

# BUDGETING MOBILITY FOR A FAIRER TRANSFORMATION

3c. Just Transition “Digital tools to support policy and practice” session

**Alexandra Gomes, LSE Cities**

London School of Economics

2022 POLIS Conference, Brussels, 30 November 2022

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Information on the project @ <https://www.lse.ac.uk/Cities/research/cities-environment-and-climate-change/MyFairShare>

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[www.polisnetwork.eu](http://www.polisnetwork.eu) #POLIS2022

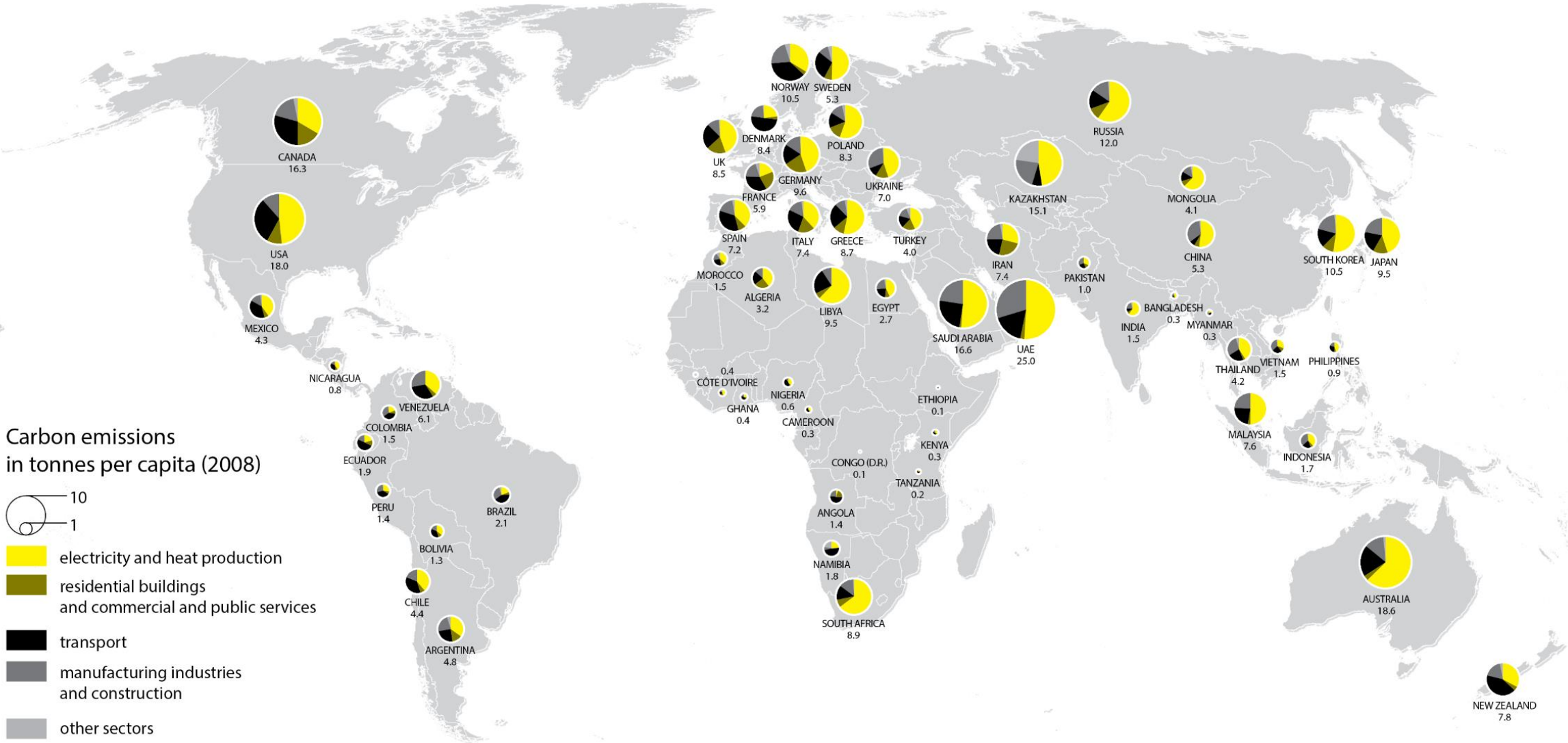


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Photo@Alexandra Gomes

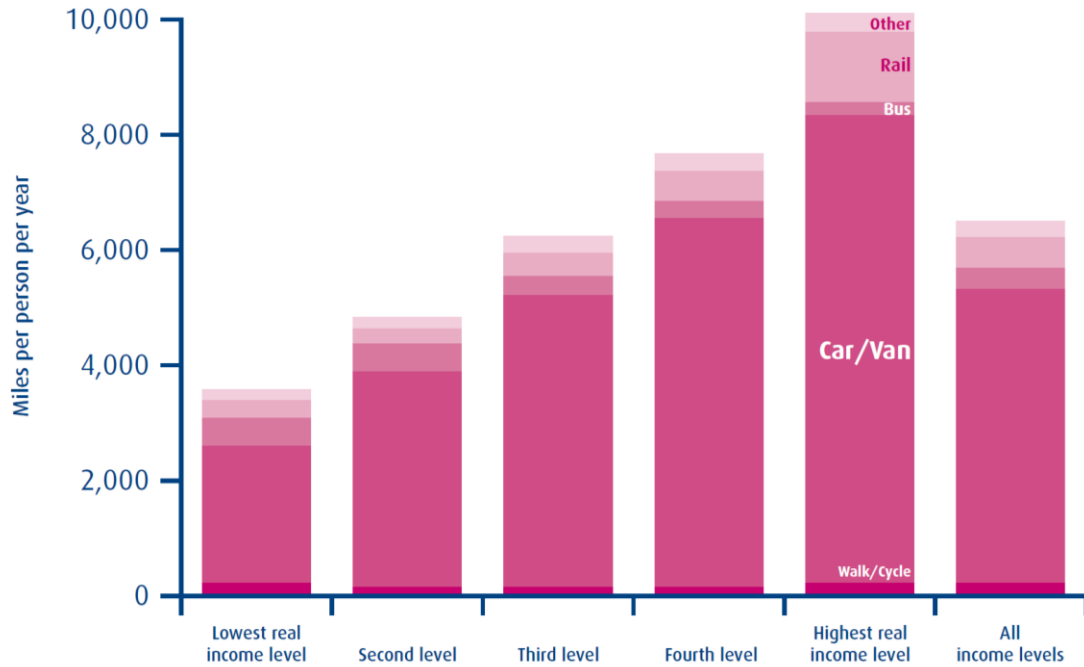
