

London's Low Emission Zones and Freight Management

Claire Cheriyan
Transport for London



Contents

- Background
- London's Low Emission Zones
- Considerations
 - Setting the right standards
 - Setting the right charge level
 - Impact on population
- Freight Management



Background



London and the Role of the Mayor

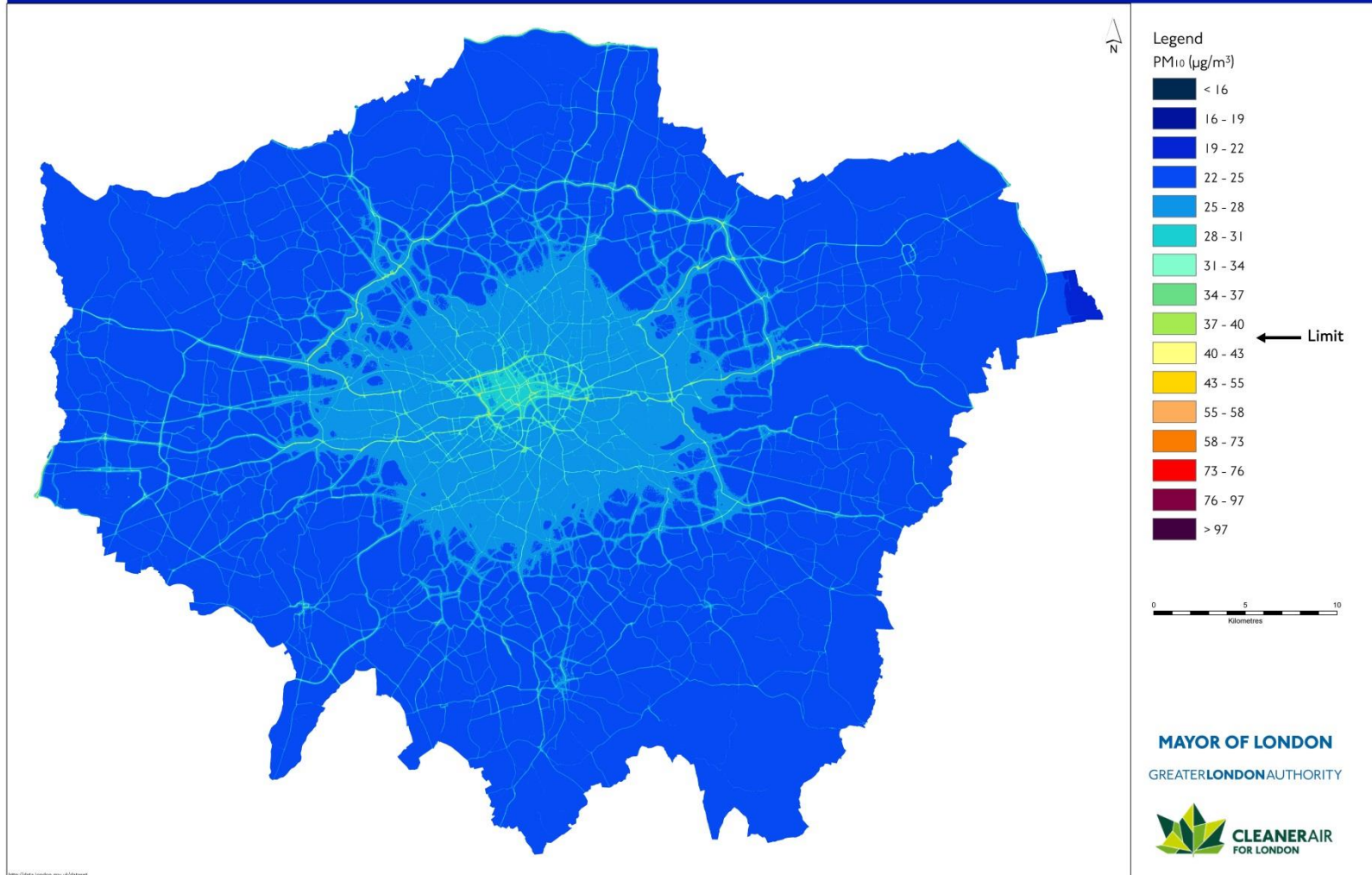
- Population – 8.7 million
- Size – 1572 km²
- 33 Local Authorities
- The Mayor of London's work includes:
 - making it easier for people to move in and around the city
 - improving London's environment
 - helping the capital's businesses to thrive
 - providing Londoners with more affordable housing
 - giving young people in London more opportunities
- TfL is a statutory body of the Mayor of London



