

Sustainable Transport in a Carbon Constrained World

Malcolm Shepherd
Chief Executive

what do we do?



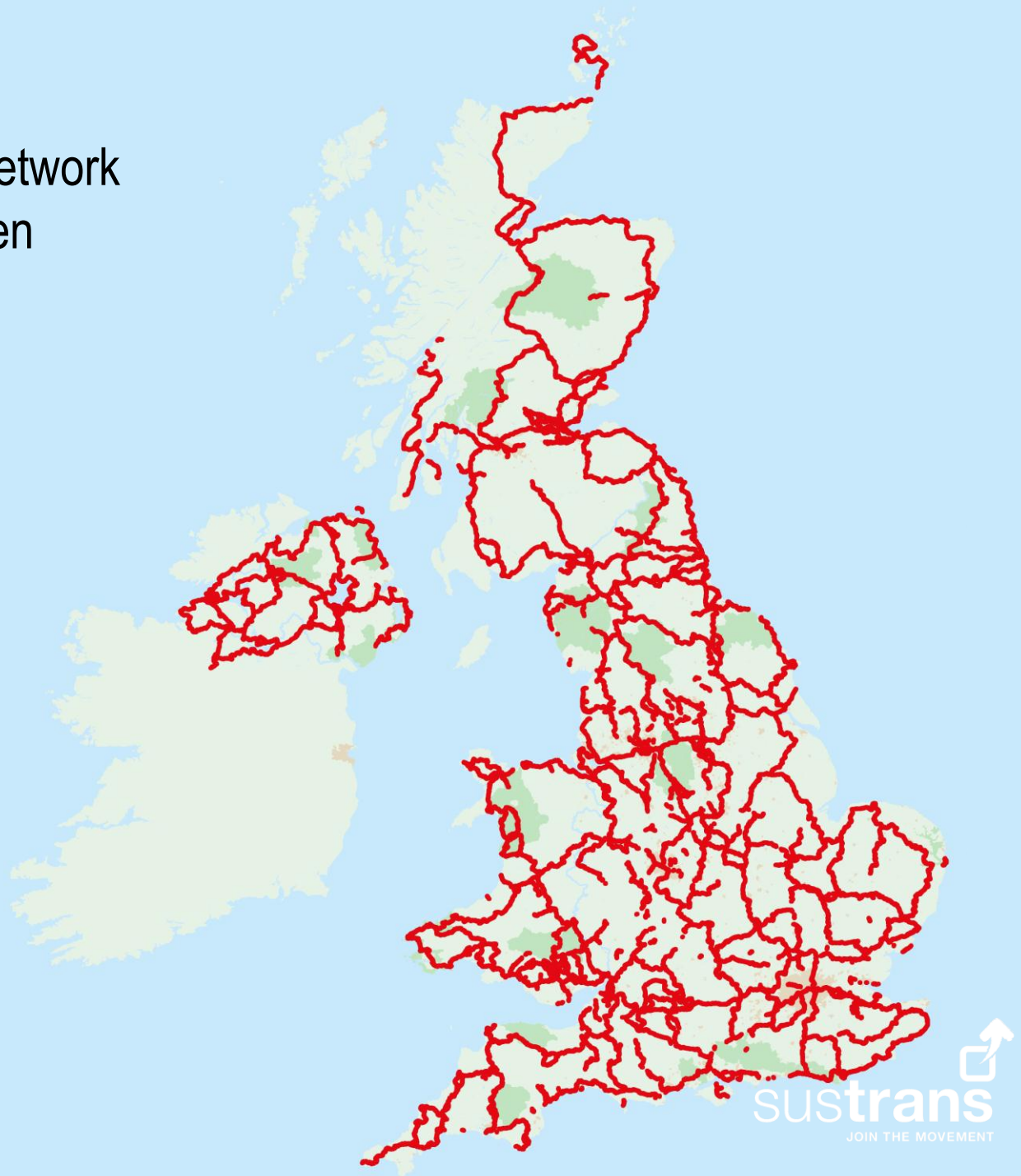
we create the best public space we can focused on
access not mobility

we provide information and work directly with
people to bring about behaviour change

we influence government policy

2011

— The National Cycle Network
over 13,000 miles open



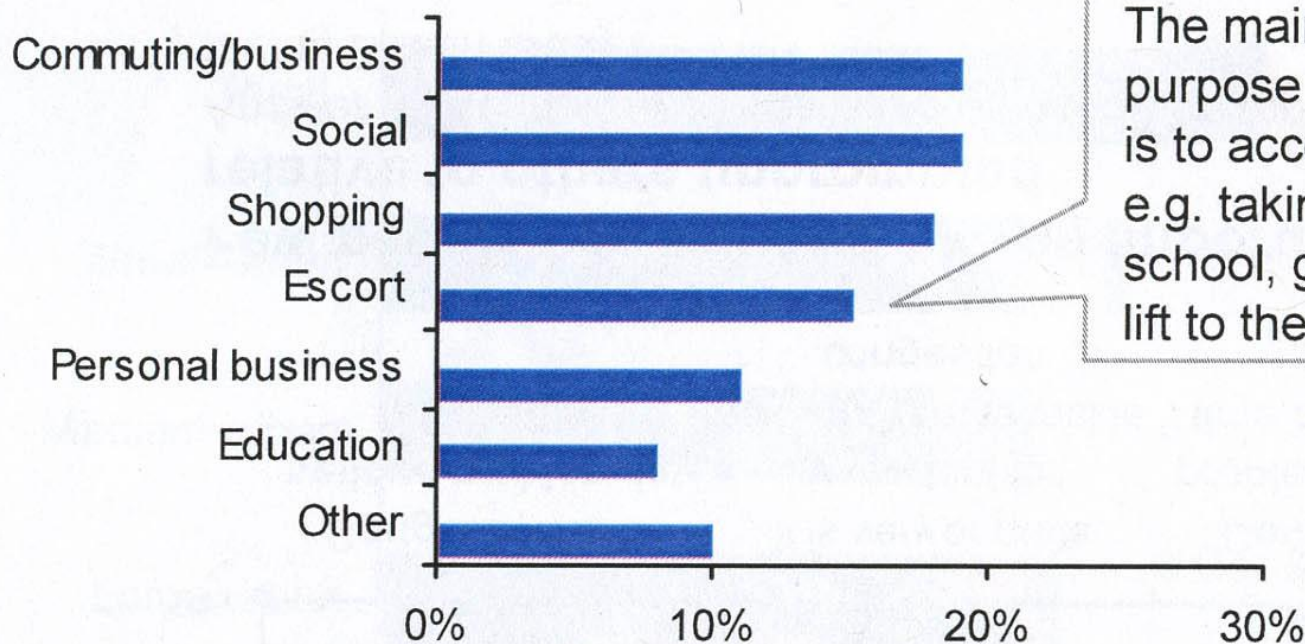
Sustainable Transport in a Carbon Constrained World

- How and why people travel
- The consequences of how we choose to travel
- What needs to change
 - and how do we achieve that change?

Journey Purpose

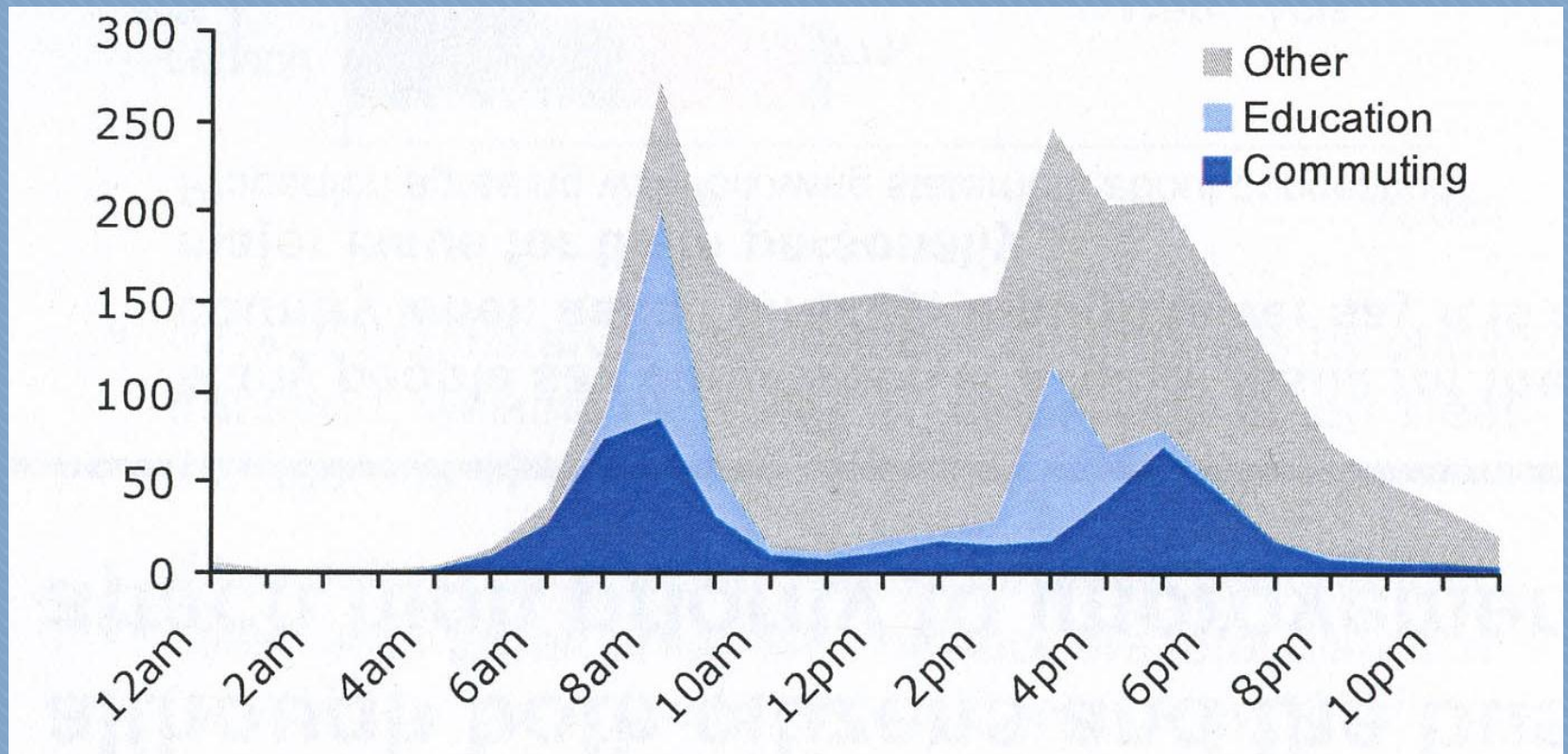
Most travel takes place in order to undertake other activities (a “derived demand”)¹

Per cent of all trips

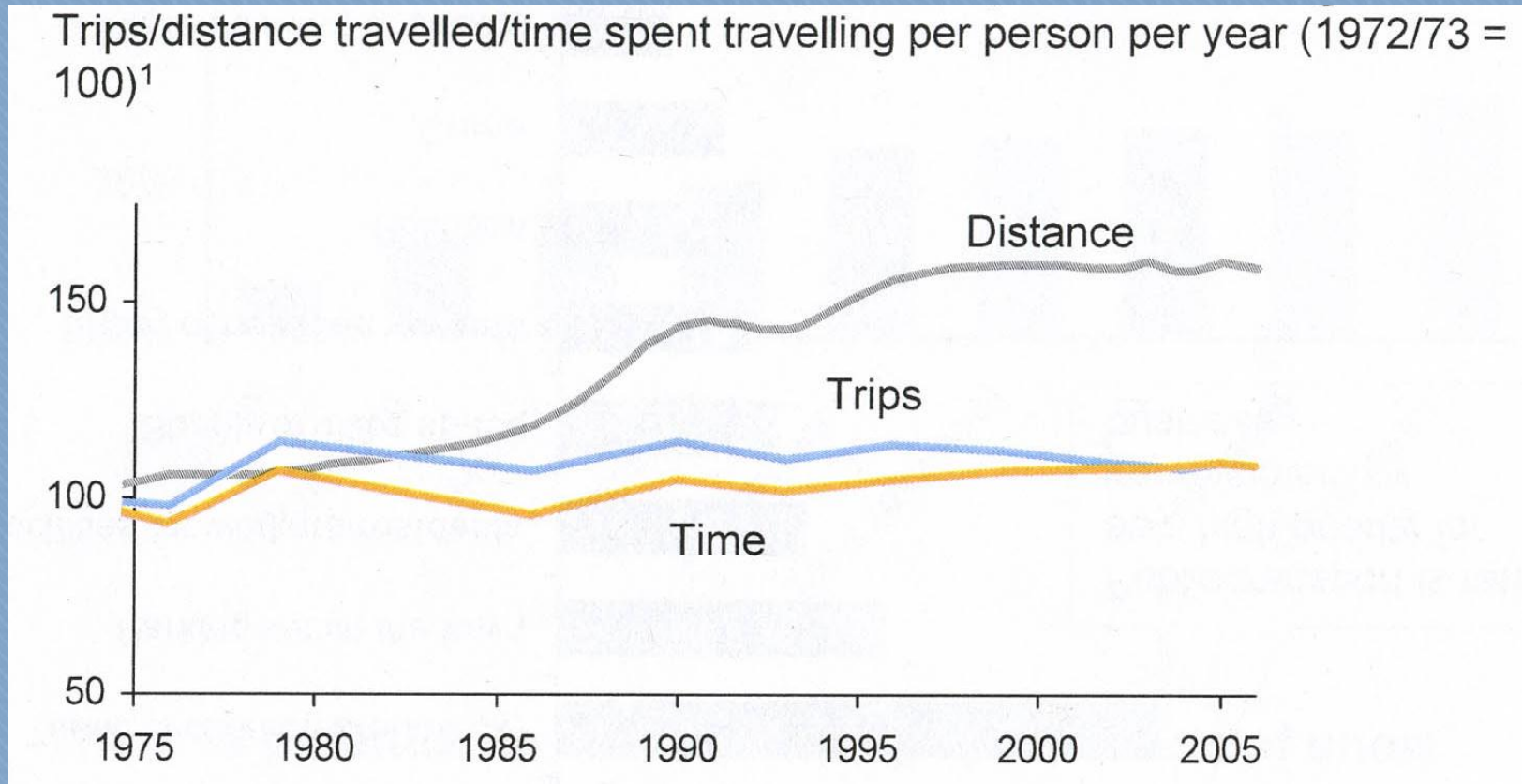


The main journey purpose of 'escort' travel is to accompany others e.g. taking children to school, giving partner a lift to the shops etc.