# Where we pollute



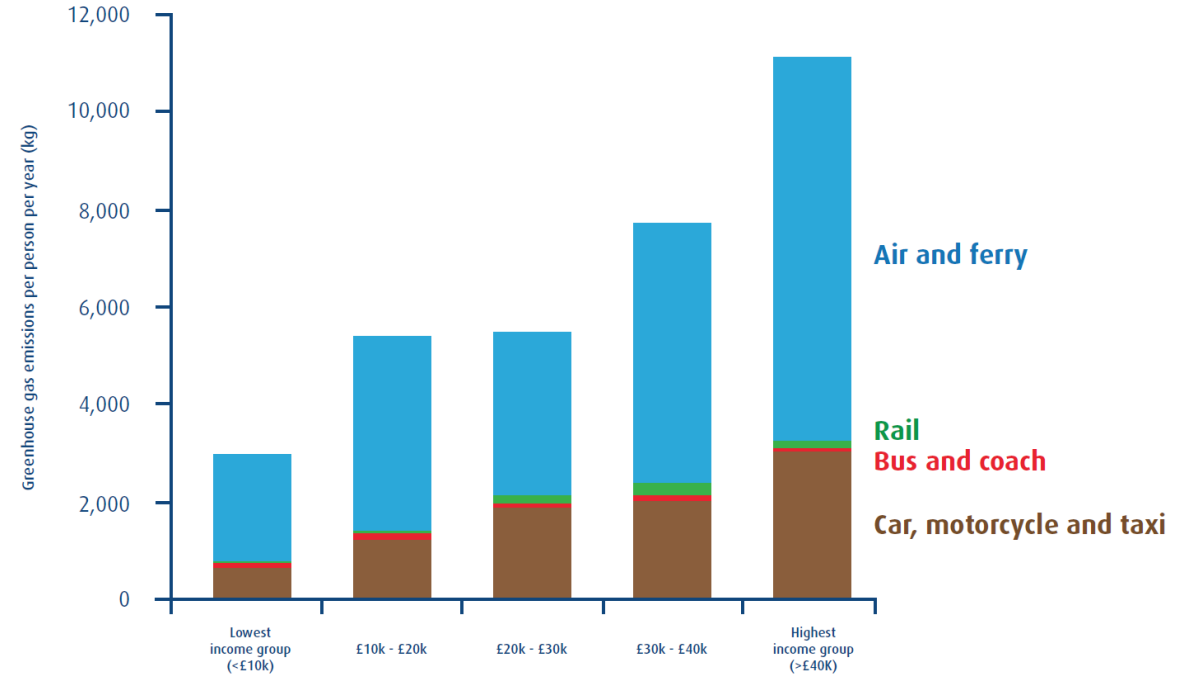
Urban areas are home to 75% of EU citizens

Globally, urban areas consume generate more than 70% of global greenhouse gas emissions (EC EU 2022)

Distance travelled by income quintile (National travel survey)



UK Greenhouse gas emission from personal travel by income group



## Important considerations

Wants vs needs & Choice vs necessity

Fairness of an existing situation vs fairness of an intervention

Fair distribution of benefits and burdens:

- (i) minimum standards (floors) for accessing opportunities;
- (ii) carbon emissions and space consumption have clearly defined maximums (ceilings).