Air Quality in London – PM10

Greater London - Annual Mean PM₁₀ concentrations 2013

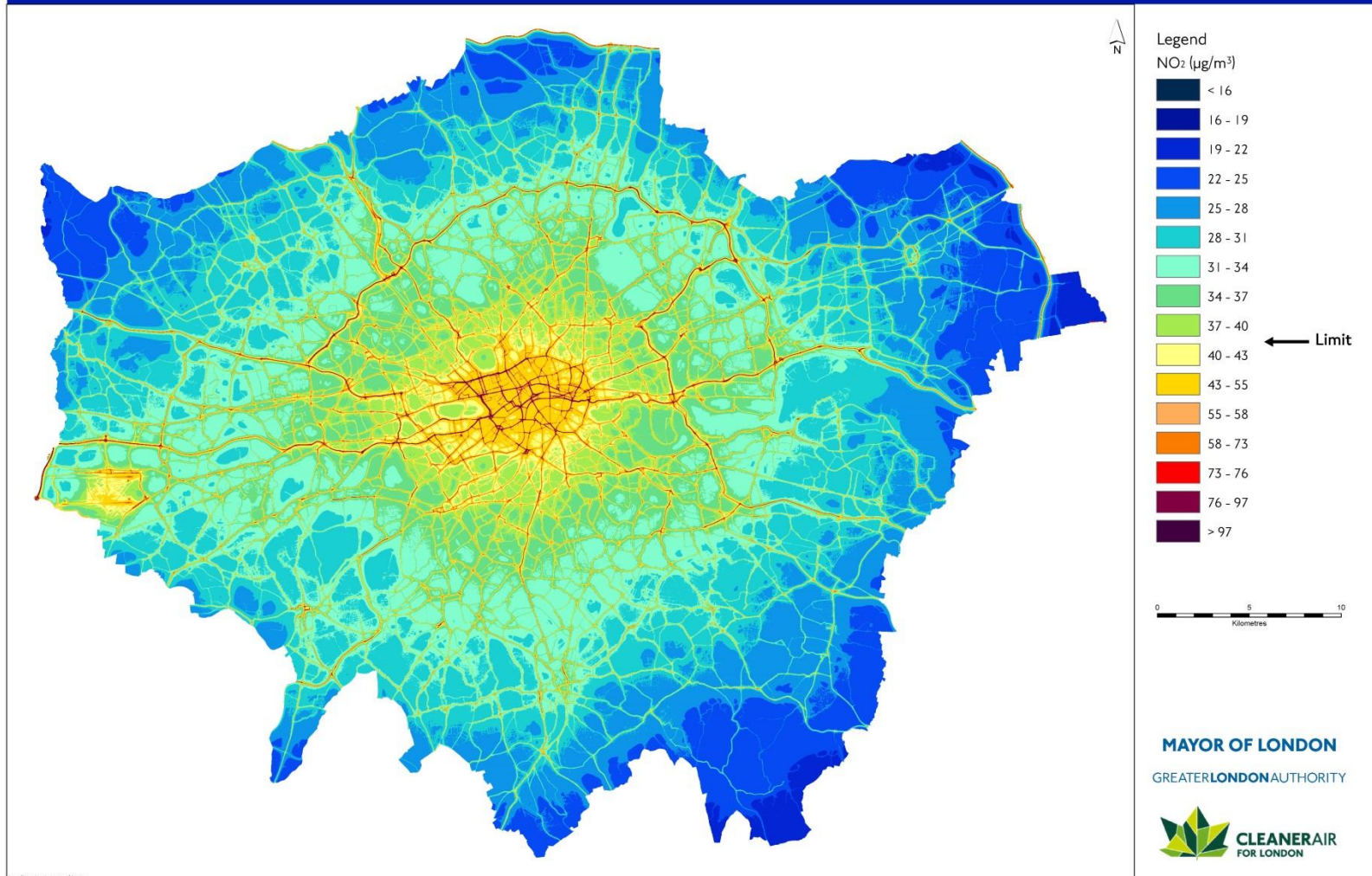
LAEI 2013



Air Quality in London – NO₂

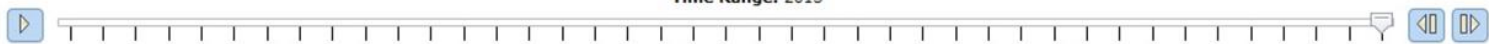
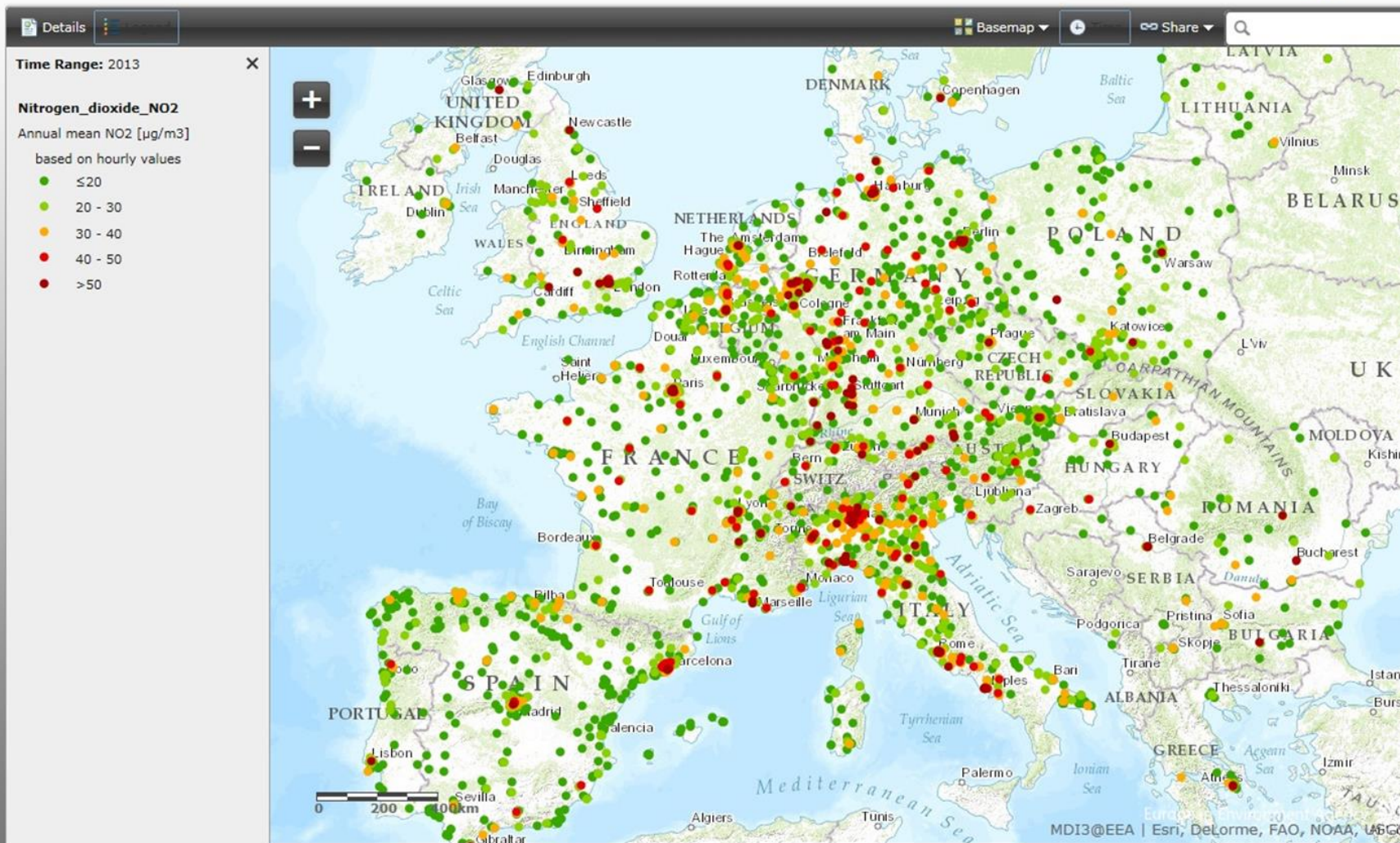
Greater London - Annual Mean NO₂ concentrations 2013

LAEI 2013



NO₂ – A Europe Wide Challenge

Nitrogen Dioxide (NO₂) in Europe



Health and Equalities

Health

- We estimate an equivalent of around 9,400 deaths were caused by long-term exposure to air pollution.
- A baby born in 2010 and exposed to that same level of air quality for its entire life would lose 2.2 years (if male) and 2 years (if female) of life expectancy.

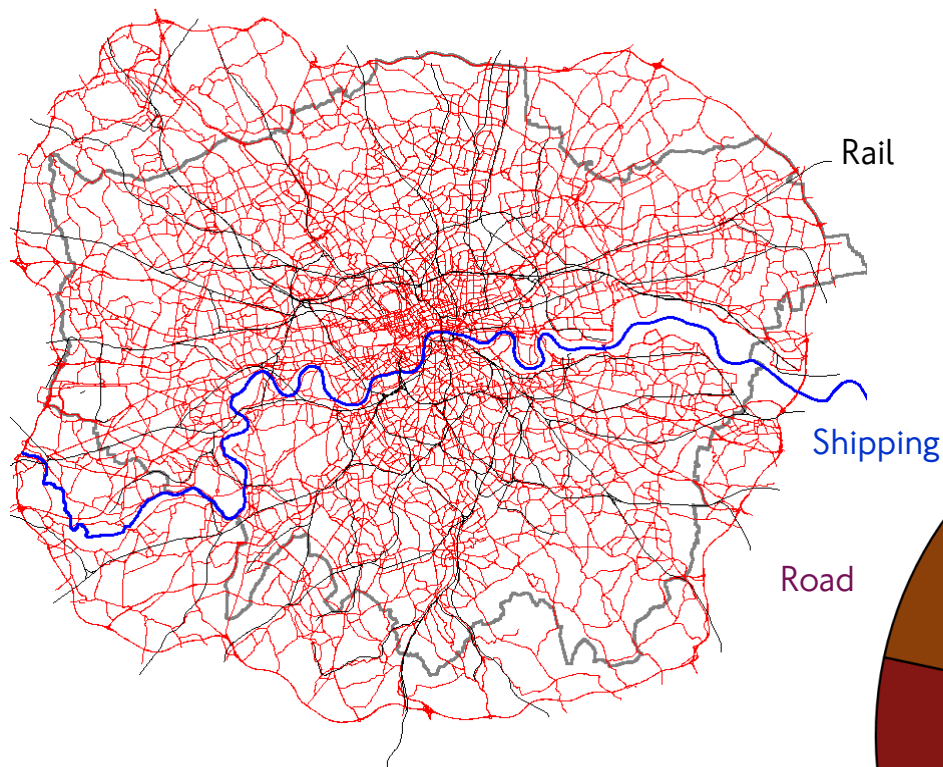
Fairness

- The health impacts associated with air pollution fall disproportionately on our most vulnerable communities, affecting the poorest and those from minority ethnic groups more acutely.
- Tackling air pollution is about social justice and there is an urgent need to do more to tackle public health inequalities.