Our Journeys are concentrated around 2 peaks in the day



Improvements in transport have allowed people to make longer trips without increasing time spent travelling



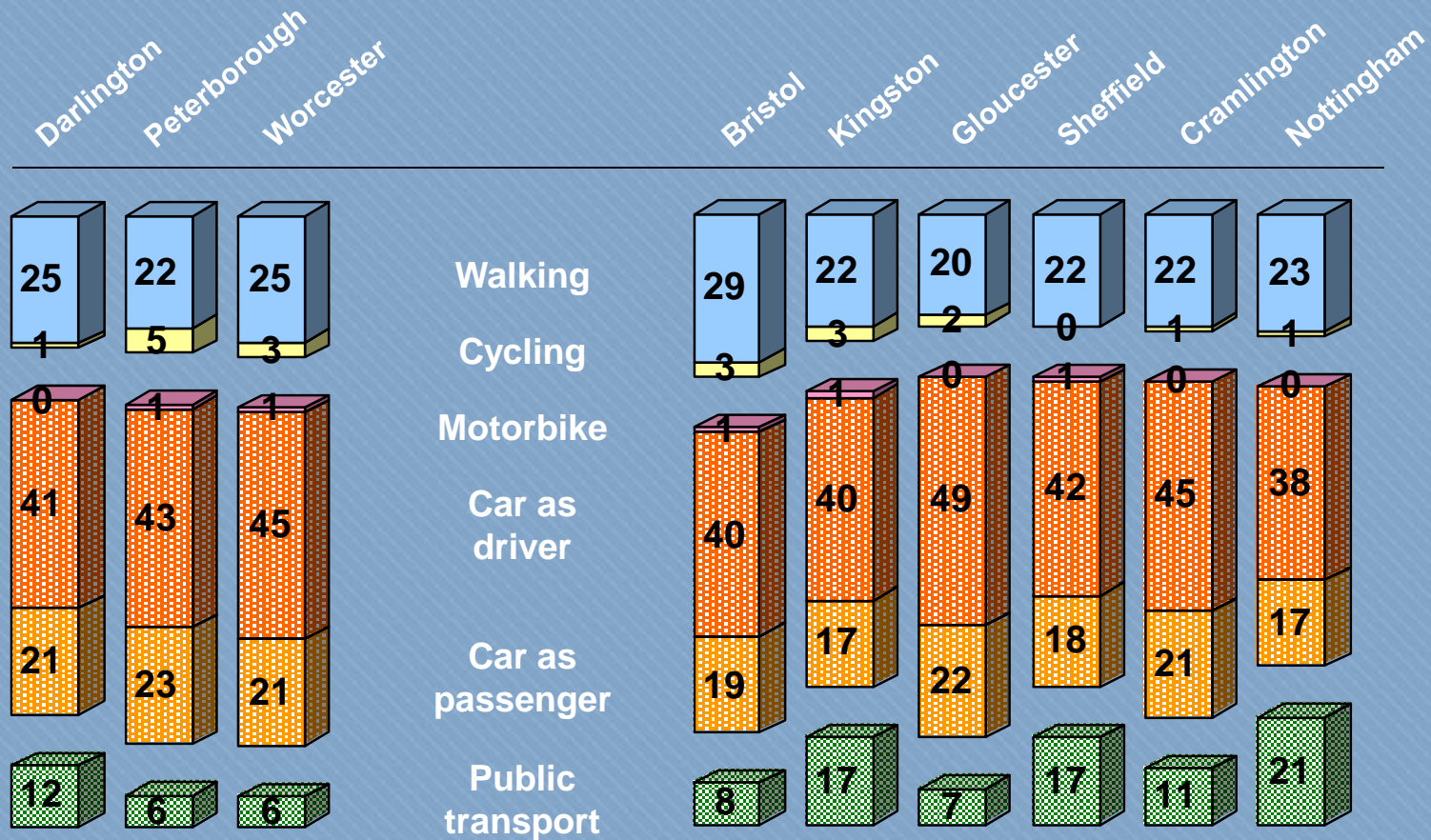
Constants in travel behaviour

consistent over decades, and across developed world

Daily mobility	On average, people make three trips per day, spending one hour travelling
Activities	Only one in five trips is work-related
Spatial orientation	Five out of six trips begin or end at home
Car trips	10% are not further than 1km, 30% are not further than 3km and 50% are not further than 5km

