vans.

We continue to call on the Government to match London's leadership and provide funding and support for a national retrofit and scrappage fund.

Figure 17: Impact of the ULEZ on average annual road-level NO₂ (by 2021)



Key

Impact on annual average NO₂ µg/m³

-0.1 to 0.1

-1 to -0.1

-2 to -1

-5 to -2

-10 to -5

More than -10

Focus on

Low emission vehicles

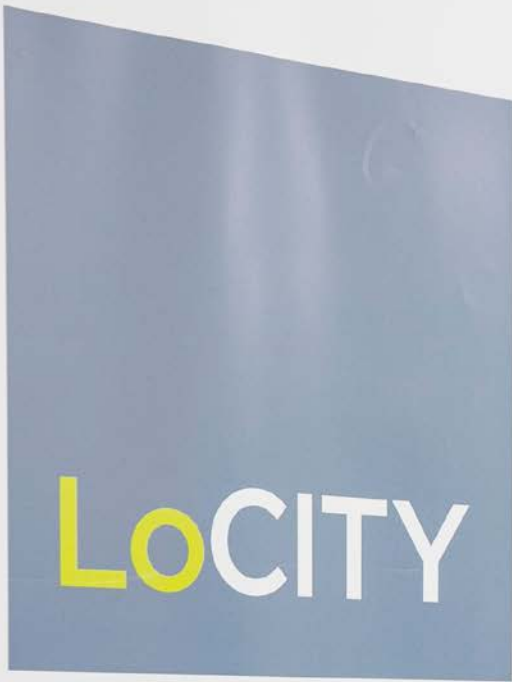
We launched LoCITY in January 2016 to encourage the uptake of low emission commercial vehicles. The programme encourages fleet operators, policymakers and vehicle manufacturers to work together to improve London's air quality.

LoCITY provides regular expert forums where operators can share their experience, highlight best practice and seek impartial advice. There are also live vehicle events, which are an excellent way to influence fleet managers, enabling them to see the vehicles and talk to those already running them.

We have supported LoCITY by funding research and have distributed the findings via new tools, including an online training course for drivers and fleet managers, a commercial vehicle finder tool with information on fuel technology, a fleet advice tool, and a facts and fiction toolkit that contains toolbox talks, videos and a best practice guide.

The LoCITY approach has been successful in engaging new audiences and has been replicated by other cities across the UK.

All LoCITY events are free to attend. The three industry working groups meet regularly throughout the year and focus on vans, HGVs and waste and construction. For more information or to register for an event, visit locity.org.uk or contact LoCITY@tfl.gov.uk



ROADSHOWS

frastructure



Action 6

We will support the freight and servicing sector to comply with the ULEZ by:

- a. Providing ongoing communication and marketing before and after the launch of the central ULEZ scheme, and in advance of the London-wide LEZ and ULEZ expansion
- b. Launching a bold new scrappage scheme, targeted at supporting London's microbusinesses to switch to the cleanest vehicles, including electric
- c. Calling on the Government to match London's leadership and provide further support for other Londoners and businesses as part of a national retrofit and scrappage fund
- d. Using our convening power to work with manufacturers and leasing companies to identify and publicise incentives for retrofit solutions, and incentives for businesses to trade-in more polluting vehicles
- e. Progressing the LoCITY programme, helping businesses to go beyond compliance through engagement and trials, and providing guidance on the use of alternative fuels and reducing non-tailpipe emissions

Towards a zero emission city

The Mayor has made it clear that the future for London is zero carbon – as is necessary to reduce the impacts and risks of climate change. Significant action is therefore required to move to zero emission transport and to a fully zero emission fleet, improving London's air quality. The Mayor's Transport Strategy outlines the ambition of reducing PM_{2.5} levels to below the World Health Organisation guidance limit of 10µg/m³ by 2030. London is projected to exceed these guidelines until well after 2030, which means further action is needed.

To achieve these goals, we need a substantial shift to ultra low emission vehicles in the near term. This will include a mixture of battery electric, fuel-cell electric and plug-in hybrid electric vehicles. Through our LoCITY programme, we have showcased low emission freight vehicles and developed tools to help businesses to understand electric vehicle charging and purchasing options.

London was awarded £13m funding from the Government's Go Ultra Low City Scheme to increase the uptake of ultra low emission vehicles. The scheme includes funding local projects to create 'Neighbourhoods of the Future'. These will be a testbed for a range of innovative policies, initiatives and charging infrastructure. For example, the boroughs of Croydon and Sutton



are working together to loan electric vans to businesses in the Beddington Industrial Area.

However, even a relatively small change in the overall fleet composition as predicted for 2020 will require a sizeable increase in electric vehicle infrastructure. To address this, we are delivering a major expansion in electric vehicle charging with a new rapid charging network across London and new charge points in residential areas.

To facilitate the next phase, the Electric Vehicle Infrastructure Taskforce was set up in May 2018, with a remit of estimating the future demand for electric vehicle charging, identifying the barriers to implementing the infrastructure and coming up with practical solutions.

Specific user needs are taken into consideration, particularly high mileage activities, such as commercial and freight journeys. These users will need both high power, on-the-go charging, as well as slower, overnight charging in depots and residential on-street locations. The taskforce is exploring the potential for interaction with micro-consolidation centres. This work will culminate in the launch of an Electric Vehicle Infrastructure Delivery Plan in 2019, detailing London's charging infrastructure needs up to 2025 and the most effective way to achieve this.

We will also support the implementation of zero emission zones, working with London boroughs to deliver zones with consistent standards in town centres from 2020 and in central London from 2025.

Because of the lack in variety of zero emission vehicles in the UK market, the design and implementation of local zero emission zones will need to be considered at this stage as complementary to other policy measures to deliver zero emission transport by 2050, rather than as a standalone measure. These are important opportunities to demonstrate the cutting edge of the industry, showcasing electric vehicles and working with boroughs to advise on locations and requirements for charging points.

The current rate of uptake of ultra low emission vehicles within the freight and servicing sector is limited. Despite this, there remains an opportunity to futureproof vehicle standards and procurement through extensive collaboration and engagement with the industry. We will develop zero emission zone guidance for boroughs, ensuring a consistent approach for schemes as they are introduced at the local level across London, and encouraging boroughs to engage with freight operators at an early stage.

We have a single ambition in the longer term – zero emission transport. A core aim is that all newly registered cars and LGVs driven in London are zero emission by 2030 and that all newly registered HGVs driven in London are zero emission by 2040.

The Government has committed to ending the sale of new conventional petrol and diesel cars and vans by 2040, but the Mayor has called on it to bring this date forward, ensuring that all new cars and vans are zero emission by 2030 at the latest. We will champion London as a world-class market for electric vehicle manufacturers and will work to overcome barriers to vehicle supply and variety.

Action 7

We will support the freight and servicing sector to switch to zero emissions by:

- a. Providing guidance for boroughs on consistent standards for local zero emission zones by spring 2019
- b. Ensuring the Electric Vehicle Infrastructure Taskforce Delivery Plan, due in spring 2019, includes proposals for supporting ultra low emission freight vehicles
- c. Continuing to call on central Government to ensure all new cars and vans are zero emission by 2030 at the latest
- d. Promoting London as a world-class market for electric vehicles and working with industry to increase the supply and variety of electric vehicles

Case study



DPD's all-electric depot

One of the UK's leading express delivery companies, DPD, has recently opened its first all-electric depot in central London. Located on TfL land, the depot is completely zero emission for both incoming parcels, served by two 7.5t fully-electric lorries, and for last-mile deliveries served by a fleet of 10 electric vans and eight micro-vehicles.

DPD has invested £500,000 in the site, including extensive charging infrastructure, and the depot will serve a two-square mile delivery radius in the heart of Westminster. The company expects to invest £3m on the depot over the next 10 years and has plans for a further six depots in central London.



10 am - 10 pm
except
local buses



Efficient freight

Freight operators run their businesses as efficiently as possible to meet customer demand and within the constraints of local and national regulations, restrictions and road conditions.

The businesses that make London a great place to live, work and visit depend on reliable deliveries and servicing. Managing freight well plays an essential role in making the city attractive for people and businesses, allowing it to grow and thrive. Freight and servicing access to local areas must be enabled as part of the Healthy Streets Approach with minimal impact on the street environment and other road users. Both network and local movement should be reliable and minimise delays.

Our city is set to transform as we deliver our vision for Healthy Streets. Achieving this vision will significantly change the operating environment for freight and servicing vehicles by reallocating road space to walking, cycling and public transport. Our most vibrant streets are those that are full of people, like town centres.

This reallocation of space is an essential part of achieving our aim for 80 per cent of personal trips to be made on foot, by cycling or using public transport. We know from our engagement with industry that there is some concern that this will reduce the space available for freight and servicing trips, and risks worsening the impacts of congestion. However, moving trips out of the car and on to these more space-efficient modes of transport will release road space for the freight and servicing trips on which our city relies.

The following actions seek to achieve efficient movement across the network and maintain good access to local areas. We will work with boroughs, businesses and the freight industry to scale up the initiatives that are proven to work through a targeted and evidence-based approach, informed by local conditions and stakeholders.

Improving the efficient movement of freight across London

Peaks in demand and both planned and unplanned incidents can lead to congestion. The delays these cause can make it challenging for operators to meet customer demand and expectations.

To overcome this, operators might run more vehicles to deliver the same quantity of goods or use alternative, possibly longer routes. This adds to operators' costs and further increases total vehicle kilometres in London.

The cost to London's economy of congestion caused by incidents that could have been avoided by driver behaviour was estimated to be £137m in 2016 with 52 per cent of this estimated to be caused by commercial vehicles.¹⁵ These vehicles therefore have an important role to play in helping to reduce congestion.

The most severe delays on London's road network tend to occur on routes with the highest freight vehicle flows.

Our forecasting suggests that, without taking action, this situation is likely to persist, with the most severe delays on the network in 2031 still expected to be located on the busiest freight routes.

We reduce the impacts of congestion and maintain a more efficient network through planning and managing network operations, and providing real-time response to incidents. We also set appropriate regulations and restrictions based on activity, vehicle type, location or time of day, and can share data to inform efficient route planning by operators.

15 TfL (2016) The cost of alterable behaviour on the TLRN – TfL outcomes, insights and analysis



Focus on

Silvertown Tunnel

The new river crossing will reduce congestion at the Blackwall Tunnel and improve the reliability and resilience of the wider road network for freight and servicing.

It will connect to the A1020 Silvertown Way/Lower Lea Crossing on the north side and to the A102 Blackwall Tunnel Approach on the south side. The earliest the Silvertown Tunnel could become operational is 2024.

Among the benefits that the tunnel will bring are reducing the impact of unplanned incidents at the Blackwall Tunnel by providing a nearby alternative route. It will also reduce queues at the Blackwall Tunnel and approach roads. We will be able to include user charging at the Blackwall and Silvertown Tunnels to manage demand and provide a source of revenue to build and maintain the new tunnel.

It will also enable us to create new cross-river bus links in east London, improve road connections between Docklands and east and south London, and reduce journey times and make travel, deliveries and servicing more reliable.

The Silvertown Tunnel will also create opportunities for new jobs in the area, helping employers to access new markets and reduce the environmental impact of traffic congestion.





Figure 18: Current freight and servicing vehicle flows and congestion hotspots



Key

Goods vehicles (people flow)

Lowest



Second



Middle



Fourth



Highest



Pinch points (07:00-19:00) –
Delay at location per hour per
kilometre (mins)

2,001-3,500



3,501-5,000



5,001-6,500





6,501-8,000



Figure 19: Projected freight and servicing vehicle flows and congestion hotspots in 2031



Key

Highest flow	
Medium flow	
Lowest flow	
Junction with the most delays (morning peak)	

Responding to incidents

We manage the operation of our road network and all 6,300 traffic signals in London, including on borough roads, to support the aims of the Mayor's Transport Strategy, for example retiming signals to improve journey times for people walking, cycling and using public transport.

Operation of the network is based on analysis of a range of data and systems, enabling preparations for planned events and quickly mitigating unplanned events. One such system, our Real-Time Origin Destination Analysis Tool, takes information from roadside sensors to help us quickly identify how traffic is responding to incidents and deal with them before they become serious. The tool operates every day and updates every 15 minutes, providing us with a highly dynamic operational view of the network. We can use it to distinguish different types of vehicles using the roads, including forms of commercial traffic.

We continue to improve how we use data to inform our decision-making and operate the road network more efficiently. We have an important role to play in coordinating London-wide action, sharing data and enabling collaboration between the London boroughs, the GLA, the Metropolitan Police Service, BIDs and the businesses and operators to improve the efficiency of the network through active management.

Working with industry to share information, we will ensure that the most relevant, up-to-date information on freight movement informs our planning and management of the network. We will make this information available to staff in our Network Management Control Centre. Where incidents occur, we will identify and communicate preferred diversion routes, and work with the recovery industry to explore faster recovery times on key freight routes.

Improving journeys for freight and servicing vehicles

Given the vital contribution that efficient, reliable freight and servicing trips make to London's economy, they need to be accommodated properly on London's streets, with adequate loading space and minimal congestion.

We are investigating ways that an enhanced level of service might be provided for these vehicles on key freight routes. This could include new traffic signal strategies to reduce delays for freight vehicles at certain times, or using new in-vehicle communications technologies, which are being tested in the Multi-modal Optimisation of Road-space in Europe (MORE) project on the A2. This work will be developed in line with the Healthy Streets Approach, ensuring that we create a street environment that encourages people to walk, cycle and use public transport.

The learnings from this will inform our wider operational plans for the network. We will work with partners in the industry to test the impact on efficiency (both network and industry operational

efficiency) over the next 12 months. Once we understand the impact, we will identify key routes for freight today and in the future to ensure efficient movement on these routes.

Action 8

We will pursue opportunities to offer an enhanced service for clean, safe and efficient freight while protecting existing and future provision of cycling and walking infrastructure and journey times by:

- a. From 2019, using our operational data to identify the key strategic corridors for freight and review traffic signal timings along these routes to improve journeys where appropriate
- b. Working in partnership with freight and fleet operators over the next year, we will demonstrate how we could jointly improve the reliability and efficiency of operations by

providing an enhanced level of service for certain freight vehicle movements and retiming trips to different times of day where there is spare capacity

- c. Minimising the impacts of planned and unplanned disruption to freight and servicing vehicles through a renewed focus on real-time road management for freight in our Network Management Control Centre
- d. Sharing our data to enable operators to optimise the efficiency of their operations, and continuing to work with routing software providers to update their products

Focus on

Flexible street space

We are one of five city partners in an EU-funded project investigating innovative methods for making more flexible use of street space and accommodating multiple, competing demands on busy urban streets.

The MORE project focuses on major urban corridors that connect to the Trans-European Transport Network, the network of routes used for international freight transport within Europe. In urban contexts, these corridors are important freight routes into urban centres and help with movement within the city, and are places for people to meet, shop and spend time.

