

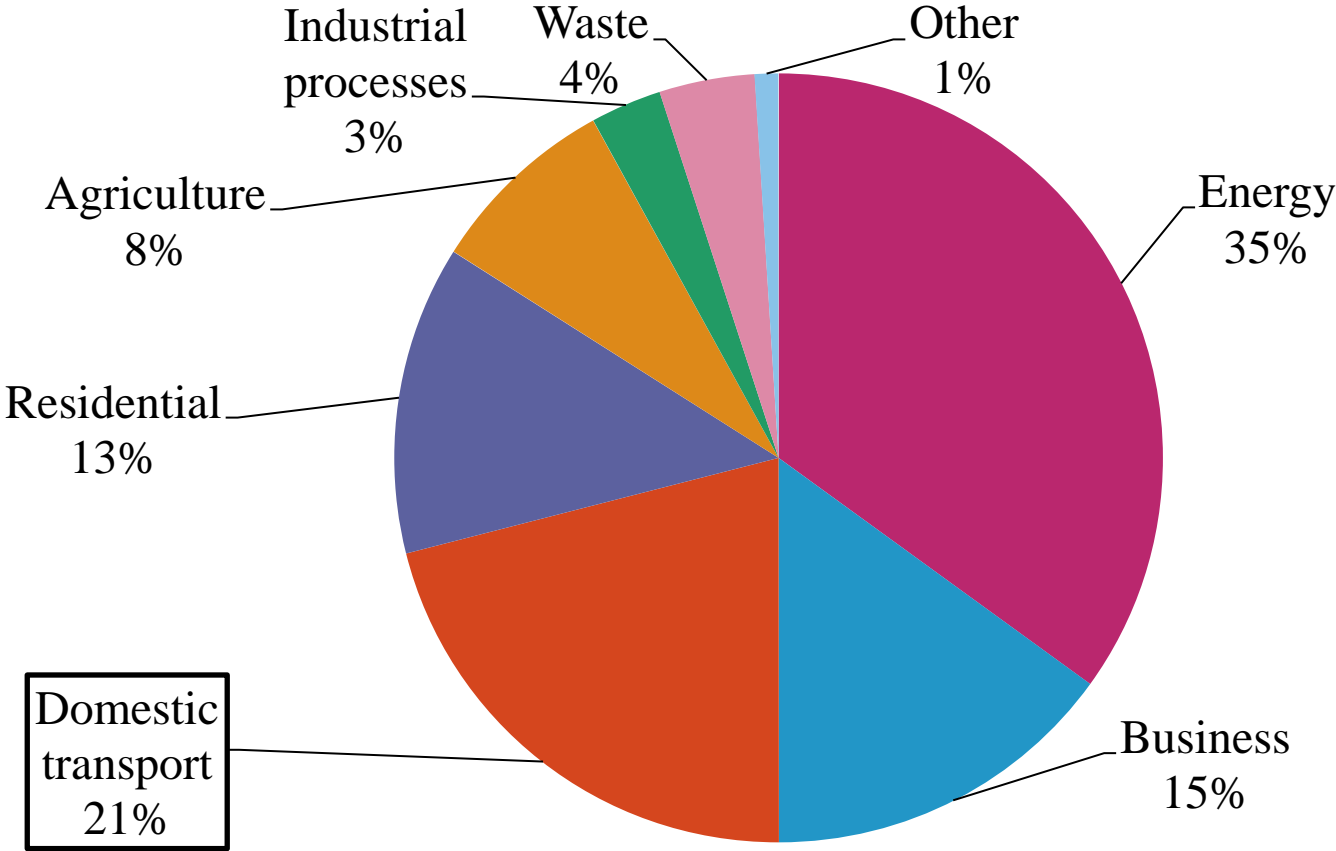
Mobility in a carbon and space constrained age

LCVP Conference “*Just over the horizon: mobility to 2020 & beyond - the next phase of road transport decarbonisation*”