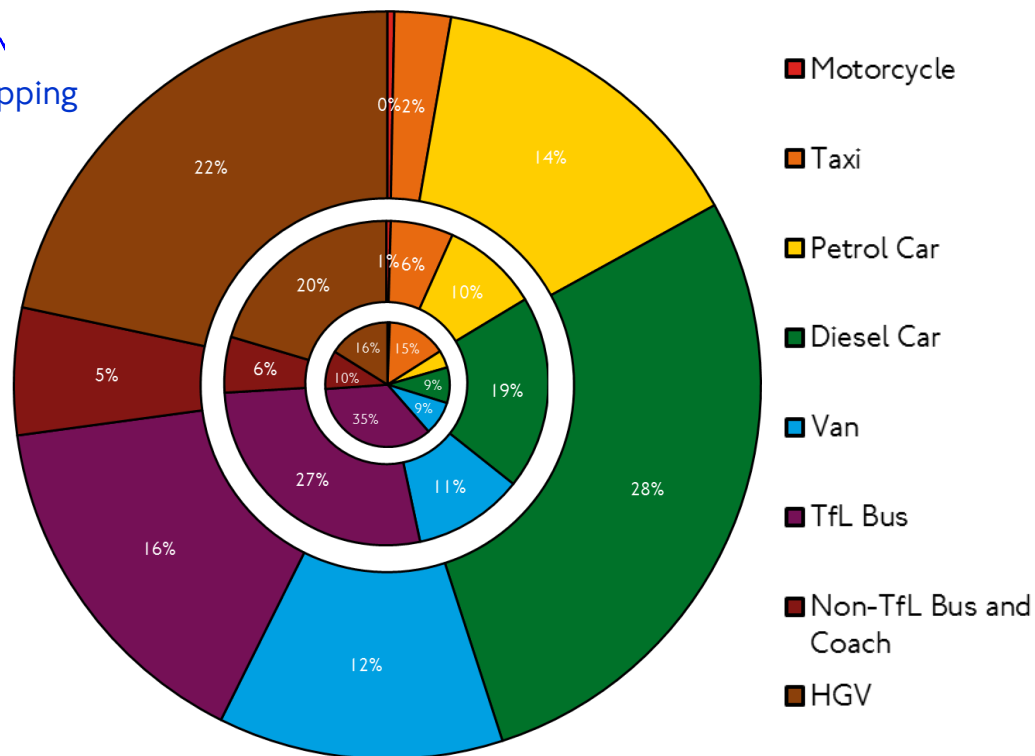


Sources of Pollution

- London Atmospheric Emissions Inventory (LAEI)



2013- NO_x from Road Transport



London's Low Emission Zones

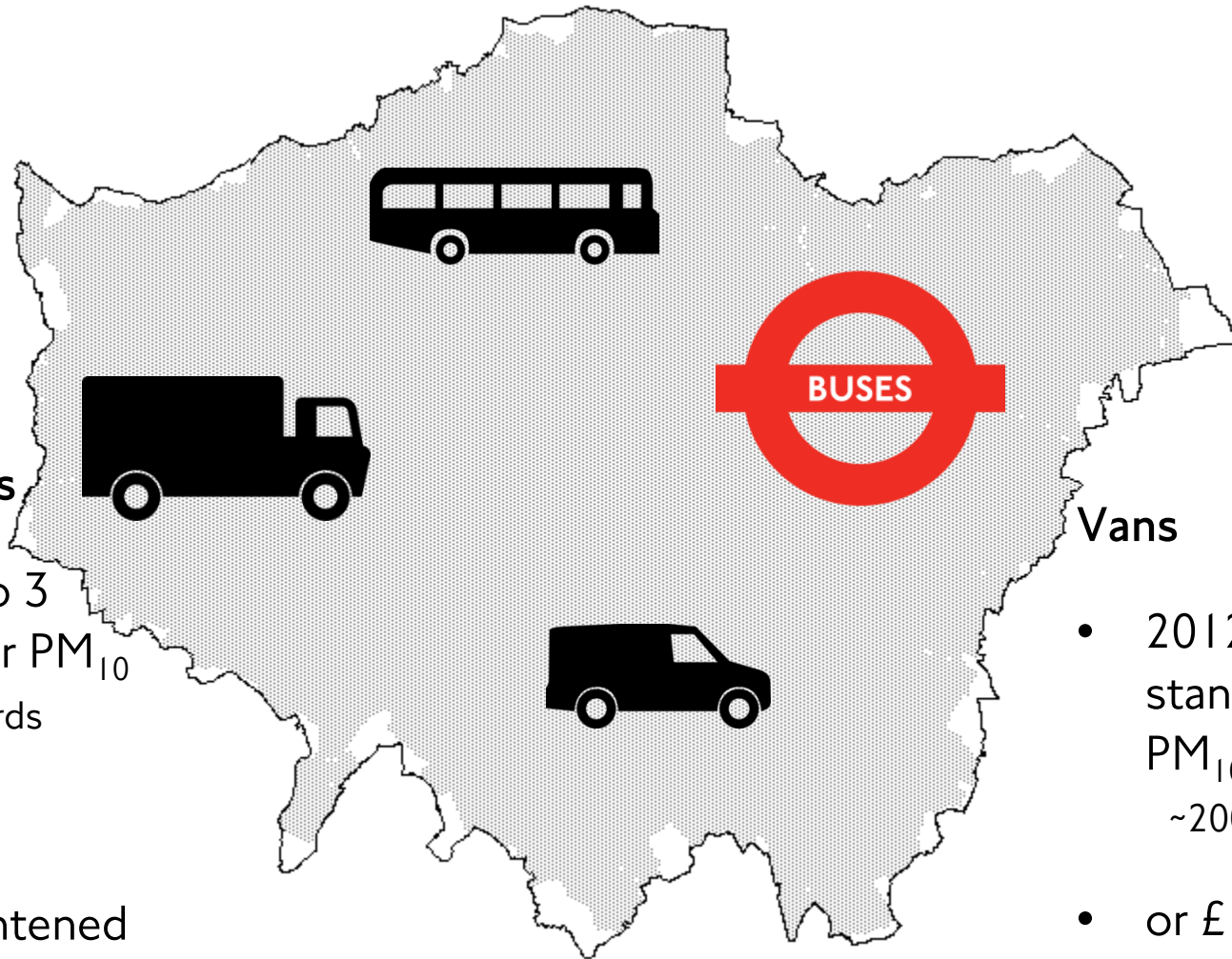


Timeline

- 2008 Low Emission Zone launched
- 2012 Low Emission Zone tightened
- **March 2015** - Ultra Low Emission Zone in central London from September 2020 confirmed
- **May 2016** Sadiq Khan elected Mayor
- **June 2016** Announcement of package of air quality measures to bring in ULEZ sooner and expand it
- **2017** consult on expanding ULEZ options



Tackling PM₁₀ – The Low Emissions Zone



Heavy Vehicles

- 2008 - Euro 3 standard for PM₁₀
~2000 onwards
- or £200
- In 2012 tightened to Euro 4 standard
~2005 onwards