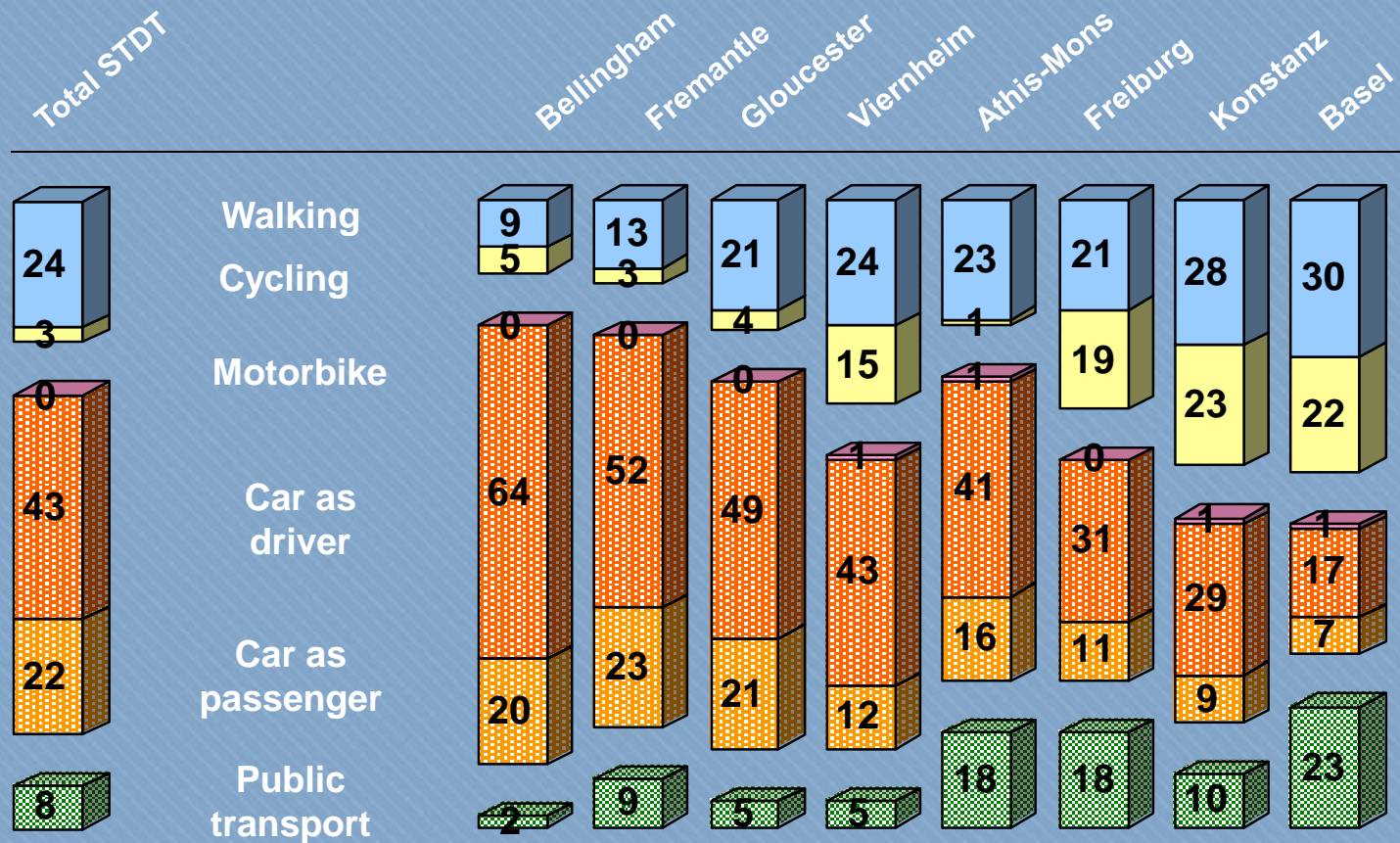
Mode share

% of trips per person in UK towns and cities

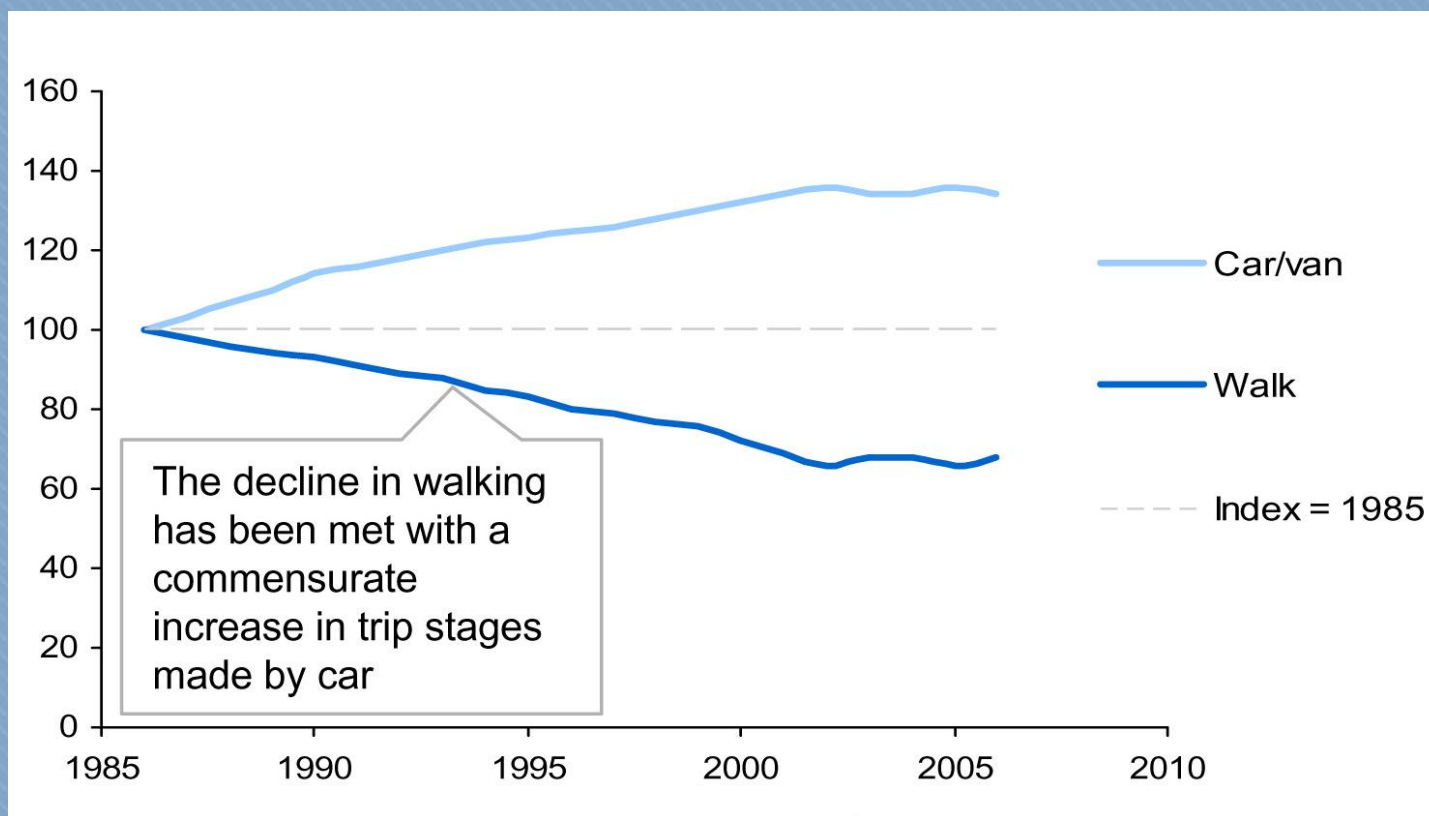


Mode share

% of trips per person internationally

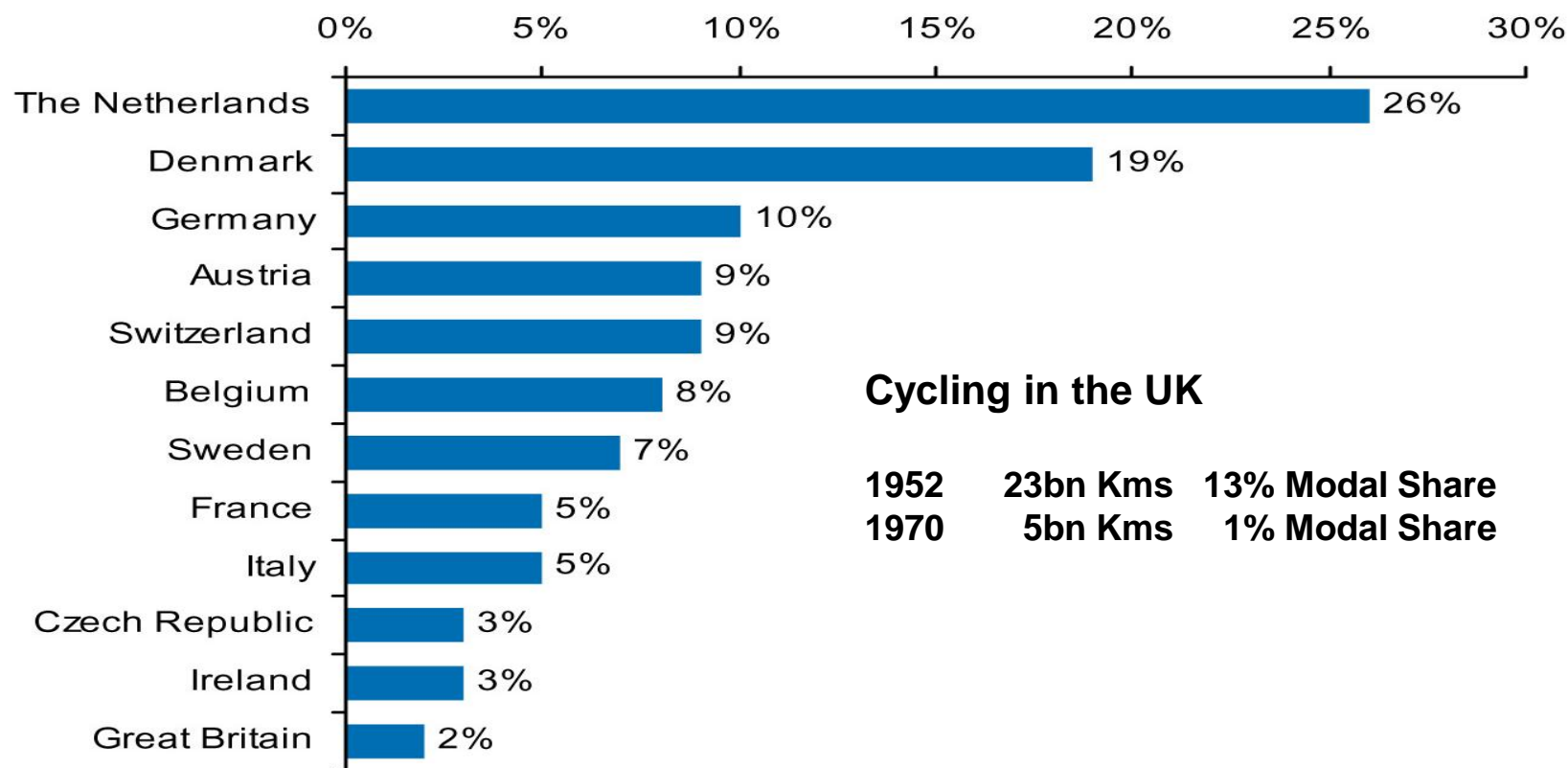


Comparison of walking & car trips



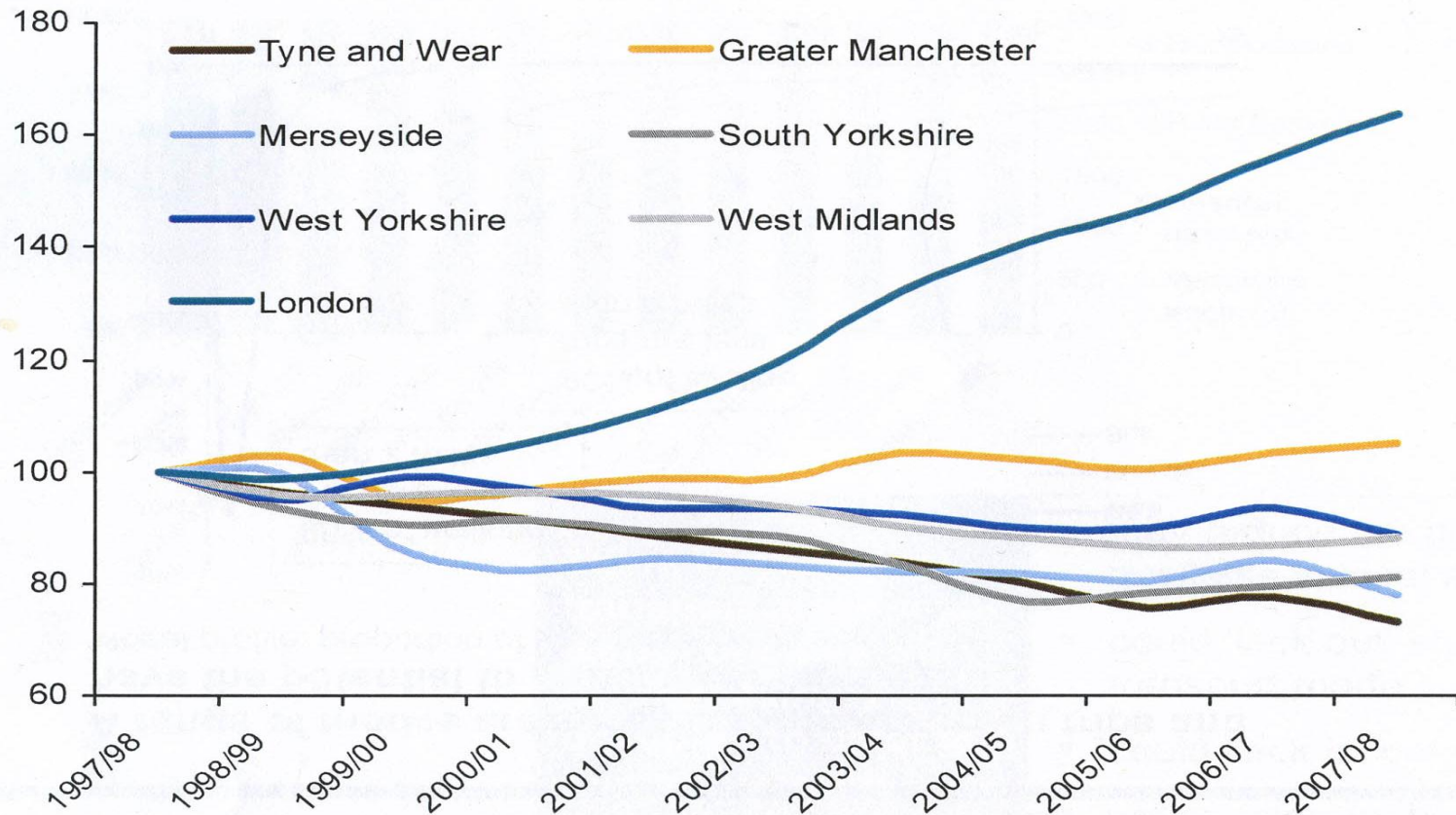
In comparison to Great Britain, some other European countries have a much higher proportion of trips made by bicycle

Estimated share of journeys (trips) made by bicycle

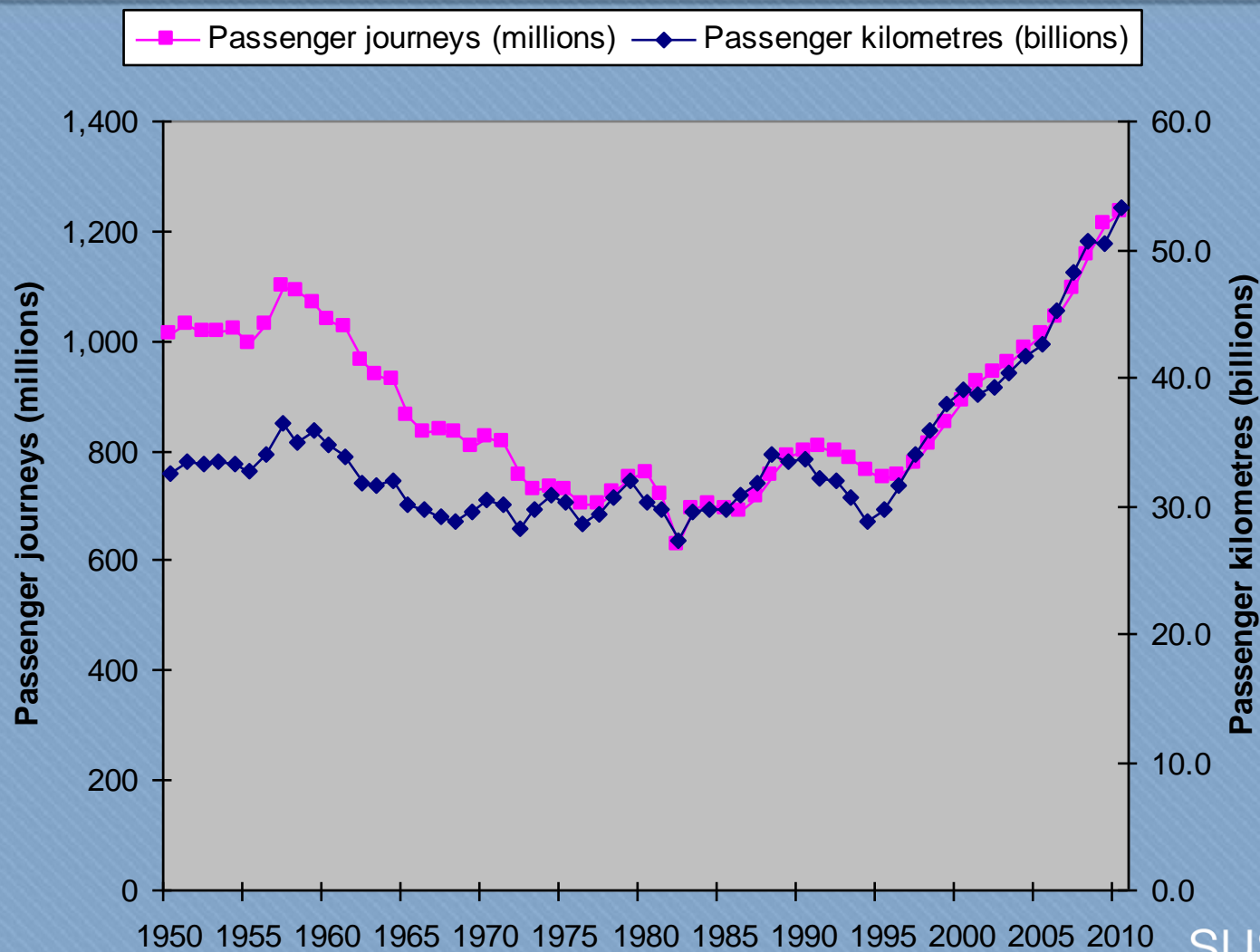


Bus use outside London and Manchester has continued to decline

Bus passenger journeys by PTE area (1997/98 = 100)

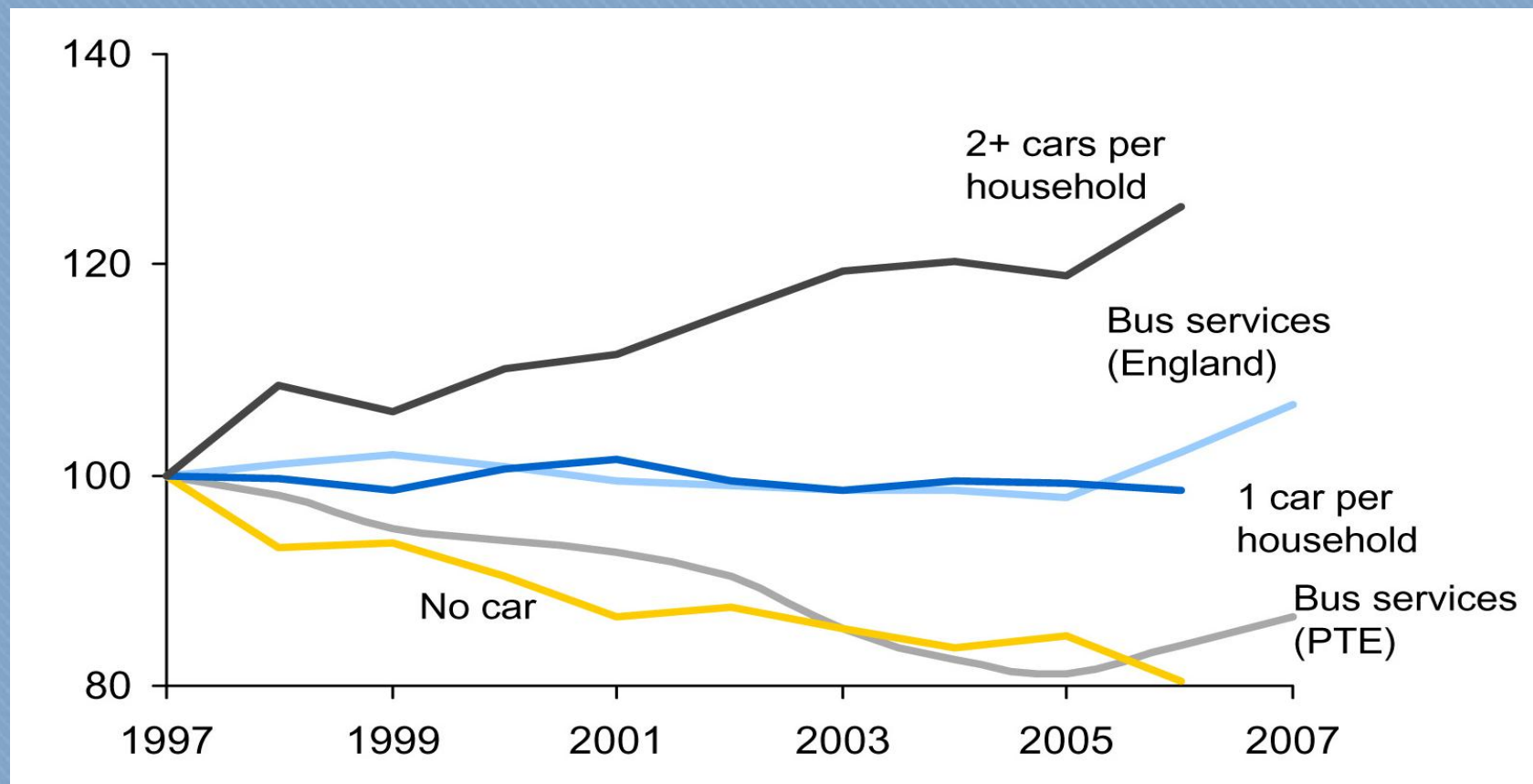


Railway passenger kilometres and journeys



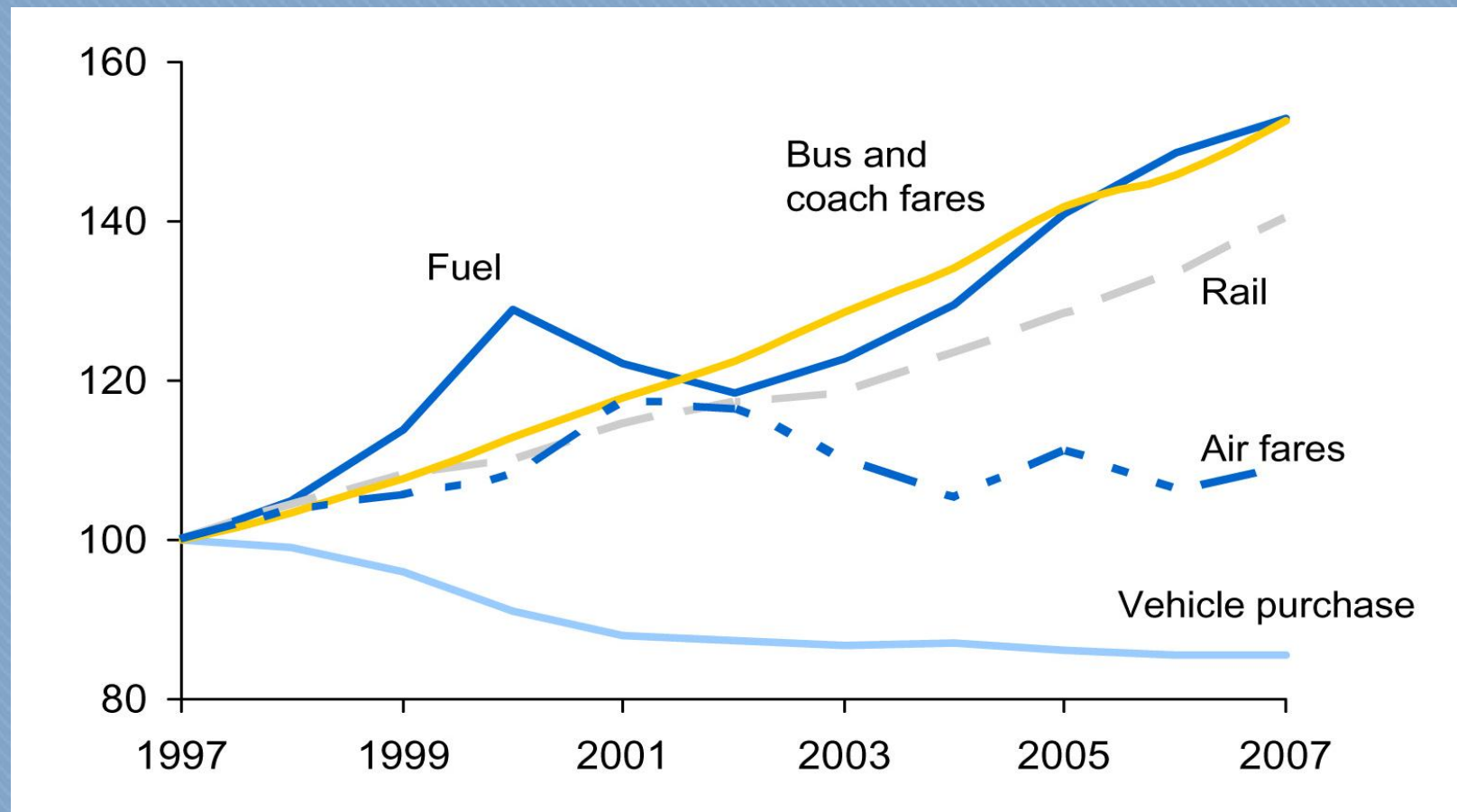
Car ownership rates continue to rise, whilst bus services outside London remain broadly static

Bus services (km operated) and number of cars per household. 1997=100



The costs of purchasing cars have fallen in real terms

Cost and price indices, 1997=100



Consequences of how we choose to travel



Co² Emissions

Peak Oil & Energy
Security

K.S.I.