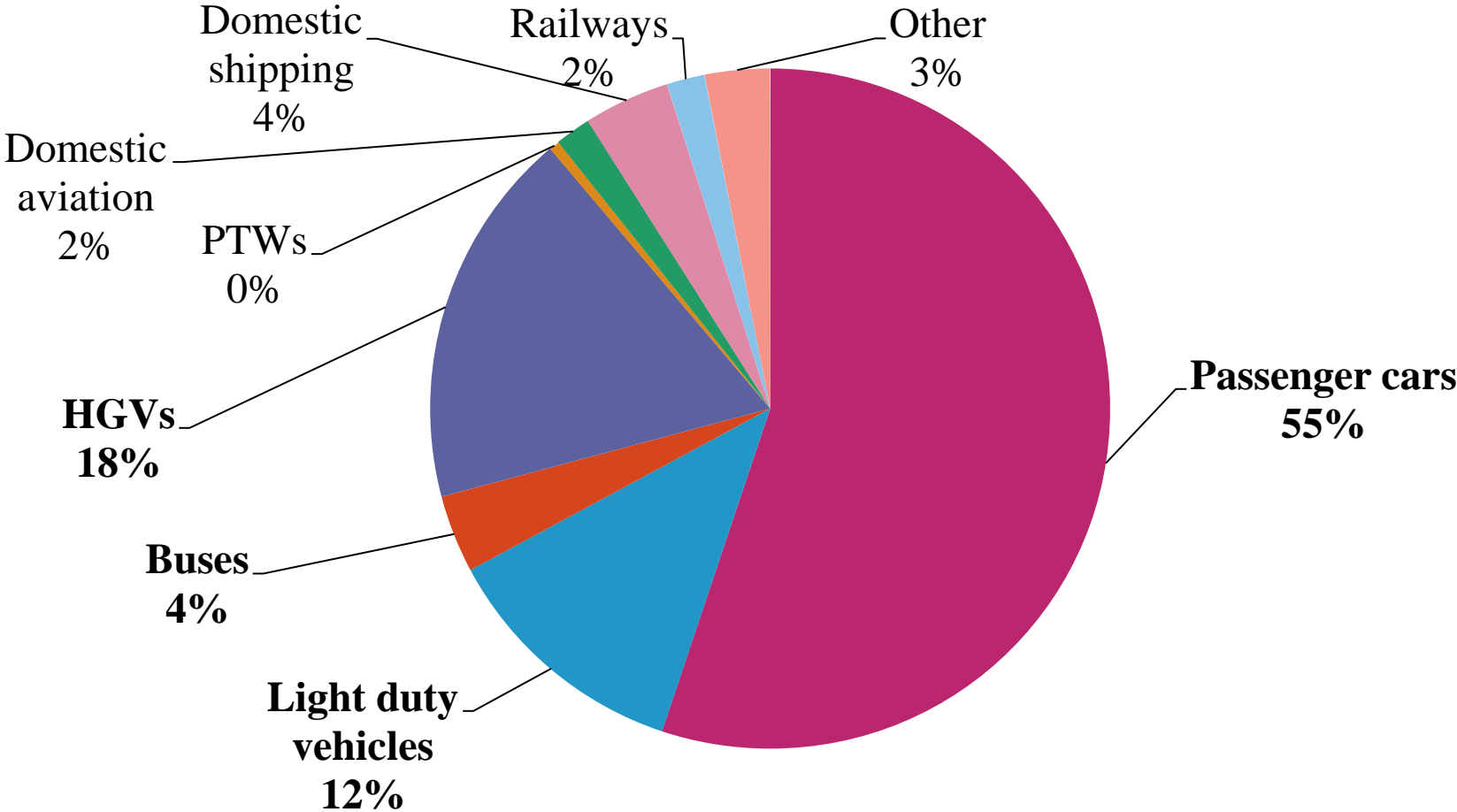
Session: Sustainable Mobility Futures

Susan Claris, 9 June 2011

UK green house gas domestic emissions by sector, 2008



Breakdown of CO₂ emissions in the transport sector, 2008

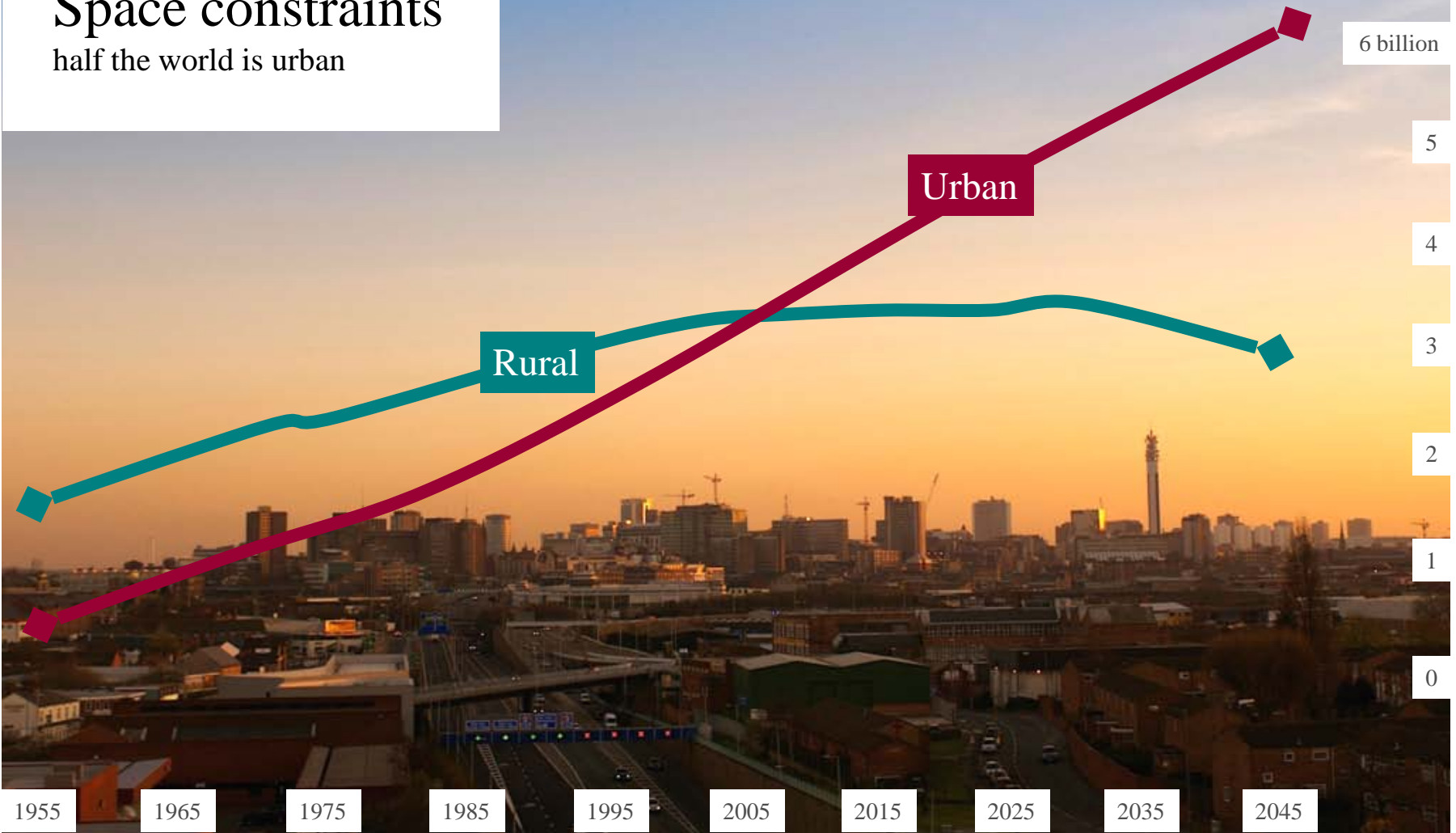


Carbon constraints

- The Climate Change Act 2008 - sets a target to reduce greenhouse gas emissions in the UK by at least 80% on 1990 levels by 2050
- May 2011 – announcement to halve carbon emissions by 2025, from 1990 levels:
 - net emissions over this period should not exceed 1,950 million tonnes of carbon dioxide equivalent