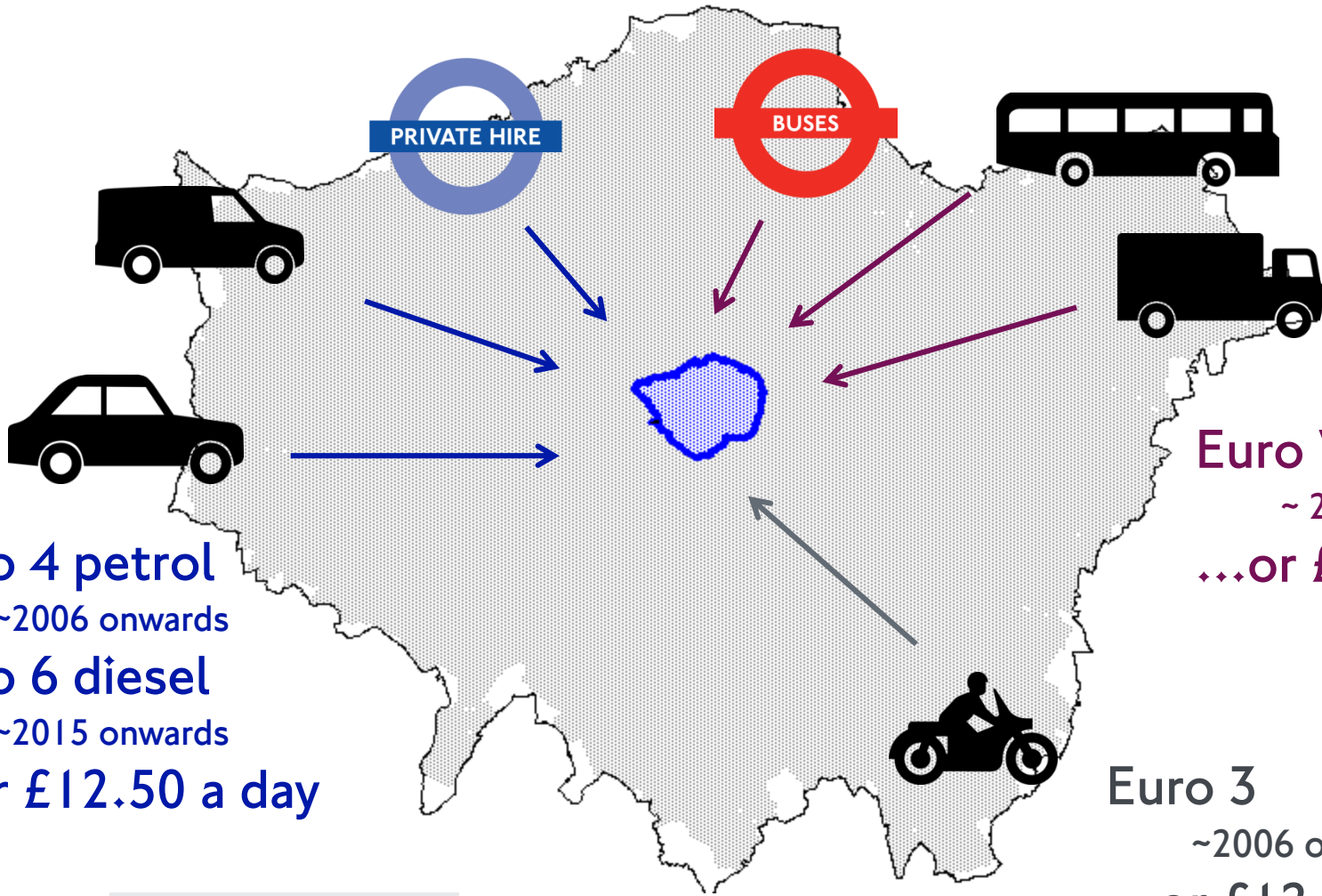
Vans

- 2012- Euro 3 standard for PM₁₀
~2001 onwards
- or £100

~size of Greater London



Ultra Low Emissions Zone



Euro 4 petrol
~2006 onwards
Euro 6 diesel
~2015 onwards
...or £12.50 a day

Euro VI
~ 2014 onwards
...or £100 a day

Euro 3
~2006 onward
...or £12.50 a day



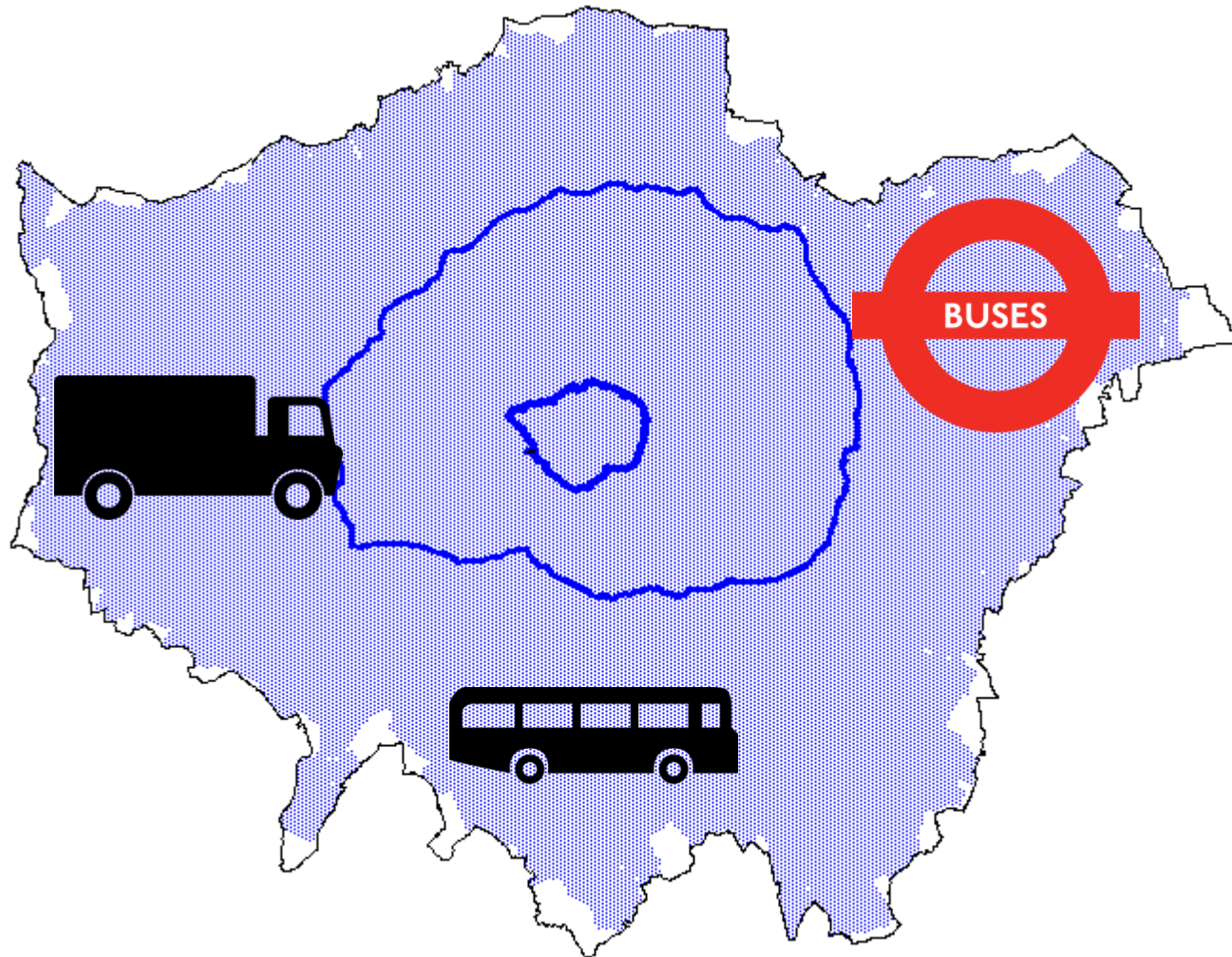
Expanding ULEZ to Inner London for All Vehicles



~360 km²



Expanding the ULEZ Across London for Heavy Vehicles



~size of Greater London



Emissions Surcharge

- October 2017 start date
- Higher congestion charge of £22.50 for the oldest vehicles (pre-Euro 4)
- Stepping stone towards ULEZ in 2019