Health

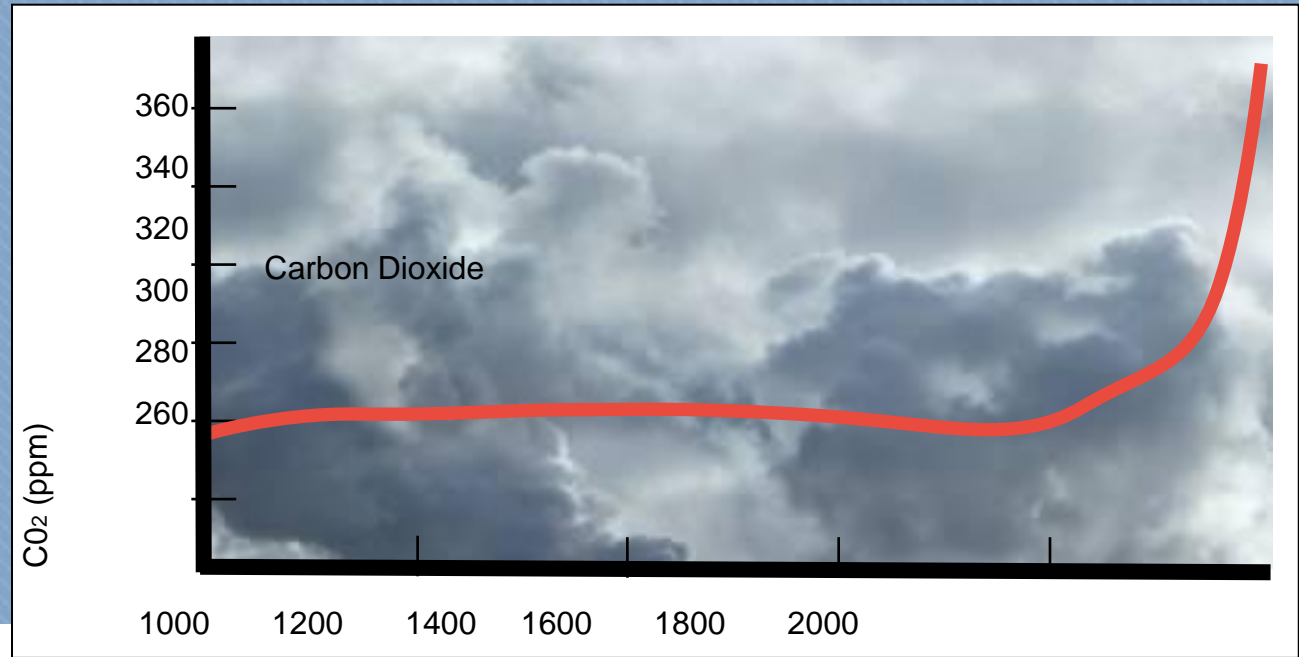
Air Quality

Congestion

Place

The wider costs of Transport

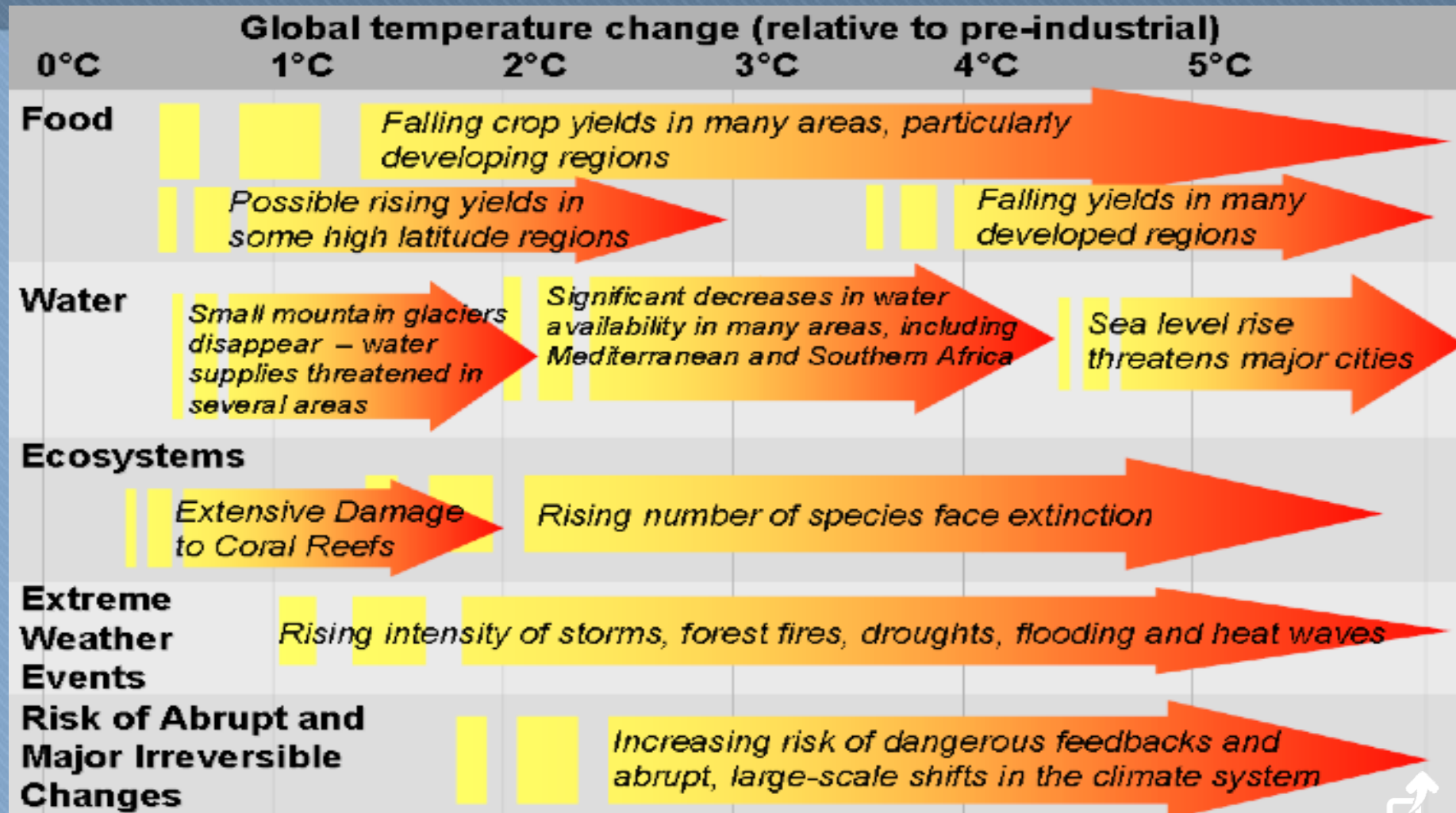
Carbon Dioxide in the atmosphere has risen by over 30% due to human activities