Space constraints

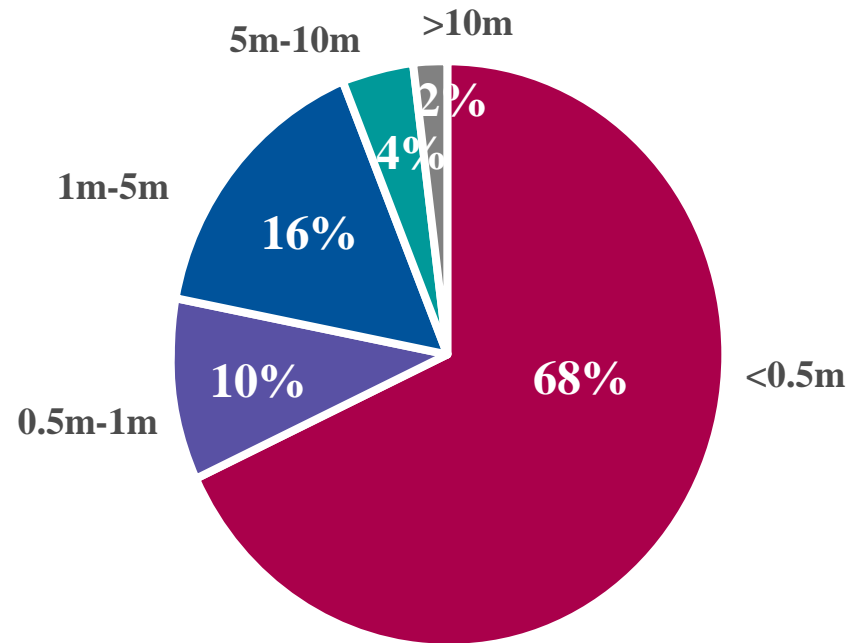
half the world is urban





City size

% urban population by settlement size in Europe



Less developed countries

2/3 urban dwellers now – 95% urban growth in the future



1 billion urban

More developed nations
18% world's population
75% urban



2.3 billion urban

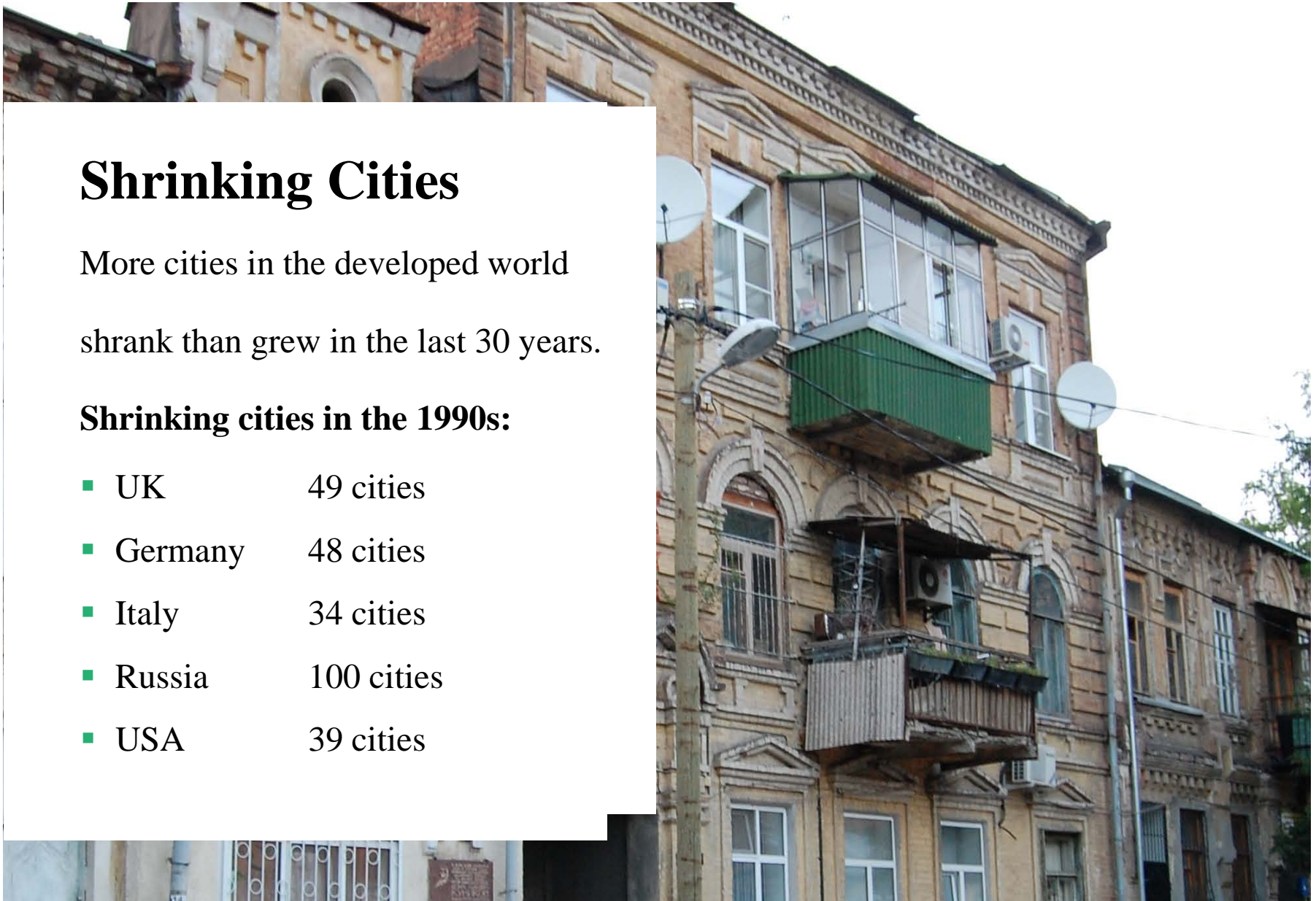
Less developed nations
82% world's population
44% urban

Shrinking Cities

More cities in the developed world shrank than grew in the last 30 years.

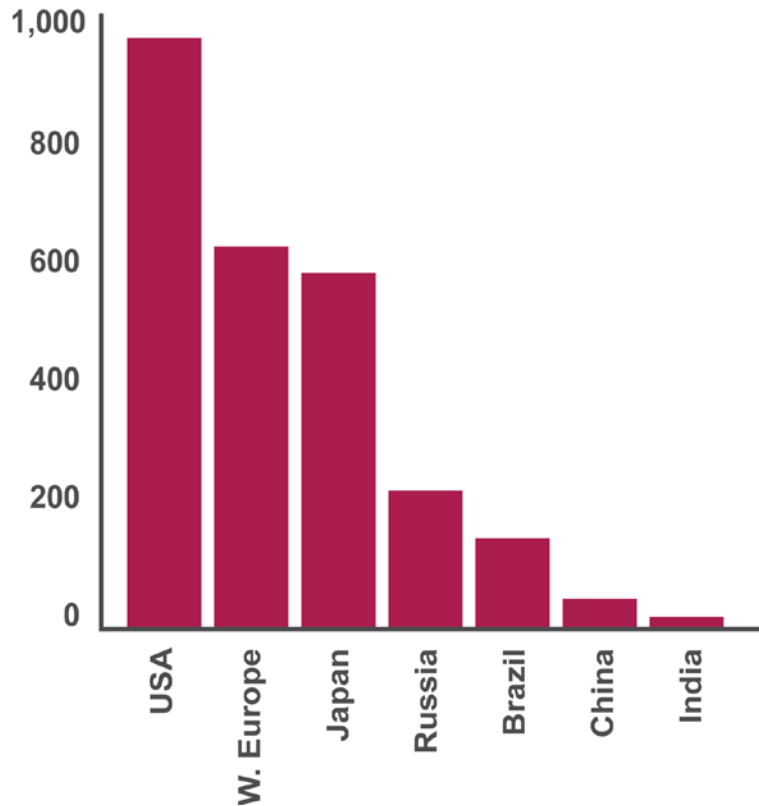
Shrinking cities in the 1990s:

- UK 49 cities
- Germany 48 cities
- Italy 34 cities
- Russia 100 cities
- USA 39 cities



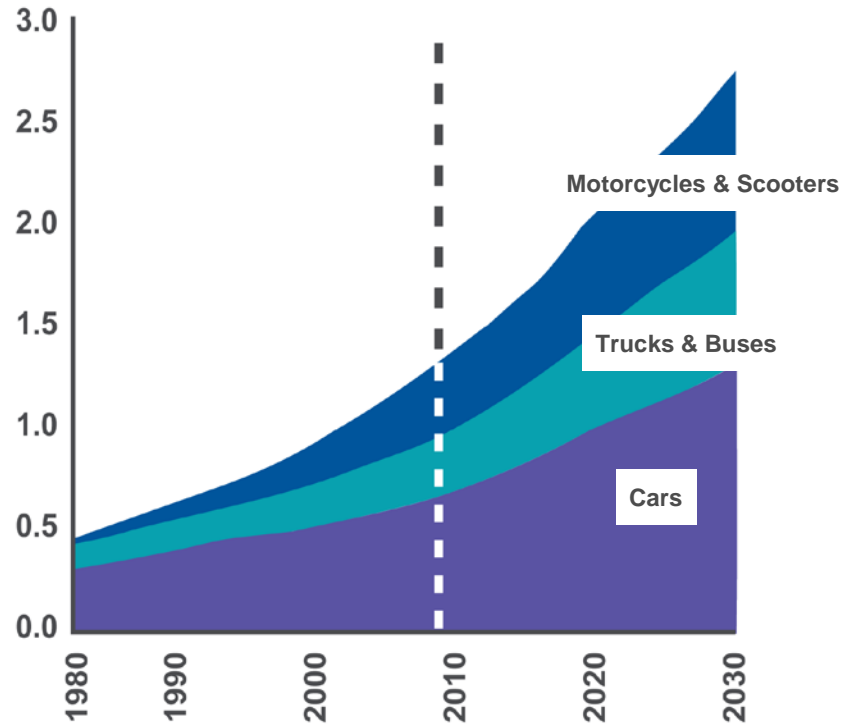
More people, more cars?

2 billion vehicles by 2020?



Car Ownership per 1,000 population of driving age 2007
Morgan Stanley

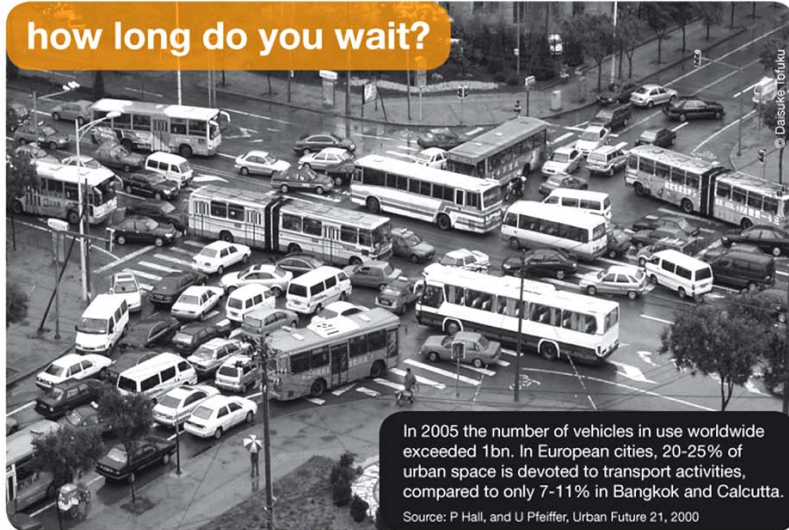
Historical & projected increases in global motor vehicle numbers



Number of motor vehicles - Billions

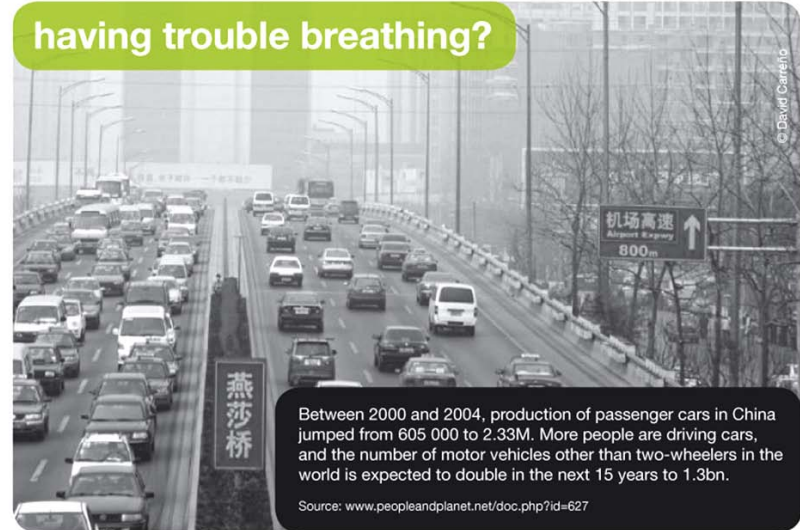
What does this mean for future mobility?

how long do you wait?



