

# Demand Side Policy – Vehicle charging schemes in London

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# Background



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# London and the Role of the Mayor and TfL

- Population – 8.7 million
- Size – 1572 km<sup>2</sup>
- 33 Local Authorities
- Elected Mayor with strategic powers over all of Greater London
- TfL are the integrated transport authority responsible for delivering the Mayor's strategy and commitments on transport.
- On the roads, we regulate taxis and the private hire trade, run the Congestion Charging and Low Emission Zone (LEZ) schemes, manage the city's 580km red route network, operate all of the Capital's 6,300 traffic signals
- Our operational responsibilities include London Underground, London Buses, 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.



# Timeline of charging schemes in London



- February 2003 Congestion Charge Launched
- 2008 Low Emission Zone launched
- 2012 Low Emission Zone tightened
- March 2015 - Ultra Low Emission Zone in central confirmed
- May 2016 - Sadiq Khan elected Mayor
- October 2017 – T-Charge Launched
- November 2017 – ULEZ start date brought forward to April 2019
- December 2017 – Consultation on future expansion of ULEZ and tighter LEZ



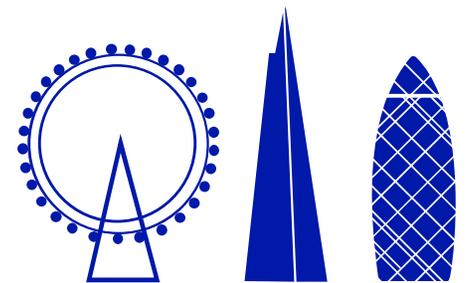


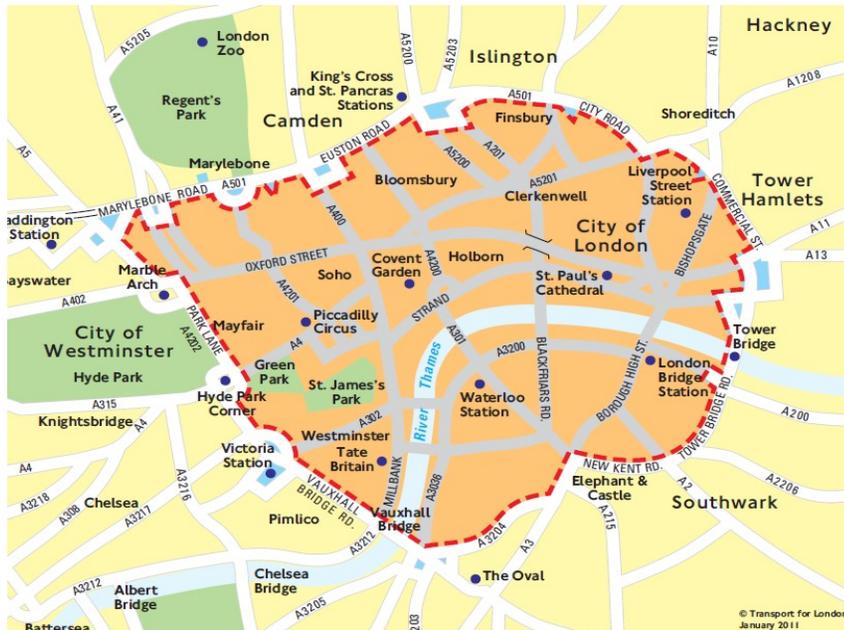
# Congestion Charging Zone



## Why was Congestion Charging necessary?

- Despite 85% public transport usage, vehicular traffic major problem
- 185,000 cars entered central London each day
- Central London most congested area in UK; traffic speeds <9mph
- Congestion persisted throughout the day
- Congestion cost London an estimated £4 billion
- To address this, an area-based charging scheme was chosen for central London (eligible motorists pay once per day)
- Objectives of scheme:
  - Reduce traffic and traffic congestion
  - Raise revenue to re-invest in transport.





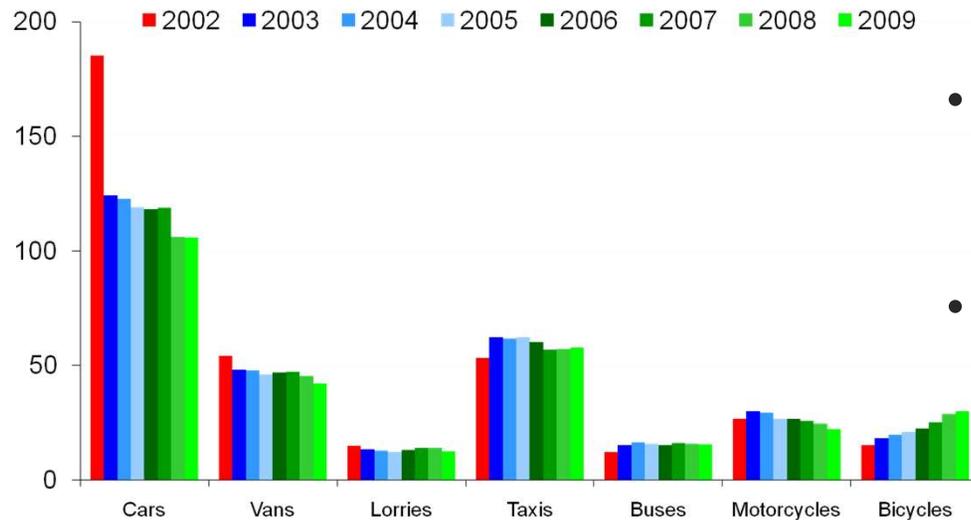
## Charge Payment

- Monday – Friday, 7am – 6pm
- £11.50 on the day of travel
- £14 on the charging day after travel
- £10.50 for customers on CC Auto Pay
- Daily, weekly, monthly or annual payment for individual vehicle registration number



# Impacts

Average daily traffic entering charging zone during Charging hours



- The total number of vehicles entering the zone reduced by 60,000 per day
- Traffic circulating in the zone fell by 15 per cent during weekday charging hours
- 11 percentage point shift from car use to public transport, walking and cycling

- Congestion in the zone fell by around 30 per cent
- Additional capacity enabled linked to major improvements to the urban realm, cycling and walking conditions, and safety
- Congestion Charging was directly responsible for reductions of traffic emissions inside Zone equating to 8% of  $\text{NO}_x$ , 7% of  $\text{PM}_{10}$  and 16% of  $\text{CO}_2$