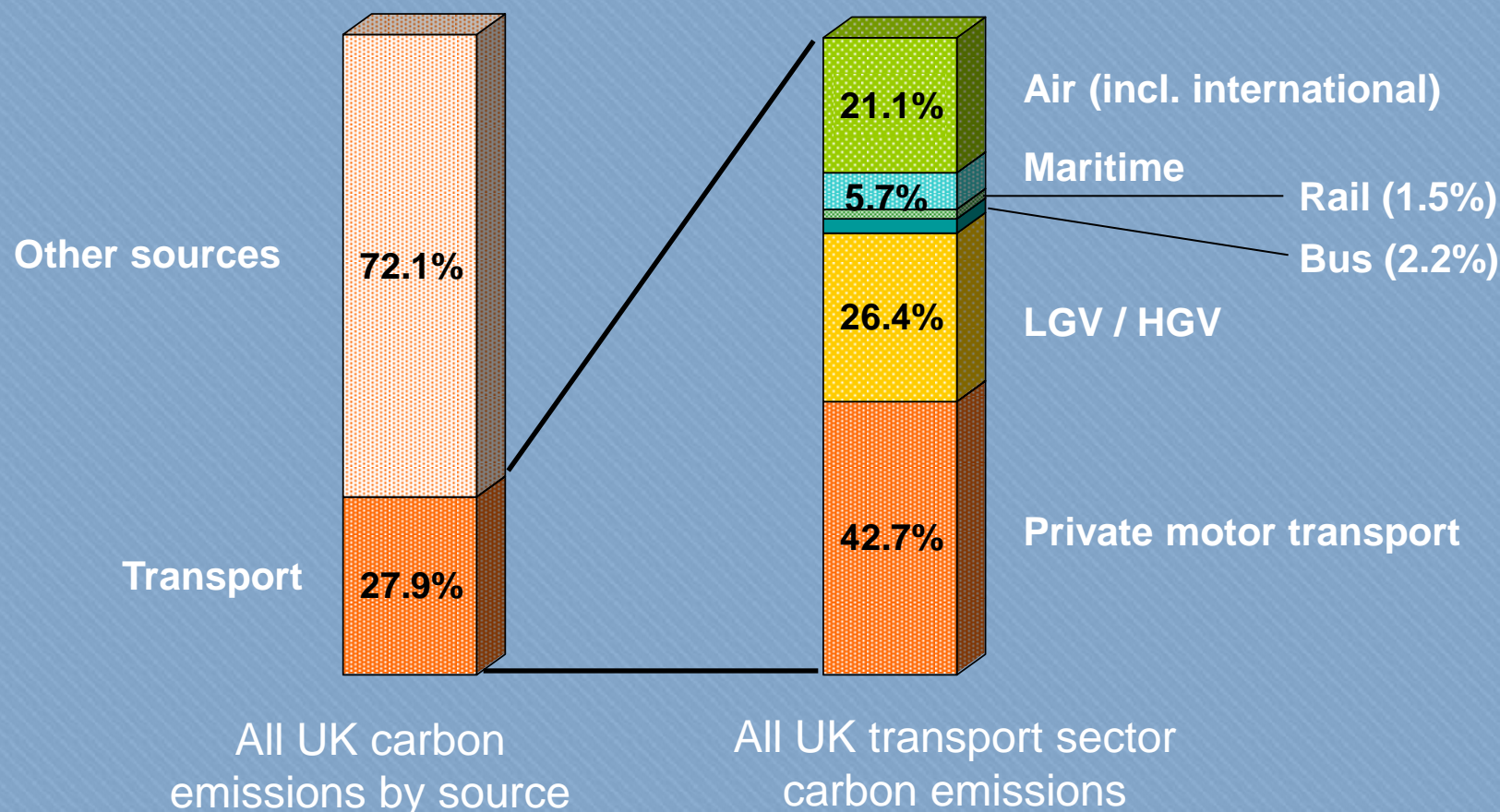
slide courtesy of Tony Juniper



Projected impacts of climate change

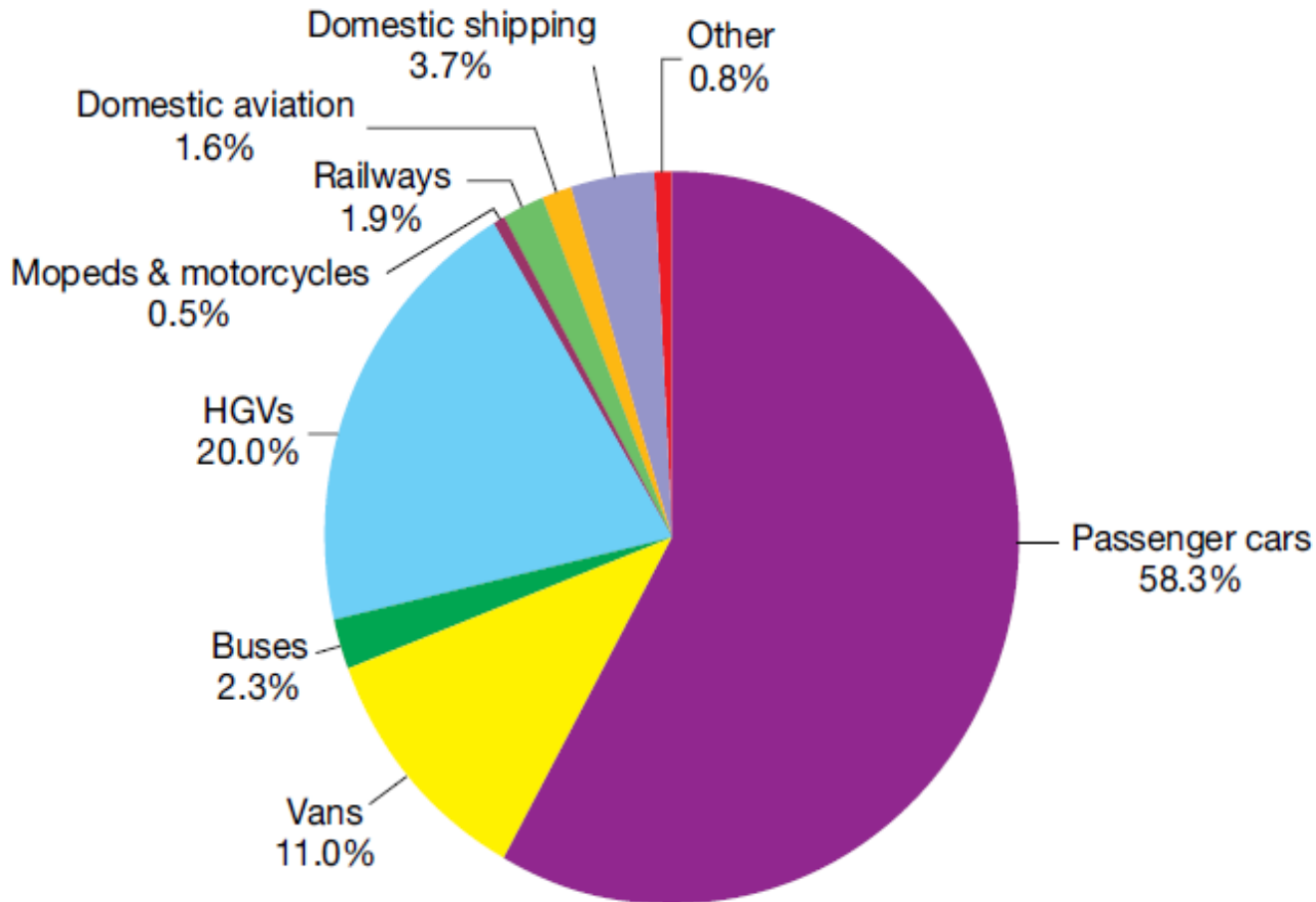


Cars account for 12% of UK CO₂ emissions



Source of UK CO₂ emissions from Transport

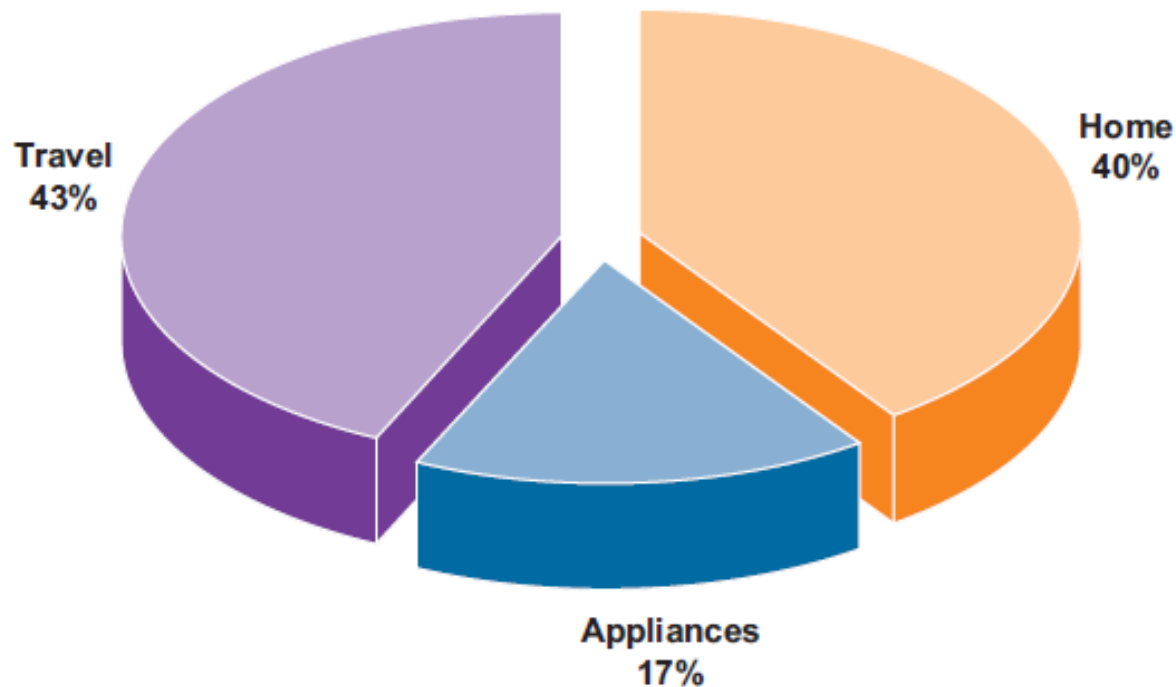
(excluding international aviation)



Source: Department for Transport, 2008 Carbon Pathways Analysis

Climate Change is personal

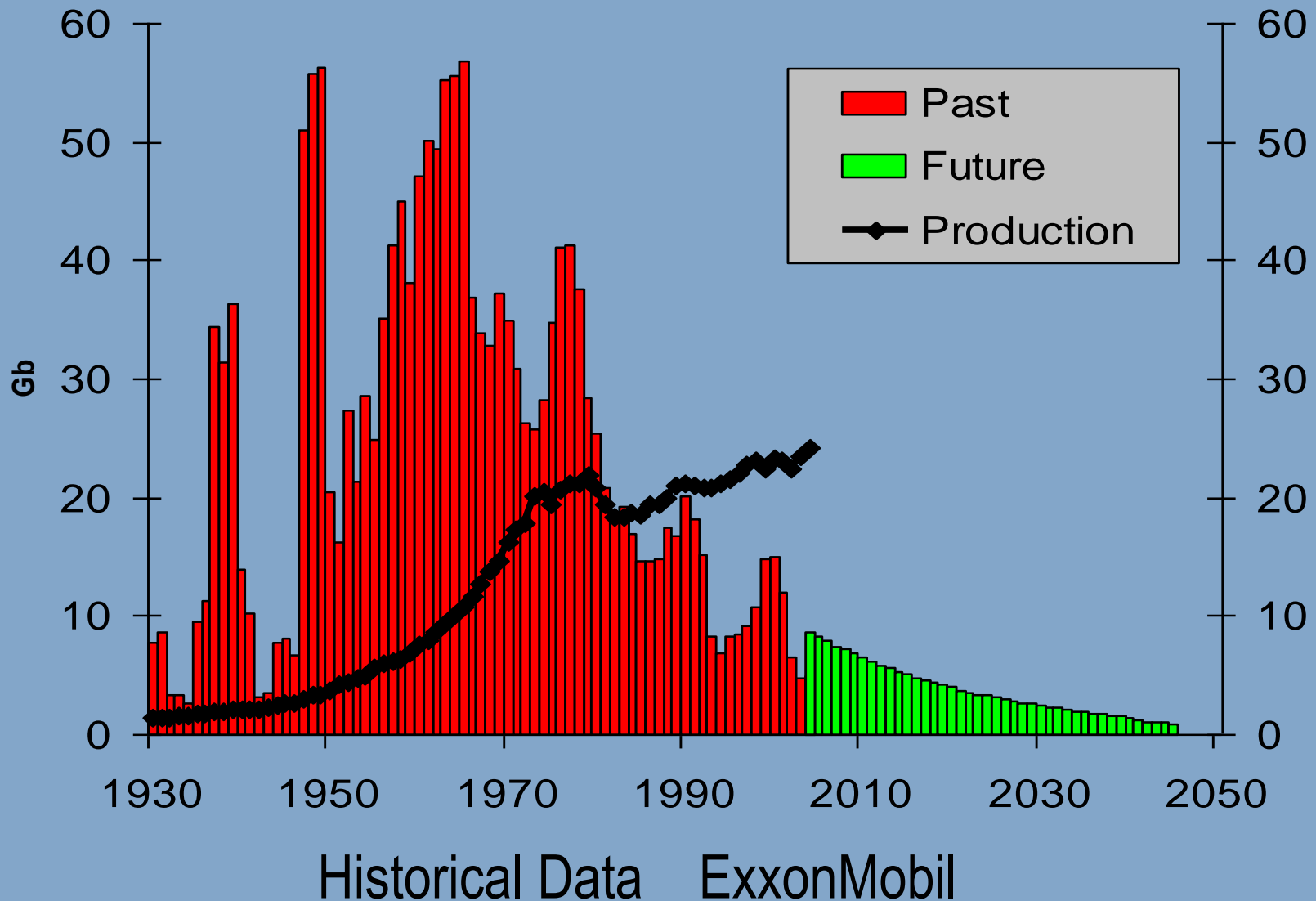
Figure 4: National Average breakdown of household and individual CO₂ emissions by activity area, July 2009



car travel is the single biggest source of personal CO₂ emissions in the UK

Source: Department of Energy and Climate Change, 2009 Act on CO₂ Calculator Version 2.0

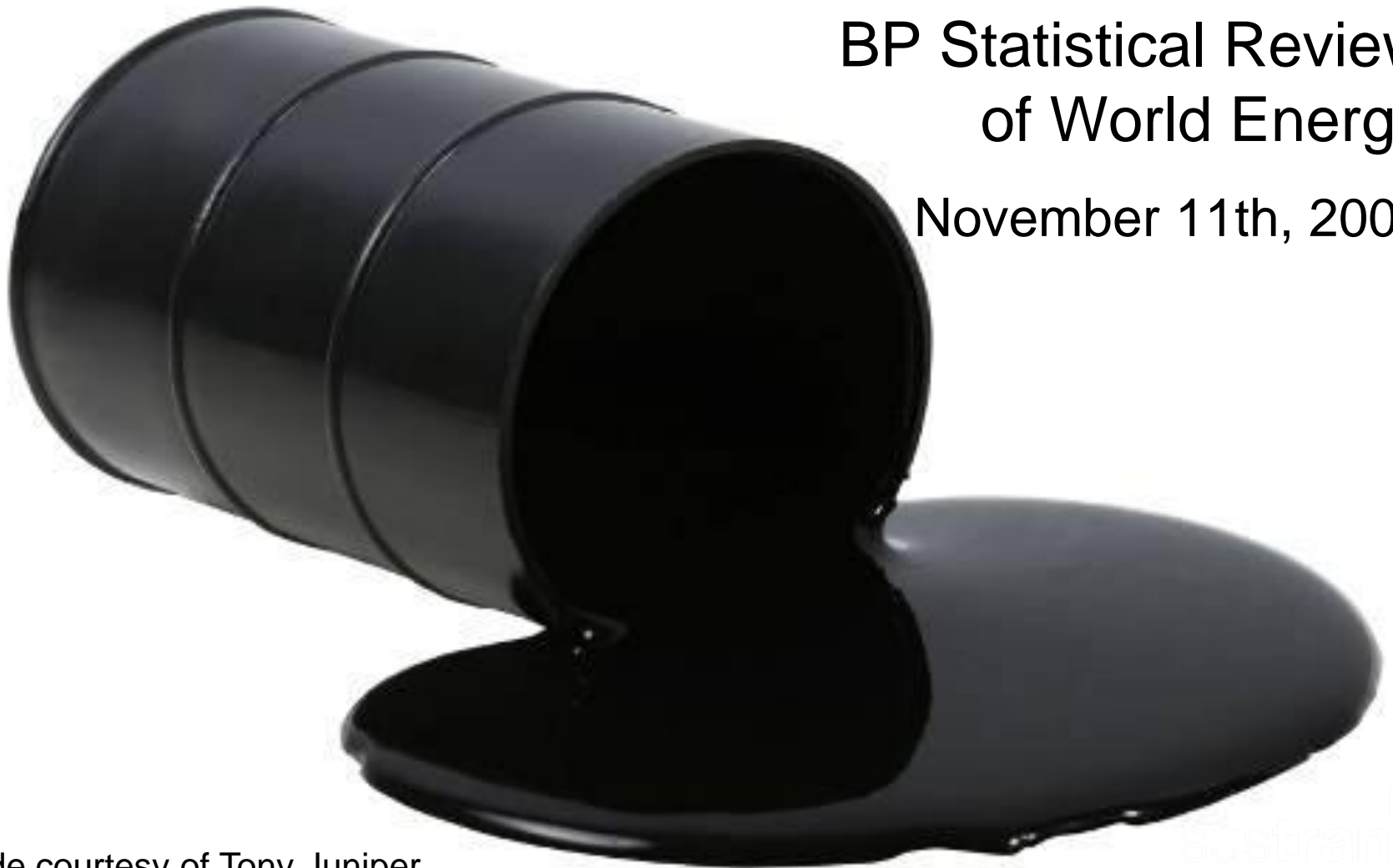
World Real Discovery Trend



"It's no secret anymore that for every nine barrels of oil we consume, we are only discovering one."