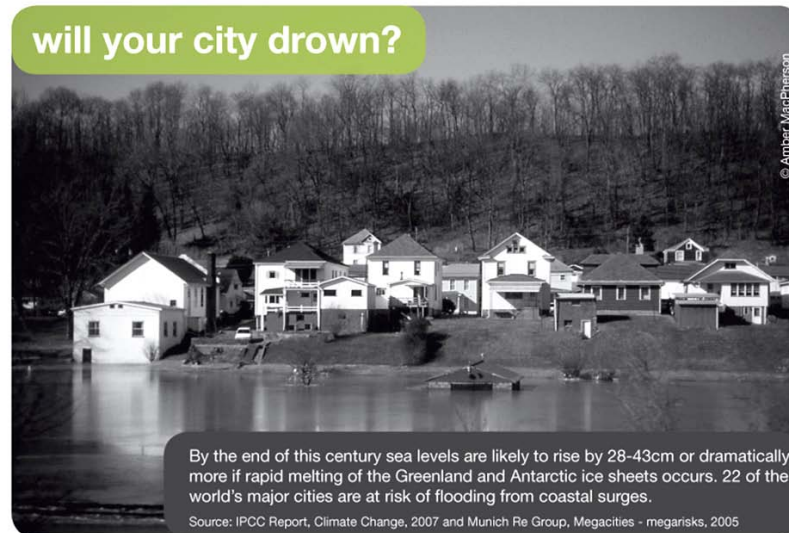
congestion

having trouble breathing?



motorisation

will your city drown?



flooding

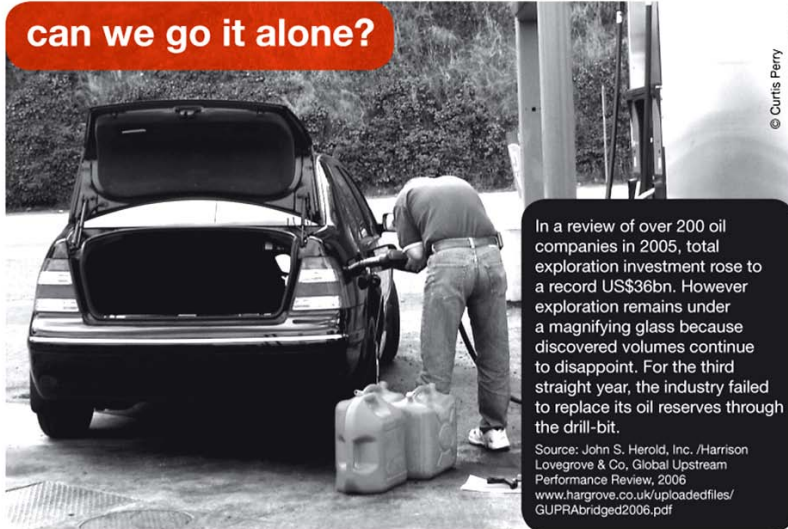
how many worlds will an urban future need?



urban footprint

What else should we be thinking about?

can we go it alone?



In a review of over 200 oil companies in 2005, total exploration investment rose to a record US\$36bn. However exploration remains under a magnifying glass because discovered volumes continue to disappoint. For the third straight year, the industry failed to replace its oil reserves through the drill-bit.

Source: John S. Herold, Inc., /Harrison Lovegrove & Co, Global Upstream Performance Review, 2006
www.hargrove.co.uk/uploadedfiles/GUPRAbridged2006.pdf

peak oil

how many centenarians will you know?

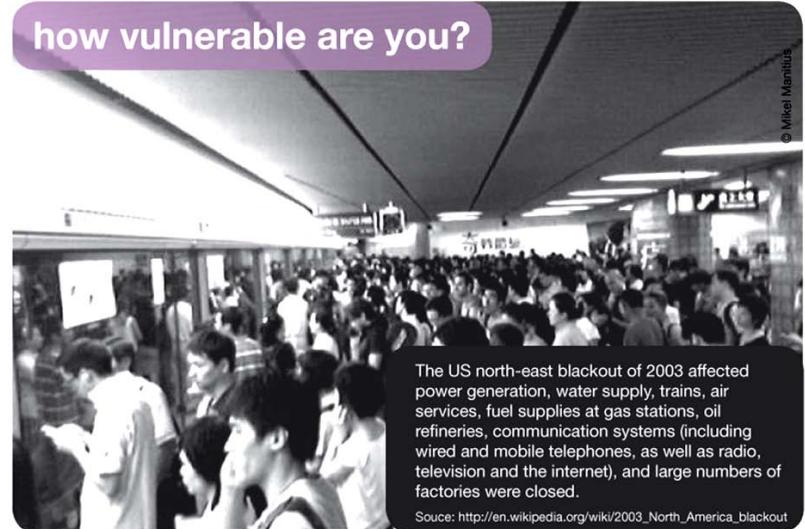


There are currently 580M people over the age of 65 in the world, with 355M of them in developing countries. By 2020 70% of the world's elderly will be in developing countries.

Source: Old Age and Ageing in Africa, IFA Global Conference, June 2006

ageing population

how vulnerable are you?



The US north-east blackout of 2003 affected power generation, water supply, trains, air services, fuel supplies at gas stations, oil refineries, communication systems (including wired and mobile telephones, as well as radio, television and the internet), and large numbers of factories were closed.

Source: http://en.wikipedia.org/wiki/2003_North_America_blackout

techno-reliance

do you know your BMI?