The project views streets as an 'ecosystem' that must support a complex mix of modes and activities throughout the day. We will work with partners and local stakeholders to apply new tools to the process of designing street space on a case study corridor. The resulting design options will aim to accommodate the multiple demands made by the range of road users, including people walking, cycling, spending time on the street and public transport, while also enabling efficient movement of freight. This may include new technologies that allow space to be used and managed differently throughout the day or on different days of the week, while supporting our Healthy Streets Approach.

The project, coordinated by University College London, started in September 2018 and will run for three years. It allows us to work with leading academics, practitioners and other cities experiencing similar challenges to develop and test new and innovative approaches to creating Healthy Streets while enabling efficient freight. We will identify approaches that are shown to work with the potential to be rolled out across the wider network in future.





Construction

An increase in commercial and residential building has led to an increase in construction activity. The volume of construction materials moved last year was 318 million tonnes.¹⁶ This requires use of HGVs to transport materials to and from sites as well as LGVs to fit out buildings and connect to utilities.

We work with construction and logistics operators to manage the network to assist the safe, clean and efficient movement of construction vehicles to and from sites.

Major construction projects face considerable challenges each day in managing the large number of deliveries. Construction Logistics Plans are used to set out protocols for managing construction freight to development sites and focus specifically on construction supply chains and how their impact on the road network can be reduced. We will update the Construction Logistics Plan guidance to bring together and embed best practice in future.

Construction Consolidation Centres are appropriately located distribution facilities, where multiple bulk material deliveries are stored and transported to construction sites. They offer opportunities to improve operational efficiency, which results in reduced congestion and delays, and improved safety.



Materials are delivered from suppliers, which are then checked and held in the centre, and stock is then picked and packed into consolidated loads as required. Vehicles can then be used to bring waste, damaged goods, pallets and stillages back to the consolidation centre on the return journey.

Construction Consolidation Centres benefit developers, contractors, local authorities and society by reducing congestion and delivery costs, increasing supply security, reducing likelihood of project over-run, lowering the

¹⁶ AECOM for TfL (unpublished) Construction Logistics Baseline model draft



environmental impact of development sites and improving safety.

The construction consolidation network is already well-established in London, with 12 centres currently operating. These have reduced the number of HGVs on the road network. These centres have been used in the Heathrow Terminal 5 and London Olympics developments, providing an effective supply chain management solution.

The Mayor's Transport Strategy supports the creation of more facilities to enable all of London to be within 30

minutes of a Construction Consolidation Centre and commits us to complete the network of centres. We will work with partners on this and promote the increased use of existing Construction Consolidation Centres.

We have identified that a Construction Consolidation Centre is required in Croydon, Sutton or Merton to ensure that all of London is within 30 minutes of a centre. Due to the large amount of construction under way and planned in Croydon, we are working with the borough to identify suitable sites and seeking a supplier to operate a facility.

Accessing construction sites in space-constrained locations can be difficult in larger vehicles, disrupting other road users and increasing road danger while the vehicle performs manoeuvres to access the site. Space for loading and unloading on site is not always available when the vehicle arrives, meaning they must circulate on local roads – looping – until space becomes available. This increases congestion, emissions and the risk of road danger for other road users. Many businesses and operators are changing their operations to reduce their impact

on the road network. Examples of this include individual and shared vehicle holding facilities with neighbouring sites to reduce looping, on-site waste compacting and reducing the size or number of vehicles required.

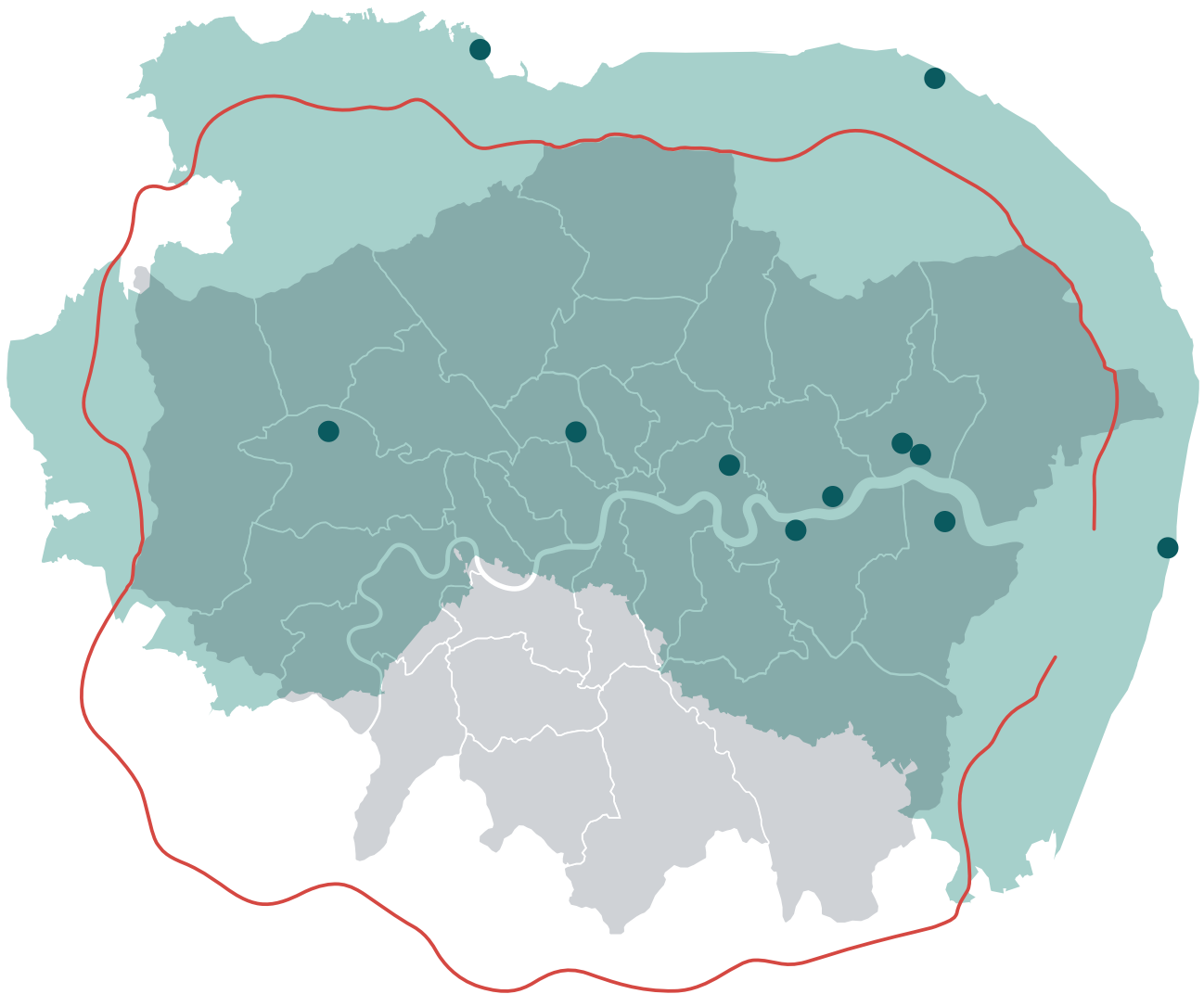
For example, by engaging with the developers of 19-23 Blackfriars Road, we supported on-site recycling during demolition and construction. As a result, demolition material was crushed on site and stored for use as the piling for the new development. This saved 1,633 tipper movements to and from the site.

Action 9

We will collaborate with industry, developers, contractors and boroughs to reduce the impact of the construction supply chain by:

- a. Updating the Construction Logistics Plan Guidance in 2019
- b. Completing the network of Construction Consolidation Centres in London, which will also be included in a new online toolkit from 2019
- c. Reducing the number of trips to sites by helping to identify shared vehicle holding facilities, recycling and sharing materials between sites, and compacting waste from multiple nearby sites before removal
- d. Seeking to transport materials for TfL-funded construction projects by the safest, cleanest and most efficient modes practical
- e. Championing the important role marshals have to coordinate safe, timely and cost-effective access to sites
- f. Working with developers, contractors and stakeholders to improve the local environment during construction for those walking, cycling and using public transport
- g. Creating a baseline model of construction activity in London and use this to better direct our construction logistics programme

Figure 20: Construction Consolidation Centres



Key

Construction Consolidation Centres	●
M25	—
30 minute catchment	■

Water and rail

Approximately 10 per cent of freight is carried by water and rail. The rivers and canals network, and rail and railhead network provide opportunities to shift freight from road to water and rail. These modes are safer, often cleaner and can have less impact on the road network and street environment.

Water

Terminals on the River Thames within London handle more construction material aggregates than any other port in the UK. In 2017, they handled 12.38 million tonnes of cargo, comprising 8.33 million tonnes of international trade and 4.05 million tonnes of cargo moved between terminals, according to Department for Transport statistics. Cargoes handled included construction material, sugar, vehicles, waste and recyclates, animal feed and petroleum products. The London Boroughs of Barking and Dagenham, Greenwich and Bexley are classified as major ports in their own right, handling more than one million tonnes of international trade every year.

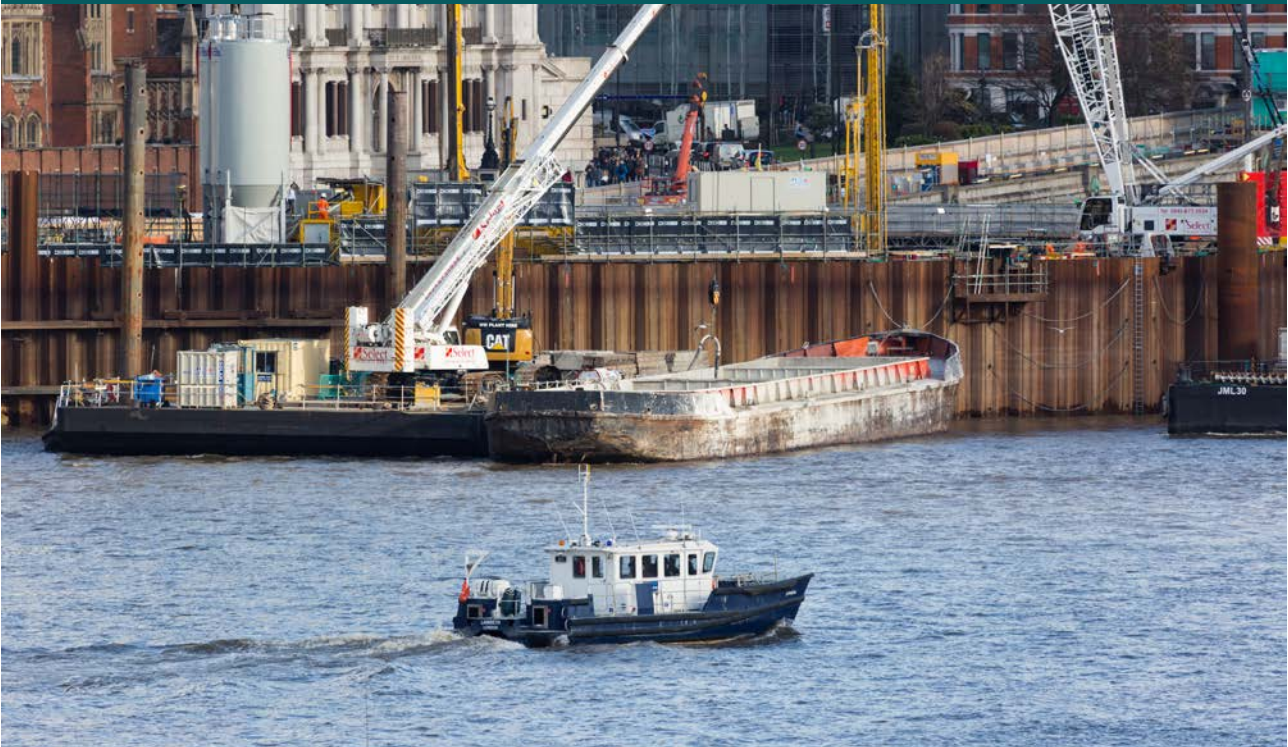
The Thames is the most used inland waterway for freight movement in the UK, with the vast majority moving to or from terminals within London. Bulk cargoes, particularly construction materials and containerised waste, are the principal cargo types transported on the river. The Port of London Authority estimates that water freight already enables the equivalent of 265,000 HGV movements each year that might otherwise have taken place on the road.

A recent Safeguarded Wharves review conducted by the GLA developed volume forecasts to 2041.¹⁷ Demand is expected to add two million tonnes to current levels on the Thames by 2041. Growth is predicted to come from increased consolidation at the Port of Tilbury and from construction and infrastructure projects.

The Port of London Authority estimates that achieving four million tonnes a year of intra-wharf freight will take an estimated 400,000 HGV trips off London's roads. It also sets out to reactivate at least five safeguarded wharf facilities and bring them back into operation by 2025.

¹⁷ Ocean Shipping Consultants (2016) Forecasting London's Freight Demand and Wharf Capacity on the Thames 2015-2041

Focus on



Thames Tideway

Tideway has developed a strategy, in conjunction with its partners, to ensure that as many materials as possible are transported by river, taking lorries off London's roads to limit pollution, congestion and to protect road-users.

The project's use of river transport is on a scale unprecedented in modern times and builds on the experience gained from earlier projects, notably the Lea Tunnel and Crossrail.

Current projections are that the project will move 5.9 million tonnes of tunnel spoil, tunnel lining segments and construction materials by river, or more than 75 per cent of all the volume of material generated by the scheme. Tideway has also been a key partner, alongside the Port of London Authority, in a new training centre for river operators called the Thames Skills Academy.

The Thames is principally used for transporting non-time sensitive, bulk cargoes, but the river also offers a direct, sustainable and congestion-free route from the deep water ports and terminals in the Thames Estuary to the large urban markets of London. Work to investigate the potential and opportunities to use the river to move unitised cargoes and last-mile deliveries is currently under way. These are building on the success of earlier trials that used the river for transporting ambient goods in containers from Greenwich to Wandsworth for Sainsbury's.

We recently commissioned a study that identified several barriers that need to be addressed to support widespread use of water.¹⁸ The results included insufficient wharf availability, lack of awareness, unenforced Construction Logistic Plans, perceived high costs and operational issues such as cargo double handling.

To address these barriers and unlock the potential for a mode shift, a new working group of the Thames and Waterways Forum will be established to focus specifically on water freight.

The group will work together to find ways to maximise the benefits of water freight and to secure the reactivation of currently unavailable safeguarded wharves.

We will promote the use of water freight through the Water Freight Toolkit and expand it to include railheads and Construction Consolidation Centres. This will become a comprehensive Freight Infrastructure in London Toolkit. We will work with the boroughs, the Port of London Authority and Canal River Trust to facilitate using London's waterways in the construction and operational phases of new developments.

We will also identify and develop opportunities to increase light freight, last-mile deliveries and unitised cargoes by water.