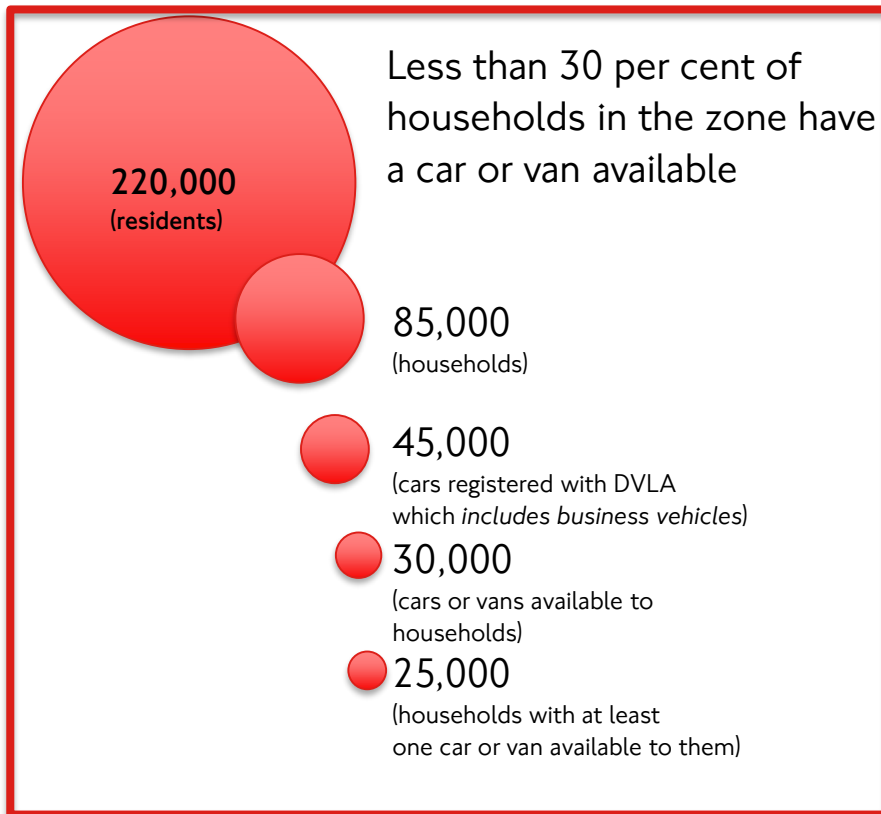


Considerations - *how people are affected*

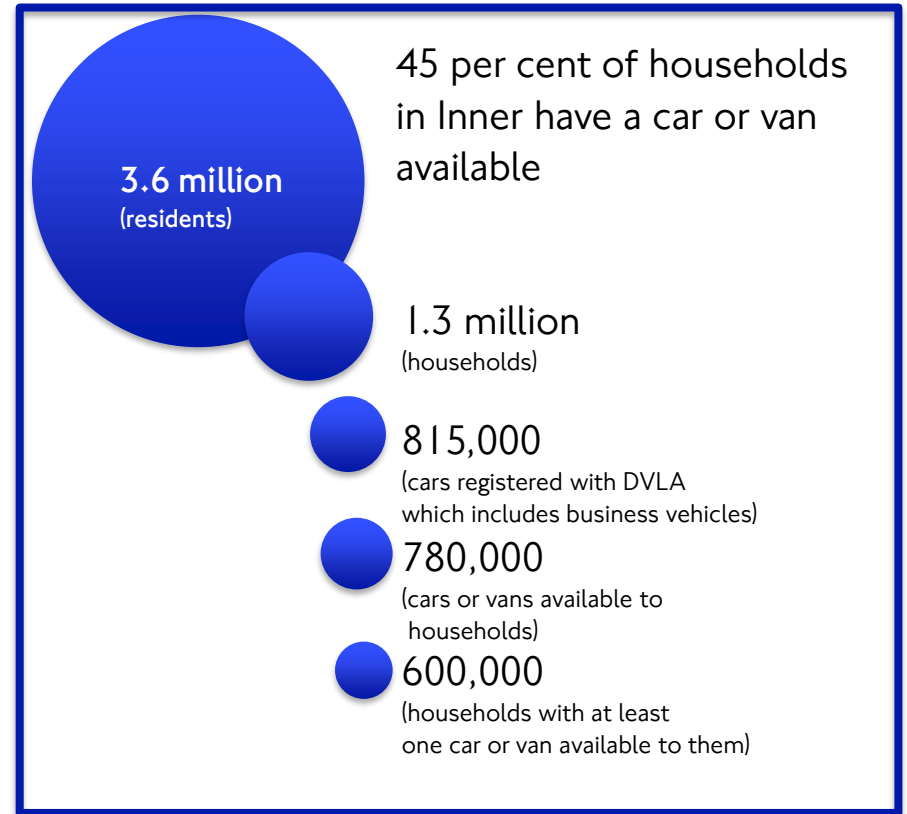


Many more residents

Central ULEZ



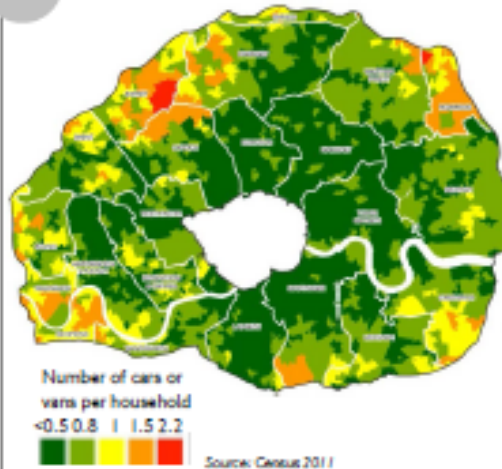
Inner ULEZ



Who is affected and how?

1

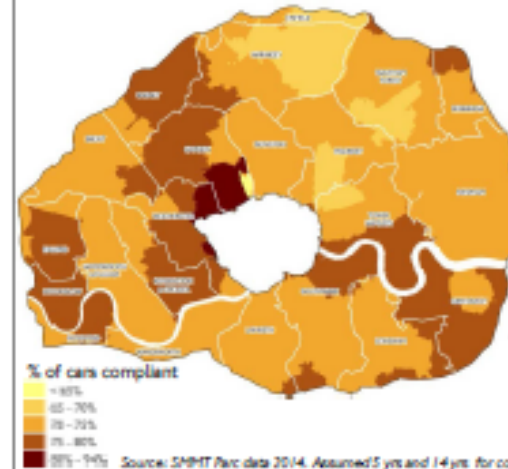
Who has access to cars?



- ~ 1.4 million households in the inner charging zone
- 45% of these have a car or van available
- Average of 0.6 vehicles per household.
- Spatial variability with households further out from the centre having on average 1 or more vehicles per household

2

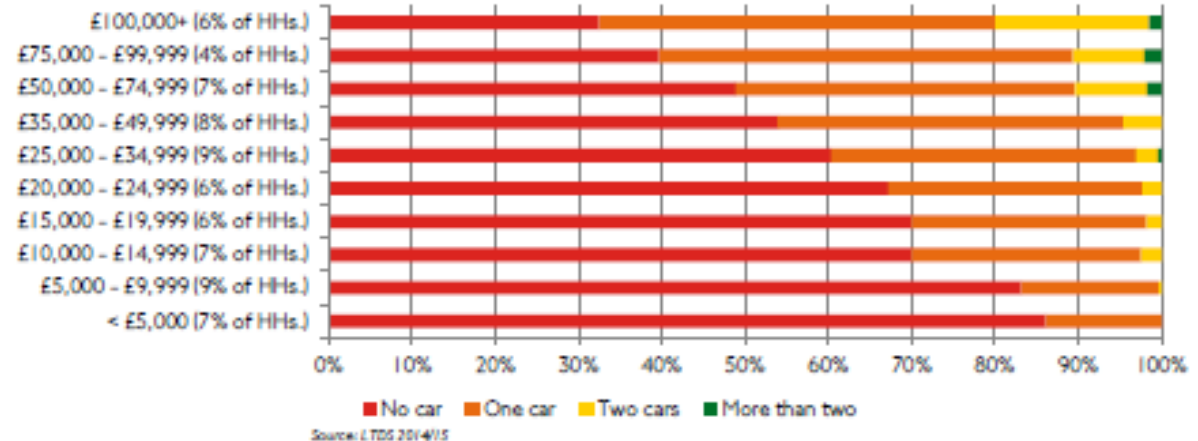
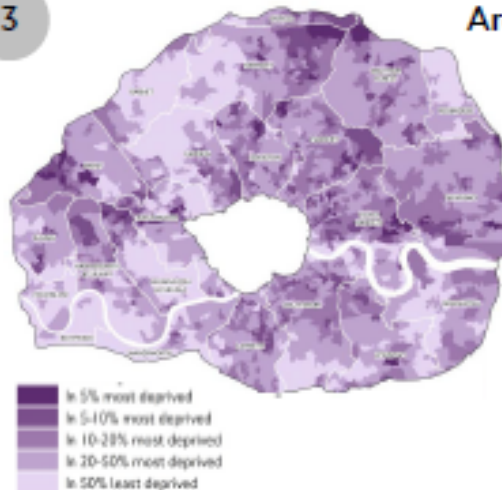
Will these cars be compliant?



