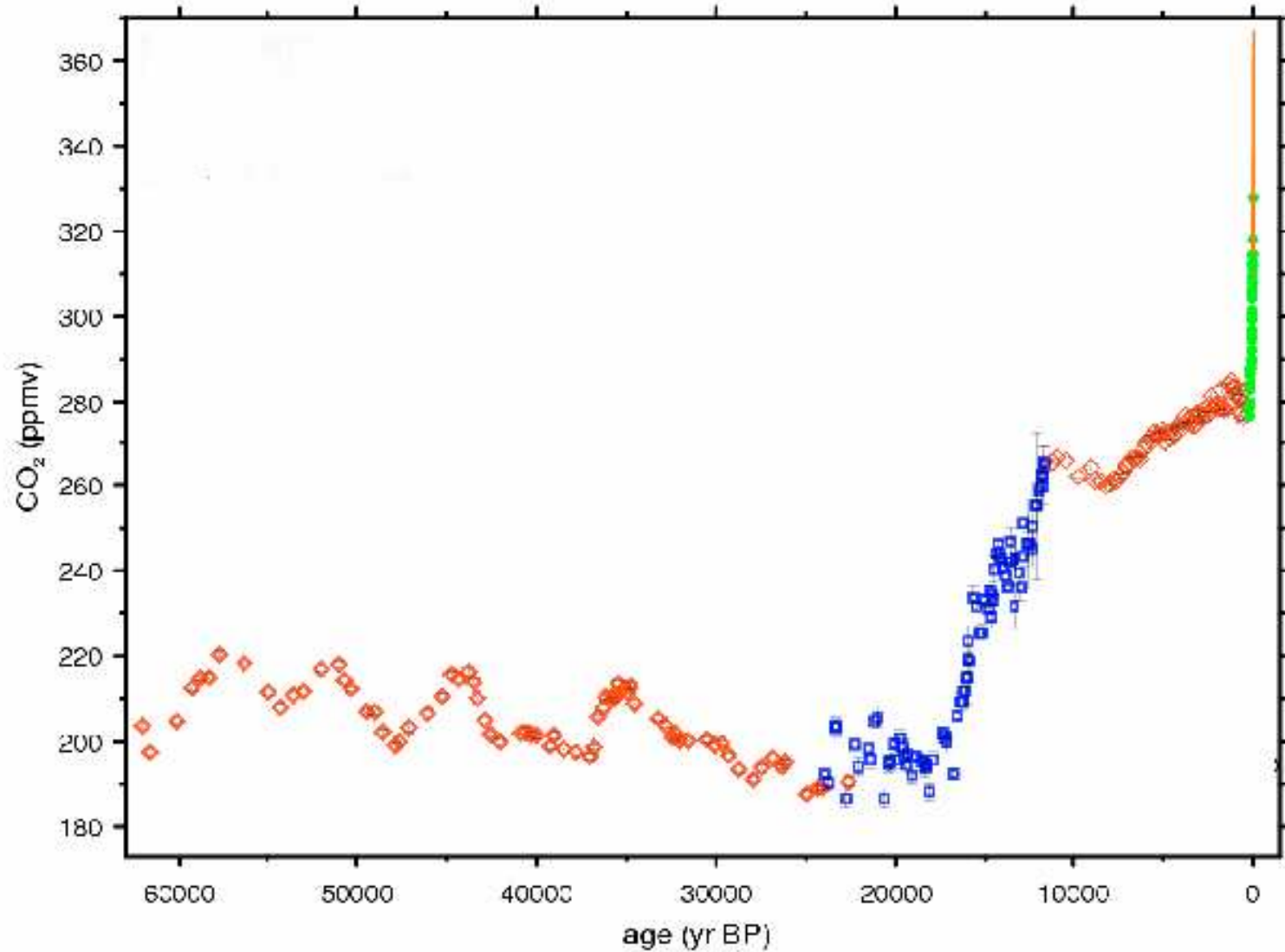


SUSTAINABLE URBAN DEVELOPMENT AND TRANSPORT

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The New Imperative



381 ppm
2005

EU Kyoto Commitment

-8% 1990-2010



EU White Paper on Transport - 2001

- 1. Integration of transport in sustainable development**
- 2. Break link between economic growth and transport**
- 3. Shifting the balance between modes**

Energy consumption in transport = 28% of CO₂
Could increase by 50% from 1990 to 2010
Road accounts for 84% of this figure
Quality of life in cities – pollution, noise, accidents and congestion