¹⁸ Steer, Davies, Gleeve (2017) Investigating the barriers to transporting bulk construction materials and waste by river and rail

Focus on



The Water Freight Toolkit

The Water Freight Toolkit was launched in spring 2018. It is designed to provide useful information to stakeholders and increase awareness of opportunities for water freight. It includes guidance and an interactive map showing active wharves in London. It is already popular with developers and the freight operators. We will promote its use and continue to develop it to meet the needs of its users.

Rail

In addition to carrying more than a million passengers per year,¹⁹ London's rail network carries more than 10 million tonnes of construction material per year, including 50 per cent of aggregates for projects in London. We are working with Network Rail and the Rail Freight Group to develop an integrated approach to increasing the proportion of freight carried by rail in a way that does not compromise growing passenger demand.

A recent study by Network Rail into rail freight identified 25 active rail handling sites within the M25. These sites make 62 heavy freight rail movements per day, eliminating an estimated 4,000 daily HGV movements across the Capital.

Rail freight produces 76 per cent less carbon dioxide per tonne of cargo relative to road haulage and each freight train removes up to 76 HGVs from the roads.²⁰

Growth in rail volume is expected to come from construction and intermodal freight. To unlock this growth, we will work with our delivery partners to maximise the use of rail freight in new developments. There are also opportunities to increase the volume of light freight, particularly off-peak, by increasing the provision of intermodal

micro-consolidation facilities in or close to railheads to encourage sustainable last-mile deliveries. However, it is essential that growth in rail freight does not lead to a reduction in the capacity of the network for carrying passengers. It is also important that the effects of noise and vibration from rail freight are mitigated where possible, particularly in residential areas and overnight.

The opportunities for moving road freight on to rail are limited by the large amount of rail freight which passes through London to other national destinations, using up valuable capacity. We need to encourage the DfT and Network Rail to upgrade rail freight routes outside London so that non-London rail freight can be taken around London, thereby freeing up rail paths through the Capital for additional passenger services and freight trains that serve London.

To grow rail freight we also need to tackle network limitations such as gauge clearance and the lack of interchange and wagon capacity. Cost is also a barrier as last-mile journeys by road are required to get to final destinations. Rail is less flexible than road, which offers door-to-door service and flexible transport arrangements, but journey times are more reliable.

¹⁹ Department for Transport RAI0202 (2017)

²⁰ Network Rail (2017) Freight Network Study

Crossrail spoil by rail



Rail is well suited to removing large volumes of bulk materials from roads. Between 2013 and 2015, Crossrail, as part of its tunnelling project, transported 1.9 million tonnes of spoil. The equivalent of 95,000 trucks were removed from the London road network. The spoil waste from this project helped build Europe's largest man-made nature reserve at Wallasea Island. At its height, GB Railfreight operated six trains per day.

This project showed how rail freight can move significant volumes through urban areas far more efficiently and where congestion is far less likely to delay operations.

Rail supporting UK Tarmac



UK Tarmac moves two million tonnes of aggregates and cement by rail each year in London.

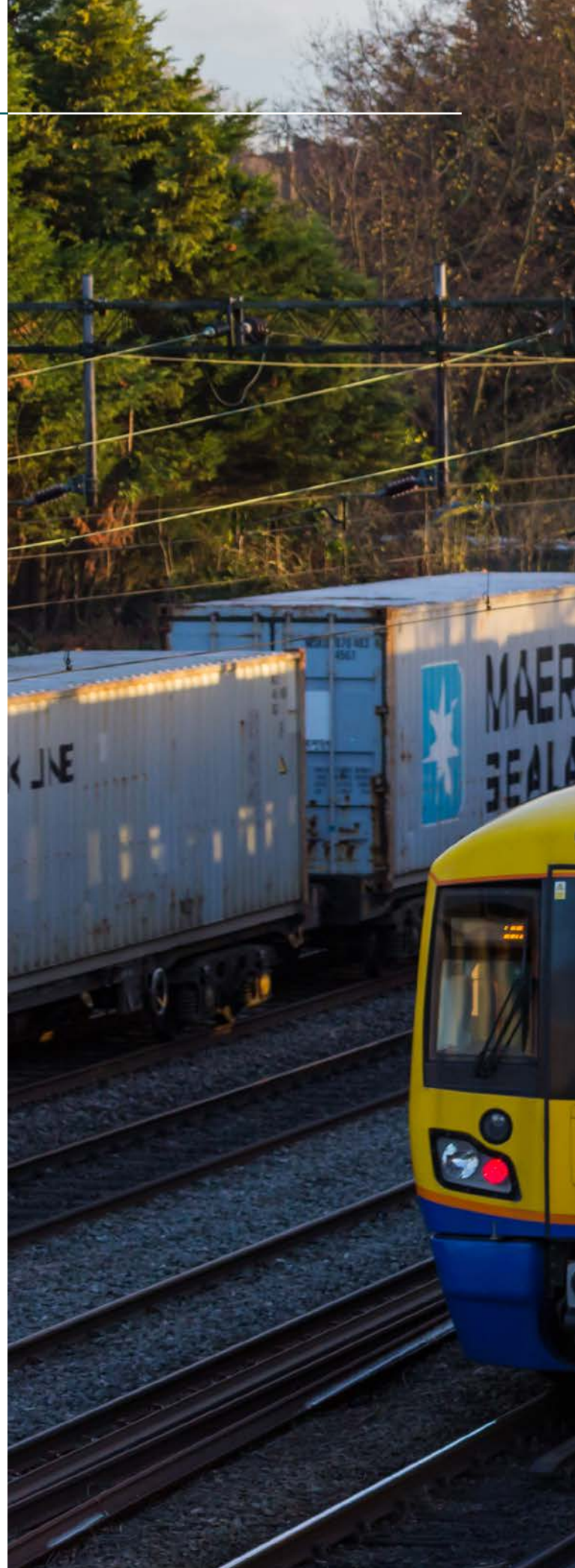
Material is currently handled at 12 terminals across the city with a significant volume coming through Greenwich Wharf.

Tarmac's rail operations remove more than 100,000 HGVs from London's roads annually reducing CO₂, NO_x and congestion in London.

Action 10

We will encourage the mode shift from road to water and rail by:

- a. Working with the Thames and London Waterways Forum, the Port of London Authority and the Canal River Trust to protect wharves, promote freight by water, and setting up a new waterways working group
- b. Working with river and canal-facing boroughs and industry groups to promote toolkits and measures to encourage freight by water
- c. Working with Network Rail and rail freight operators to optimise capacity on the existing network for freight and passenger services, taking advantage of opportunities to grow light and bulk freight on rail from 2019
- d. Including wharves, railheads and Construction Consolidation Centres into a Freight Infrastructure in London Toolkit by spring 2019
- e. Working with rail freight stakeholders, the GLA and The Mayor to encourage Government to progress national rail freight schemes so those rail services not directly serving London have more direct routing options to their final destination, freeing up more capacity for rail freight and passenger services







Improving the efficiency of freight and servicing at the local level

Making London's high streets, town centres and neighbourhoods work for everyone requires careful consideration of freight and servicing at street level. Road and kerb space is limited with many competing demands from different road users, business and residents. We need to ensure local businesses and households can receive the goods and services they need with the least impact on the street environment and other road users.

To do this we need to promote good examples that minimise the impact of freight and servicing activity. We must work with businesses, BIDs and operators to identify how we can influence consumer behaviour across the supply chain and what measures are needed to support them making the best choices.

Research and evidence from trials to make deliveries more efficient

Data and evidence collected through trials across the supply chain have identified initiatives that reduce the impacts of freight in local areas. We now need to work with the freight operators, boroughs and BIDs to bring these together and scale up this positive impact across the city, and specifically in central London, to achieve our Mayor's Transport Strategy aim of reducing goods vehicles entering in the morning peak. These initiatives include:

Collective procurement

This involves businesses working together to reduce the amount of freight and servicing activity in an area. For example, in partnership with New West End Company BID, we established preferred suppliers for waste and recycling collection services and promoted their use among businesses on New Bond Street. This reduced the number of vehicle movements from 144 to nine a day and waste bags on the footways during shopping hours by 67 per cent.

Retiming

This can reduce deliveries in the morning peak. Our retiming programme, which ran from 2014-17, overcame local challenges and operator barriers to off-peak deliveries, and retimed deliveries at more than 500 premises across London between 07:00-19:00. This resulted in an estimated reduction of more than 160,000 deliveries and removed more than 20,000 vehicles from the morning peak in 2017. We will continue to promote retiming as a key measure to achieve the aim of reducing freight entering central London during the morning peak.

Cycle freight

Research we commissioned in 2017 found that up to 14 per cent of vans could be replaced by cycle freight by 2025 in areas where LGVs contribute to more than 60 per cent of traffic. It also shows that cycle freight can be quieter, achieve more reliable journey times and reduce congestion. The research identifies parcels, post, couriers and retail/wholesale sectors as having a high potential for uptake for cycle freight. Replacing one 7.5 tonne HGV with cycle freight in central London could save 9.8 tonnes of CO₂ emissions and at least 7.4kg NO_x and 60g PM per year.²¹

Pedestrian portage

Trials conducted in 2018 found that using pedestrian portage, where porters meet drivers at the kerbside to deliver parcels on foot, successfully reduced the time that vehicles spent at the kerbside by 2.5 hours and reduced vehicle kilometres.

Click and collect

Parcel collection points are located at local shops, post offices and dedicated stores across London, which can easily be accessed on foot, by cycle and public transport, close to home or as part of daily commutes.

They give customers the option of picking up their deliveries and returning goods as part of their journey, rather than waiting at home for a delivery or making an additional trip due to a failed delivery attempt. For suppliers, it saves costs by consolidating the number of deliveries and collections into one rather than multiple locations, and reduces missed deliveries.

We have been working with our delivery partners to expand the network of collection points in London. We are making small parcels of land available to courier companies.

21 Element Energy and WSP (2017) Strategies to increase cycle freight

Working with Amazon and InPost, we also provide parcel lockers at eight Tube stations – Amersham, Finchley Central, Newbury Park, Ruislip, Chalfont & Latimer, Buckhurst Hill, Chorleywood and Ickenham – and Victoria Coach Station. We plan to significantly expand the number of locker facilities provided at our stations. We will launch a new competitive tender exercise this year, as the existing contract expires in September 2019, to increase the number of locations across our network.

Promoting collection points to employees

Given that the number of personal deliveries to offices in central London is thought to be between 200,000 and 400,000 per day, there is significant potential for click and collect lockers and collection points to help reduce unnecessary trips.

The Mayor has been urging online shoppers to stop ordering goods to their workplace in an effort to reduce traffic congestion, as part of his plans to improve air quality. The GLA has advised staff to stop having personal deliveries sent to its City Hall and Union Street offices, and promotes the use of alternatives, such as click and collect services through Cross River Partnership's www.clickcollect.london site. The website was part-funded by the Mayor's Air Quality Fund, and developed as part of Cross River Partnerships Clean

Air Better Business programme, to help online shoppers redirect their deliveries from central London workplaces.

We at TfL have also encouraged our employees to order and receive personal items in the least impactful way. This resulted in a reduction in the number of personal deliveries received by our Palestra office post room from 100 every week to under 30. We're now improving how we record the deliveries received at our delivery bays and post rooms and investigating other data sources to help us monitor trends and understand the wider impacts of this policy.

Looking to the future

We will continue to scale up successful programmes across the Capital. We also want to work closely with the servicing sector to explore how we can support safe, clean and efficient access to their servicing destinations. We know the logistics industry is changing. New business models and advances in vehicle technology, particularly with the rise of connected and autonomous vehicles, may change the way goods are delivered in future. As well as understanding the risks and opportunities associated with these changes, we want to work with boroughs, businesses and the freight and servicing industry to encourage the use of new technologies and promote innovation to work towards achieving the ambitions of the Mayor's Transport Strategy.

Focus on



Cycle freight case studies

Many companies have already run successful schemes to use bicycles and electric vehicles to complete deliveries. These help reduce carbon emissions and ensure a reliable and efficient service for customers.

Cycle freight in Dublin

In Dublin, UPS delivers parcels by truck to a city centre storage container. Drivers then switch to cycle freight for last-mile delivery by electric-assist trikes and/or on foot.

Sainsbury's deliveries

In 2018, Sainsbury's started to trial the UK's first grocery delivery service by electric cargo bike, delivering 100 orders a day and reducing carbon emissions at the same time.

Deliveries in Cambridge

Across three areas of Cambridge, around 500 parcels are delivered by cargo bike and cargo trike each day. This has replaced two 7.5 tonne HGV routes.

Influencing consumer choices

Action by businesses and individuals, supported by us, the Mayor and boroughs, will be crucial to achieving sustainable freight and servicing in our future city. A responsible approach is required not just from operators, but from all parts of the supply chain and the consumer. As well as managing impacts at the end of the supply chain, we can also influence behaviour at the beginning of the process. As policymakers, we, the Mayor, and the boroughs have an important role to play in changing the way Londoners – including businesses and individuals – think about deliveries and use their purchasing power to create change. It is everyone's responsibility to take positive action and make choices that help reduce the impact of delivery vehicles coming into their local area, through a reduction in numbers and a switch to safer, cleaner vehicles.

Changing the way Londoners receive their deliveries

A key part of our approach will be to improve Londoners' understanding of the impacts of their delivery choices on their local town centres and neighbourhoods, so that they can make positive changes to their behaviour.

There are a number of options for individuals receiving goods: click and collect, collection points, home deliveries and deliveries to workplaces, including next day and same day services. All of these options create trips and have an impact on their local destination – be that a town centre or a residential street.

Promoting the alternatives to home delivery will help prevent failed delivery attempts when no one will be home and reduce multiple vehicle trips. Click and collect and parcel lockers in high street locations can also benefit local shop owners by generating trade as customers pick up their parcels. Changes in the way people work, with more flexibility and homeworking, can help reduce the number of deliveries being made to workplaces in more congested areas.

To improve convenience for their customers and the efficiency of their operations, delivery companies can provide text and email updates once a timeslot is confirmed, giving the option of alternative slots. This enables the customer to rearrange a delivery if they are not going to be available to receive it and to reduce the impact missed deliveries have in generating additional trips.

Encouraging customers to be more flexible with when they receive goods will help the delivery companies and couriers implement the most efficient delivery schedule and therefore reduce the number of vehicles deployed on the roads. Improving Londoners' awareness that they can help reduce vans in their neighbourhood by allowing a longer or more flexible time period for deliveries (ideally supported by text or email communication to prevent missed deliveries), rather than defaulting to next day or even same day, can help operators deliver goods in the most efficient way. Consumers can also actively choose delivery options that use sustainable vehicles such as electric vans or cycles.

The more consumers request these options, the more retailers will need to respond to remain competitive.

We have an opportunity through our existing programmes and marketing campaigns to improve consumers' awareness of the impact of their delivery options and encourage Londoners to make the most sustainable delivery choice. For example, our air quality education campaign explains the specific contribution that driving has on air quality. We will use this as an opportunity to also remind Londoners that deliveries contribute to the number

of vehicles on the road and by making responsible delivery choices they can have a positive impact on air quality.