- The average age of cars registered in the inner zone is 8 years
- Approximately 75% of the cars registered in the Inner charging zone will be compliant with the ULEZ standards

3

Areas of multiple deprivation, income and car ownership

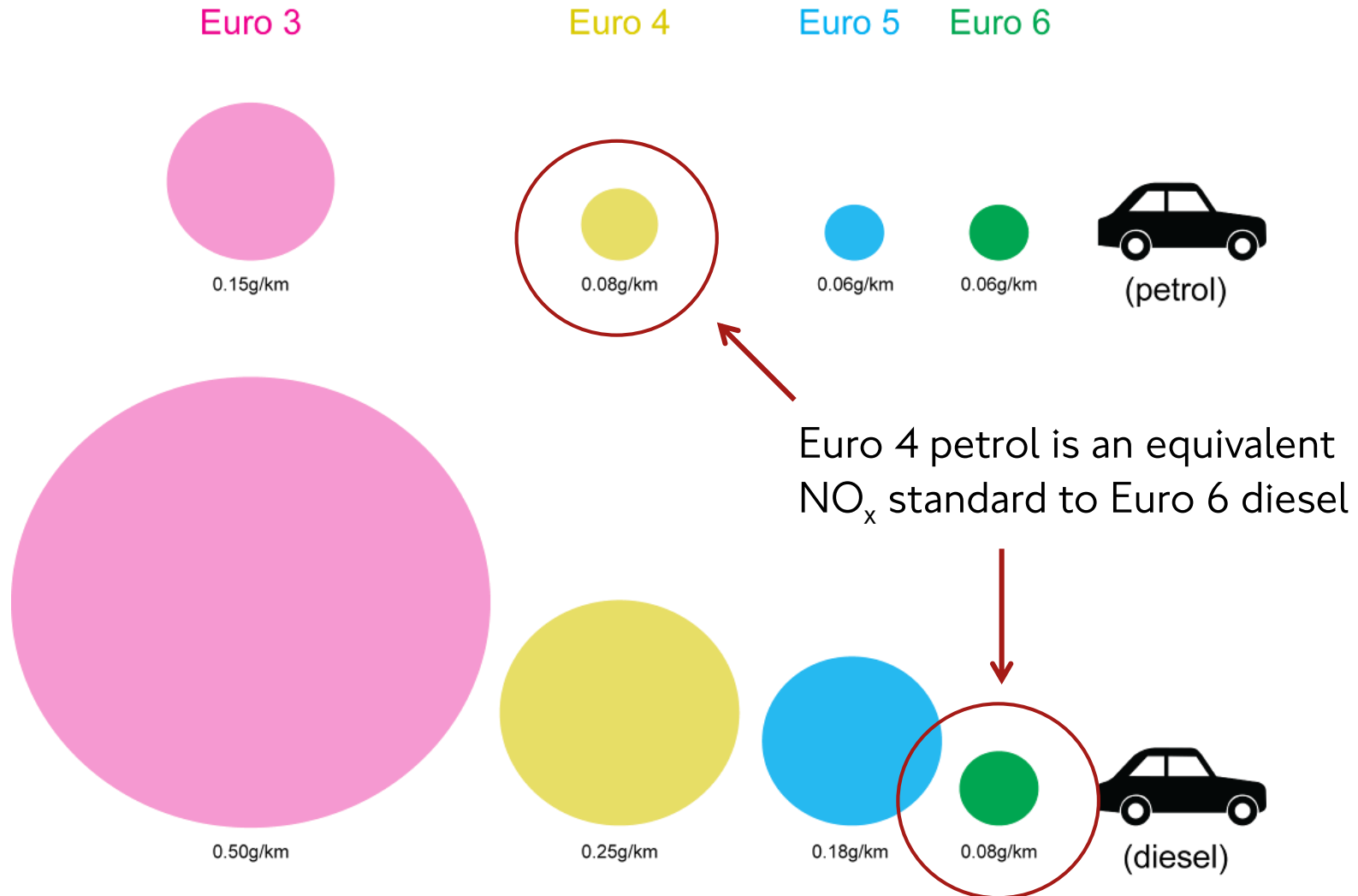


- Multiple deprivation takes into account household income, employment, education, health, crime, barriers to housing / services and living environment. Some of England's most deprived areas are within the inner charging zone (see the two darker shades for 10% most deprived areas in England).
- Typically the areas of higher car ownership in map 1 correspond to areas of least deprivation.
- In addition, data from LTDS shows that car ownership increases with higher household incomes. In households with an average income of less than £10k, only 15% own a car with this increasing to 30% for household earning between £15k and £20k.
- The more deprived areas in the north of the zone also correspond to areas of below average compliance (around 65% to 70%)

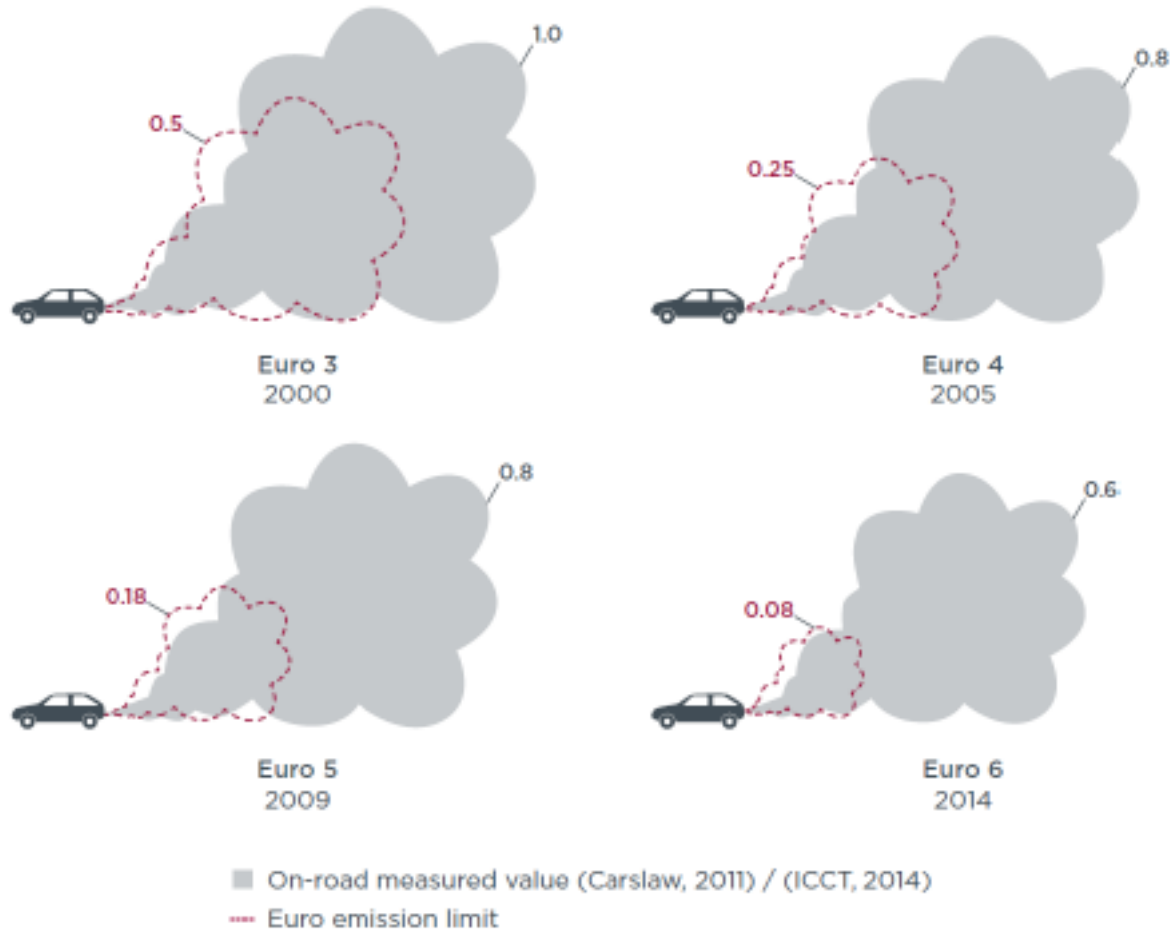
Considerations - *setting the right standard*