# Typical issues of Equity, Fairness and Justice in Transport

Source: expanded based on Banister et al 2019

## Traditional questions:

- Who pays the costs of providing transport?
- What are the basic needs for public transport provision? (e.g. SDG 11.2)

## Politics of transport perspectives

- Travel as freedom & basic right vs mobility needs and trip purposes (i.e. access to services and opportunities)

## Discrimination (old, young, gender, income groups, ethnicity, etc.)

## Impact on future generations

## Fair consequences of decisions: e.g. trade-off between quality of housing vs access

## Less Travelled are 'Travelled-upon'

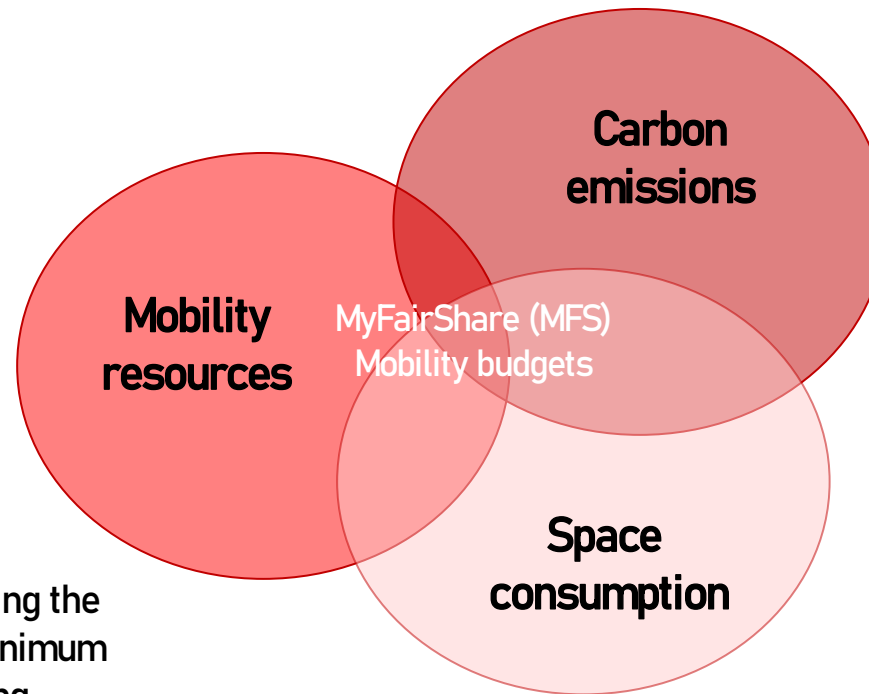
# How do we look at fairness and distribution

## Mobility resources:

- ability to travel at certain speeds and over certain distances
- play a fundamental role in providing access to opportunities

## MFS equity concerns linked to:

- mobility resources - considering the definition and guarantee of minimum standards (floors) for accessing opportunities
- carbon emissions and space consumption - defined maximums (ceilings)



## Environmental impact (carbon emissions):

- politically defined and scientifically underpinned maximum levels
- rights represent a “positive” benefit to individuals often translated to the mobility resources: cheap, readily available, comfortable but carbon intense motorised mobility (ie, conventional car use)

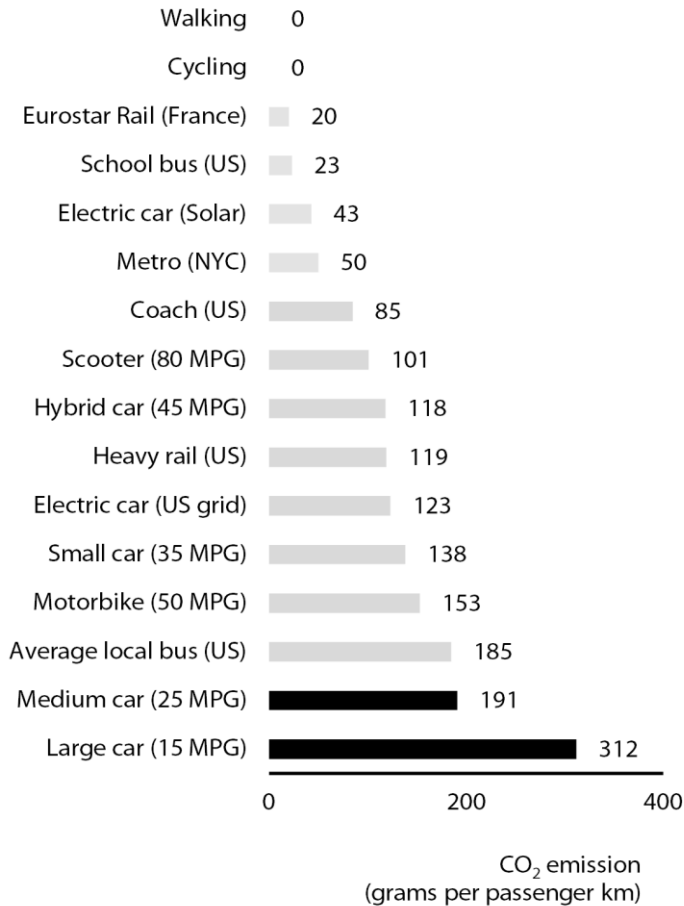
## Space consumption:

- has a clearly defined, physical limit
- often translated to mobility resources such as convenient, comfortable, and spacious individualised transport (again, mainly car use).