We will also use our walking and cycling campaigns to encourage Londoners to collect deliveries from less congested locations and outside of peak hours. This includes incorporating this message into our campaigns to encourage people to walk or cycle for weekend leisure and shopping.

Improving delivery options

We will engage with the industry, boroughs, major public sector organisations, businesses, the Government and other cities to understand how we can work together to achieve a real shift in consumer demand. We would like to work with our partners to investigate the different options available in the future. This could include encouraging companies to offer 'green' delivery slots, where customers can choose a slot where a vehicle is already making a delivery in their area. This is already offered by retailers like Waitrose and Sainsbury's. We will promote and share this best practice to encourage other companies to provide the greener delivery slots, and also explore the use of incentives for choosing more sustainable delivery methods or times.

We will also work with these companies to encourage customers to click and collect their goods.

Support for BIDs, boroughs and businesses

BIDs and businesses have a role to play in encouraging their members and their employees to be considerate consumers. For example, we supported Better Bankside BID to engage their members in the run up to Christmas and identify what they could do to minimise the impact of personal deliveries. We will continue to work with BIDs to support their members to introduce sustainable delivery and servicing practices, such as personal delivery options. Similarly, we will work with boroughs and businesses to encourage them to work with their suppliers to avoid peak times. This can be coordinated with neighbouring businesses, for example in a multi-tenanted building or in a BID.

In support of this, we have developed Efficient Deliveries toolkits to share best practice among boroughs, operators and businesses, building on the success of our existing programmes helping businesses reduce and retime deliveries.

These toolkits are supported by action planning workshops for businesses to identify the right solutions for their needs. We are working with BIDs and

other groups to inspire and support local businesses to take action to reduce the impact of their deliveries and servicing activity. We will take advantage of the improvements being delivered through our and borough transformational schemes such as Liveable Neighbourhoods and zero emission zones, to engage and promote efficient delivery practice with businesses in these areas.

Many of the changes that businesses could make to help their suppliers optimise their operations would require supporting measures, such as a preferred supplier scheme, a micro-distribution centre, electric delivery and waste collection vehicles or waste compactors.

We established the Healthy Streets Fund for Business in 2017 to help BIDs and recognised business groups introduce some of these measures to reduce their delivery and servicing impact.

Some of the projects so far include:

- Micro-consolidation of waste in the Better Bankside BID using a new electric vehicle to transport waste to nearby compacting and bailing facilities with spare capacity at Borough Market
- Installing a waste compactor in the Heart of London BID and procuring a preferred supplier to collect the waste from the facility
- Creating a cycle freight facility and storage centre near Archway station
- Working with the Team London Bridge BID and seven of its largest members to implement delivery and servicing plans at their sites for businesses and a cycle freight strategy
- Installation of underground waste storage containers and daily waste collection using an electric vehicle for Vauxhall One businesses
- Reducing waste collection trips to Leicester Square by installing a waste compactor and appointing a contractor to remove waste
- Working with the Better Bankside BID to establish a green logistics centre for its members, including Borough Market, to reduce trips by providing storage for goods, parking and recharging facilities. The BID has also implemented measures to reduce waste collection. Since its launch, 15 businesses have used the service, removing 70 diesel vehicle trips per week from the local road network

We have established a programme of ongoing support and engagement to encourage mentoring and sharing of best practice to change behaviour on a large scale and achieve our aim of reducing the number of goods vehicles entering London in the morning peak.

Figure 2l: Efficient deliveries toolkit



Working with major estates and multi-tenanted premises

Multi-tenanted premises are among the biggest customers of the delivery and servicing industry in London, putting them in a powerful position to influence these trips. Many estate management companies we have spoken to either support or have introduced initiatives that reduce the impact of deliveries and servicing activity and personal travel to and from the buildings in their estate. This is typically driven by the opportunity to reduce their cost base, improve the efficiency of their own operation, and enhance the attractiveness of their property to prospective tenants by positively contributing to safety, air quality and overall attractiveness and competitiveness of the cities in which they own real estate. To date, we have worked with three major property management companies in London to promote efficient delivery practices and will capture and share best practice through engagement with other businesses, and updates to our Efficient Deliveries toolkits. For example, one of these property companies – Grosvenor Britain & Ireland – has successfully introduced preferred suppliers to consolidate waste collections from more than 700 buildings, mostly shops and restaurants, to a single provider.

This ‘zero to landfill’ service substantially reduces heavy traffic in the area, significantly reduces waste build up in public places and has resulted in recycling rates almost twice the London average. Head office deliveries are also consolidated at facilities outside the central zone and then carried once a day to their office in the West End in one environmentally-friendly electric vehicle. During the pilot, Grosvenor cut total vehicle movements to their head office by 40 per cent, reducing an average of 21 diesel powered deliveries per day into a single delivery by electric van. In the three-month pilot, they removed the requirement for more than 2,000 in and outbound delivery journeys – the equivalent of 3,600 diesel van miles. We are now developing a workshop with Grosvenor to explain and offer these services, and the business model that supports them, to other commercial occupiers across the company’s London estate.

Together we will showcase this and other best practice examples to demonstrate the operational and environmental benefits of these programmes to encourage their adoption.

Action II

We will raise awareness of the impact of deliveries and encourage consumer behaviour change by:

- a. Collaborating with businesses, retailers, operators, public sector organisations, other cities, boroughs and the Government to investigate how we can work together to change consumer behaviour and encourage responsible purchasing decisions
- b. Using our communication channels and existing marketing campaigns to raise awareness of the impact of personal deliveries and encourage consumers to make responsible and healthy choices, starting with our air quality and active travel campaign in 2019
- c. From 2019, promoting the variety of available delivery options, such as click and collect at stations and in high street shops or green delivery slots, so that customers can make the most sustainable choice for their delivery
- d. Sharing knowledge and best practice among boroughs and operators through the development of toolkits and guidance, including publishing a report on cycle freight in 2019
- e. Delivering workshops, developing and promoting our Efficient Delivery toolkits and sharing successful examples to support businesses to take action to reduce the impact of their deliveries and servicing
- f. Promoting the Healthy Streets Fund for Business to encourage efficient freight and servicing practices and sharing learnings and best practice from these with our partners to encourage future projects

Focus on

Quieter deliveries

Noise pollution affects a significant number of people, with exposure data showing that within Greater London, almost 2.4 million people are exposed to road traffic noise levels above the 55dB limit recommended by leading health experts.²² Freight vehicles play a substantial role in this, in part due to their size and weight, as well as their integral role in deliveries, collections and construction.

Retiming deliveries is a core element of efficient freight operations. However, the key to retiming deliveries outside of peak times is the ability to complete logistics with minimal noise impacts. Our Efficient Delivery toolkits for business includes guidance and resources on site and noise assessments, noise management, an online training course, quiet equipment guide and guidance for quieter deliveries. Retiming is a key element in our external partners programme, supporting businesses to retime and reduce deliveries. We updated the toolkit to include the TfL Code of Practice for quieter deliveries in spring 2018. This provides businesses, delivery companies and regulators with simple, practical guidance on how to minimise noise from deliveries to enable them to deliver at less busy times. More information can be found at tfl.gov.uk/retime

²² Aether – report to GLA (2017) Updated analysis of air pollution exposure in London







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Area freight management plans

To achieve the ambitious goals in the Mayor's Transport Strategy, we need to go further and deploy the local solutions we have piloted on a larger scale across the city. Developing holistic plans for an area that focus on specific characteristics and needs, and incorporate a range of targeted measures will have the greatest impact.

To do this, freight and servicing area management plans will be developed with boroughs, local stakeholders, BIDs and operators to combine locally appropriate measures in a coordinated way. These will ensure freight and servicing needs are considered from the outset of transformational schemes, such as Liveable Neighbourhoods and zero emission zones, as well as major town centre or high street schemes. These plans will drive the introduction and coordination of better freight practices using measures that are suitable for the local context and meet area-specific needs and objectives.

We will develop guidance for developers, sponsors, boroughs, planners, businesses and business groups that covers good last-mile practice, such as cycle and ultra low emission freight, collective procurement, micro-distribution and retiming.

Plans will be developed in line with the following guiding principles:

- The economic vitality of the area will be supported by ensuring goods and services can reach their destination in a timely and efficient manner
- The number of freight and servicing trips and the kilometres travelled will be minimised
- Freight and servicing activity will avoid the busiest times for people walking, cycling and using public transport, and during the morning peak
- The cleanest, quietest and safest freight and servicing vehicles and practices will be deployed
- The impact of freight and servicing activity will be minimised, particularly around schools, busy public transport stations, or where there are lots of vulnerable road users
- The local barriers to implementing the safest, cleanest and most efficient delivery practices will be identified and addressed through the plans

We recommend that a similar local area approach is followed in places where no major schemes are planned, but where analysis indicates that freight and servicing activity might be challenging for operators and businesses, or causing conflicts with other road users. We will identify town centres and high streets on

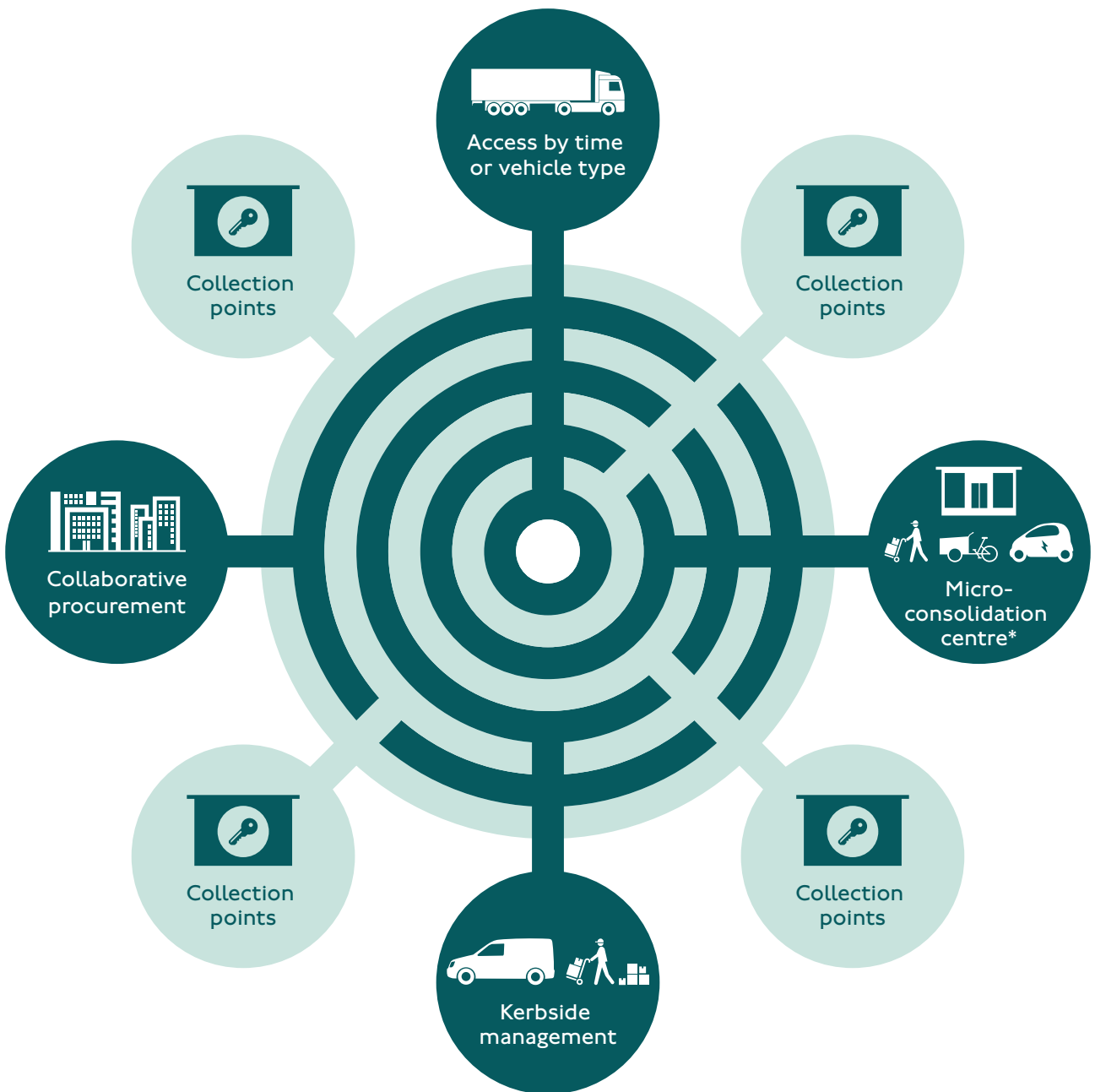
our managed road network that would benefit from safety and sustainability improvements, and support boroughs to do the same on their roads.

Action 12

We will share the learnings from successful trials of last-mile initiatives so that these practices become widespread and more impactful, particularly in areas of higher activity, such as central London. This will be achieved by:

- a. Sharing knowledge and best practice among boroughs, businesses and operators through the development and promotion of toolkits and best practice
- b. Continuing to grow the collaborative network of BIDs involved in the Healthy Streets for Business Fund to encourage further take up
- c. Developing area freight and servicing management plans and publishing supporting guidance in 2019, to ensure freight and servicing needs are considered from the outset of TfL and borough schemes
- d. Evaluating the impact of last-mile initiatives on reducing goods vehicles entering central London in the morning peak

Figure 22: Combining measures in local areas in Area freight management plans



* Last five miles on foot, bike or electric vehicle

Consolidation

Consolidating freight is an important part of many logistics chains. It allows for improved load utilisation and can reduce delivery vehicles numbers and kilometres. Consolidation can vary in scale from large regional distribution centres served by international and national freight flows which can exceed 100,000 square metres, to small, last-mile micro-consolidation facilities such as locker banks. Most consolidation and distribution centres are run by a single large company to achieve efficiency in their own supply chains. For example, companies such as Sainsbury's, Aldi and John Lewis have large consolidation and distribution centres on the edge of London.

Models also exist where city authorities, or third parties working on their behalf, establish consolidation centres that are designed to be used by multiple operators or suppliers.

There are many international examples of such facilities:

Monaco

HGVs are restricted and vehicles more than 8.5 tonnes must use the Monaco Consolidation Centre. Vehicles under 8.5 tonnes may only access the city at certain times. In addition to air quality



benefits, congestion has been reduced by 38 per cent and delivery space required by 42 per cent.²³

Copenhagen

The Danish city established an urban consolidation centre that takes inwards deliveries of non-food items from Monday to Friday between 07:00 and 16:00. These are delivered to end users using zero emission vehicles. Retailers are charged a monthly subscription fee and operations are subsidised by Copenhagen's local authority by approximately 40 per cent.²³

²³ PBA and WYG (2018) Draft London Freight Consolidation Feasibility Study

²⁴ Bestfact (2015) Electric freight vehicle with trailers: Cargohopper in Utrecht



Utrecht

The Dutch city introduced a scheme that restricts vehicles in the city centre pedestrian zone to five at any one time. Goods are delivered to urban distribution centres and distributed in the city using electric vehicles with trailers called cargo hoppers.²⁴

Paris

The French capital has established a 'Distropolis', which consists of micro-consolidation centres strategically located within the city centre. Goods are received at a central hub by HGV and are distributed by zero emission vehicles. This has reduced the number of vehicles by 20 per cent.²⁵

We need to understand the relative contribution these different approaches can make to enabling efficiency in the freight and servicing sector's use of London's roads.