Legislative Standards



Real-world performance

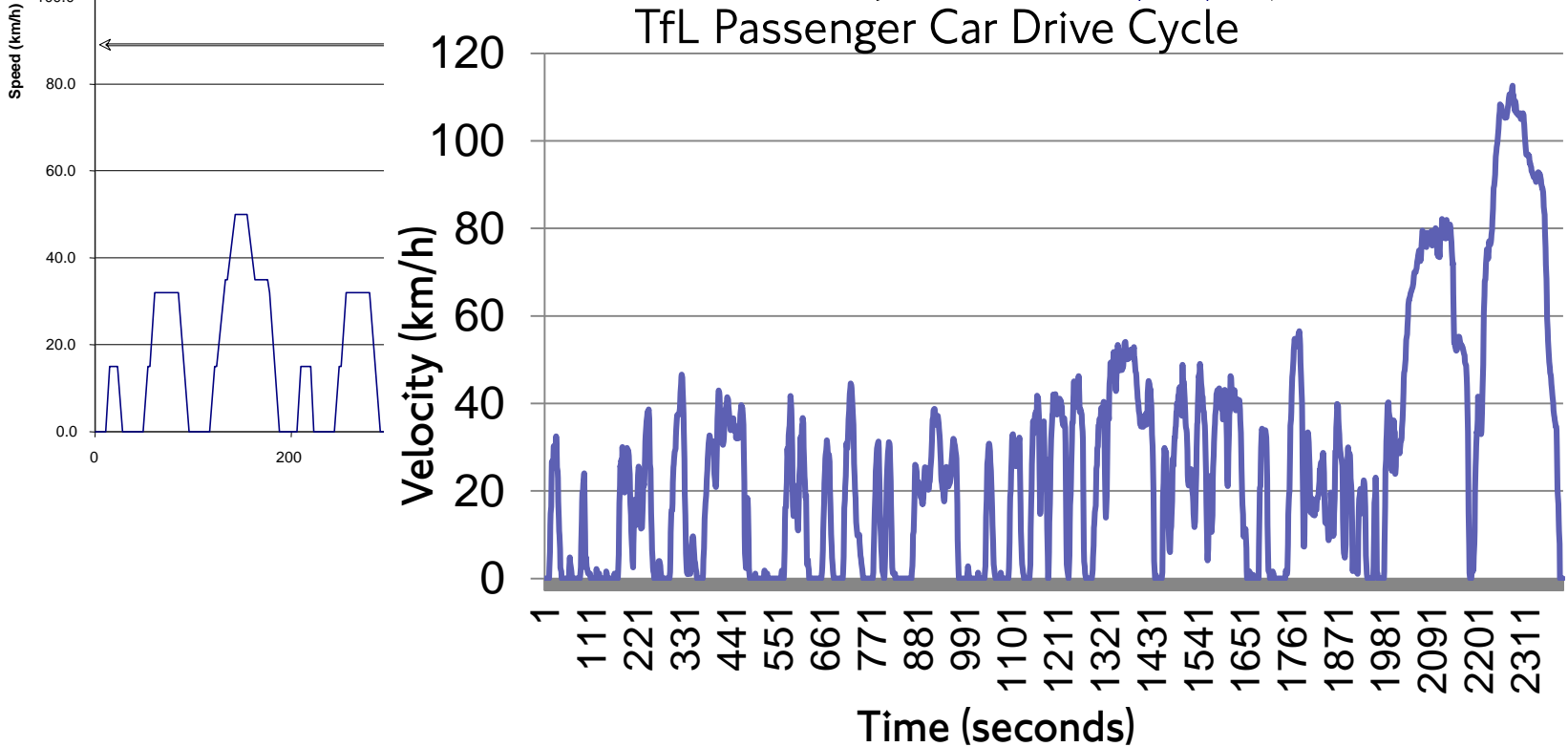
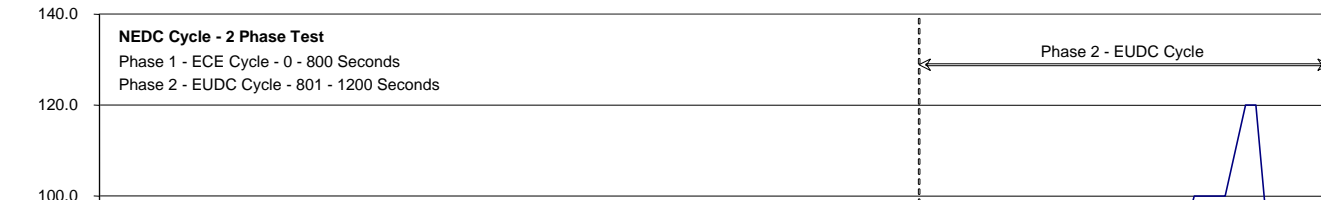


Source: ICCT



TfL's Own Drive Cycle

New European Drive Cycle (NEDC)



TfL Test Data



In-service emissions performance of Euro 6/VI vehicles.

A summary of testing using London drive cycles.

MAYOR OF LONDON



Figure 4 Comparison of London emissions functions with COPERT 4 functions (diesel cars).

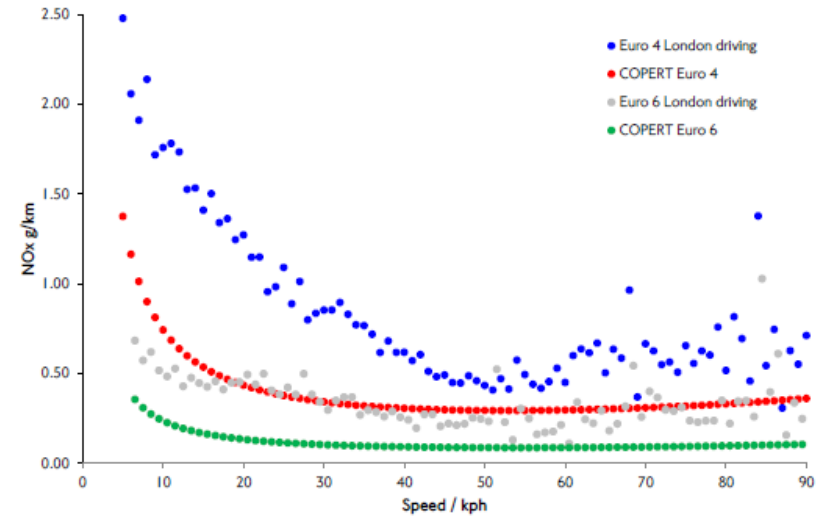
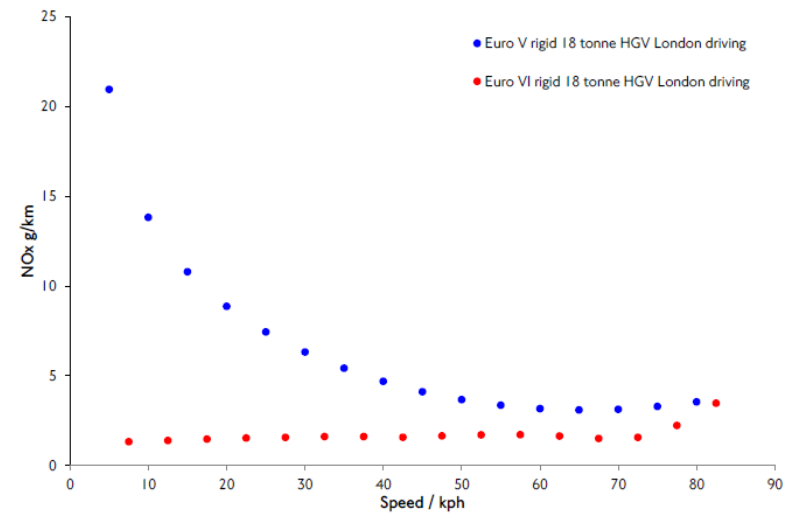


Figure 5 Comparison of Euro V versus Euro VI NO_x emissions over a range of road speeds: 18 tonne rigid HGV 100% payload