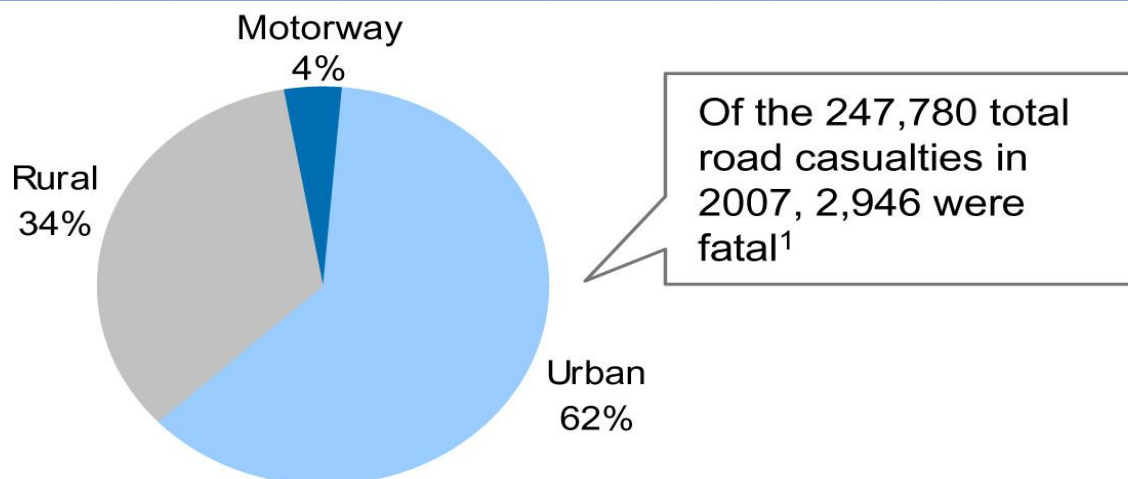
BP Statistical Review
of World Energy

November 11th, 2009



slide courtesy of Tony Juniper

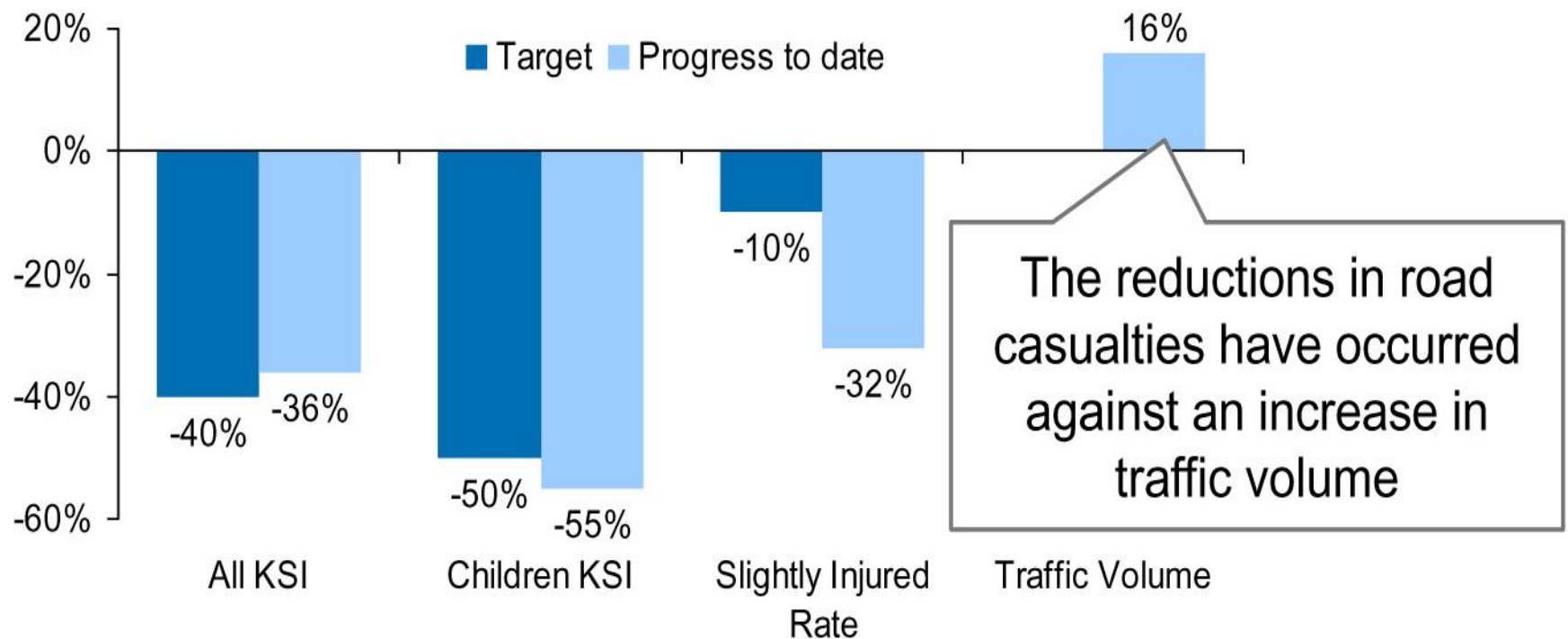
Breakdown of KSI casualties in 2007 by road type (%)



- Those involved in fatal or serious accidents are disproportionately young, male or from areas of high deprivation
 - 15-25 year olds represent approximately 15% of the population but account for 30% of urban road accidents²
 - 75% of all British road deaths are among men in 2007³
 - those living in the 10% most deprived areas were one and a half times as likely to be involved in a road accident relative to those living in the 10% of least deprived areas

The number of killed and seriously injured (KSI) road casualties has fallen significantly during the period of the current road safety strategy

% change in a selection of metrics in comparison to 1994-98 baseline



Cross-governmental support (DfT / DH)

Active Travel: The Miracle Cure?
A guide for the NHS on raising physical activity levels through your local transport plan

Department for Transport
DH Department of Health

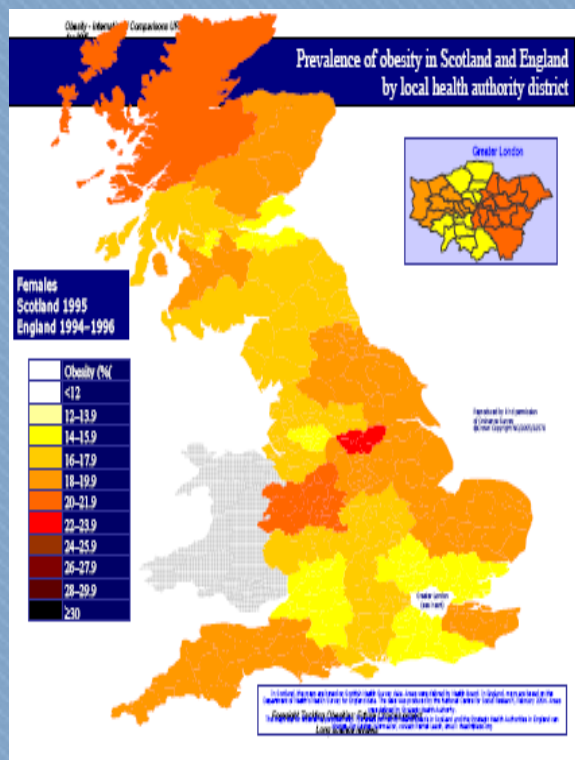
 **'We have put walking and cycling at the heart of our transport and health strategies'**
Sadiq Khan MP – Minister of State for Transport
Gillian Merron MP – Minister of State for Public Health.
(Active Travel Strategy, Department for Transport & Department of Health, February 2010)



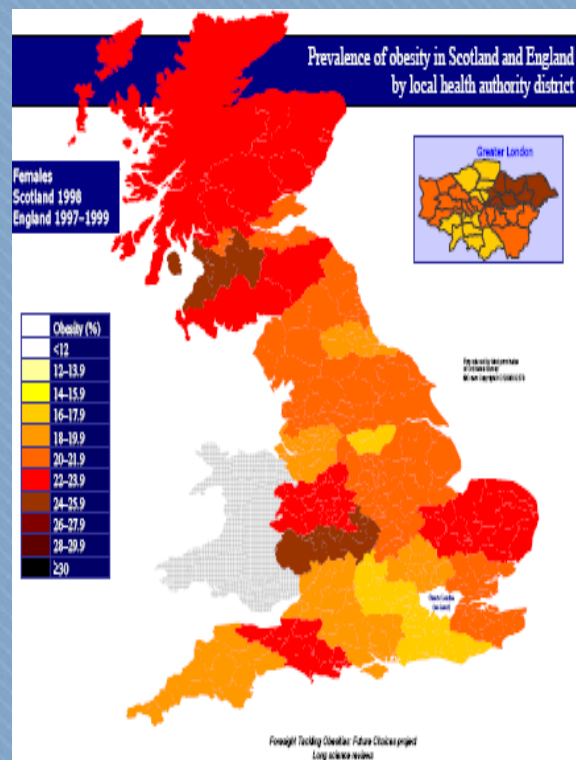
 **'The potential benefits of physical activity to health are huge. If a medication existed which had a similar effect, it would be regarded as a "wonder drug" or "miracle cure".'**
Sir Liam Donaldson – Chief Medical Officer
(Annual Report of the Chief Medical Officer 2009, Department of Health, March 2010)

UK obesity levels 1995 - 2003 (females)

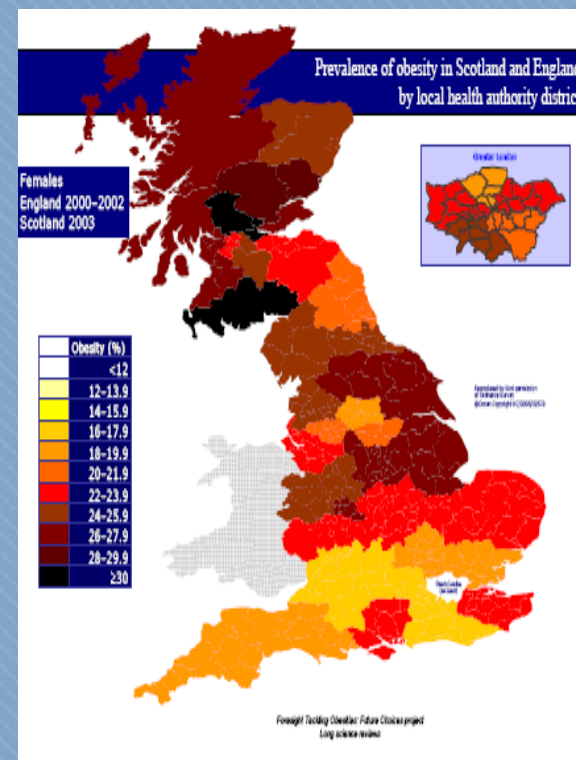
1995



1998



2003



Source: Lobstein and Leach, Foresight obesity review, 2007

.... obesity is only part of the problem



physical inactivity
increases heart disease
risk...

... and type II diabetes...

... many forms of cancer...

... mental illnesses

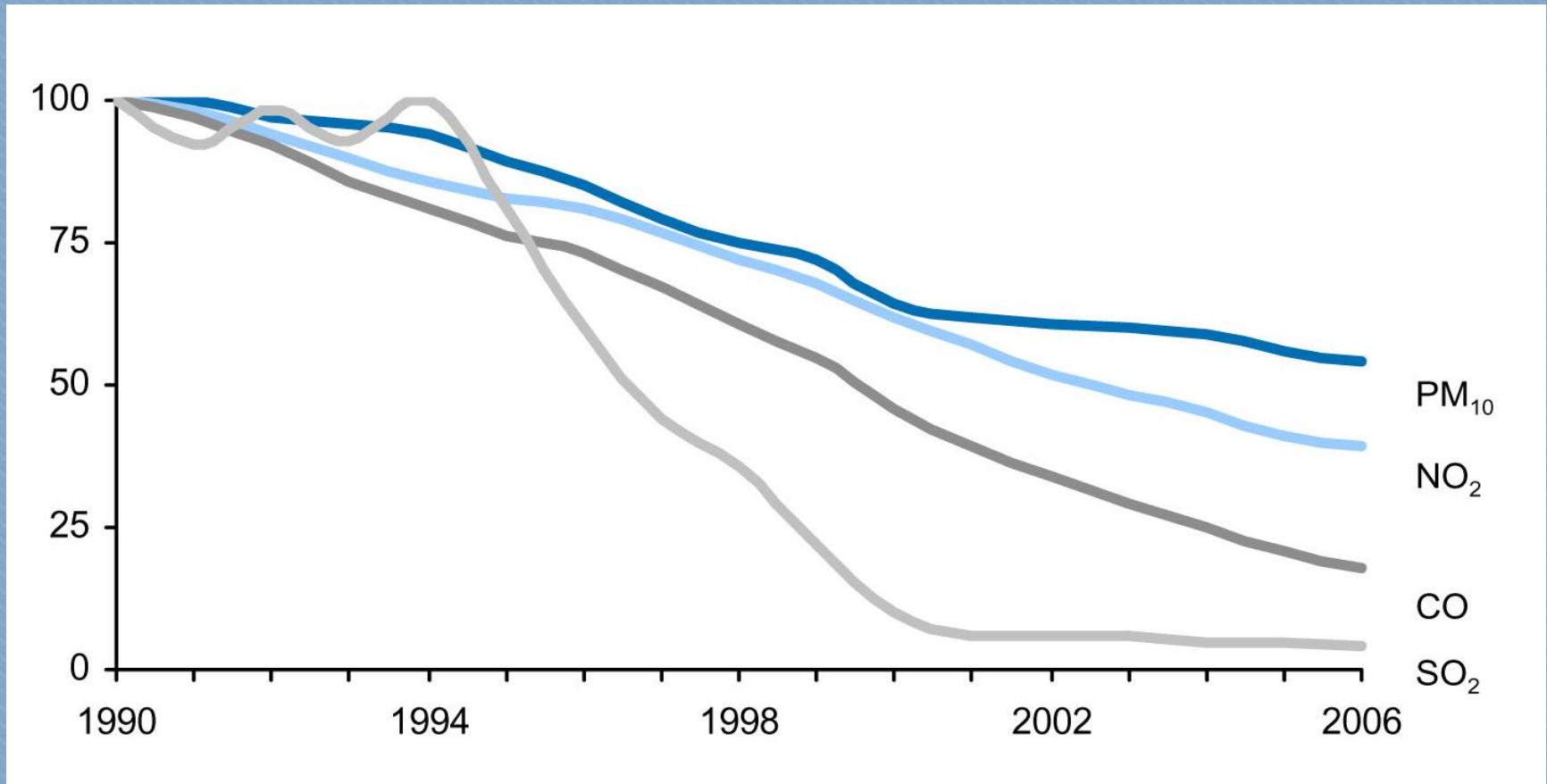
... other health impacts

£ billions in healthcare

Congestion and Air Quality



Over the period from 1990 to 2006 emissions of harmful pollutants from road transport have been reduced





Watergate, Littleton.



THE
OLD OAK



OLD OAK
PUB
ESTD 1850





Some of the issues: 'severance'

Appleyard study in San Francisco:
effects of traffic volume

Light traffic:

3.0 friends

6.3 acquaintances

Moderate traffic:

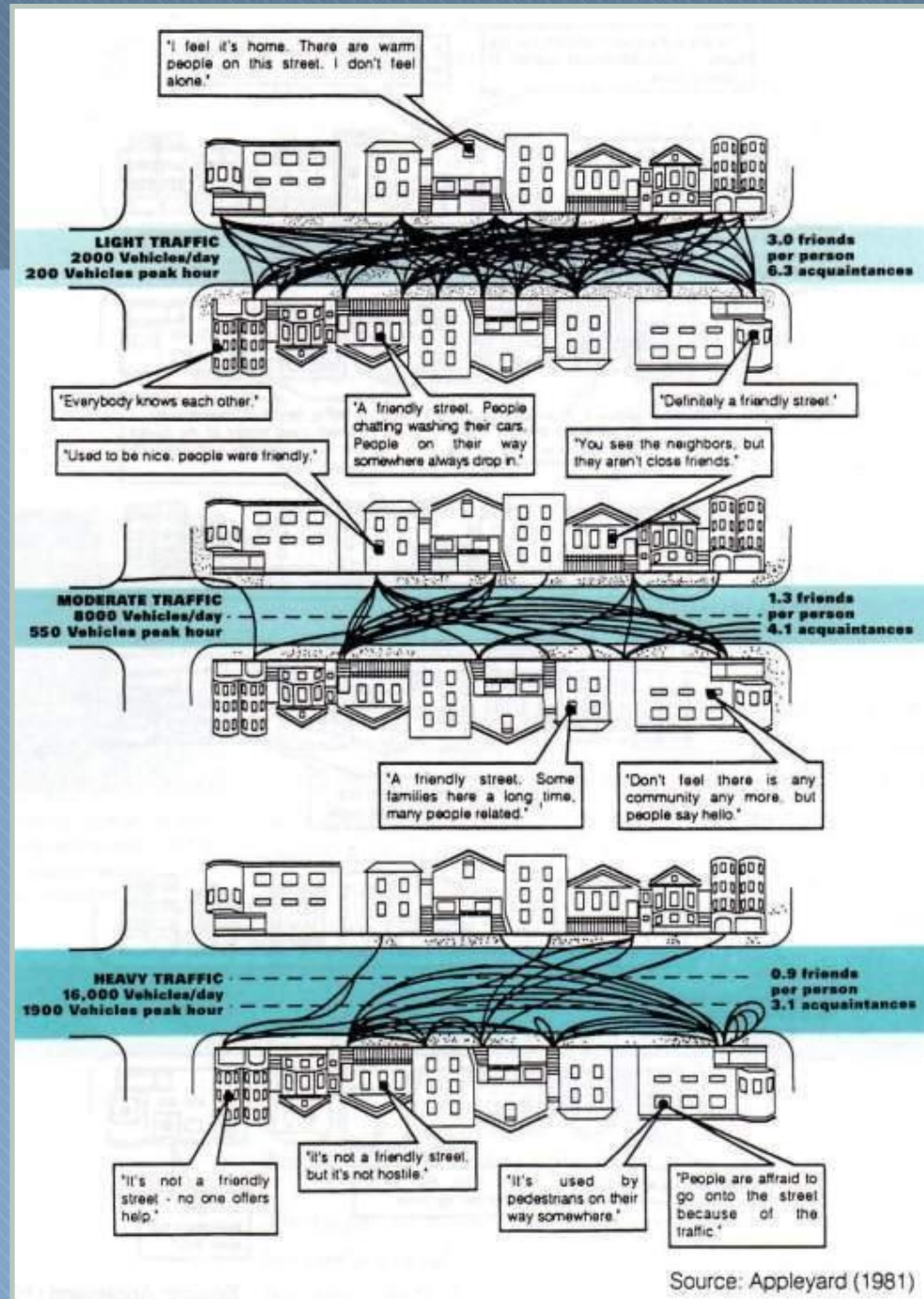
1.3 friends

4.1 acquaintances

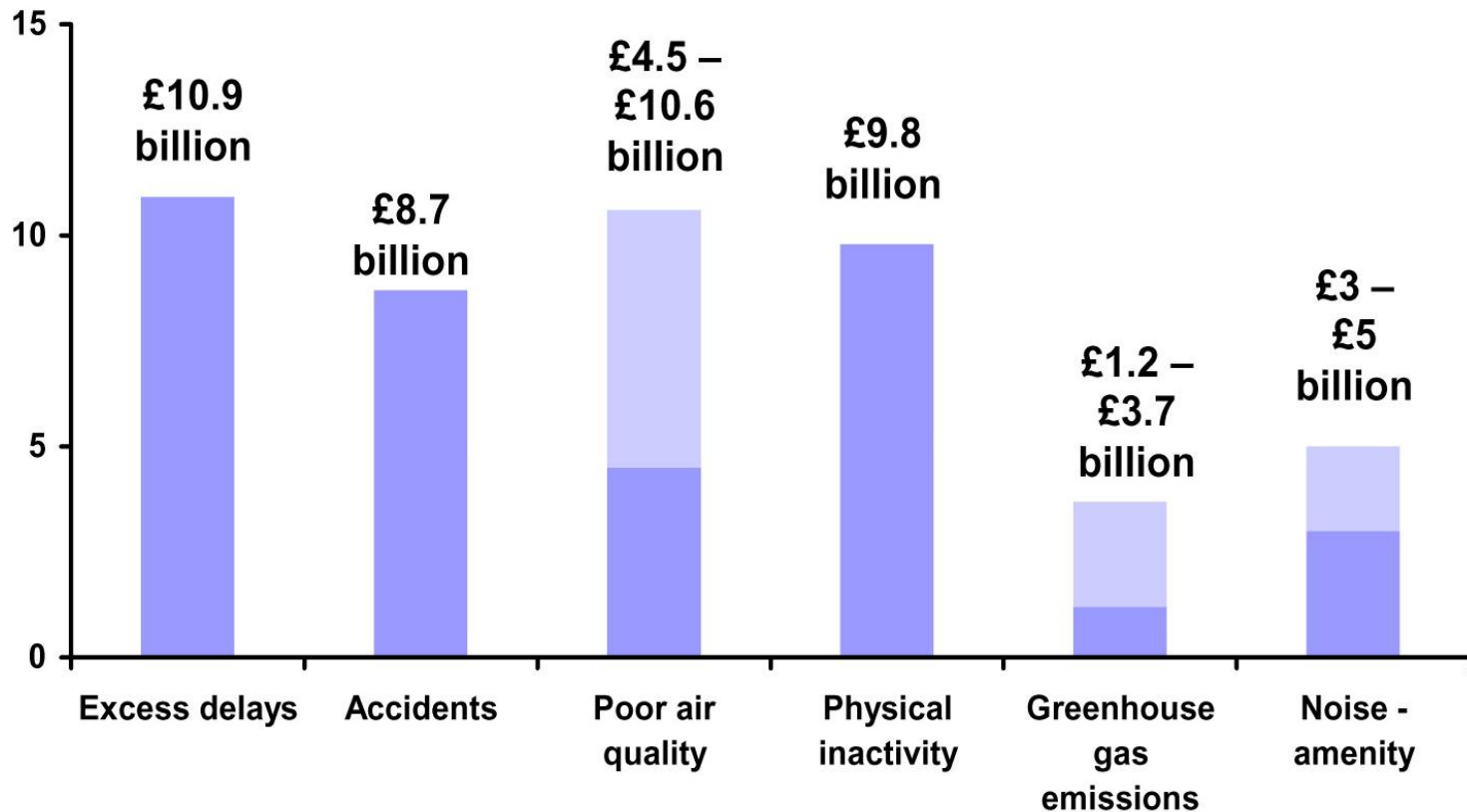
Heavy traffic:

0.9 friends

3.1 acquaintances



Comparison of the wider cost of transport in English urban areas (£ billion per annum, 2009 prices and values)



What needs to change?

- A reduced threat from climate change
- Enhanced mobility through wider choice
- Reduced congestion and increased journey time reliability
- Better health as a result of improved safety & much greater levels of walking & cycling
- Streets and public spaces which are enjoyable places to be, where exposure to harmful emissions are reduced and where quality of life is transformed

'Our vision for the future of Urban Transport'. Sadiq Khan November 2009

The importance of infrastructure



Seoul Municipal Government

The importance of infrastructure



Do-it-yourself precedent: Parking

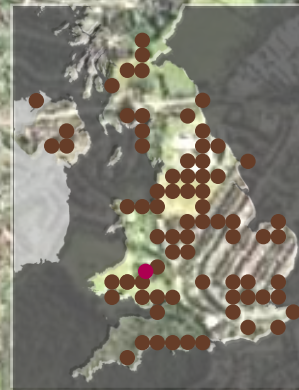


TH

aerial
labels)
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Connect2 in Worcester

1 mile



Main roads



river

connect2

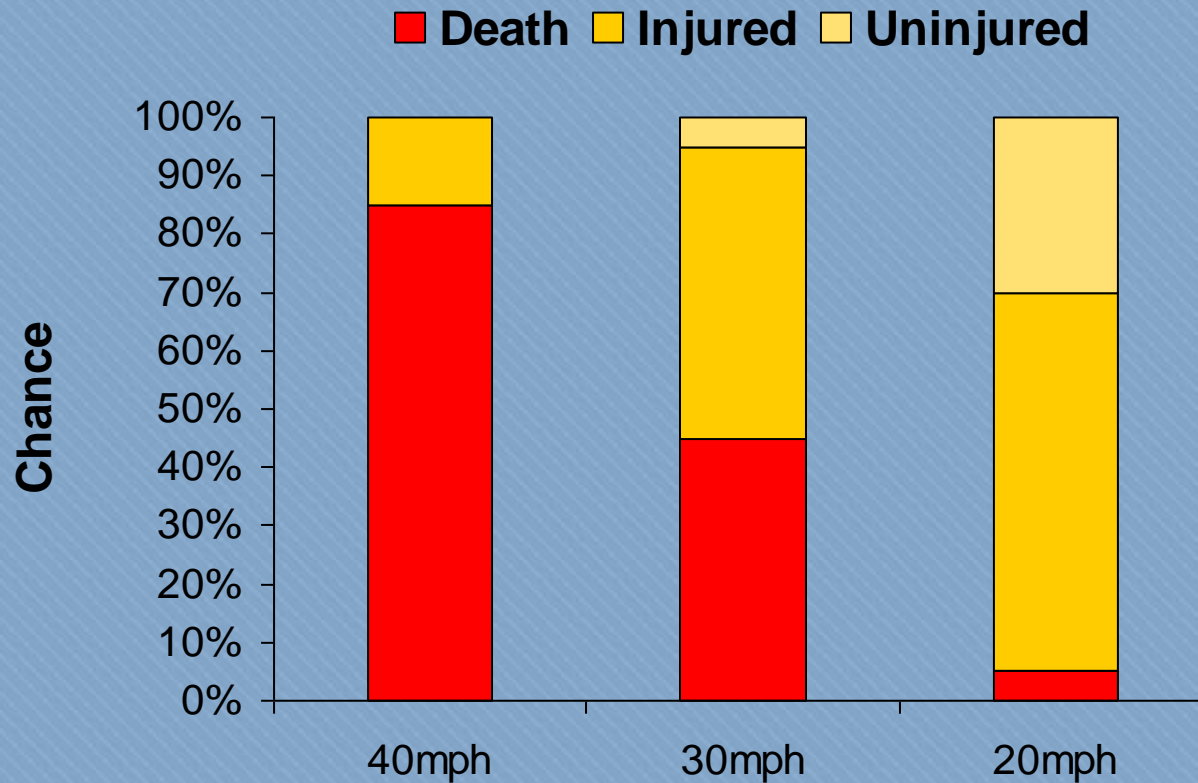
PEOPLE PLACES PRIDE

Search for
Link to this
Latitude:
Longitude:
(qs) Grid-S

Diglis Bridge, Worcester Connect2



The key issue: speed?



From the streets of London...



© Getty Images

...and Philadelphia



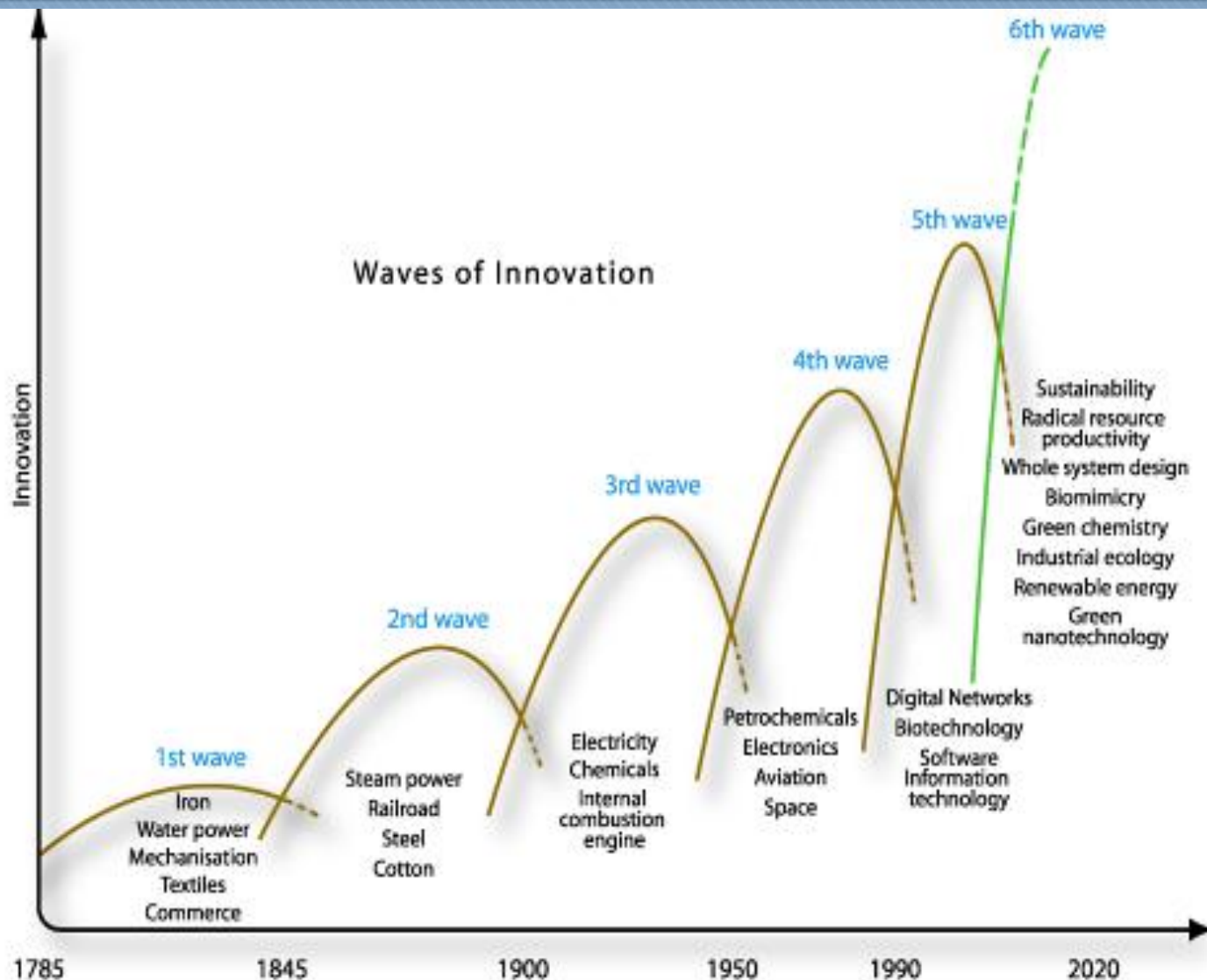
What do we want from our streets?



“Transportation is not an end — it is a means to having a better life, a more enjoyable life — the real goal is not to improve transportation but to improve the quality of life.”