Working with partners, we have created a series of 10 demonstrator projects – each seeking to promote and evaluate a particular means of consolidation. These include reviewing the impact of a borough-operated urban consolidation centre, neighbours consolidating demand by using the same suppliers, logistics operators using load-sharing technology to utilise spare capacity on vehicles and using porters or walkers as part of a logistics operation.

Case study

Consolidation demonstrator projects

Porters

Research by the universities of Westminster, Lancaster, Southampton and University College London of the Freight Traffic Control 2050 group and Gnewt Cargo Ltd identified inefficiencies in last-mile logistics that could be addressed by using porters. In partnership with the universities and Gnewt, we ran two on-street trials in early 2018 to assess the technical feasibility and potential benefits of this model. During the trials, parcels were delivered with vehicles travelling up to 30 per cent less distance, spending up to 65 per cent less time parked and up to 71 per cent less time driving.

To further test this model, we are now working with a multi-national courier service to conduct additional trials combining the use of porters with consolidation points, potentially located on our land. We will also work with technology companies to identify and develop tools that might support larger-scale deployment of porters in London.

Load-sharing technology

Vehicles often return from deliveries empty or with spare capacity. These vehicles still take up space on the road and are a cost to the operator. We wanted to test how technology can be used to reduce deliveries and ease congestion by utilising this spare capacity.

Load-sharing technology is well established in international logistics, but currently not highly used for urban freight logistics. A few technology companies have recently introduced load-sharing platforms aimed at London freight logistics operators.

We are now working with an operator to trial one of these for their London fleet. Once complete, the trial will be evaluated to consider its benefits, financial viability and potential for wider roll out.





We will complete delivery of the demonstrator projects by mid-2019. These will then be independently reviewed and the learnings and recommendations from these projects shared with the freight industry to encourage best practice.

Alongside the trials, we recently commissioned an independent study to research the potential for consolidation in London.²⁵ The study considered the potential for the following options.

Table I: Potential consolidation models for London

Consolidation model	Findings
Consolidation centres for Opportunity Areas, such as Old Oak Common, by either enforced (eg planning conditions) or voluntary participation (eg set out in Delivery and Servicing Plans)	The research found that using a consolidation centre for newly developed areas could achieve significant vehicle reductions, but that significant political will and funding would be required. If mandatory or enforced participation and the right level of charging were introduced a break-even scenario should be possible.
A network of consolidation centres serving the clean air zone	The study did not recommend this model of consolidation for London. It was not considered possible or efficient to try and provide a 'one size fits all' solution. The variety of supply chains, different sectors and end customers is too vast, dense and complex. Strong policy and significant investment would also be required.
Using planning powers to require use of preferred suppliers for multi-tenanted buildings	This would allow consolidation at source and will reduce trips. The study recommended 'wholehearted uptake' of this approach.
Micro-consolidation and last-mile logistics	Examples in London show this can be commercially successful and supports increased use of zero emission deliveries. The key challenge is identifying land for micro-distribution centres.
Consolidation centres to serve outer London town centres	This could reduce the number of vehicle trips. The study found this model has potential for London but would require strong policy and financial support.

Based on this research, London-based trials and by reviewing international research, we have concluded:

- We will continue to support consolidation as one of a combination of measures that support safe, clean, and efficient freight
- We will continue to encourage businesses to work together to use preferred suppliers to increase the use of micro-consolidation centres. We will work with boroughs to strengthen planning conditions to adopt preferred buyers for multi-tenanted buildings and to establish micro-consolidation centres in new developments and as part of transformative schemes
- Consolidation models serving Opportunity Areas or outer town centres should be considered on their own merit but would need to demonstrate sustainable traffic benefits and identify suitable funding models
- A network of consolidation centres serving inner London is not currently supported by operators and at the present time would prove expensive and difficult to implement. However, the London Plan will safeguard strategic industrial land in locations most suitable for consolidation so that this option remains open in the future

Action 13

We will promote consolidation as one of a combination of measures that support safe, clean and efficient freight by:

- a. Completing the demonstrator projects and sharing results by mid-2019
- b. Continuing with further pilots to refine the most efficient consolidation models
- c. Promoting and upscaling proven successful consolidation models, such as collective procurement



Restrictions and regulations

Across London, a wide range of regulations and restrictions exist that influence where and when different vehicle types can go, and where they can park. Many are designed to reduce the impact of freight and have clear safety, environment or streetscape benefits. However, freight and servicing operators tell us these can be difficult to navigate and they sometimes make it more difficult to deliver goods in an efficient and low-impact way.

Regulations affecting freight in London are complicated, with differences from road to road. It is therefore essential that regulations and restrictions which impact on freight are clearly communicated, regularly reviewed and updated, and consistent across London and with other UK and European cities wherever possible.

To improve clarity, we will provide clear information and guidance on existing and planned restrictions and regulations. This includes height and weight restrictions for roads in London, and kerbside loading controls on our managed road network.

This information will help operators reduce unnecessary vehicle kilometres, avoid incidents such as bridge strikes and comply with restrictions, thereby avoiding fines.

We have already released digital mapping data for the London Lorry Control Scheme (LLCS) and we are working with other partners, including Ordnance Survey, to make other vital datasets more widely and freely available.

At the kerbside

We will work with all partners to ensure businesses are able to receive the goods and services they need, and that there is a clear and joined-up approach. The first step to making this possible is by gaining a better understanding of how the kerbside is currently being managed and then making the data available to our partners. We will review kerbside management on our road network to ensure a strategic, effective and joined-up approach along major road corridors.

We will also work with boroughs to review access and loading restrictions, and ensure adequate space for loading is provided in all TfL-funded schemes, using our guidance and toolkits, such as the Kerbside Loading Guidance.

Working with the freight and servicing operators and local businesses, we will consider the design and management of local access, off-street space for loading and on-street loading restrictions in the early design stages, to reduce the impact of freight and servicing on streets. Understanding the needs of deliveries and servicing vehicles is – and will continue to be – an important consideration in our and the boroughs' transformational Healthy Streets schemes.

We hold data on our managed roads, but data on borough-managed roads is held locally and there would be great value in bringing this together in a digital format. We are looking to technology providers to help us do this as we open up our data and encourage boroughs to do the same. Being able to communicate the locations, regulations and restrictions of loading bays and parking spaces to drivers in advance of and during their journey would reduce additional kilometres driven in search of space, and help to reduce conflict with vulnerable road users, such as people on cycles or foot. This will also help to reduce occurrences of illegal parking and costly penalty charge notices.

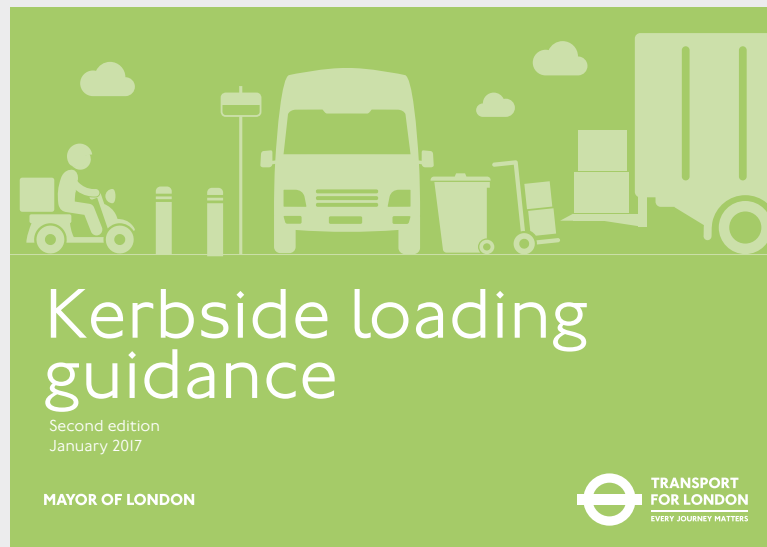
Case study



Loading restrictions

In 2012, the City of London Corporation rationalised and simplified loading in the Square Mile. This was achieved by reducing the number of different loading restrictions from 16 to five while providing an increase of 17 per cent in kerbside loading opportunities. The City recognises freight as essential traffic and has committed to delivering another kerbside review by 2022 in its draft Transport Strategy. This will include identifying locations to prioritise commercial vehicles access to the kerbside, flexible kerbside use and reviewing opportunities to integrate technology for real-time kerbside management.

Focus on



Parking for servicing

Servicing is essential for maintaining buildings, premises and their equipment. Servicing keeps lifts, air conditioning, heating and office equipment working, and maintains utilities such as electrics, plumbing, telecommunications and computer services. For example, goods cannot be sold if an electronic point of sale (cash register) system breaks down. Therefore, appropriately located parking spaces are needed for servicing vehicles as they cannot legally use loading spaces. Servicing vehicles can check how to identify legal spaces to park in our Parking and Loading Legally Guidance.

Our Kerbside Loading Guidance sets out a methodology for developers, planners and design engineers to assess delivery and servicing requirements, including analysis of land uses, current use of the kerbside, and any conflicts and competing demand. This ensures that as new developments or changes to kerbside are made, appropriate loading and parking bays are designed both off-street within new developments and on-street, and adequate parking is provided for servicing vehicles.

Action 14

We will help the drivers and logistics professionals navigate regulations and restrictions, and plan more efficient routes. This will be achieved by:

- a. Opening up our data to provide clear information and guidance on existing and planned restrictions and regulations across London that can be used by operators and software developers to develop look-up tools
- b. Reviewing restrictions and management of the kerbside on our road network to ensure a strategic, effective and joined-up approach along major road corridors
- c. Working with boroughs to review and update access and loading regulations and restrictions, particularly when implementing TfL-funded schemes to achieve a consistent approach to regulations. We will also work with partners to find innovative ways to digitise London's kerbside

London Lorry Control Scheme (LLCS)

After-hours and night-time deliveries are important to move freight away from congested periods and to support London's 24-hour economy. The LLCS is in place to reduce noise pollution in residential areas during unsocial hours and to control undesirable effects of freight movement. The scheme has been in place since 1985.

Recent advances in vehicle technology and noise-reducing improvements to the way deliveries are made provide an opportunity to make amendments to the scheme in a way that need not disturb local residents. We will work with London Councils and boroughs to take forward the priority recommendations of London Council's 2017 review of the LLCS.

We have also released data on the LLCS to help freight and servicing operators and drivers plan routes that comply with the scheme more easily. Further, we will engage with software providers, developers and operators, encouraging them to make the best use of information available now and in the future, and to understand their evolving data requirements.

Action 15

We will work with London Councils to take forward the recommendations of the 2017 review of LLCS by:

- a. Working with boroughs, residents and community groups, the industry and its customers to take forward the recommendations of the review
- b. Supporting this work by providing access to expertise, data and modelling to ensure the best outcomes are delivered for all parties at the earliest opportunity



Bringing it all together – action on vans

54%



increase in van kilometres
in London over the
previous 25 years

Van kilometres in London have grown by 54 per cent over the previous 25 years and are forecast to increase by 43 per cent over the next 25 years.

This plan has described a broad range of actions to ensure the growing number of vans using London's roads are as safe and clean as possible, and to support a reduction in the number of vans needed to serve customer demand.

The start of the journey

We will launch a new van scrappage scheme for microbusinesses and work with manufacturers to encourage incentives so van operators can afford to upgrade to the cleanest vehicles.

Progressing the LoCITY programme will help van owners go beyond ULEZ compliance and invest in ultra low and zero emission vans.

We will support more use of water and rail which will help remove vans and lorries from our roads.

Protecting industrial land will help ensure there is space for depots and consolidation where it is needed.



On route

We will work with routing software providers and share our data to optimise route planning.

Our real-time management of the road network will minimise impacts of unplanned disruptions.

We will identify key routes for freight and seek to provide an enhanced level of service, for example at different times of day.

Our safety schemes will reduce conflicts.

Delivering training for motorcyclists and van drivers will help reduce work-related road risk.



Influencing demand

Businesses will be encouraged to work together to collectively procure services.

We will raise awareness of the impact of deliveries so customers make responsible choices such as click and collect, and green delivery slots.

Our Business Toolkits encourage businesses to use contracts to stipulate clean, safe and efficient deliveries and servicing.

Working with our partners to investigate incentives to go further in influencing purchasing decisions.

Access to town centres

Our open data will provide up-to-date information on restrictions and regulations.

ULEZ and local zero emission zones will encourage use of only the cleanest vehicles.

Promoting cycle freight will support the shift from vans to cargo bikes.

Discouraging personal deliveries at work removes the need for some vans to travel to central London or congested town centres.

Producing digital kerbside data will help van drivers navigate where they can load and unload.



At the destination

Area freight management plans will take into account local deliveries and servicing needs.

We will promote a variety of alternative delivery options and help find land for facilities such as click and collect.

We will increase rapid charge points available to commercial drivers.

We will provide information on restrictions and promote consistency across London to encourage efficient last-mile deliveries.

Healthy Streets for Business Fund supports innovative work by BIDs and will reduce van trips.



Meeting the central London freight reduction aim

The Mayor's Transport Strategy aims to reduce the number of lorries and vans entering central London in the morning peak (07:00-10:00) by 10 per cent by 2026, compared to 2016/17 levels.

To achieve this, we, the boroughs and our freight and servicing industry partners need to work together to reduce the average daily number of freight vehicles entering the Congestion Charge zone in the morning peak from 21,000 in 2016/17 to under 19,000 by 2026.

Action to achieve the aim

The number of daily freight trips into central London in the morning peak has remained steady since April 2016 with LGVs currently making up 70 per cent of those entries. This is in the context of steady trip growth London-wide and population and economic growth.

Figures 5 and 6 on page 27 show how HGV and LGV activity is likely to change across London based on our current understanding of the key drivers of demand. When looking at central London only and estimating based on historical trends, we can see that HGV entries may fall in line with the aim, but without additional measures LGVs are likely to increase.

The actions in this plan, particularly those at a local level to encourage last-mile solutions such as walking and cycling freight and re-timing, will help us to support the reduction in LGVs in the morning peak needed to meet our overall aim. However, all the actions set out in this plan are vital to change behaviour at all stages of the supply chain.

Measuring and reporting our performance

We will monitor our progress against the aim and this will be reported annually in our Travel in London reports. To understand what is driving the change in central London, we will continue to explore what affects demand for freight and servicing, and develop methods for modelling freight activity. At the same time, we will continue to evaluate our schemes and projects, and assess the impact of our measures. These approaches will enable us to estimate how effective our measures should be, monitor performance on the ground and be more targeted in response to the observed data. This includes the balance between HGV and LGV entries, and how this changes over the next few years.