# ENVIRONMENTAL IMPACT

Can a carbon budget be accommodated as part of a fair road pricing instrument for London?

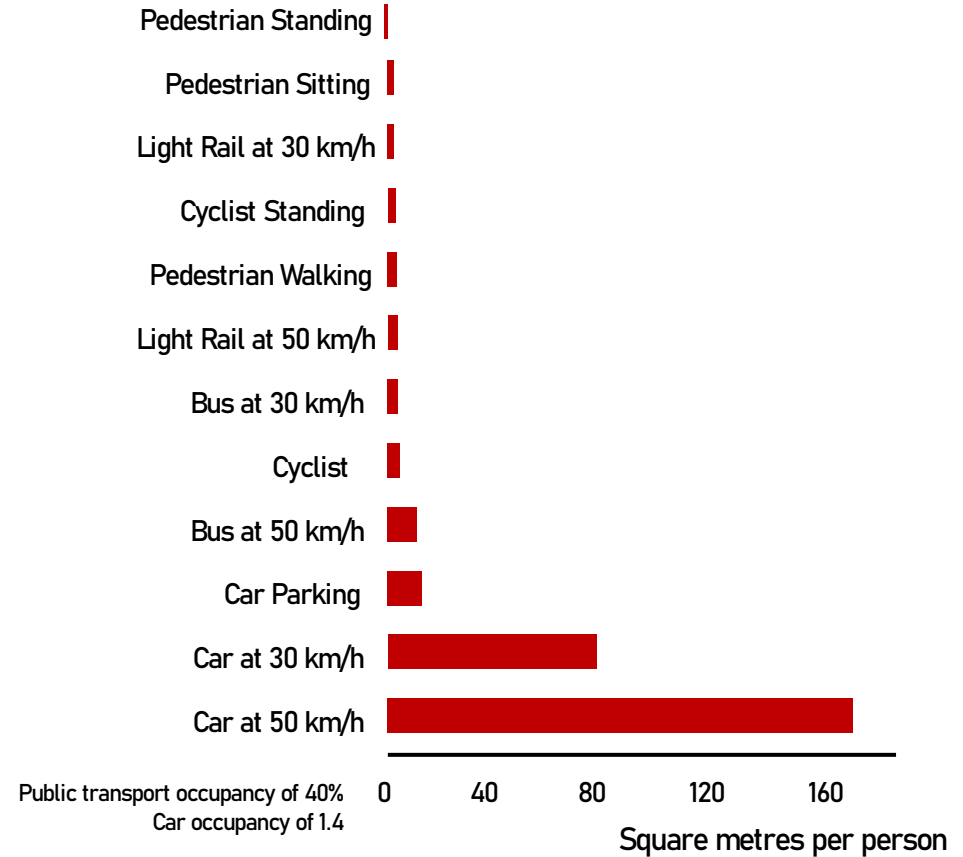
Which group and location specific mobility needs should be considered?



Source: based on STF 2014

# SPACE CONSUMPTION

Context specific daily GHGE space consumption limits?



Source: updated based on Rode et al 2000

# DISTRIBUTIVE JUSTICE IN TRANSPORT & MOBILITY

Source: expanded based on Lucas et al 2019

## 1. Benefits and Burdens

### Benefits

- Access
- Pleasure
- Status
- [...]

### Burdens

- Carbon emissions
- Space consumption
- Accidents risk
- Pollution exposure
- [...]

## 2. Social characteristics

- Home location
- Income
- Age
- Gender
- Ethnicity
- Physical and mental impairment
- Level of car access
- [...]

## 3. Distribution principle

### End State

(how benefits & burdens are distributed)

- Everyone the same (equality)
- Maximum gap standard or Gini threshold
- Minimum standard (accessibility levels)
- Basic needs based (specific knowledge)

### Intervention oriented principles

- Equalisation
- No one worse off (Pareto improvement)
- Trading (pre-established ceilings for carbon emissions )

# London

The Mayor of London has committed to Net zero by 2030. Only 39% of the London boroughs have adopted a target of net zero emissions by 2030.

- The total net carbon account compatible with a 2030 Net Zero scenario is 14 MtCO<sub>2</sub>e for London - a value that represents approx. 1.5% of the UK's budget in a city that has 14% of the UK's total population.
- Transport represented around 5.5 MtCO<sub>2</sub>e, 31% of London's 2028-2032 budget.
- Circa 45.5% of Londoners use private motorised cars (2020).