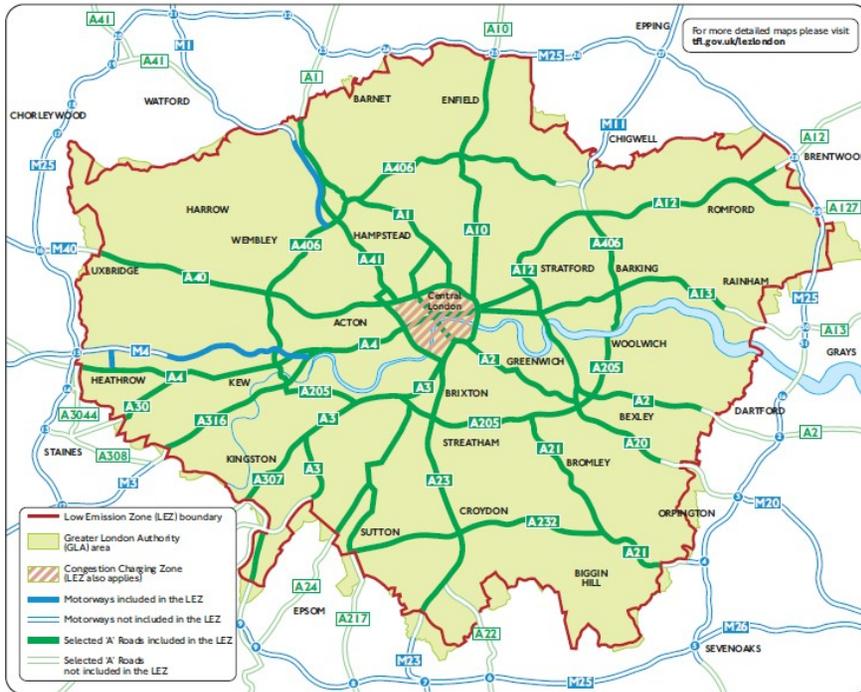




# The Low Emission Zone



# The Low Emission Zone (LEZ)



- Environmental zone covering Greater London (1580 square kilometres)
- Phased introduction from 2008 following extensive consultation;
- More vehicles included in 2012 and tighter emissions standards but it does not apply to cars or motorcycles;
- Greater London (1,580 square kilometres) and operates 24 hours a day, every day of the year;
- Encourages the most individually polluting vehicles driving in London to become cleaner
- Vehicles need to meet specified emissions standards or pay a substantial daily charge to drive within zone (£200 for heavy vehicles £100 for vans).
- Current standard is Euro IV PM for HGV and coach and Euro 3 for vans



# LEZ Roll Out : Summary

## LEZ Phase 1

- Launched 4 February 2008
- HGVs over 12 tonnes
- c. 120,000 subject vehicles of which c. 30,000 were non-compliant in '07.



## LEZ Phase 2

- Launched 7 July 2008
- HGVs of 3.5 – 12 tonnes plus buses and coaches over 5 tonnes
- c. 90,000 subject vehicles of which c. 35,000 were non-compliant in 2007.



## LEZ Phase 3

- Originally scheduled for October 2010
- Deferred to 2012
- Includes large vans and minibuses
- c. 530,000 subject vehicles



## LEZ Phase 4

- Launched 3<sup>rd</sup> January 2012
- Tougher PM standards for Phase 1 and 2 vehicles.

## LEZ Phase 5 (subject to confirmation)

- Scheduled October 2020
- Tougher NOx and PM standard for Phase 1 and 2 vehicles

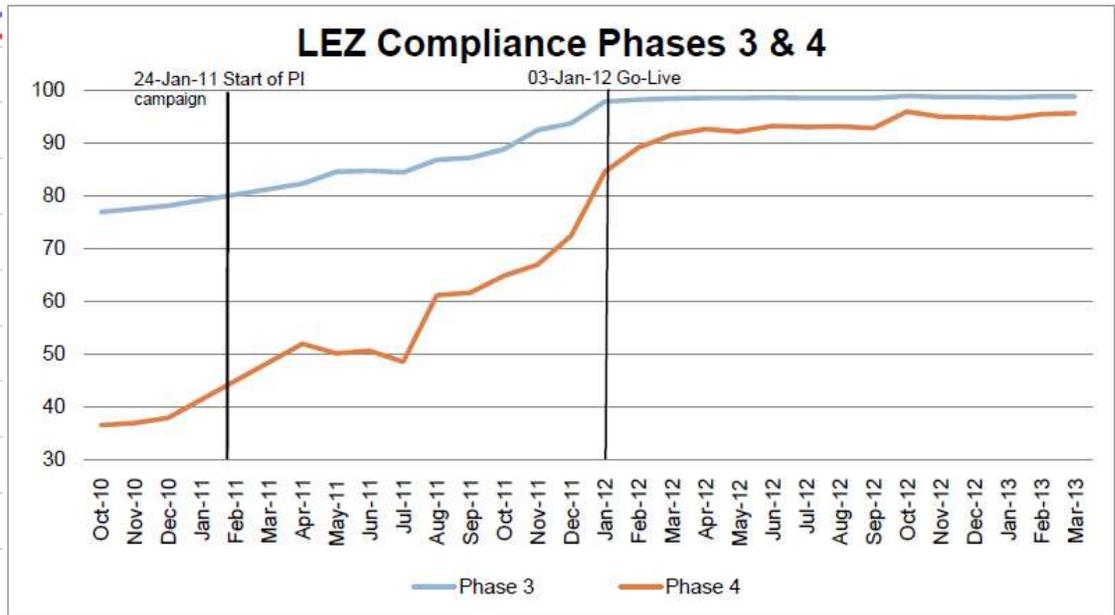
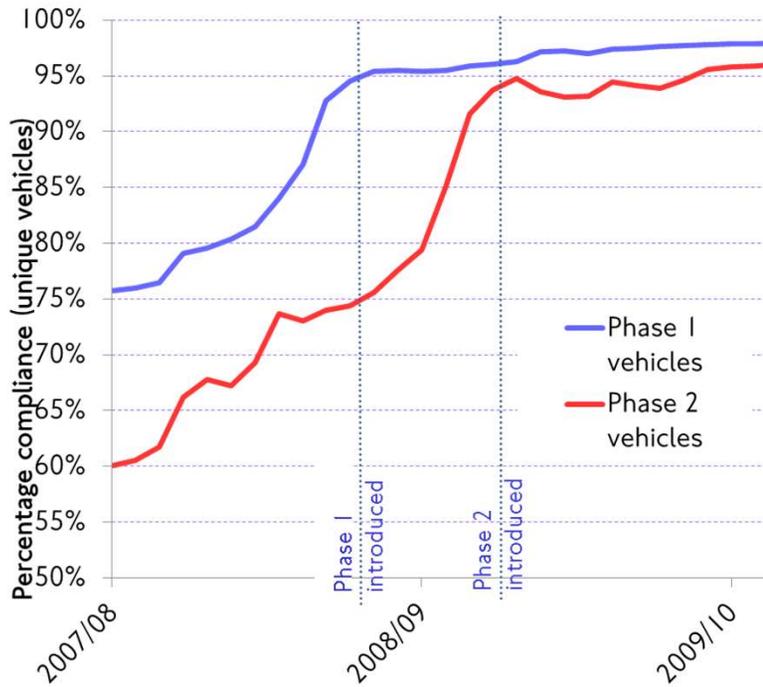
# Compliance Levels