If our annual monitoring shows that we are not on track to meet the aim then we will work with our delivery partners and the industry to upscale the actions that have the biggest impact. We will also embrace emerging tools and technology that will help to further reduce freight and servicing trips within peak hours.

Figure 23: Number of HGVs and LGVs entering central London during the morning peak compared to trajectory needed to meet the Mayor’s Transport Strategy aim

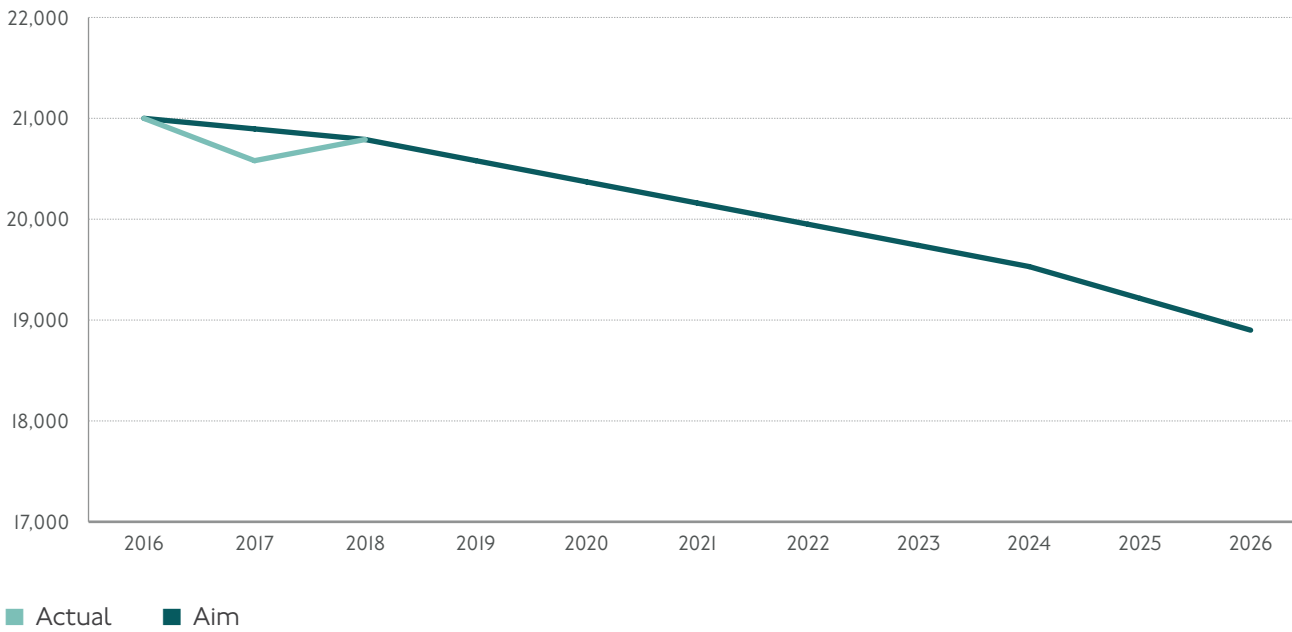
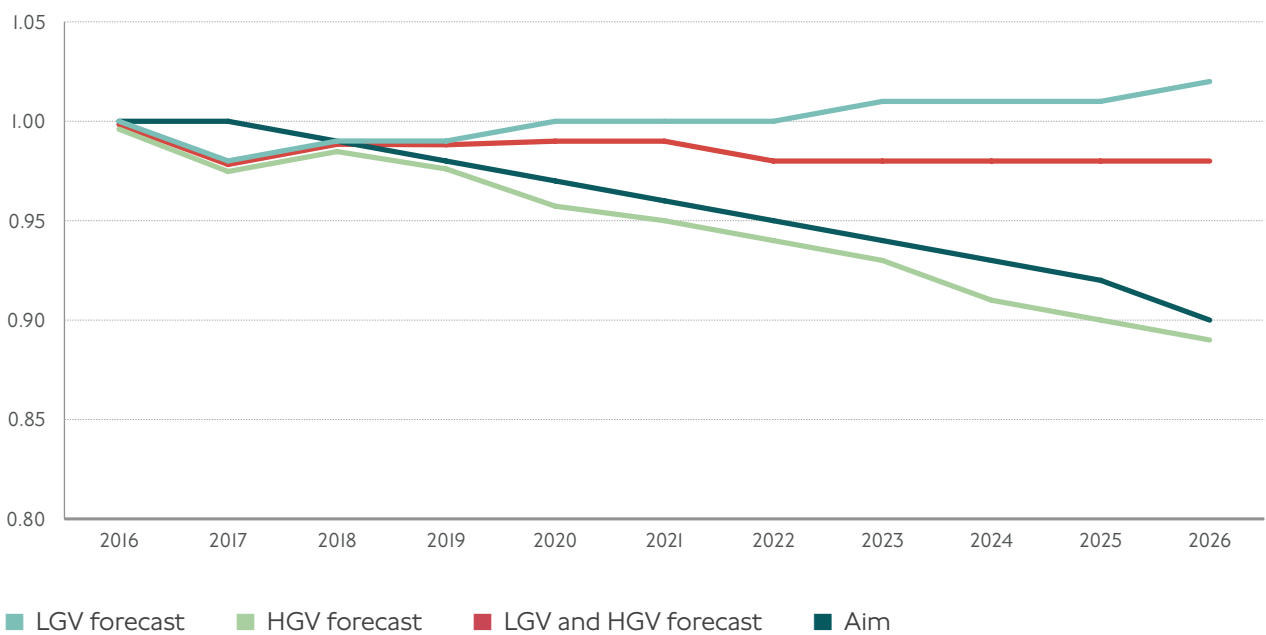


Figure 24: Forecast in HGV and LGV entries in the morning peak compared to trajectory needed to meet the Mayor’s Transport Strategy aim





Land for freight

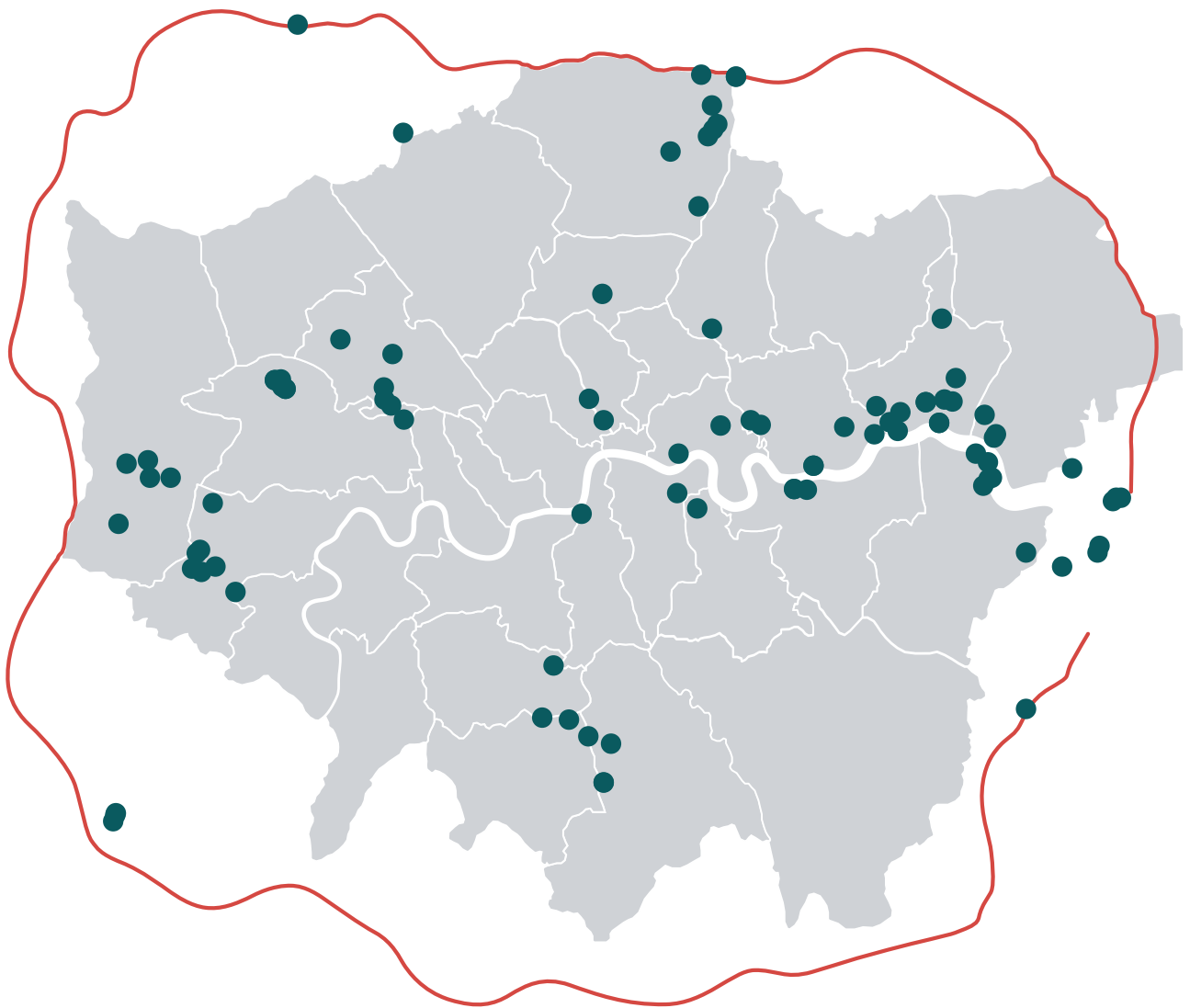
Freight providers need land and premises for logistics in the right places, with enough space for efficient storage and distribution, to ensure they can respond to business and consumer demands.

In modern logistics chains, few items simply move directly from where they are produced to where they are delivered. Therefore, land and premises for logistics need to be as close to demand as possible to provide services, maintain flexibility, keep transport costs down, and reduce the number of vehicles on the road.

Retaining and, where possible, providing additional logistics land capacity in the right places is therefore essential in supporting firms to operate in a safe, clean and efficient manner. This capacity is critical to London's economy, serving the needs of its growing population and contributing to employment opportunities.

Industrial land is broadly concentrated across five key areas: central London and Docklands, Thames Gateway, Lea Valley, Park Royal and Heathrow, and the Wandle Valley. There are 92 distribution centres located within the M25 boundary.²⁶ Food and drink distribution clusters are found mostly in south east London, courier distribution in inner London, while mail and general logistics are fairly evenly spread across London.

Figure 25: Distribution centres in London



Key

Distribution centres ●

M25 —

Diminishing stock of industrial land

Due to population and economic growth, land in London is scarce which means industrial land is competing with other uses. Industrial land is being lost as it is released to other uses, primarily housing.

A study showed that more than 1,300 hectares of industrial land was transferred to other uses between 2001 and 2015. In relative terms, between 2000 and 2012 the proportion of industrial floor space fell by almost 20 per cent, while in comparison retail and office floor space grew by approximately five and 10 per cent respectively.²⁷ Between 2010 and 2015, 528 hectares or 7.1 per cent of London's industrial land was released to other uses.

This diminishing stock has driven up industrial rents, which have grown faster in London than in the South East and the rest of the UK. Between 1997 and 2015, rents increased by 60 per cent in London, against some 30 per cent in both the UK and the South East region (see Figure 26).²⁸

At the same time, the transport and storage sector is expected to grow. These prevailing trends are at odds. Without enough land for logistics, especially in the right locations, the urban logistic sector will be compromised in its ability to efficiently meet the needs of London's residents and businesses.

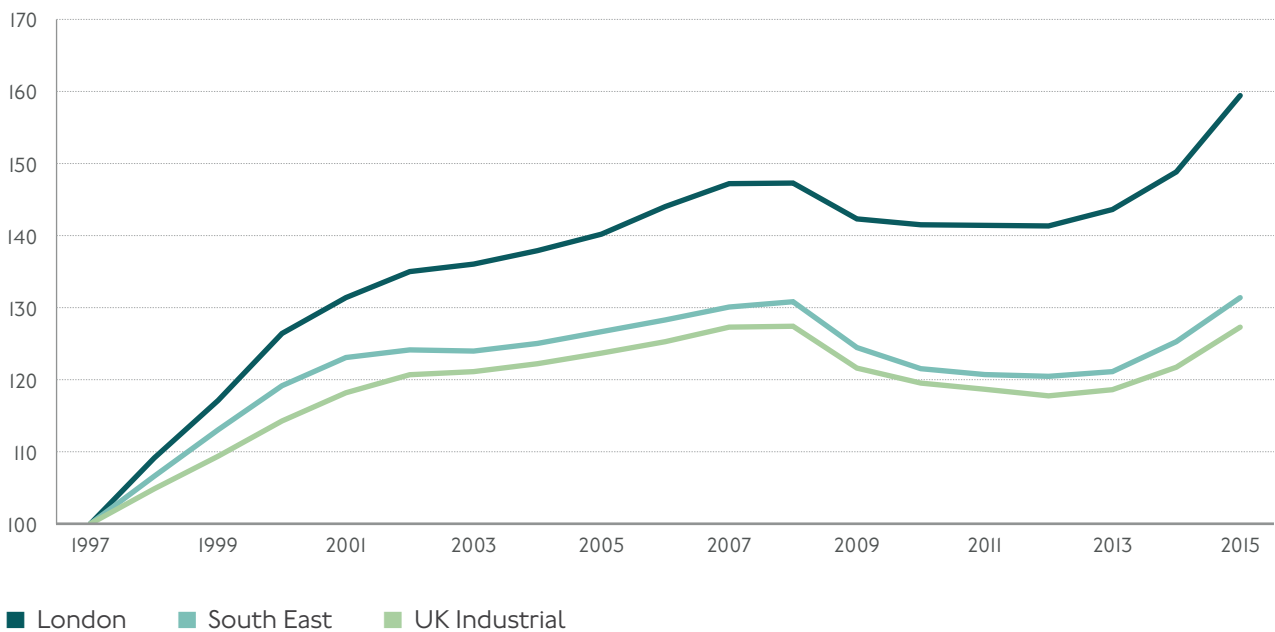
The reduced availability and rising cost of land is leading to an increase in the length of delivery trips within London, with more starting outside of London's borders. Delivery trips to central London can now average between 32-51 miles.²⁹ This segment of the delivery journey, known as the stem, is getting longer, which further impacts emissions, increases exposure to road danger risks and pushes up operating costs.