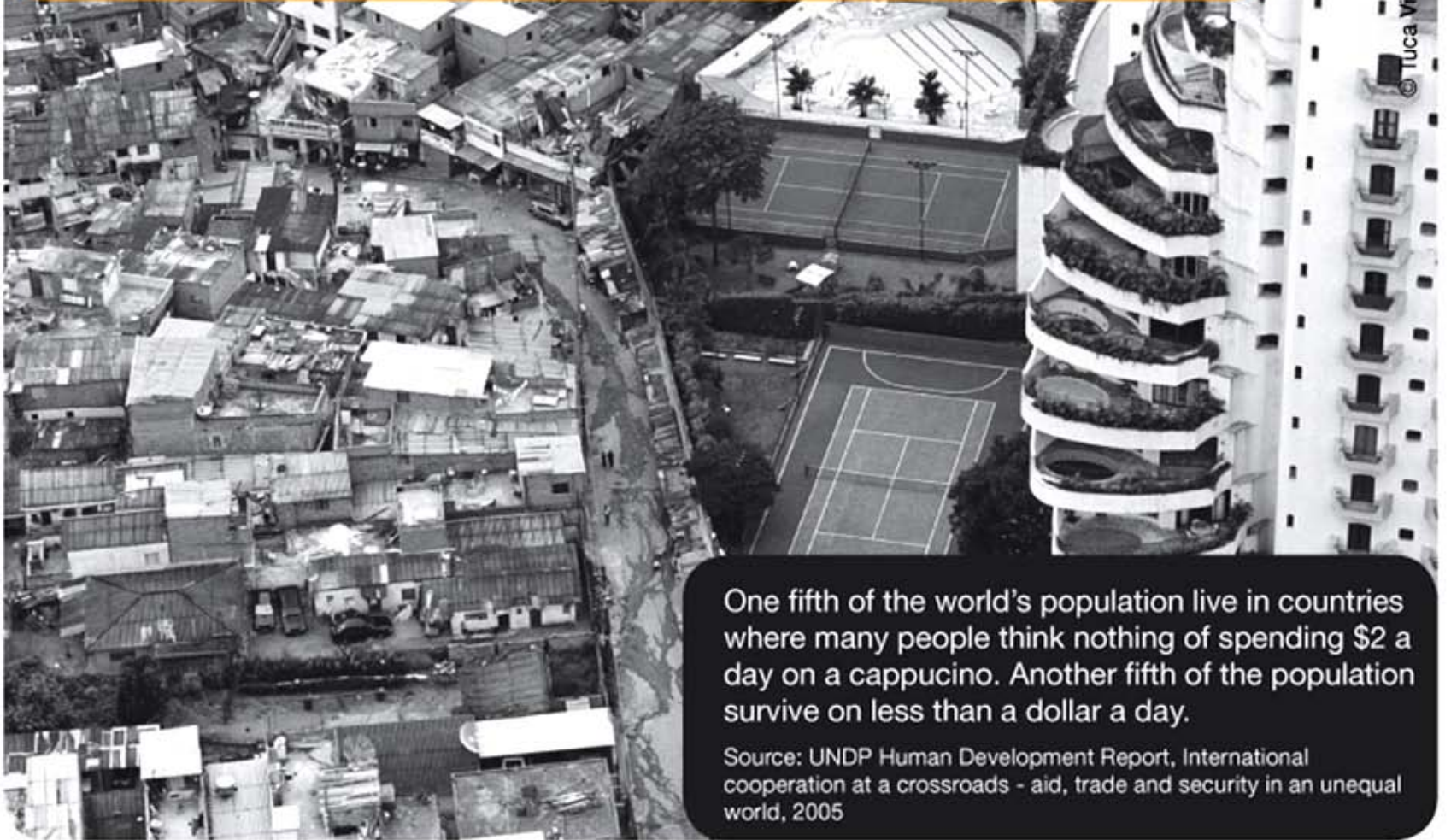


The overweight now outnumber the malnourished. While 800M people in the developing world are chronically malnourished, more than 1bn people now have a BMI (body mass index) that makes them clinically overweight, and at least 300M are obese.

Source: <http://www.who.int/topics/obesity/en/>

obesity

are there two cities within each city?

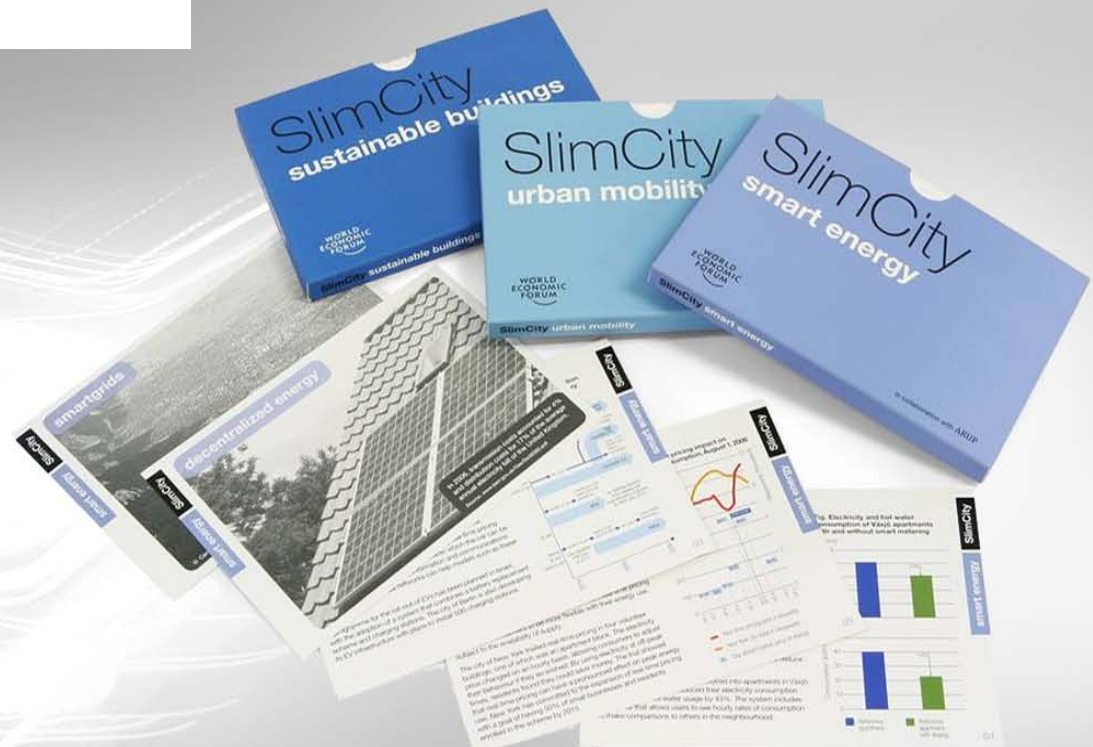


One fifth of the world's population live in countries where many people think nothing of spending \$2 a day on a cappuccino. Another fifth of the population survive on less than a dollar a day.

Source: UNDP Human Development Report, International cooperation at a crossroads - aid, trade and security in an unequal world, 2005