- Significant increases in compliant vehicles in reaction to announcements and publicity
- Step change upon introduction
- Very high levels of compliance

Vans and minibuses **99%**

HGVs, buses and coaches **96%**

## Phase 1 and 2



# LEZ Impacts

- In its first 4 years LEZ had a real impact on pollution saving 28 tonnes of Particulate Matter which is equal to saving:
  - 127 million km driven by a Euro III articulated vehicle
  - that is 160 return trips to the moon or
  - approximately 677,000 times around the M25
- LEZ reduces pollution at the road – where the pollution is concentrated and targets the kind of pollution – fine particles, which are most hazardous to health.
- The LEZ changes in 2012 delivered around twice these reductions in air pollution – critical to London meeting legal air quality standards for Particulate Matter.
- Including vans and minibuses will give children with chest complaints over 12,000 days free from suffering symptoms and adults almost 18,000 days

# The T-Charge



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## What is the T-Charge?

- Scheme launched on 23 Oct 2017
- Same boundary and times as Congestion Charge
- Similar exemptions to Congestion Charge, except 9+ seaters (not exempt), historic & and showman's vehicles (exempt/100% discount, like ULEZ). Blue badge holders get a 100% discount like Congestion Charge.
- £10 surcharge (on top of the Congestion Charge)
- Charge will apply to all eligible pre-Euro 4 vehicles (broadly equivalent to vehicles from 2005 and older)
- First Emission Control Scheme in UK to target cars
- An important stepping stone towards the Ultra Low Emission Zone (ULEZ).



**If you could see London's air,  
you'd want to clean it too.**

The Mayor has introduced a £10 T-Charge for older more polluting vehicles driving in central London. It's part of his bold plan to clean up London's toxic air. Find out what else he's doing at [london.gov.uk/cleanair](https://www.london.gov.uk/cleanair)

#CleanAir

MAYOR OF LONDON

## Key stats

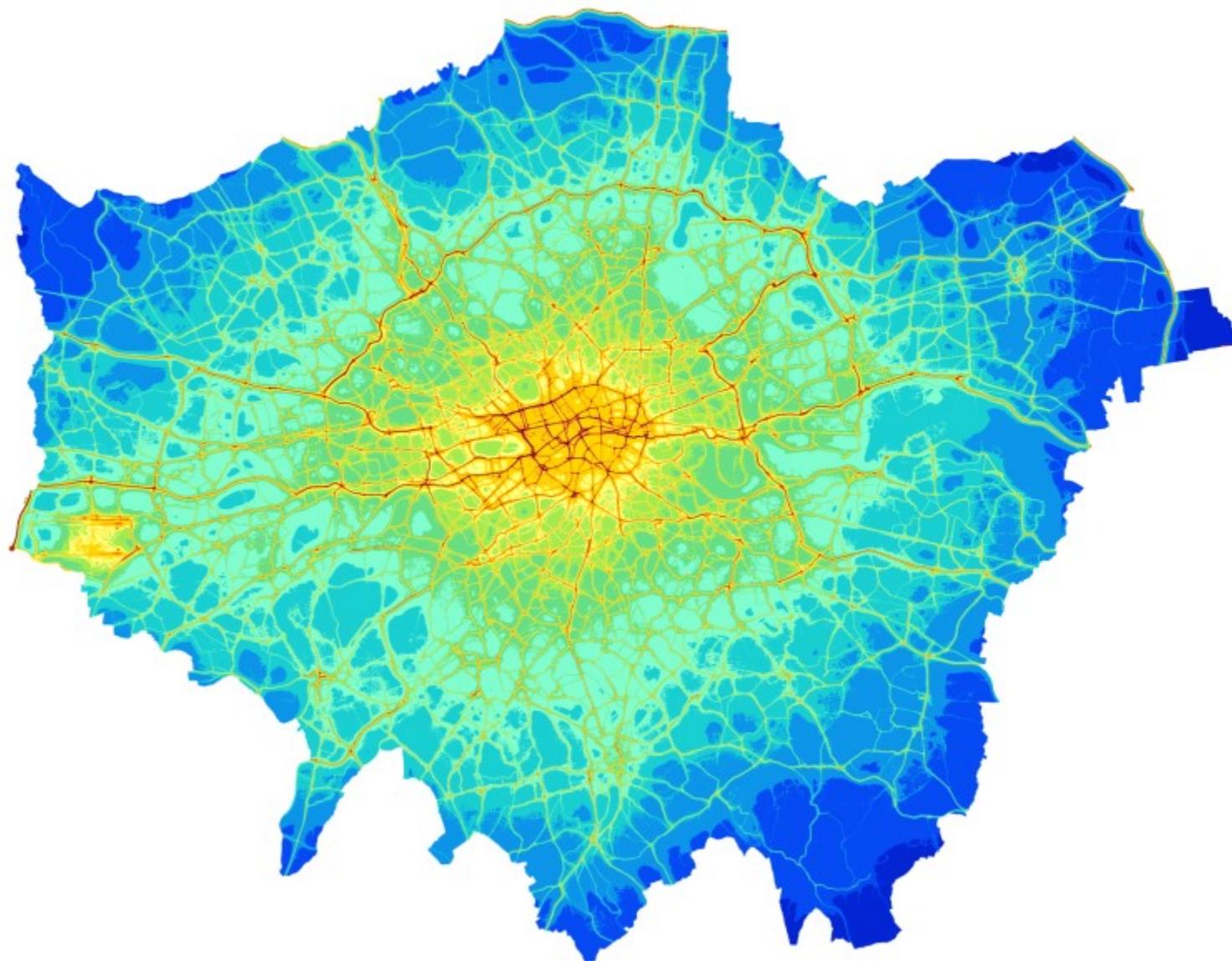
- 30 per cent fall in the number of non-compliant vehicles in the Congestion Charging zone since the announcement
- c.1000 fewer non compliant vehicles per day
- c.2000 vehicles per day pay charge