## **Personal transport mobility budget:**

2030 transport budget/Population (e.g. 2.4 MtCO<sub>2</sub>e/9.5M pers)

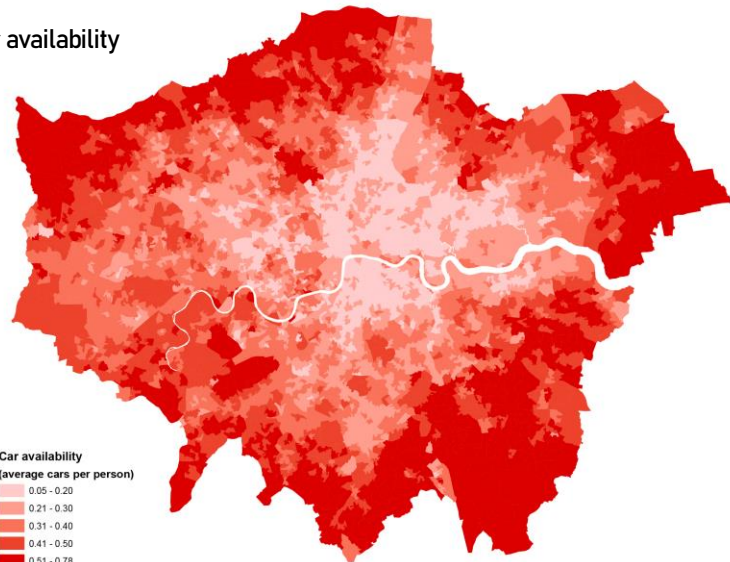
## **Spatial transport mobility budget**

2030 transport budget/Admin area (e.g. 2.4 MtCO<sub>2</sub>e/1,600 km<sup>2</sup>)

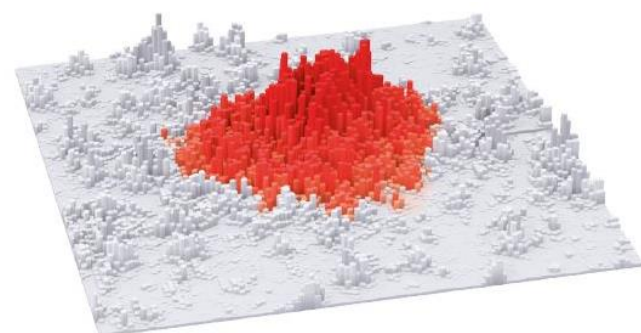
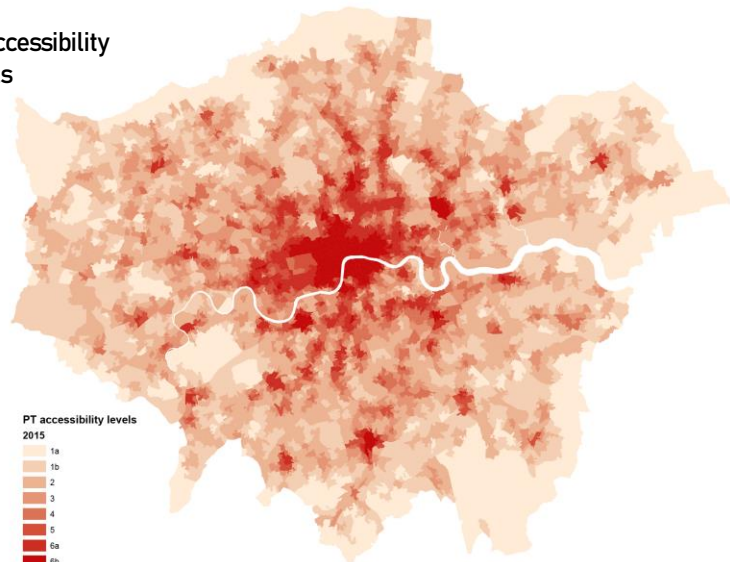