- Enrique Peñalosa, former mayor of Bogotá

Waves of innovation

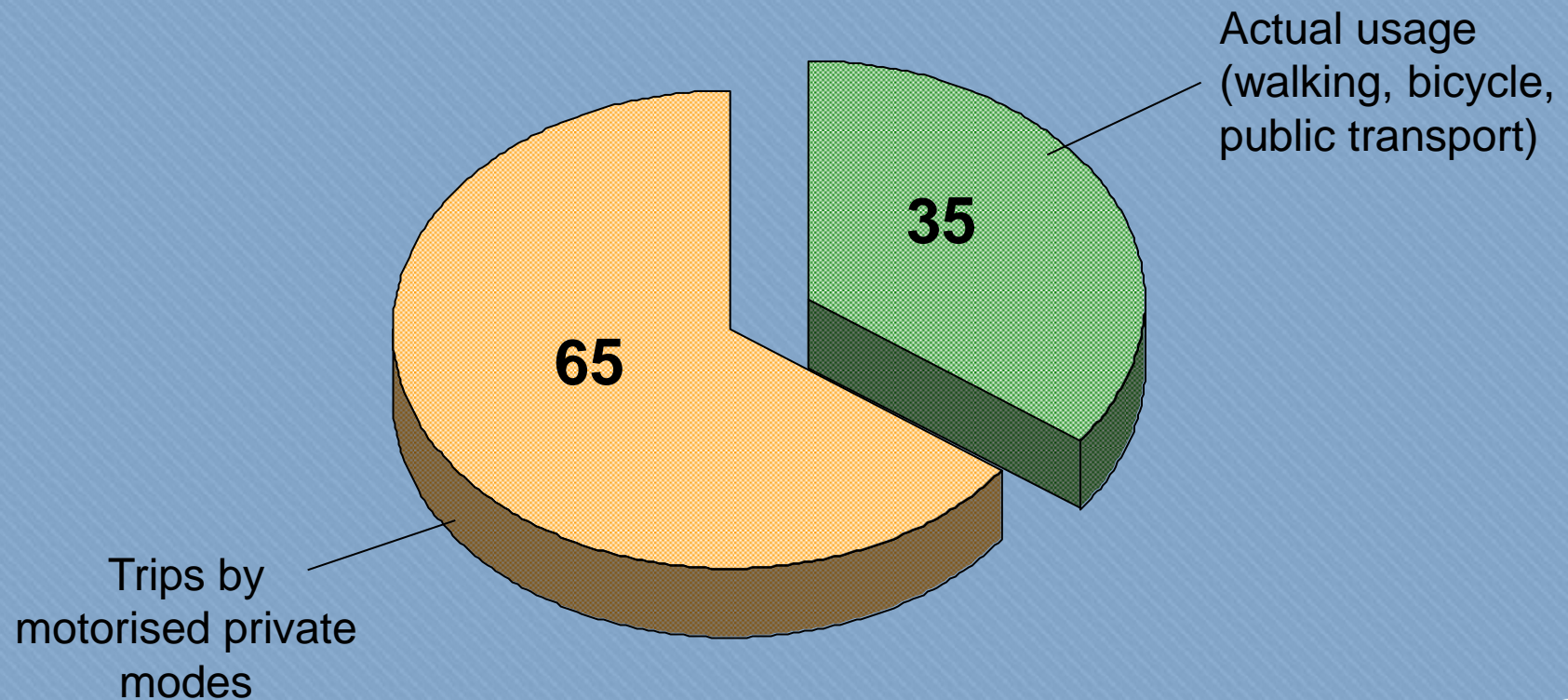


Greener Cars of the Future ?

- Electric Cars
- Hybrids & Plug-in Hybrids
- Biofuels
- Hydrogen Fuel Cells
- More Efficient Conventional Vehicles

Potential for sustainable travel modes

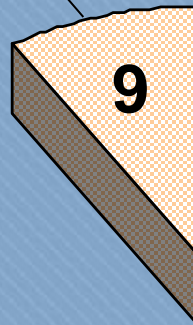
% of trips per person (STD Ts)



Potential for sustainable travel modes

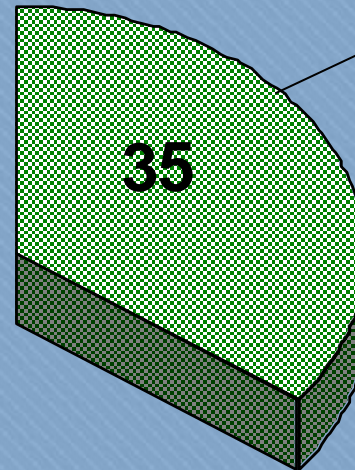
% of trips per person (STDs)

Constraints



9

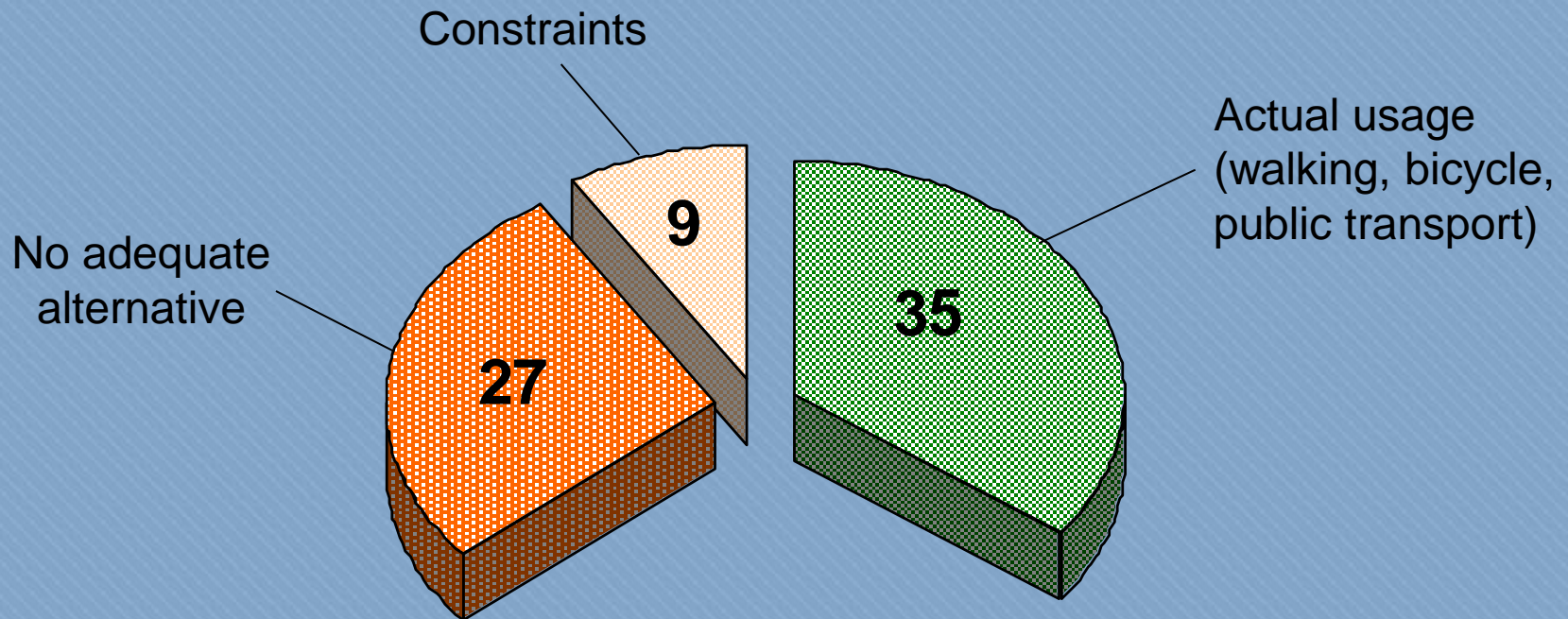
Actual usage
(walking, bicycle,
public transport)



35

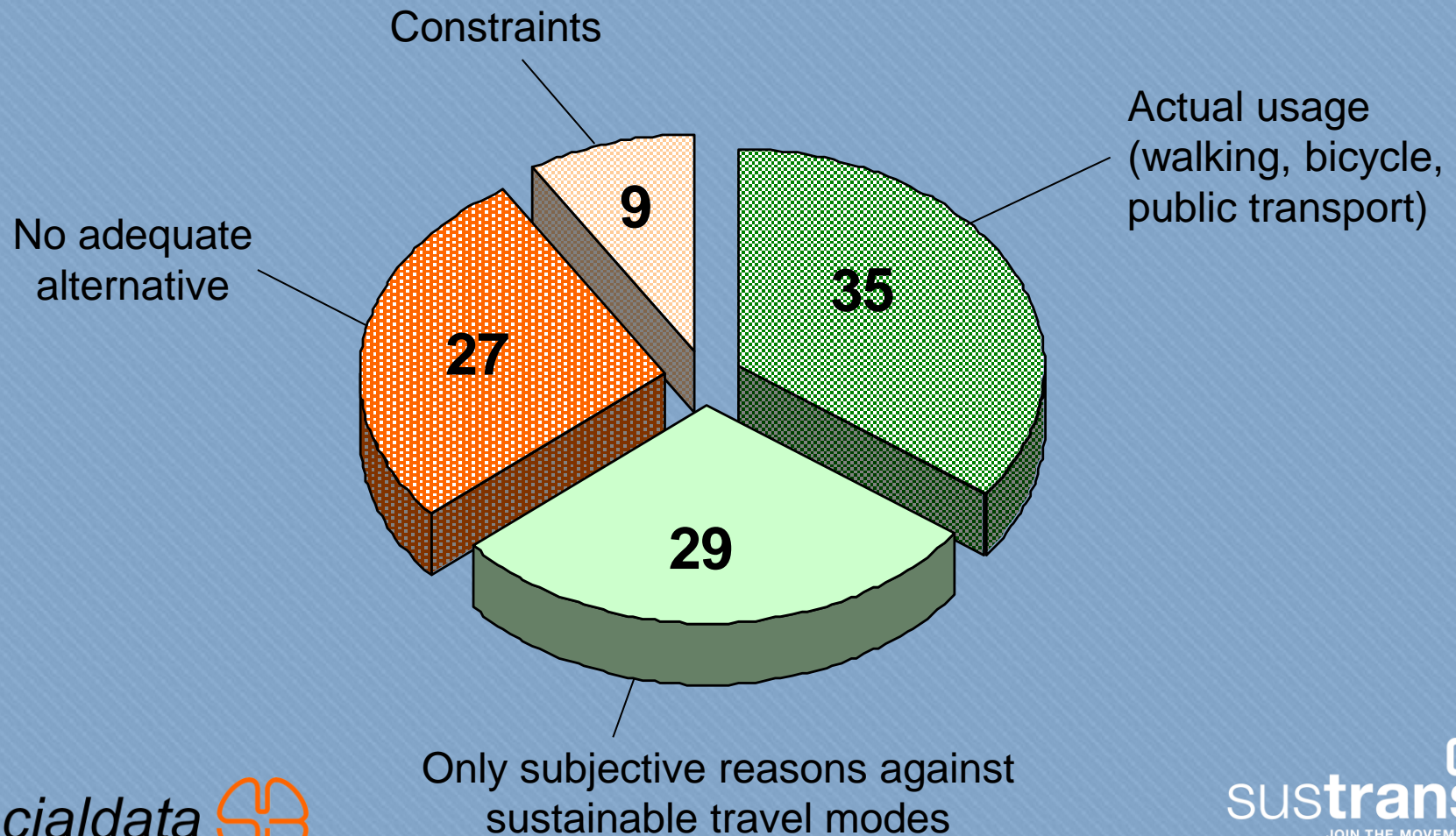
Potential for sustainable travel modes

% of trips per person (STDs)

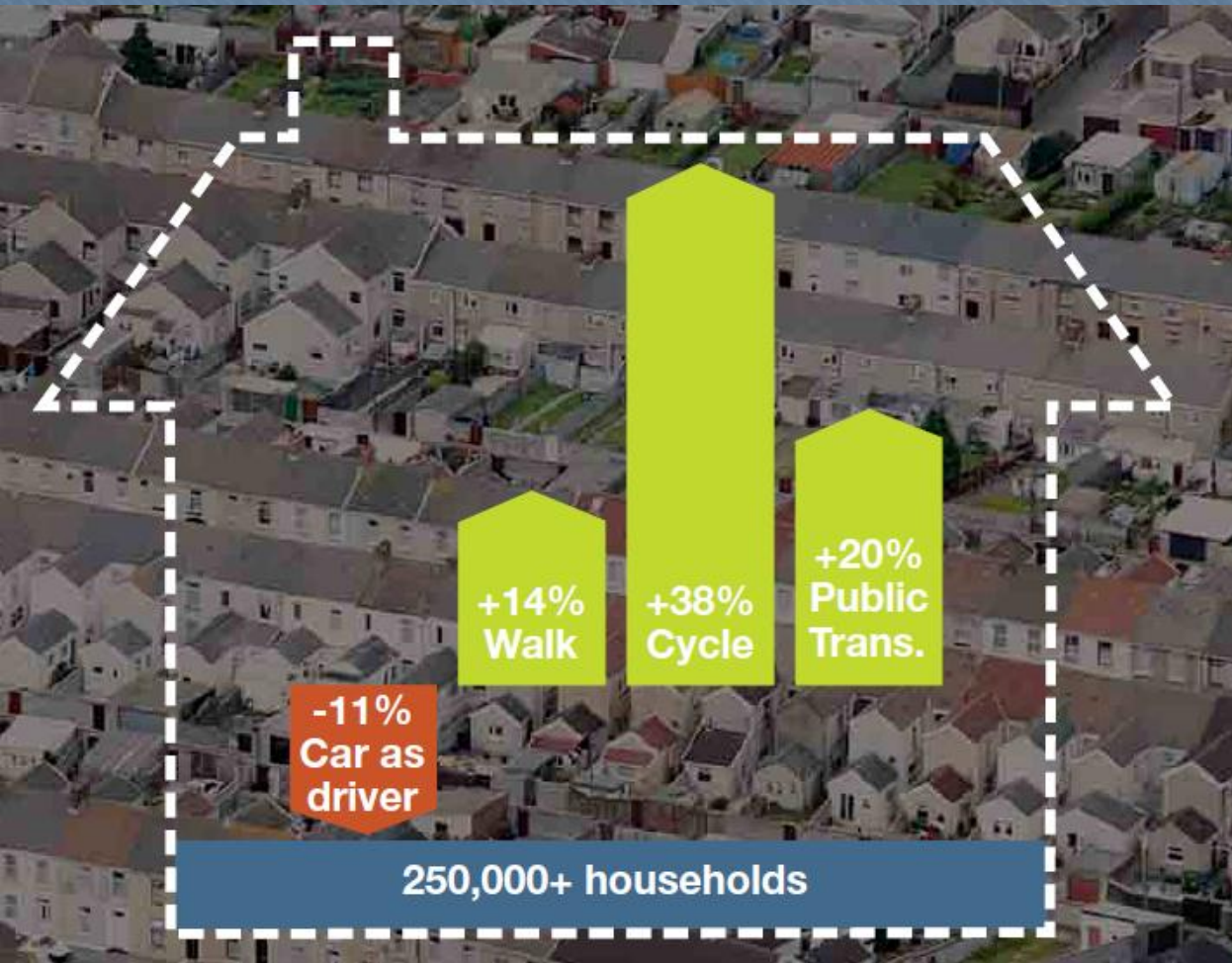


Potential for sustainable travel modes

% of trips per person (STDs)



Enabling people to leave their car behind



TravelSmart -
The UK's most
successful travel
behaviour
programme

Source: Sustrans/Socialdata, 2010: data derived from combined analysis of completed TravelSmart project evaluations

Intervention: environmental and behavioural



- now working in over 800 schools
- 400,000 children involved

universities, work places

- information
- loan bikes
- travel planning
- physical activity projects

UTravelActive, Leeds University



Phil Hammond

...ending the war on
the motorist?

“... we can't ignore the fact that **84% of journeys are made by car** and there is no realistic prospect of displacing the private car to point to complex journeys.”

**Trips by car accounted for
63% of all trips in 2009
(National Travel Survey)**

Road user charging

Significant, long-term, incremental..... helps people plan their lives