# The ULEZ



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Legend

NO<sub>2</sub> (µg/m<sup>3</sup>)

-  < 16
-  16 - 19
-  19 - 22
-  22 - 25
-  25 - 28
-  28 - 31
-  31 - 34
-  34 - 37
-  37 - 40
-  40 - 43 ← Limit
-  43 - 55
-  55 - 58
-  58 - 73
-  73 - 76
-  76 - 97
-  > 97

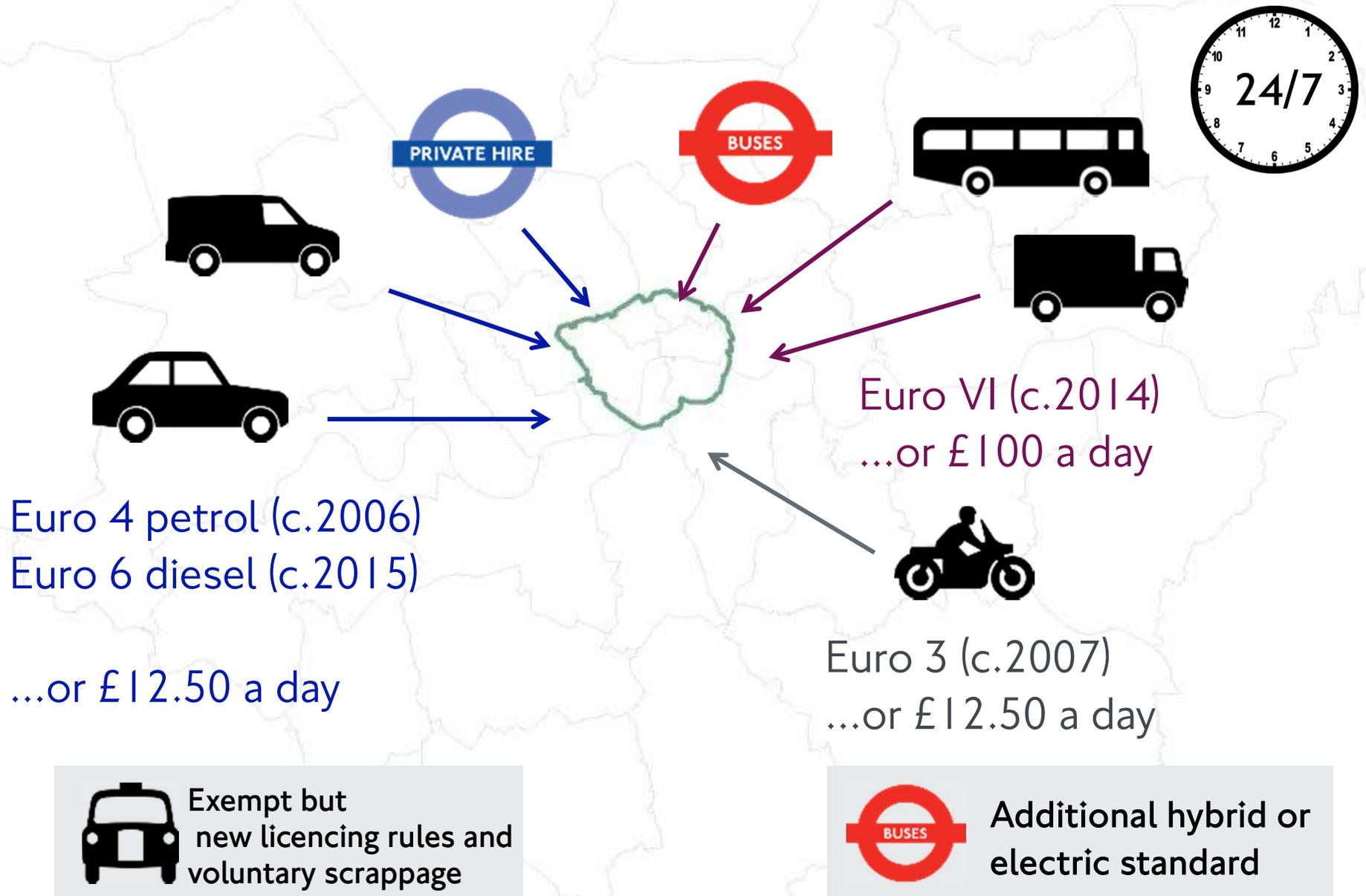