Car availability



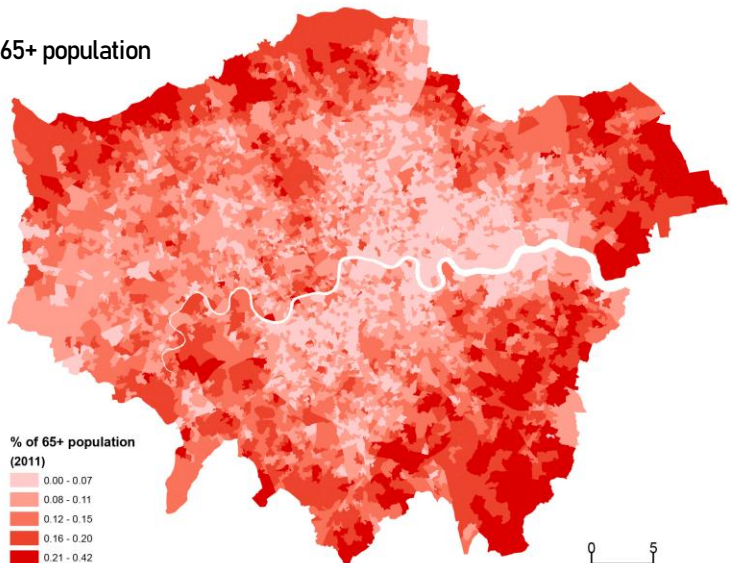
PT accessibility levels



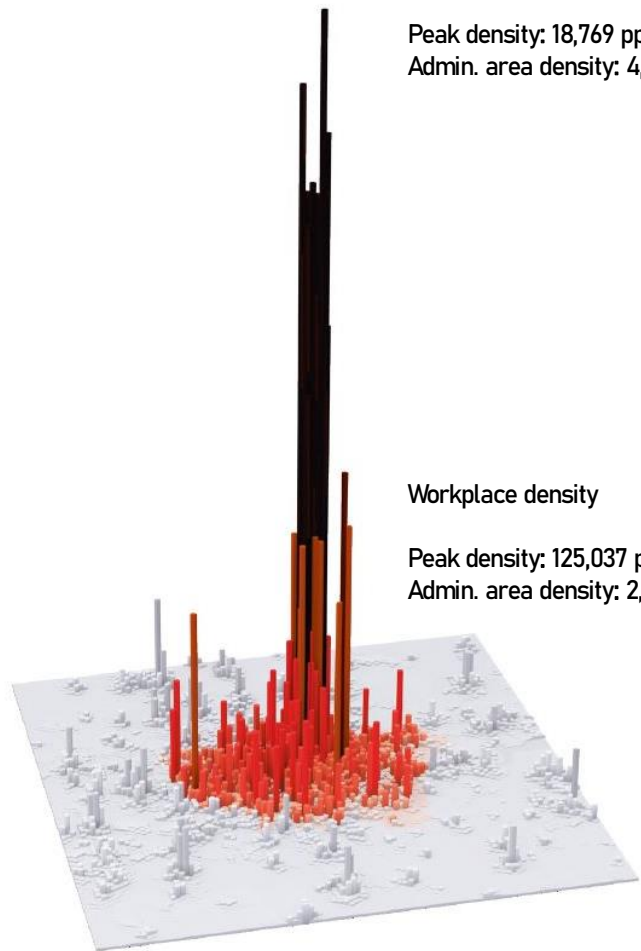
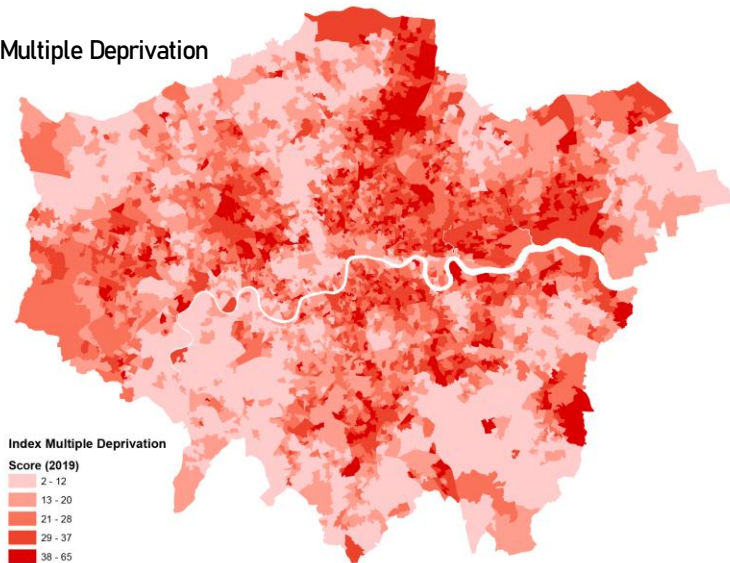
Residential density