27 Data from Valuation Office Agency

28 CAG Consultants (2017) London Industrial Land Demand

29 AECOM (2016) London industrial land supply and economy study

Figure 26: The cost of industrial rent (£ per metre squared)



Protecting capacity for freight

To achieve Good Growth in London, as described in the Mayor's Transport Strategy, we need to protect capacity for freight. Freight operators need land and capacity for logistics in locations close to where goods and services need to be provided. If the available capacity is all allocated to other uses, such as housing, then neighbourhoods can't receive goods and services in the most efficient way possible. This will have a negative impact on quality of life for Londoners in these neighbourhoods and beyond. Not only will it be harder to

supply goods and services to residents and businesses, there will also be increased road danger, air pollution and congestion caused by the deployment of more vehicles. We need to balance the demand for housing with the need to ensure that London is adequately served. The lack of available capacity for logistics in key locations is a major concern for the industry.

To help address this, the London Plan, currently in draft form, includes policies to retain, enhance and provide additional capacity of industrial land. The draft plan directs where growth should take place and protects certain locations for specific uses, as well as

influencing the type of development that takes place. It seeks to ensure that housing is optimised at each site, industrial land is intensified and co-location is explored as a potential solution to the current conflicting demands on land in the Capital.

The draft London Plan recognises the need for industrial and logistics capacity and sets out policies to protect it. It also specifies that the retention, enhancement and provision of additional industrial capacity should be prioritised in locations that provide capacity for logistics, are suitable for last-mile distribution services and support access to supply chains.

Safeguarding industrial land

In the draft plan, land for industry, logistics and services falls into three categories:

Strategic industrial locations

Approximately 50 per cent of industrial land (see Figure 27).

Locally significant industrial sites

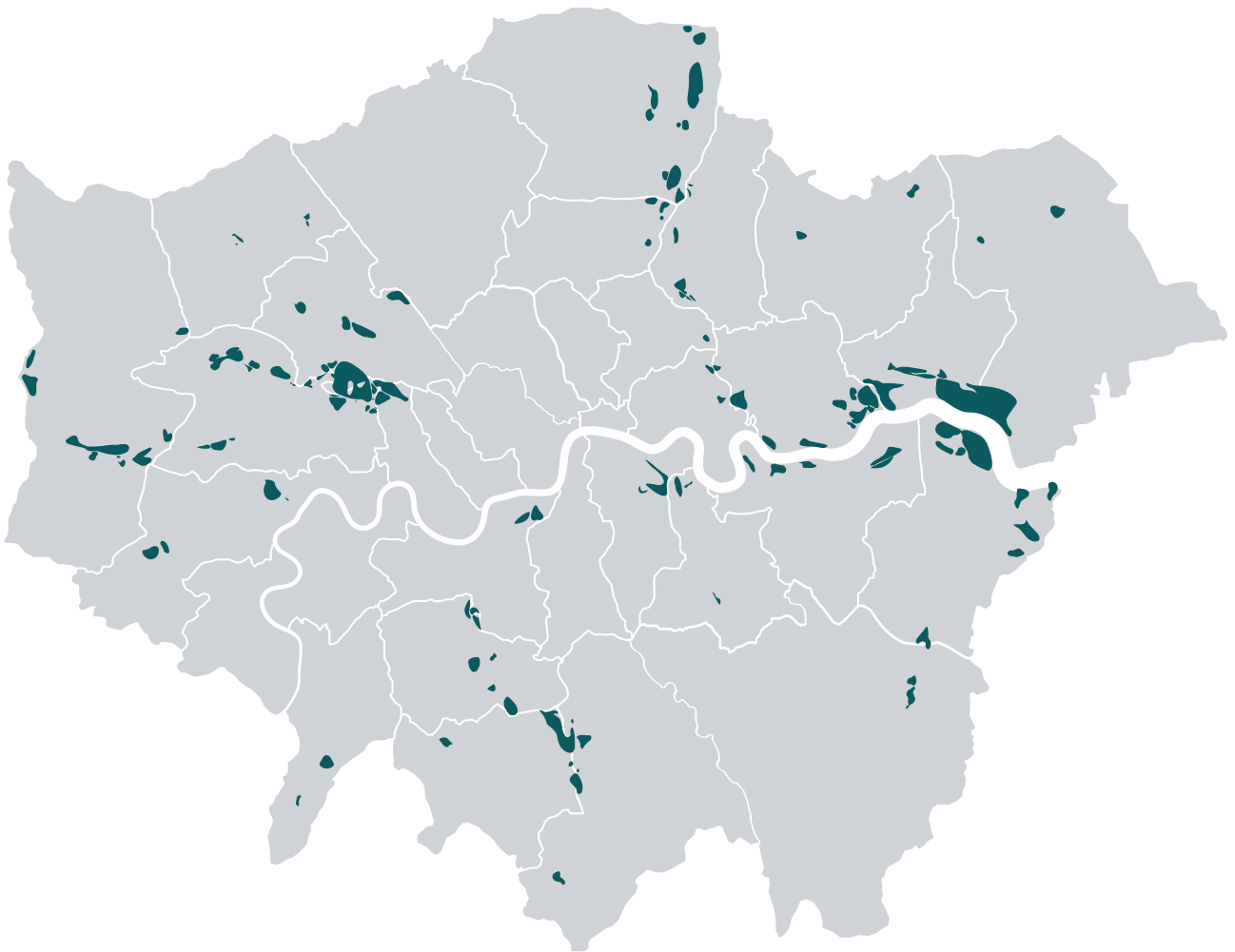
Approximately 14 per cent of industrial land.

Non-designated industrial sites

Approximately 36 per cent of industrial land.

The draft plan applies a principle of no net loss of industrial floor space capacity across overall areas of strategic industrial locations and locally significant industrial sites, and indicates that the boroughs of Brent, Ealing, Enfield, Sutton and Wandsworth need to find additional industrial capacity, as well as the Old Oak and Park Royal Development Corporation (see Figure 28).

Figure 27: Strategic industrial locations³⁰



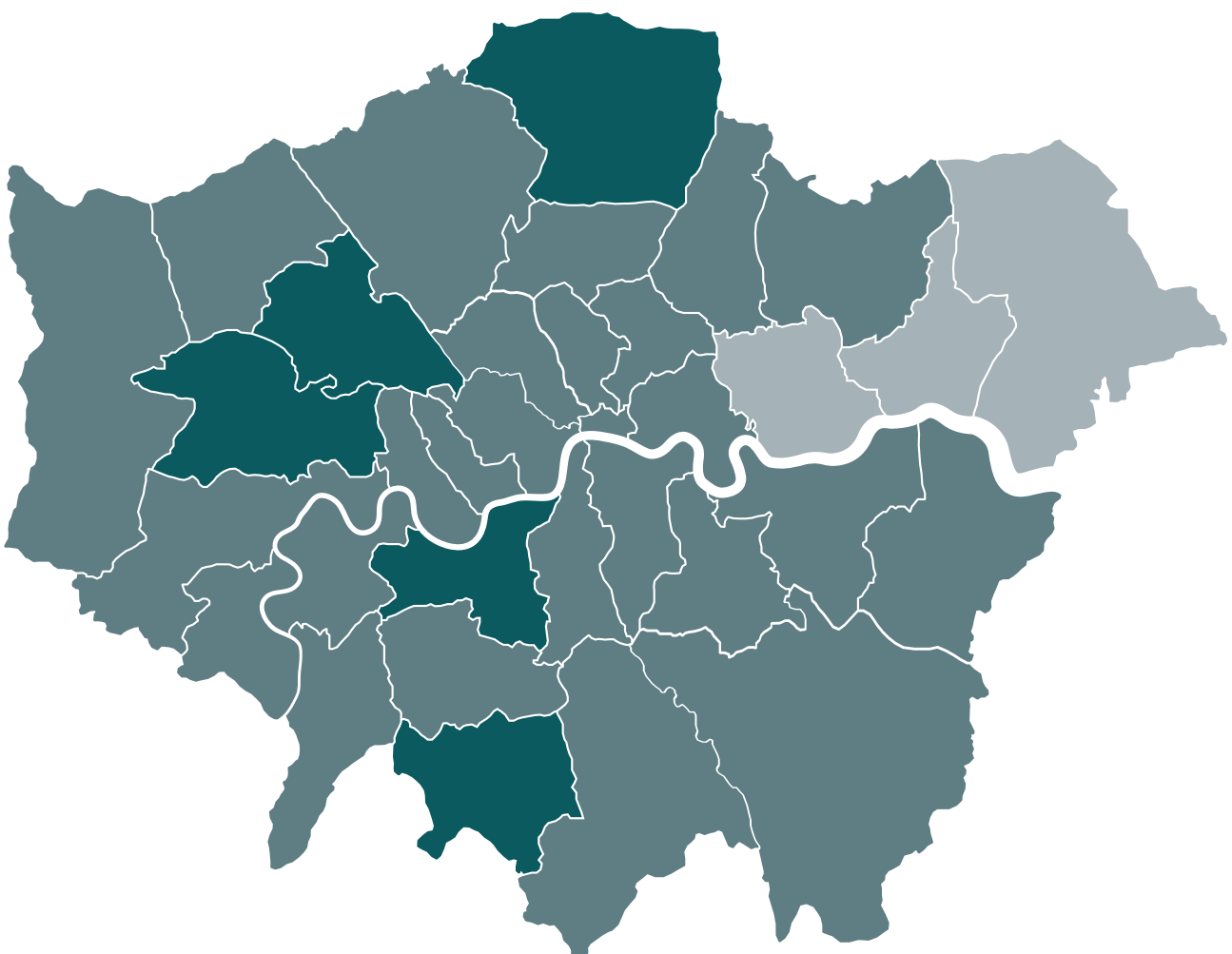
Key

Strategic industrial locations



30 Mayor of London (2017) Draft London Plan – Table 6.3

Figure 28: Management of industrial floorspace capacity – borough level categorisations³¹



Key

Provide capacity	■
Retain capacity	■
Limited release	■

31 Mayor of London (2017) Draft London Plan



Safeguarding logistics capacity

Industrial land as described in the draft London Plan includes different classes of use ranging from 'B1 business' to 'B8 storage and distribution'. Therefore, the protection of the supply of industrial land within the plan does not automatically safeguard land for freight and servicing activity. To address this, we will work with the boroughs to ensure they consider the demand for B8 storage and distribution, alongside other industrial uses, when developing their Local Plans.

Safeguarding rail and water freight capacity

The draft London Plan seeks to increase the amount of freight transported on London's waterways and protect a network of wharves for waterborne freight-handling. Other forms of freight infrastructure are also protected, for example, there is a policy directing boroughs' Development Plans to safeguard railheads.



Strategic Rail Freight Interchanges can contribute to safer, cleaner and more efficient freight by transferring road freight to rail. We will support Strategic Rail Freight Interchanges that do not reduce passenger rail capacity, where there is a genuine commitment to use rail connections that can provide a material mode shift from road to rail to reduce road freight on the network. This may require safeguards or commitments to the use of rail as part of the planning permission.

30%



higher increase in rents in London compared to rest of the UK

528



hectares of industrial land released to other uses between 2010 and 2015

20%



reduction in industrial floor space between 2001 and 2012

32-51

miles average distance of delivery trips to central London

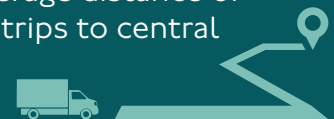
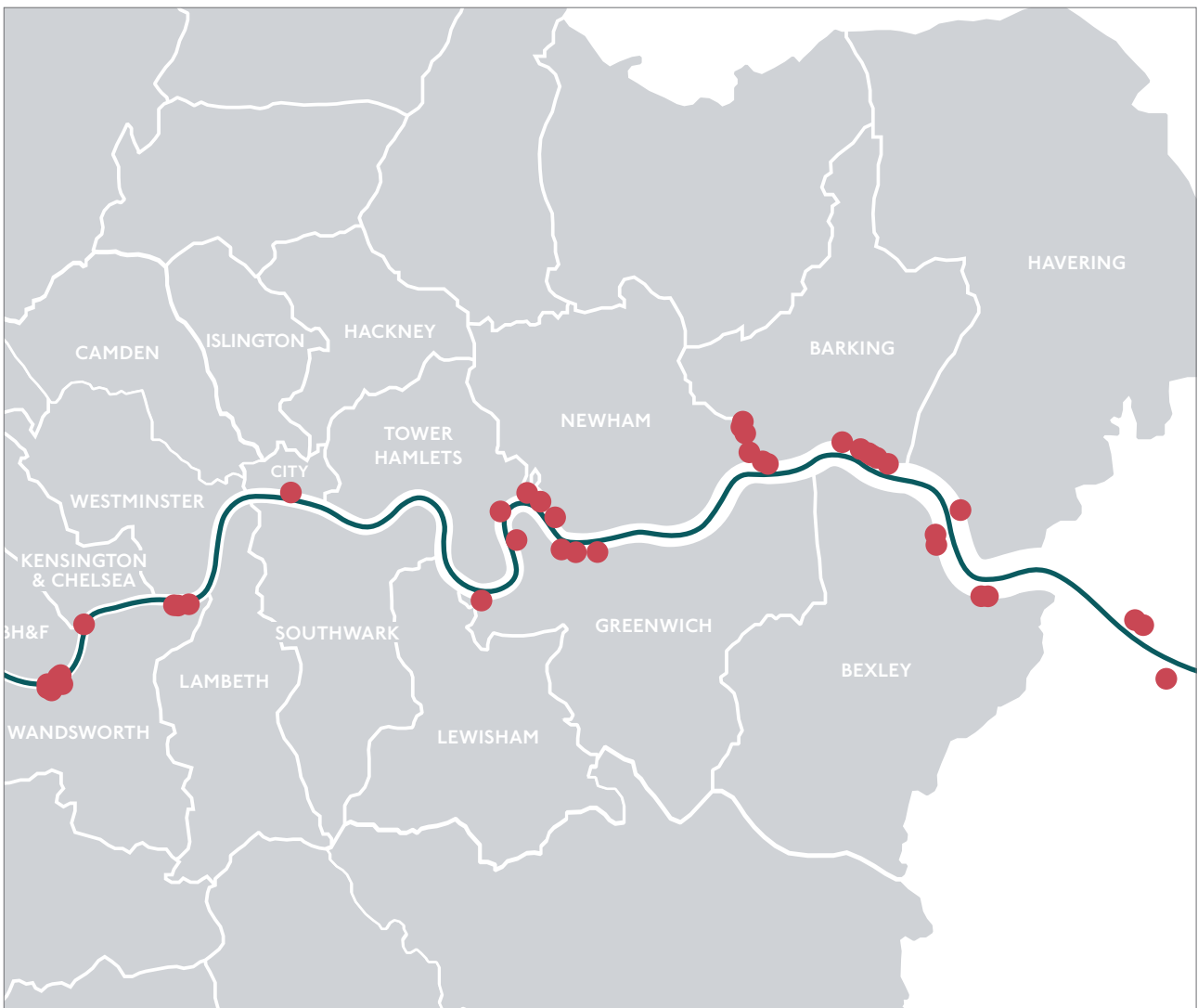