Changes in Travel



EU25 Pass km %	1995	2002	Change
Car	75.0	71.3	-5.0%
Buses and Coaches	9.4	8.2	-12.8%
Tram and Metro	1.0	1.0	0%
Rail	6.5	5.9	-9.3%
Air	8.1	13.6	+67.9%
<hr/>			
Great Britain Total	1975/76	1992/94	2003
Journeys	935	1053	990
Distance	7536 km	10302 km	10933km
Journey Length	8.06 km	9.78 km	11.04km
Air travel distance per person per year		65.6km	124.8km

The New Realism

Stage 1 - Consensus that projected traffic growth is not sustainable

Stage 2 - Proposed road schemes will not solve the problem

Stage 3 - Limitations on the use of the car and substantially raising the costs of travel

Stage 4 - Awareness of the environmental and social costs of unlimited mobility

Stage 5 - Reduce the need to travel - the only means to improve the environment and congestion





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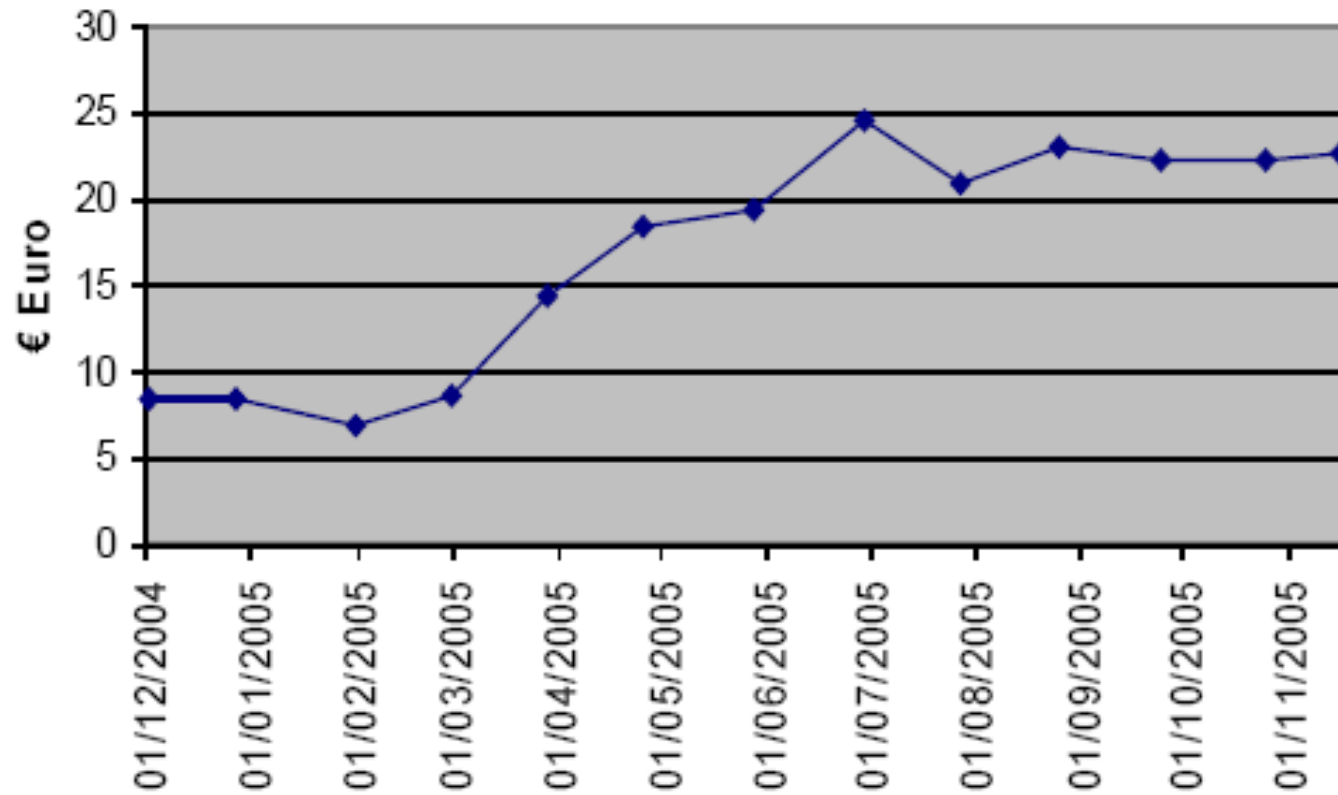