poverty

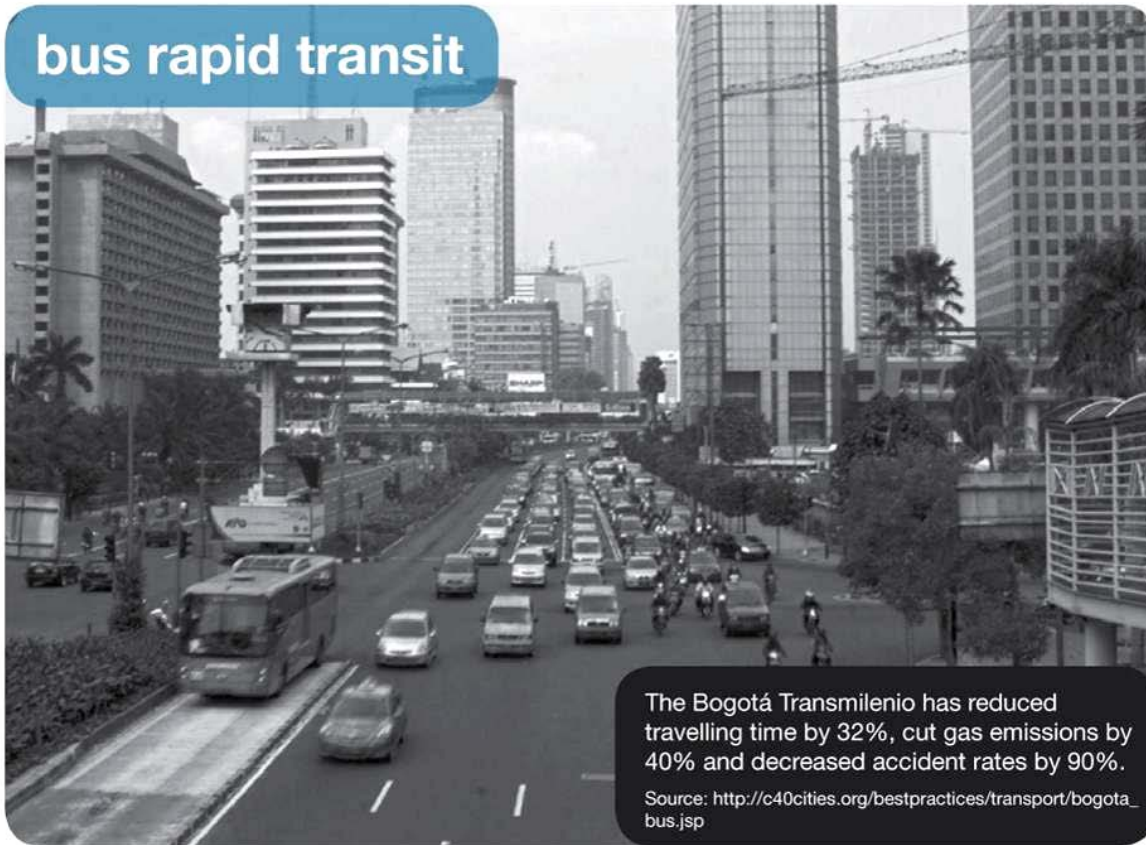
How some cities have responded



SlimCity

urban mobility

bus rapid transit



The Bogotá Transmilenio has reduced travelling time by 32%, cut gas emissions by 40% and decreased accident rates by 90%.

Source: http://c40cities.org/bestpractices/transport/bogota_bus.jsp

SlimCity

urban mobility

ticketing



The Octopus card can be used to pay fares for all public transport in Hong Kong and to make purchases for consumer products at many stores in the city, being accepted by more than 1,000 merchants.

Source: http://en.wikipedia.org/wiki/Octopus_card

road pricing

Congestion
charging



Central
ZONE

The Stockholm congestion charging trial reduced CO₂ emissions by 14% and traffic by 22%, while travel times inside the zone reduced by 30-50%.

Source: http://c40cities.org/bestpractices/transport/stockholm_congestion.jsp

goods transport



More than 80% of today's road freight trips in European conurbations are of distances below 80 km and can be defined as urban or urban-regional transport.

Source: www.bestufs.net/bestufs2_bp_handbook.html

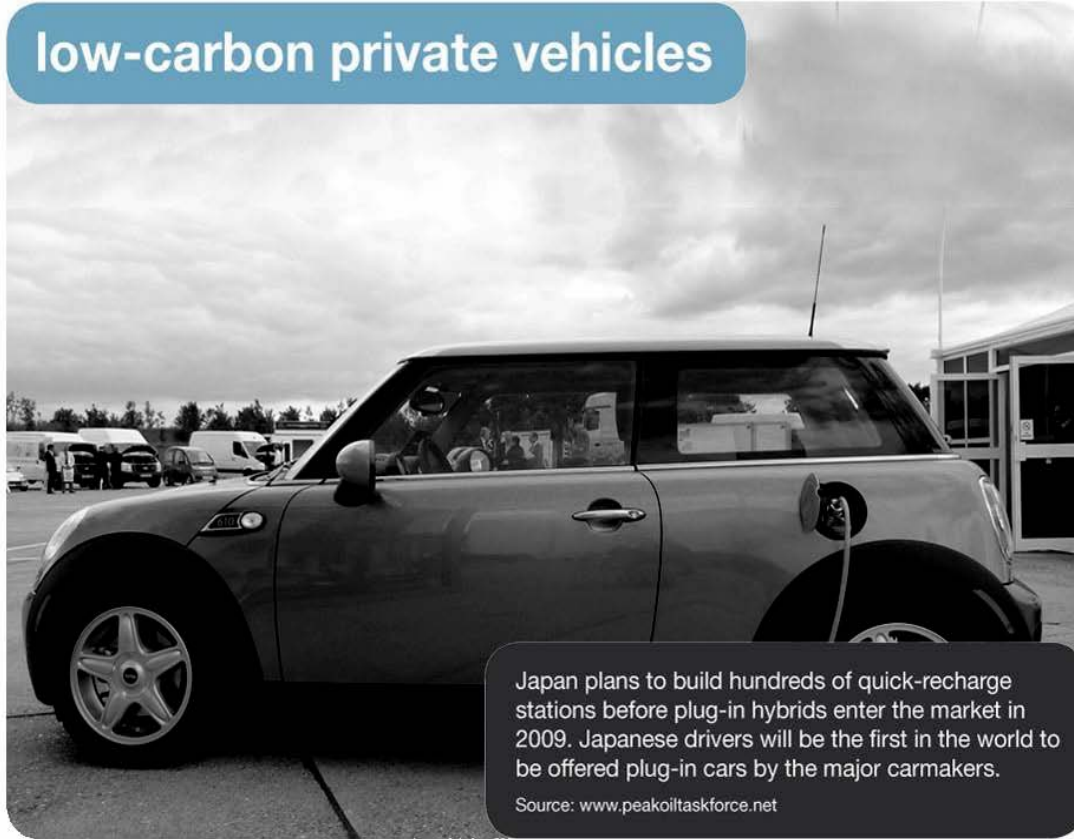
car parking



SlimCity

urban mobility

low-carbon private vehicles



Japan plans to build hundreds of quick-recharge stations before plug-in hybrids enter the market in 2009. Japanese drivers will be the first in the world to be offered plug-in cars by the major carmakers.