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GREATER LONDON AUTHORITY

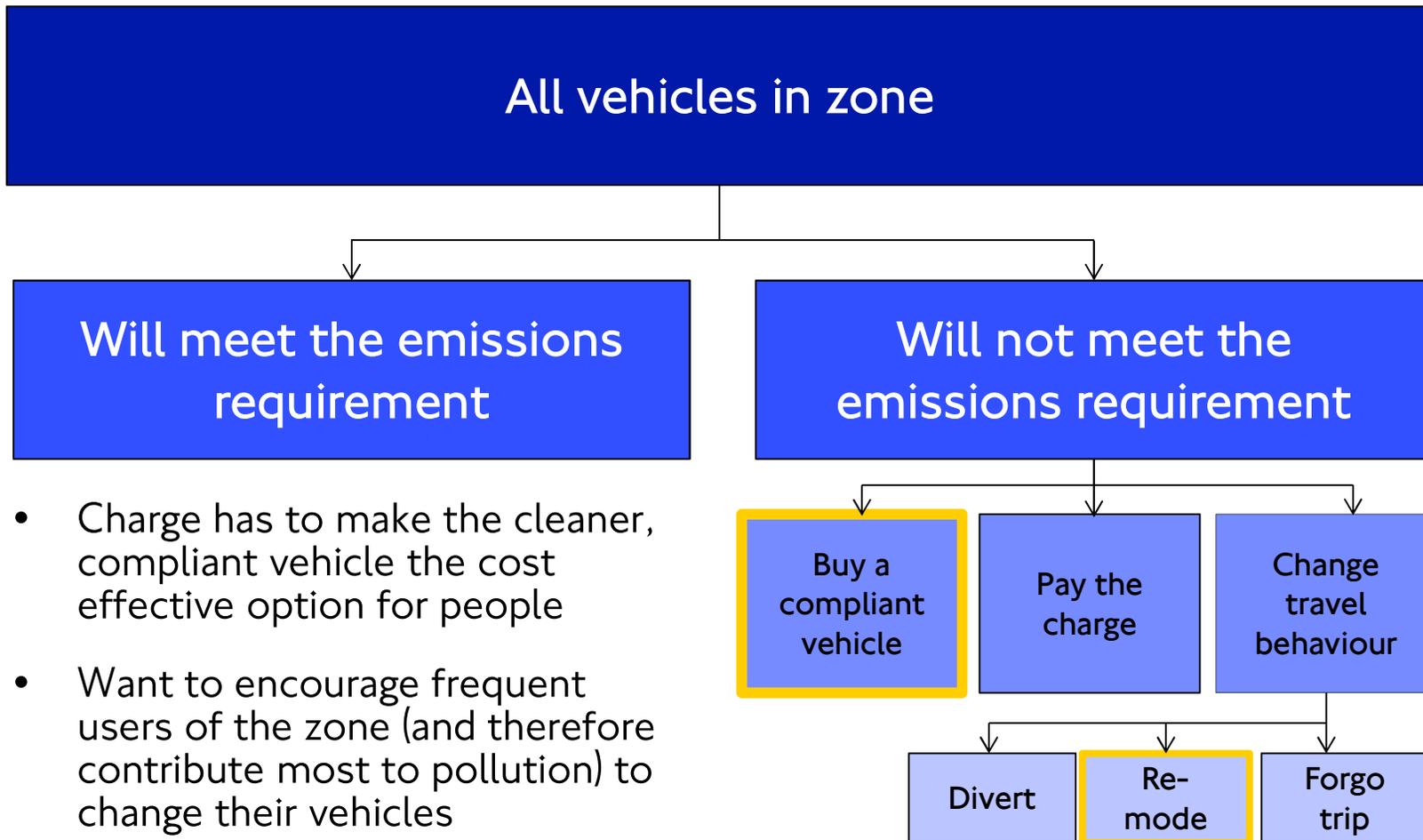


Map © Greater London Authority 2013

# The Ultra Low Emission Zone - As it stands



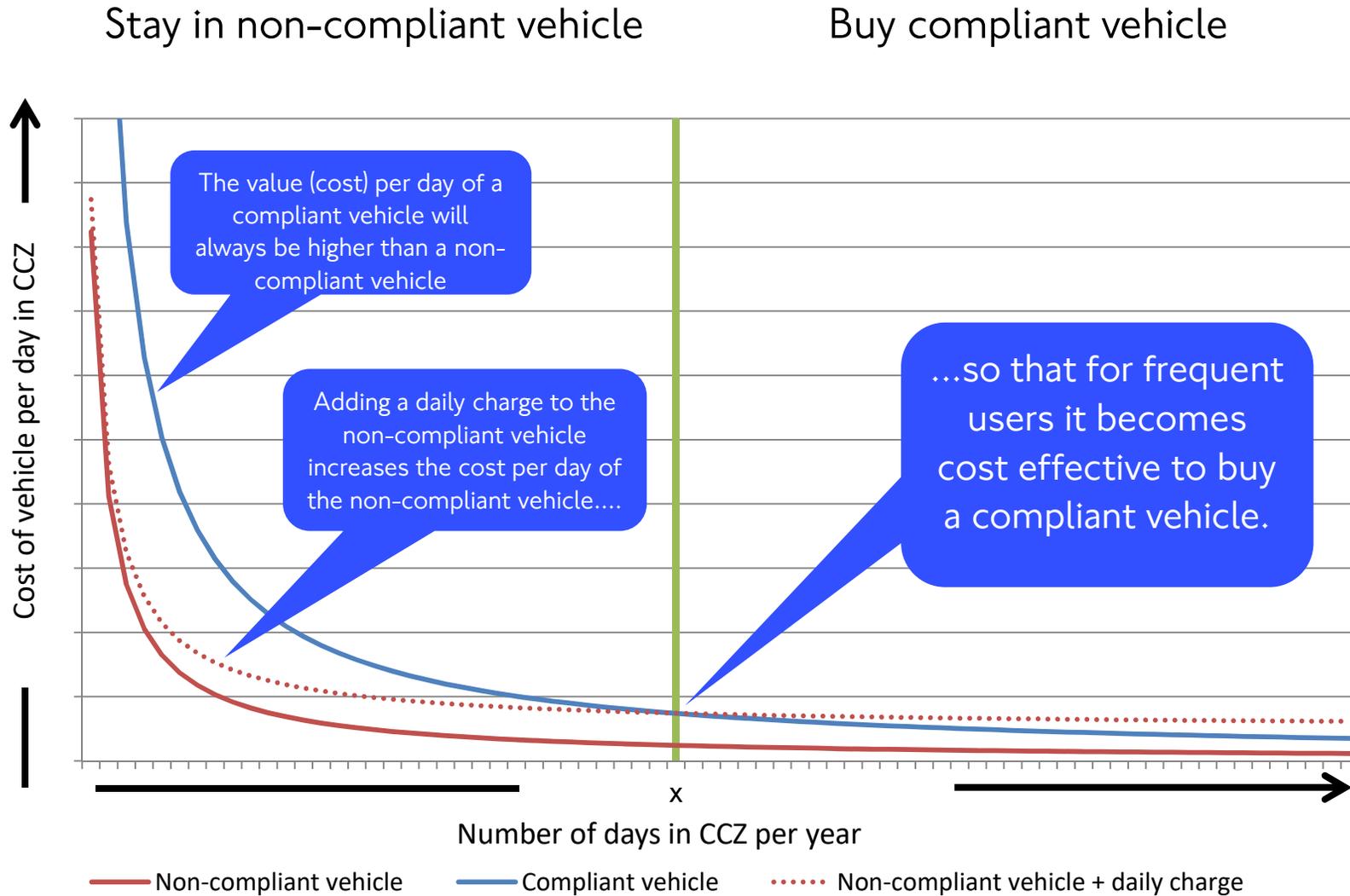
# How people might respond to the charge