Peak density: 18,769 ppmk2  
Admin. area density: 4,697 pp/km2

% 65+ population



Index Multiple Deprivation

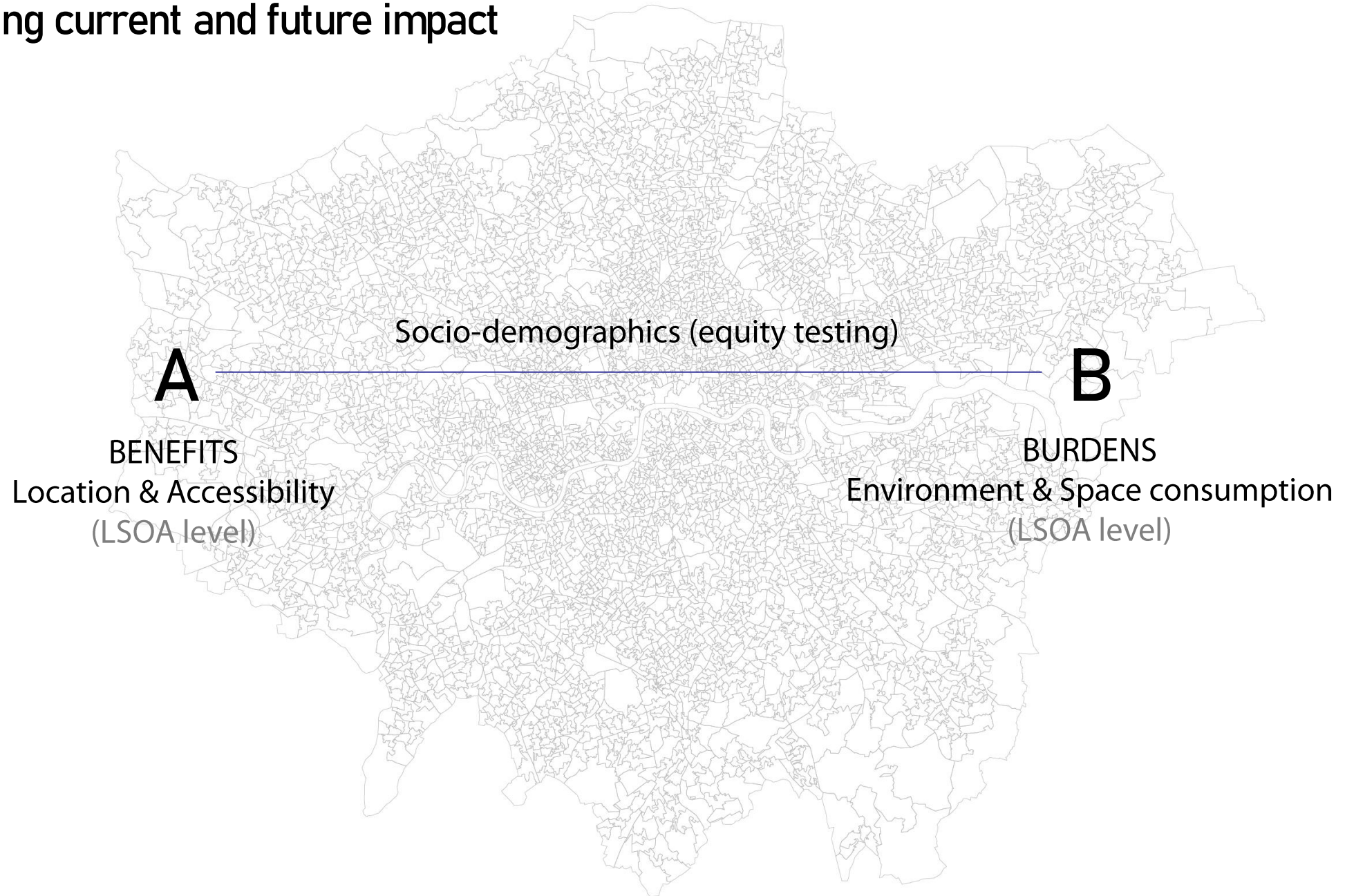


Workplace density

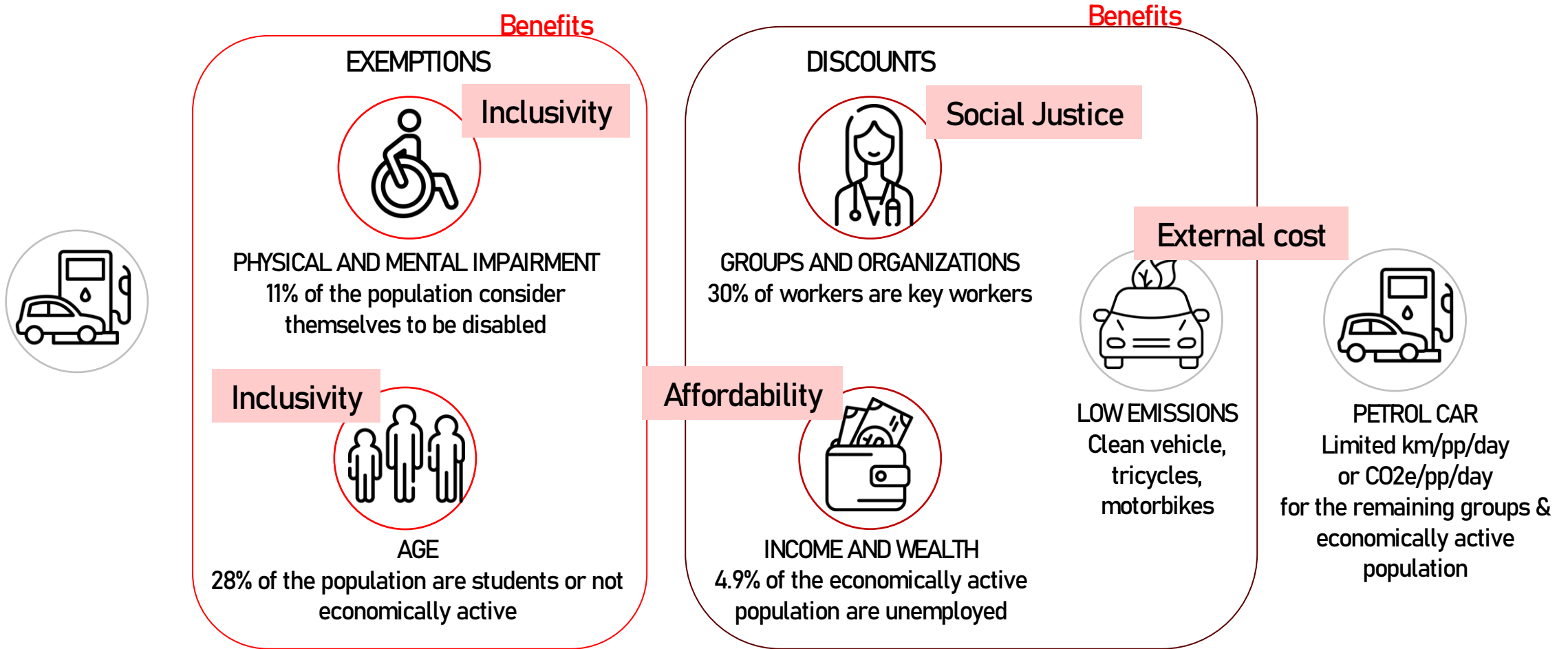
Peak density: 125,037 ppmk2  
Admin. area density: 2,541 pp/km2