Source: www.peakoiltaskforce.net

cycling

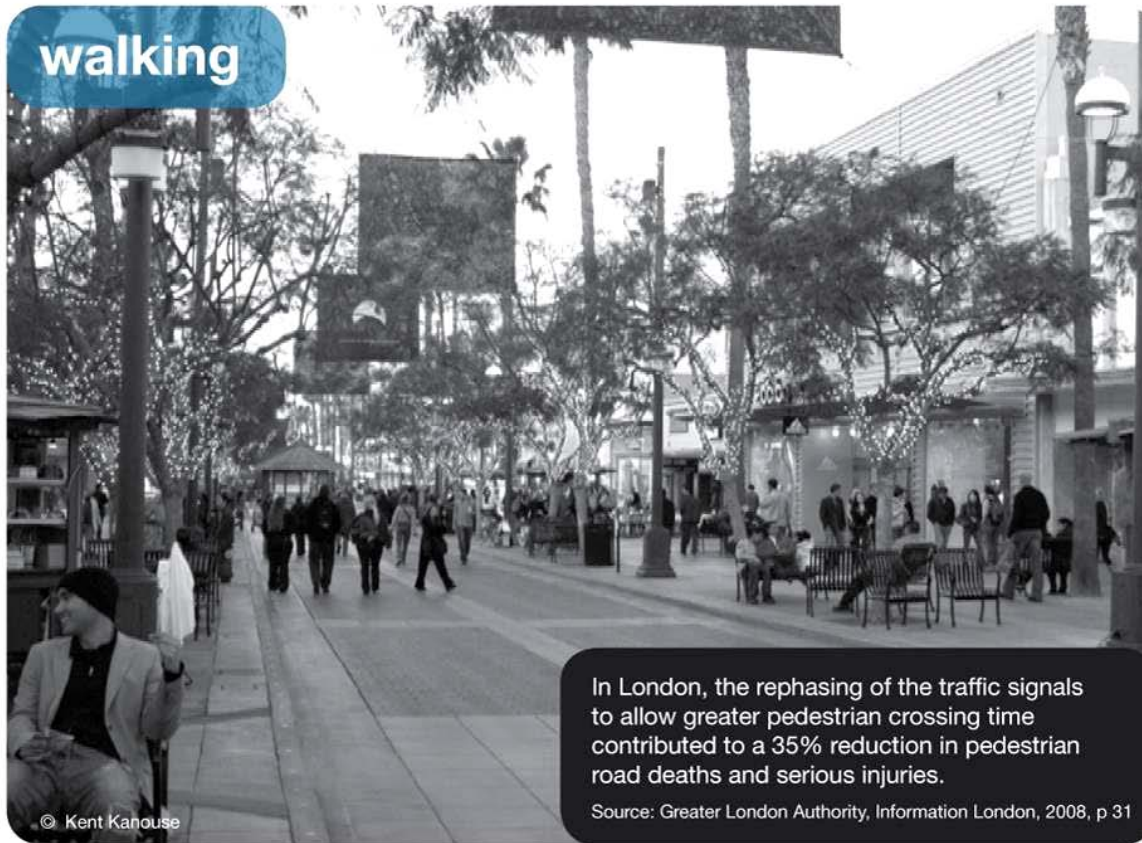


Copenhagen provides a safe, secure and efficient cycling environment for its citizens. There has been a dramatic growth in the use of bicycles during the last 10 years, and the number of accidents has substantially decreased.

Source: <http://c40cities.org/bestpractices/transport/>

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walking

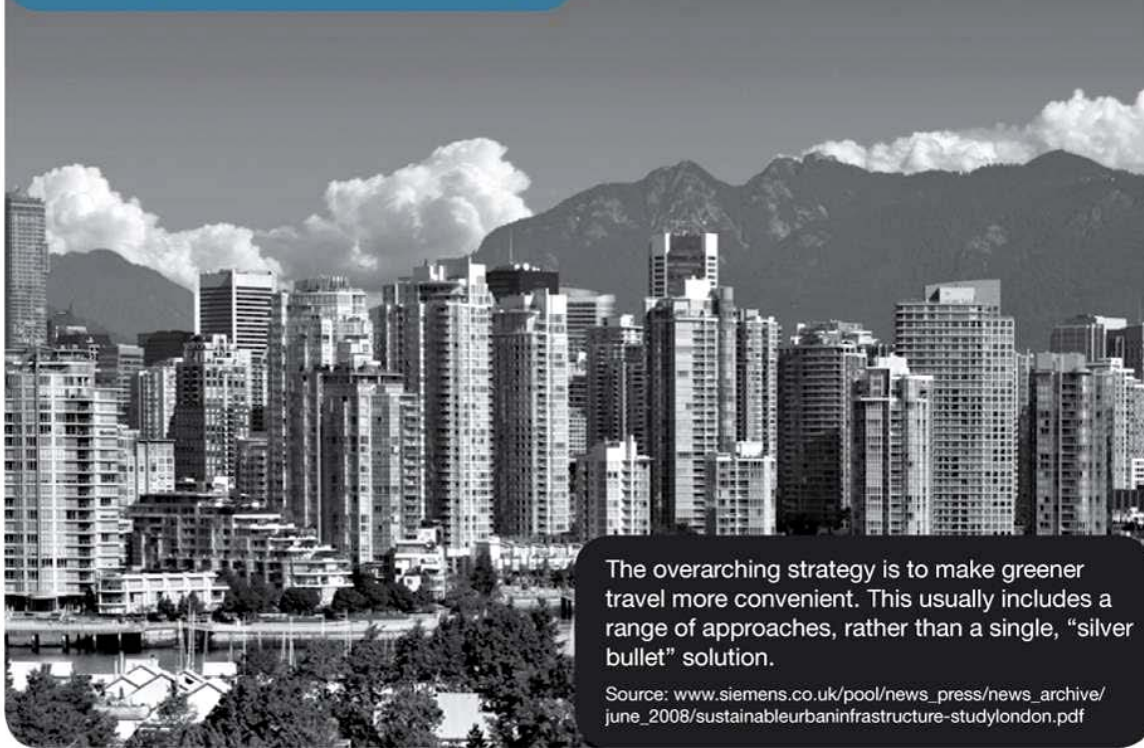


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In London, the rephasing of the traffic signals to allow greater pedestrian crossing time contributed to a 35% reduction in pedestrian road deaths and serious injuries.

Source: Greater London Authority, Information London, 2008, p 31

integrated planning



The overarching strategy is to make greener travel more convenient. This usually includes a range of approaches, rather than a single, “silver bullet” solution.

Source: www.siemens.co.uk/pool/news_press/news_archive/june_2008/sustainableurbaninfrastructure-study-london.pdf

governance



“Urban transport is a political and not a technical issue. The technical aspects are very simple. The difficult decisions relate to who is going to benefit from the models adopted.”
Enrique Peñalosa, former Mayor of Bogotá

Source: www.pps.org/info/placemakingtools/placemakers/epenalosa

Question: what should be the strongest policy driver for transport initiatives in the future?

- 1. Economic vitality** – to attract employment, give access to work etc
- 2. Low carbon** - to reduce climate change
- 3. Health and quality of life** – air quality, safety, active travel, flexible working etc
- 4. Energy efficiency** – reduce energy consumption etc to address peak oil and security of supply concerns

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