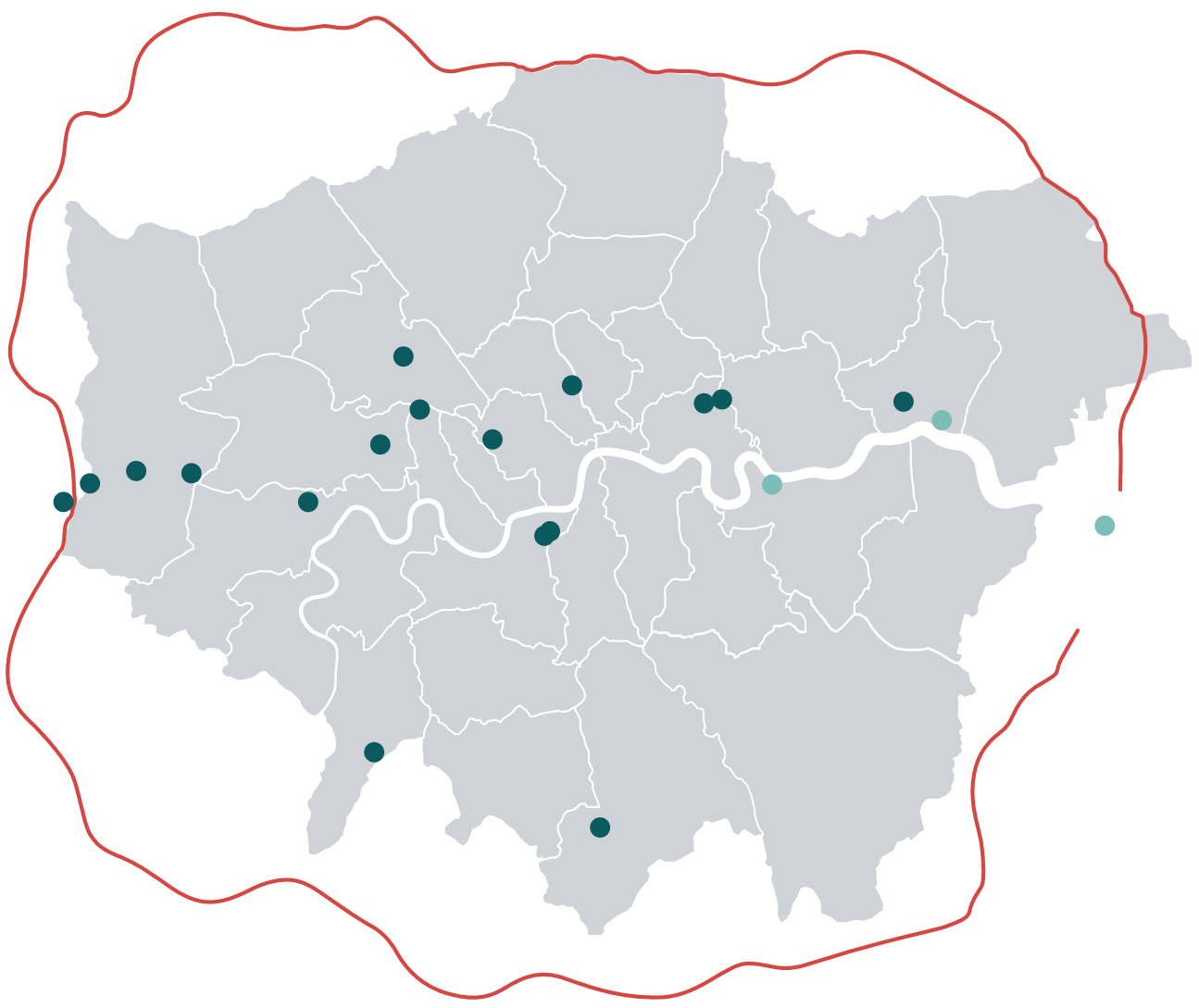
Figure 29: Safeguarded wharves in London



Key

- Access points ●
- River Thames —

Figure 30: Rail depots in and around the M25 area



Key	
Import	●
Import and export	●
M25	—

Action 16

We will retain, enhance and provide additional capacity where possible for industrial land. Together with the GLA we will achieve this by:

- a. Ensuring no net loss of industrial floor space capacity on designated sites
- b. Ensuring the boroughs support and sustain individual capacity
- c. Prioritising locations with potential for the transport of goods by rail and/or water

We will further protect the supply of land for freight and servicing activity by:

- d. Working with the London boroughs to ensure they consider the demand and provide sufficient capacity for B8 storage and distribution, alongside other industrial uses, in their Local Plans

Planning for Good Growth

The draft London Plan promotes freight movements that use space efficiently while minimising impacts on other road users. Specifically, the plan sets out requirements for:

- Development Plans to demonstrate the application of the Healthy Streets Approach, including supporting improved health and reduced vehicle dominance, emissions, and noise through sensitively designed freight facilities
- Area-based plans, such as Opportunity Area Planning Frameworks and Area Action Plans, to reduce the number of freight movements, coordinate freight provision and reduce emissions from freight
- Development proposals to submit Construction and Logistics Plans, and Delivery and Servicing Plans, in line with our updated guidance

The policy also states that development proposals should facilitate more freight being transported by water and calls for regular reviews of safeguarded wharves, and appropriate access for existing and new locations.

Planning for London's growth corridors and Opportunity Areas (identified through the draft London Plan as areas with particular development potential) involves careful consideration about how these areas will be connected, both for personal travel and freight and servicing activities. These areas present an opportunity to design the infrastructure required for efficient freight and servicing activity, and to support car-free lifestyles from the start. This may include appropriate consolidation and distribution facilities, and ensuring adequate short-stay parking provision for goods and servicing vehicles.

Action 17

To support Good Growth as set out in the Mayor's Transport Strategy and draft London Plan, we will work with our partners to ensure freight and servicing is carefully planned for in new developments. This is particularly important in Opportunity Areas. We will achieve this by:

- a. Working with our partners, in particular the boroughs, to update the Delivery and Servicing Plans guidance and Transport Assessment Guidance to ensure they are produced for all developments so that freight can be adequately planned for from the outset, starting with publishing updated Delivery and Servicing Plan guidance by Spring 2020
- b. Ensuring that major new development areas, such as Opportunity Areas, provide adequate land and infrastructure for appropriate consolidation and distribution activity, and for loading

Focus on

Using technology

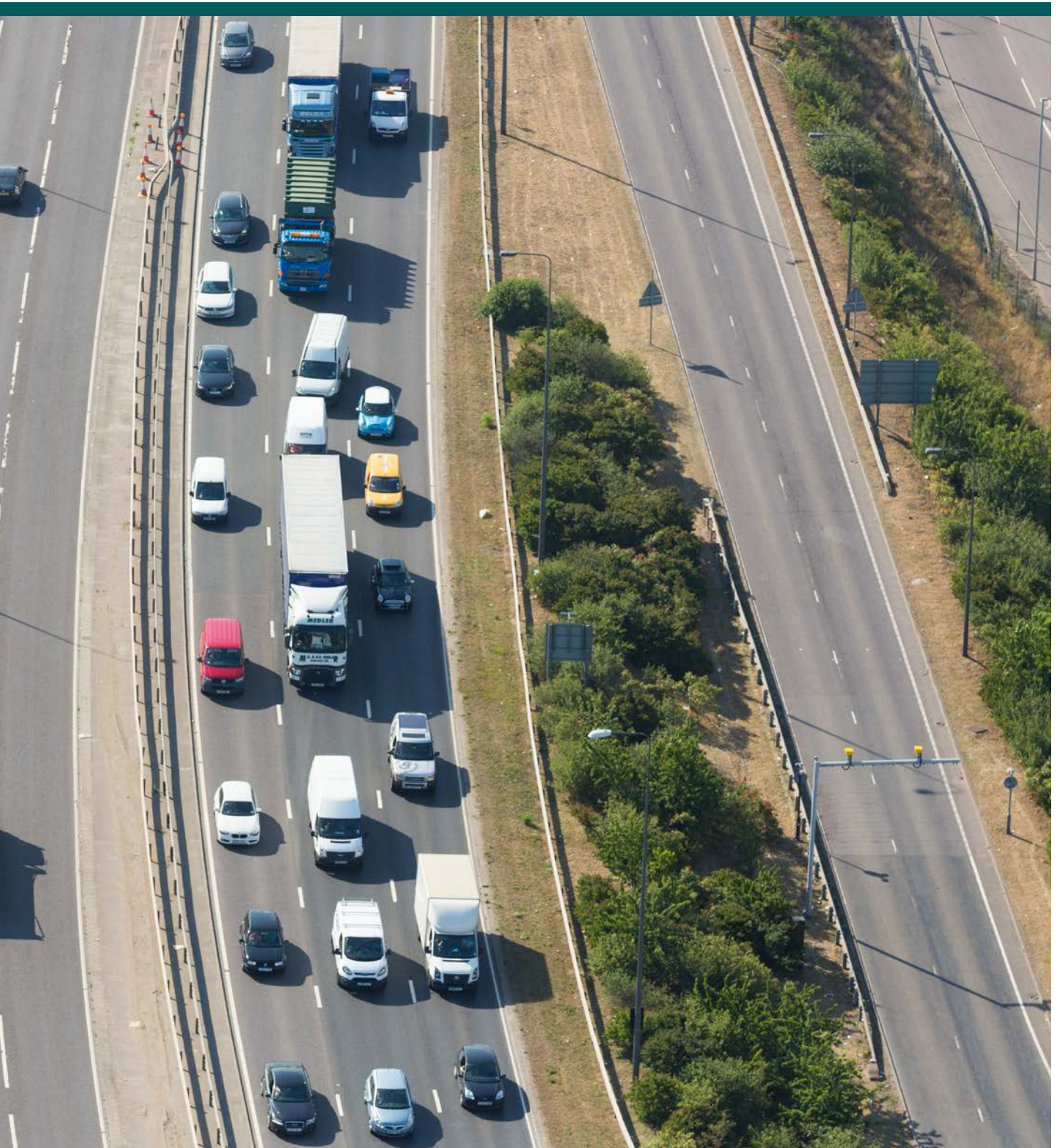
Technology can improve visibility of freight flows and improve how and when freight is delivered. Companies are embracing technology to improve efficient deliveries.

Collecting and sharing data offers opportunities to reduce freight trips. For example, Amazon uses 'smartlocks' with a supporting application, which allows customers to let package deliveries into their home remotely.

Similarly, Waitrose runs a 'not-at-home' delivery scheme for customers to allow deliveries when they are not there.

A recent trial, which collected telematics data from vans, highlighted travel patterns and extended stop or dwell times. It also showed where vans spend long periods at kerbsides. This information can be used to aid scheme design and informing the local delivery and servicing plan.





Mixed-use development

The principle of no net loss of industrial capacity across strategic industrial locations and locally significant industrial sites will protect vital capacity. To support this, the draft London Plan also encourages more efficient use of land for industry and logistics through intensification. This may include multi-storey or basement development, with appropriate yard space for servicing and operational requirements.

Outside of areas retained as strategic industrial locations, the draft plan supports the co-location of industrial and logistics activities with other uses including residential where certain criteria are met. Higher densities in town centres may lead to the need for space for micro-consolidation, while the intensification of industrial and logistics capacity elsewhere may enable some industrial land near public transport hubs to be freed up for other uses. Co-location will require a number of design and planning policy considerations, including allowing efficient access for freight vehicles while continuing to ensure residents are able to safely use their streets.

To support co-location, the draft London Plan sets out the Agent of Change principle, which protects industrial and commercial activity by placing the responsibility for mitigating impacts from existing noise and other nuisance-generating uses on the proposed noise-sensitive development.



Making our land available for logistics

As cheap land for logistics becomes less available, operators are increasingly using small plots, such as car parks, as temporary or part-time distribution centres. Such innovation makes good use of land and should become mainstream as space in London is further constrained due to growth.

In parallel, we are looking at our estate to identify what opportunities may exist to provide much-needed space for logistics and micro-consolidation. We have matched delivery methods to the type of land needed, such as parking spaces for cycle couriers or locker boxes within station concourses, to identify appropriate land that will grow innovative vehicle-free and vehicle-kilometre reducing deliveries. We will also work with the boroughs and other



large public sector organisations to encourage a review of their estates to identify opportunities for land that could be used for logistics. We are providing 10 sites for the GLA's Small Sites pilot programme, which aims to make more small publicly-owned sites available to small developers, housing associations and communities.

We are also working with the delivery companies to identify pilot sites to trial delivery models that benefit stakeholders and reduce freight kilometres. Once trials are complete we will develop a process for leasing land to freight stakeholders who demonstrate commitment to vehicle-free or congestion-reducing delivery methods and we will encourage boroughs to do the same.

Action 18

We will support the integration of logistics activity with other land uses by:

- a. Identifying small parcels of unused land within our estate for distribution centres and collection points, and encouraging boroughs and other public sector organisations to do the same
- b. Sharing best practice and promoting use of guidance documents for deliveries for mixed use/co-location sites



The future of freight

We will work with our partners to ensure freight and servicing continues to achieve our Healthy Streets aims and meets the changing demands of a growing population.

This action plan sets out where we are now and outlines the key actions we need to take in the short-term to overcome the barriers to clean, safe and efficient freight. The actions will help us achieve our aim of a 10 per cent reduction in lorries and vans entering central London by 2026 and improve how deliveries and servicing activity is carried out across our city.

However, this is only our first step to achieving the vision for London as set out in the Mayor's Transport Strategy. Over time, we will continue to monitor progress of this plan, evaluate the impact of our actions and build our knowledge in order to develop new actions or policies as and when they are needed.

We will take a lead role in coordinating action and partnership working between the many parties involved – boroughs, suppliers, operators, servicing companies, businesses, BIDs, organisations such as the NHS, customers and others – to ensure London remains at the forefront of clean, safe and efficient freight.

We will monitor our progress towards the Mayor's Transport Strategy aims and report this in our Travel in London annual reports. If we are not on track, we will take further action and increase activity in the areas that have the most impact.

Change and innovation in the future

We recognise that our city is changing fast. Customer demands are evolving, as are the logistics and servicing industries that must meet those demands. As London grows and densifies, the increasing demand for freight and servicing will make the situation ever more complex. With the growth of servicing and light freight, new technologies and innovations will be vital in adapting to the changing landscape of freight and servicing.

We still have a lot to understand about what influences customer choices and how that may change in the future. Our research into what is driving demand and the growth of sectors, such as home deliveries and servicing, will be vital in the development of new actions beyond those in this plan.

As well as changing customer demands, new business models and emerging technologies may radically change the way the freight industry operates. We will actively seek out new ideas by engaging with market innovators, start-ups, academics, public bodies and wider industry to understand what is coming, so we can be open to the opportunities that new business models and emerging technologies present.

Our approach to new innovations will be guided by the Mayor's Transport Strategy, specifically Policy 23, to ensure we are not passive regarding the future



but that we are able to assert ourselves for the good of Londoners and the city.

While demand and technologies evolve, our ambitions remain clear – safe, clean and efficient freight that serves a growing London. Looking further ahead, we will seek to harness or support innovation where it can contribute to the aims of this plan and will continue to update our strategy as our knowledge, business models and technologies evolve.