# Measuring current and future impact



# Environmental impact (type of equity)



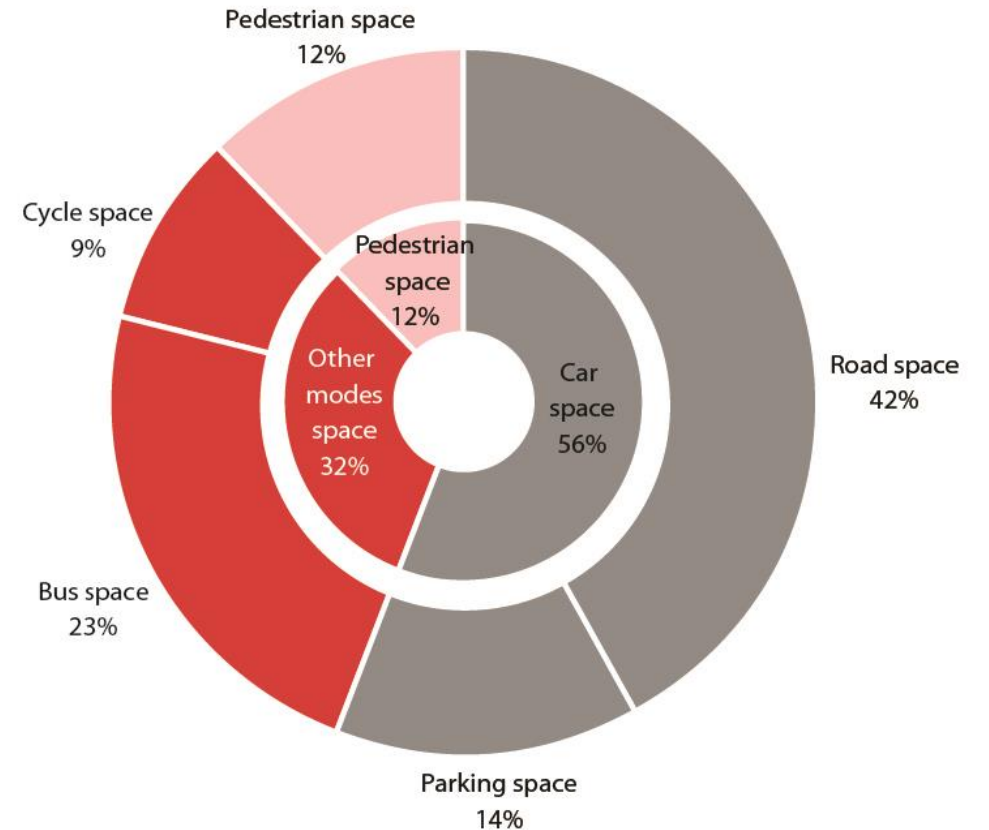
Personal mobility budgets as a foundation for carbon reduction  
Identification of disadvantaged groups & definition of criteria, measures and benefits

# Space consumption (type of equity)

London street map (sample)



% of space occupied per specific mode (example)



How much space is occupied by each mode? How can we measure space consumption over time?  
How much traffic moves in each section and for how long? How much space do they use/per day?

# MOBILITY RESOURCES & BUDGETS

the resources enabling the movement of people & the allocation of movement options to people w/equity concerns

## Individual Mobility Resources

- enabled by mobility resources by the state (PT & roads)
- enabled by individual financial resources to mobility
- Abilities (travel at speed & distances)
- indirectly, individually and flexibly determining mobility budgets
- [...]

## Individual Mobility Budgets under sufficiency

- pre-determined ceiling of mobility related carbon emissions with a maximum number of tonnes per year
- pre-determined ceiling of mobility with a maximum number of km per year

(w/minimum standards (floors) for accessing opportunities)



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Part of the pan-European research project <https://www.myfairshare.eu/>  
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