- Charge has to make the cleaner, compliant vehicle the cost effective option for people
- Want to encourage frequent users of the zone (and therefore contribute most to pollution) to change their vehicles
- Want to still allow low levels of infrequent travel but at a cost



# There is a daily charge for 'non-compliance'



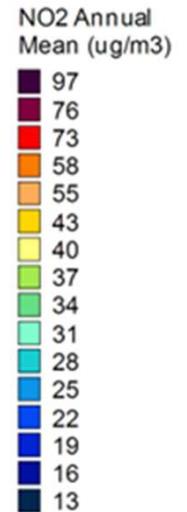
# Impact of 2019 ULEZ



2019 Baseline (ULEZ in 2020)

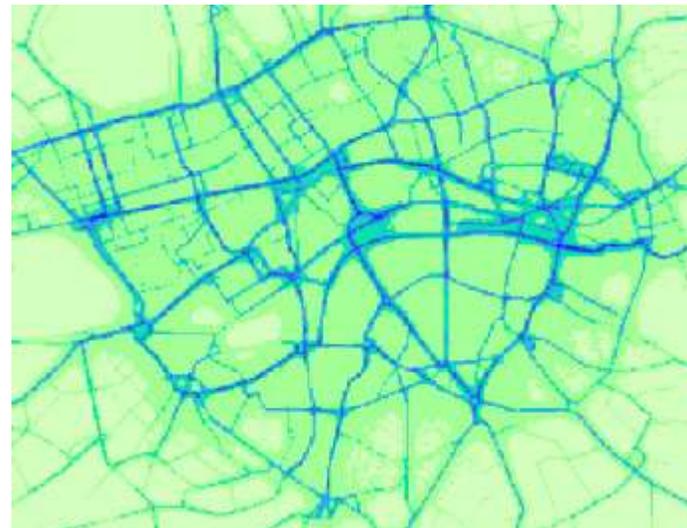


ULEZ in 2019

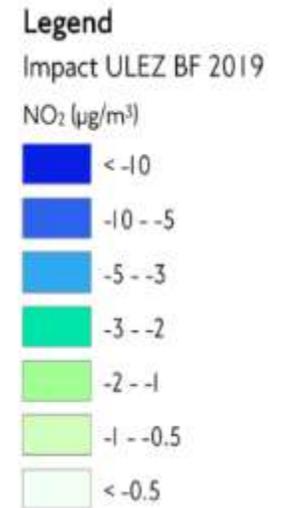


	Central
Total	20%
TfL Buses	52%
HGVs	49%
Coaches and non-TfL buses	36%
Vans and minibuses	8%
Cars & motorcycles	12%

Emissions savings in 2019 as result of ULEZ being brought forward (on top of savings that would have been seen in 2019 due to pre-compliance with ULEZ in place in 2020)



Difference in concentrations

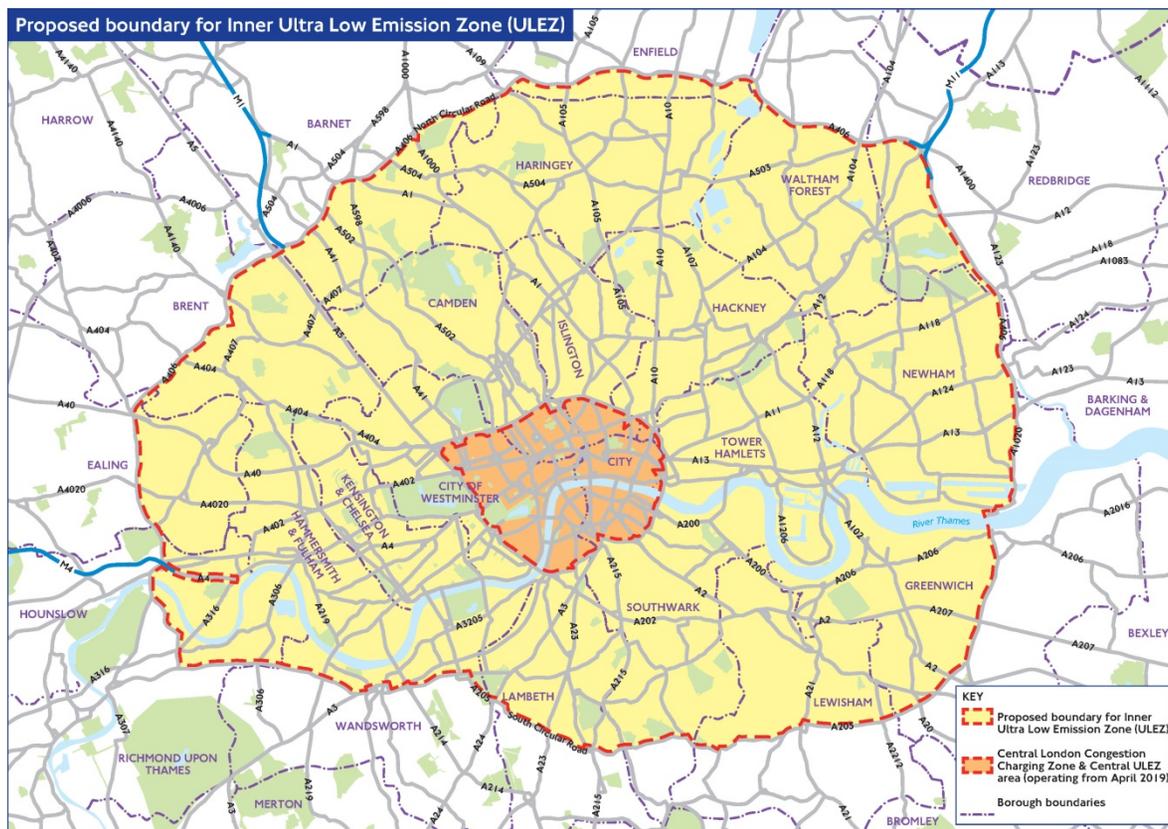


# Future Proposals



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# ULEZ expansion up to N/S circular