Considerations *- setting the right charge level*



How people might respond to the charge

All vehicles in zone

Will meet the emissions requirement

Will not meet the emissions requirement

- Charge has 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

Buy a compliant vehicle

Pay the charge

Change travel behaviour

Divert

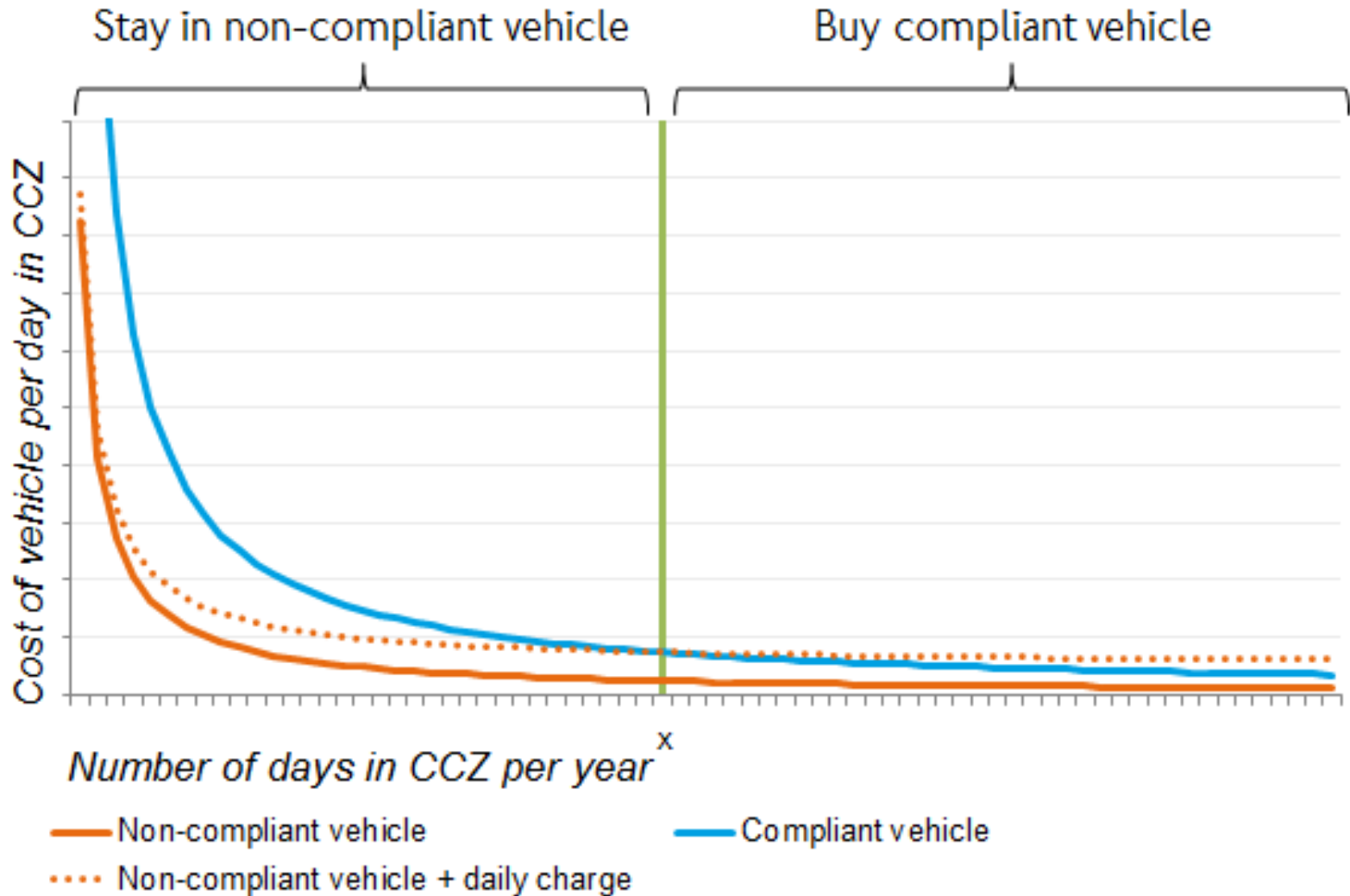
Re-mode

Re-time

Forgo trip



Using Our Camera Data



Freight Management

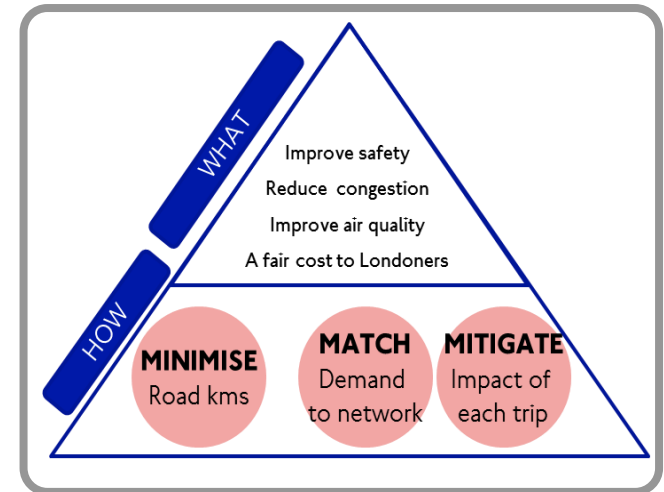


EVERY JOURNEY MATTERS

Freight Policy Needs Support From Across the Public Sector and the Supply Chain

Mitigate the impact of freight trips

- Each delivery in the safest and cleanest vehicle.
- This includes vehicles servicing TfL buildings and public sector projects
- Supporting businesses transition to ULEZ compliant vehicles
- Looking ahead to plug in and alternative fuelled vehicles



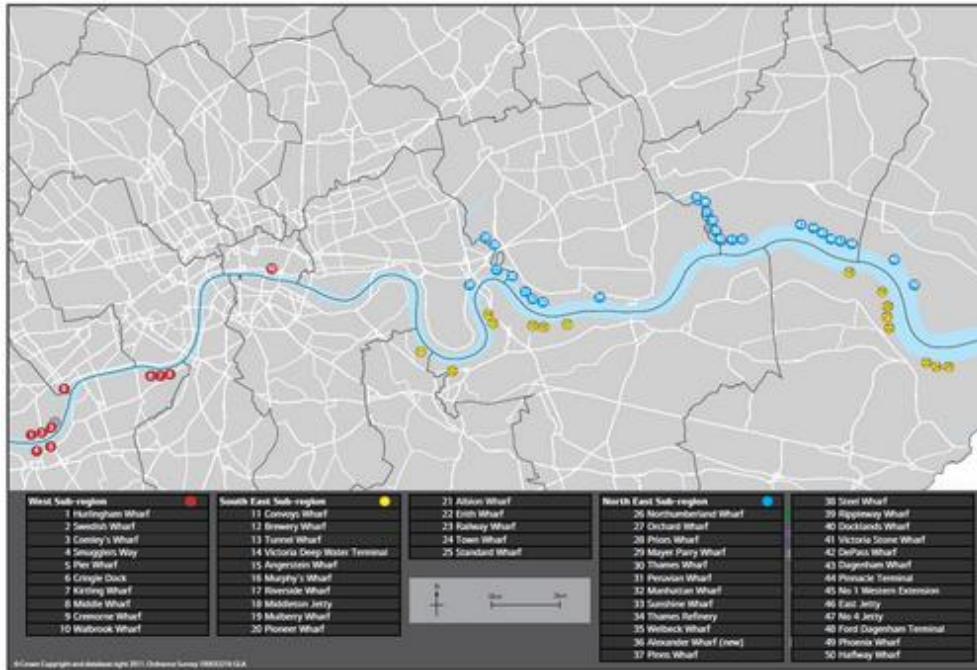
Minimise trips

- Land use planning policy to minimise freight trips
- Encourage more trips by water, rail or bike where practical
- Encourage more consolidation. Many companies already consolidate to save money.
- Restrict or charge for access to the road network to drive change

Match freight demand to network capacity – right time, right route, right place

- Shift freight trips out of peak periods
- Ensure freight uses the right routes and the right delivery points

Case Studies



LAMILO
sustainable city logistics