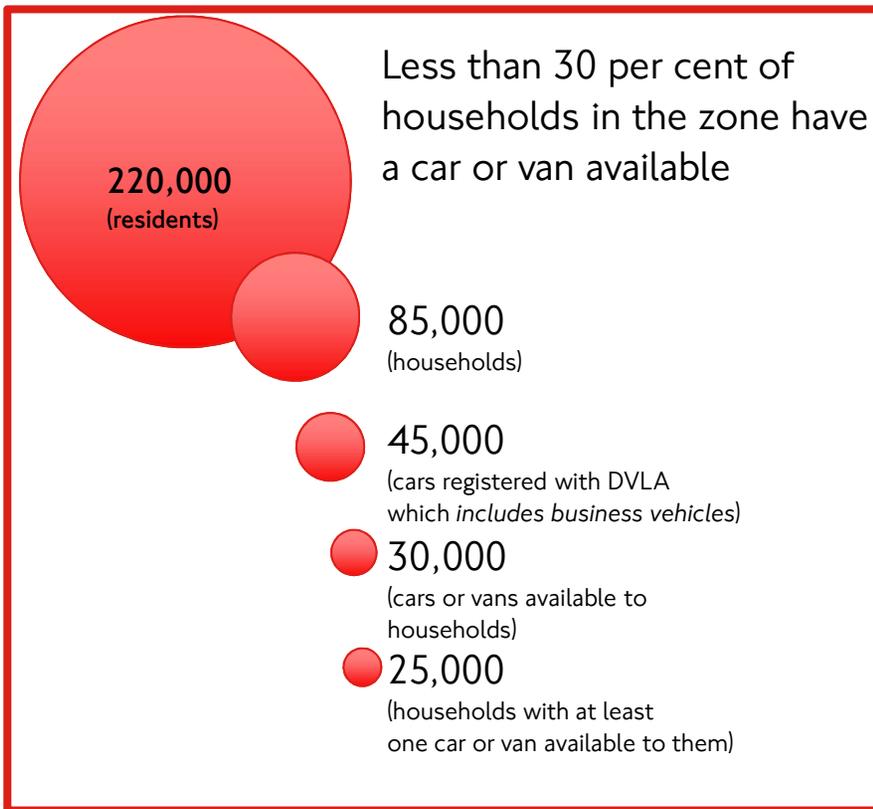


	Central	Up to N/S Circular	
Area	21 sq. km	381 sq. km	(18 times larger)
Population	136k	3.8m	(28 times larger)

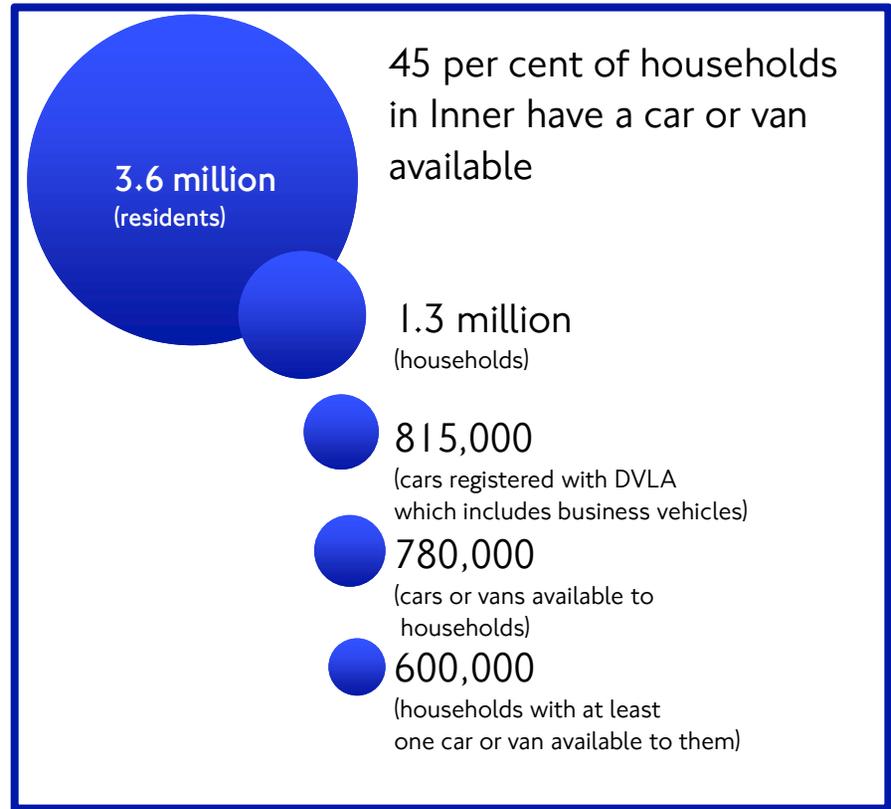


# Many more residents

## Central ULEZ



## Inner ULEZ



# Mayor's Transport Strategy

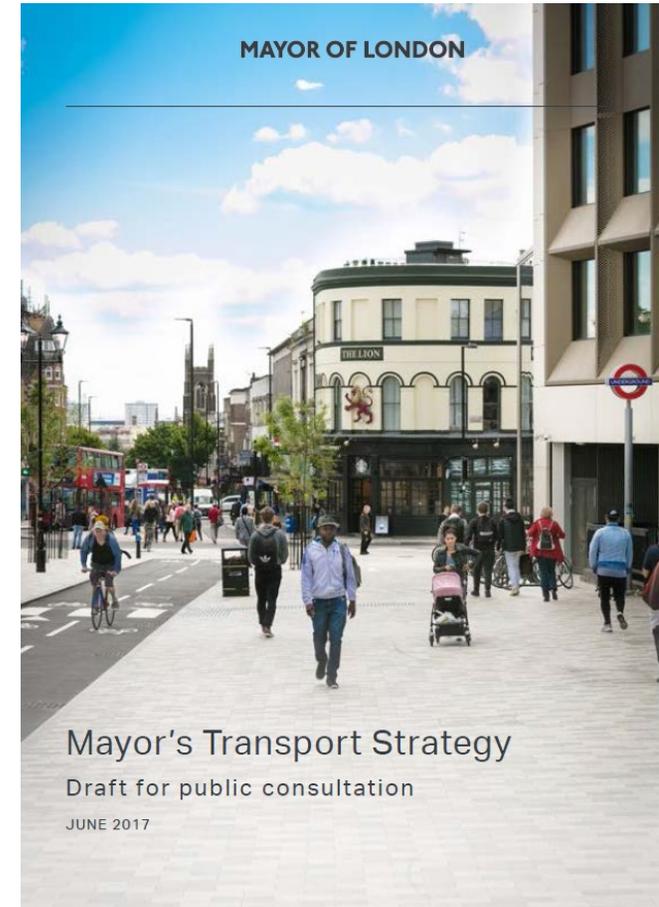
- Sets out a strategy for London's transport to 2041.
- Consultation ran from 2 June to 2 October 2017. Final strategy due to be published in early 2018.
- Three key themes are at the heart of the strategy.

1. **Healthy Streets and healthy people**

2. **A good public transport experience**

3. **New homes and jobs**

- Target of a zero emission London by 2050

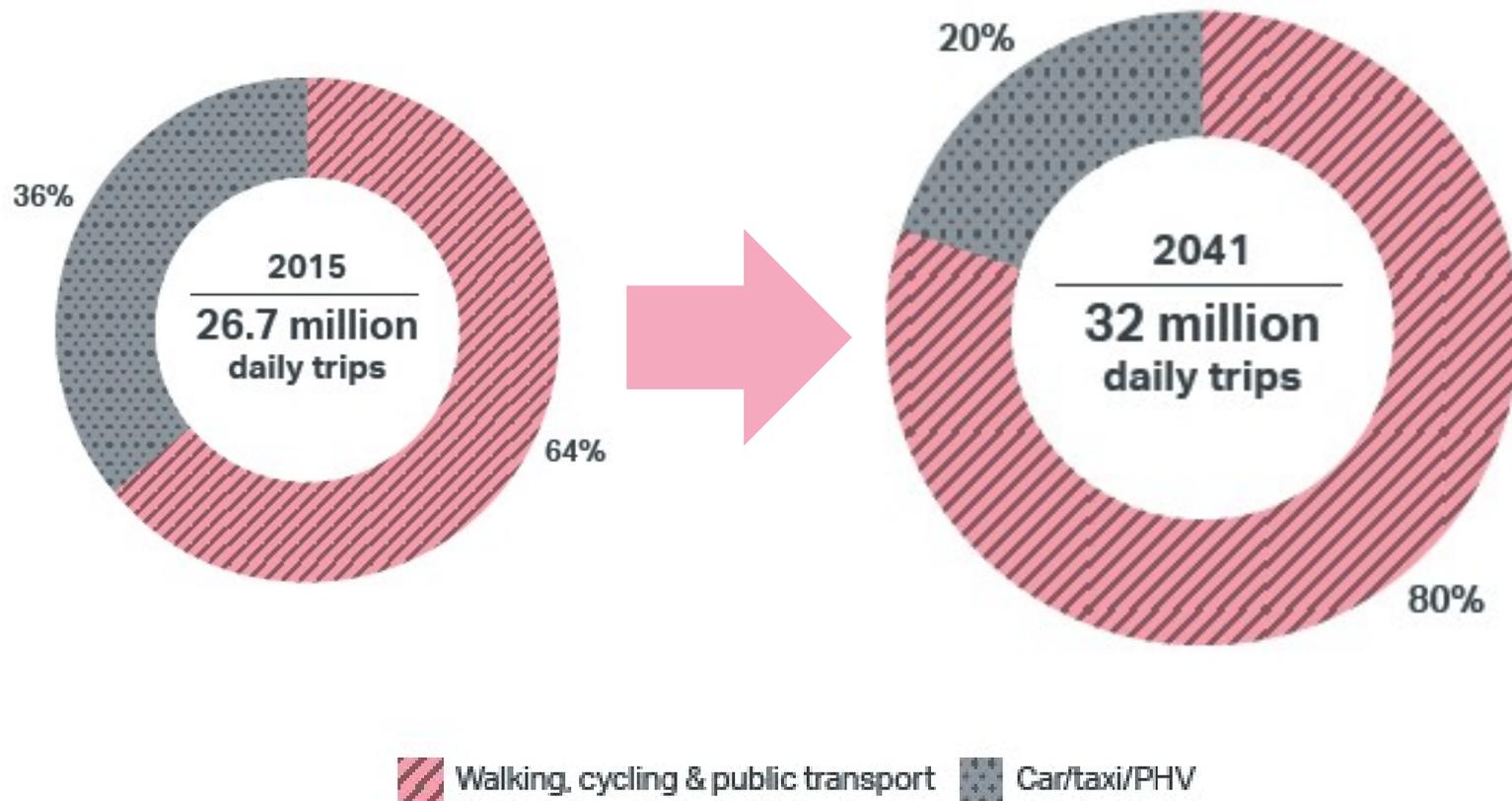


[tfl.gov.uk/mayors-transport-strategy](https://tfl.gov.uk/mayors-transport-strategy)



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# By 2041 the aim is for 80% of Londoners' trips to be on foot, by cycle or using public transport



# Roadmap to zero emission road transport

		NOW	2020	2025	2030	2035	2040	2045	2050	
London action	Demonstrating technologies	Zero emission-capable taxis		Town centre Zero Emission Zones						
		Electric single-deck buses; bus charging infrastructure								
		Supporting low-emission freight								
	Changing purchasing patterns	Deliver a major expansion in electric vehicle charging points			Further investment in charging and refuelling infrastructure					
		At least 15 hydrogen fuelling stations installed in and around London						All newly registered vehicles driven in London zero emission		
		All new taxis zero emission capable	All new private hire vehicles zero emission capable							
		All new buses will be hybrid, electric or hydrogen	Pan-London approach to parking charges for zero emission vehicles							
	Fleetwide adoption and managing congestion	Keep Congestion Charge under review and support borough measures	Develop a new, more sophisticated way of paying for road use, integrating existing and proposed emissions-based and congestion charging schemes							London-wide Zero Emission Zone
		Emission Surcharge/Central London Ultra Low Emission Zone	Expanded Ultra Low Emission Zone	Central London Zero Emission Zone	All buses zero emission or hybrid	Wider Zero Emission Zone				Zero emission road transport
					All taxis and PHVs zero emission capable		All buses zero emission			
				All public sector car fleets zero emission capable						
National action		Increase use of renewable electricity generation for the National Grid until it results in net zero carbon emissions								
	Plug-in vehicle grants	Taxation encourages ultra low emission vehicles over conventional vehicles					Taxation discouraging ownership of non-zero emission vehicles			
	Funding low-emission vehicle research - especially heavy vehicles	Financial incentives for businesses/manufacturers								
	Vehicle tax exemption for zero emission	National diesel scrappage scheme								

Key: Taxis/PHV (black), Buses (red), Fleets (purple), Congestion reduction (olive), Infrastructure (pink), Emissions Charging Zones (blue), Taxation (teal), Aim (yellow)



# Thank You

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[www.tfl.gov.uk/airquality-consultation](http://www.tfl.gov.uk/airquality-consultation)



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