The Universal Problem

Internalising the social costs of transport through the pricing mechanism

1. Fuel duty increases – fuel duty escalator
2. Emissions trading schemes – cap and trade
3. Road pricing – congestion based or environmental based

Carbon Dioxide – Price per Tonne



TOTAL EXTERNAL COSTS 2000 (EXCLUDING CONGESTION)

Mill. € per year

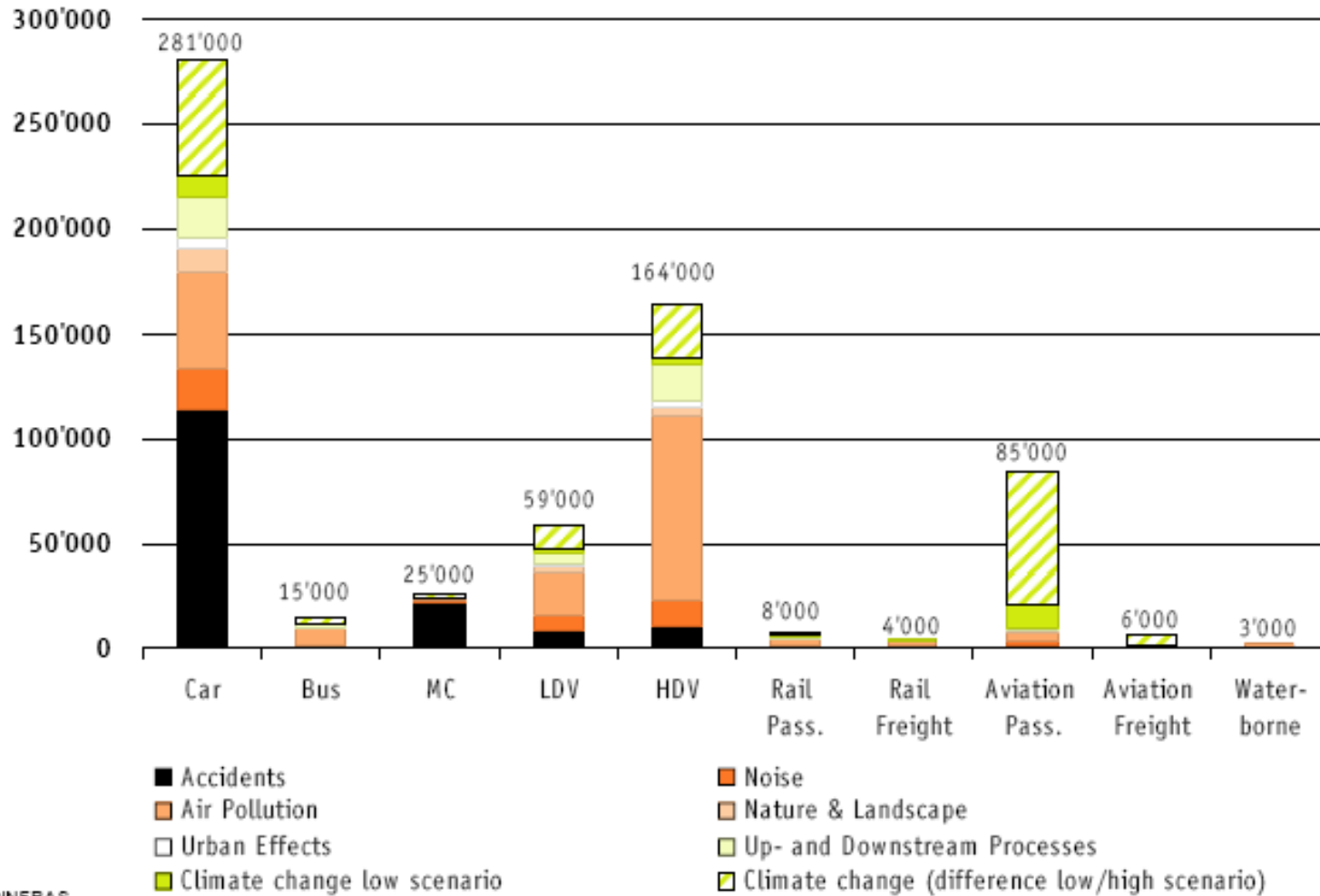
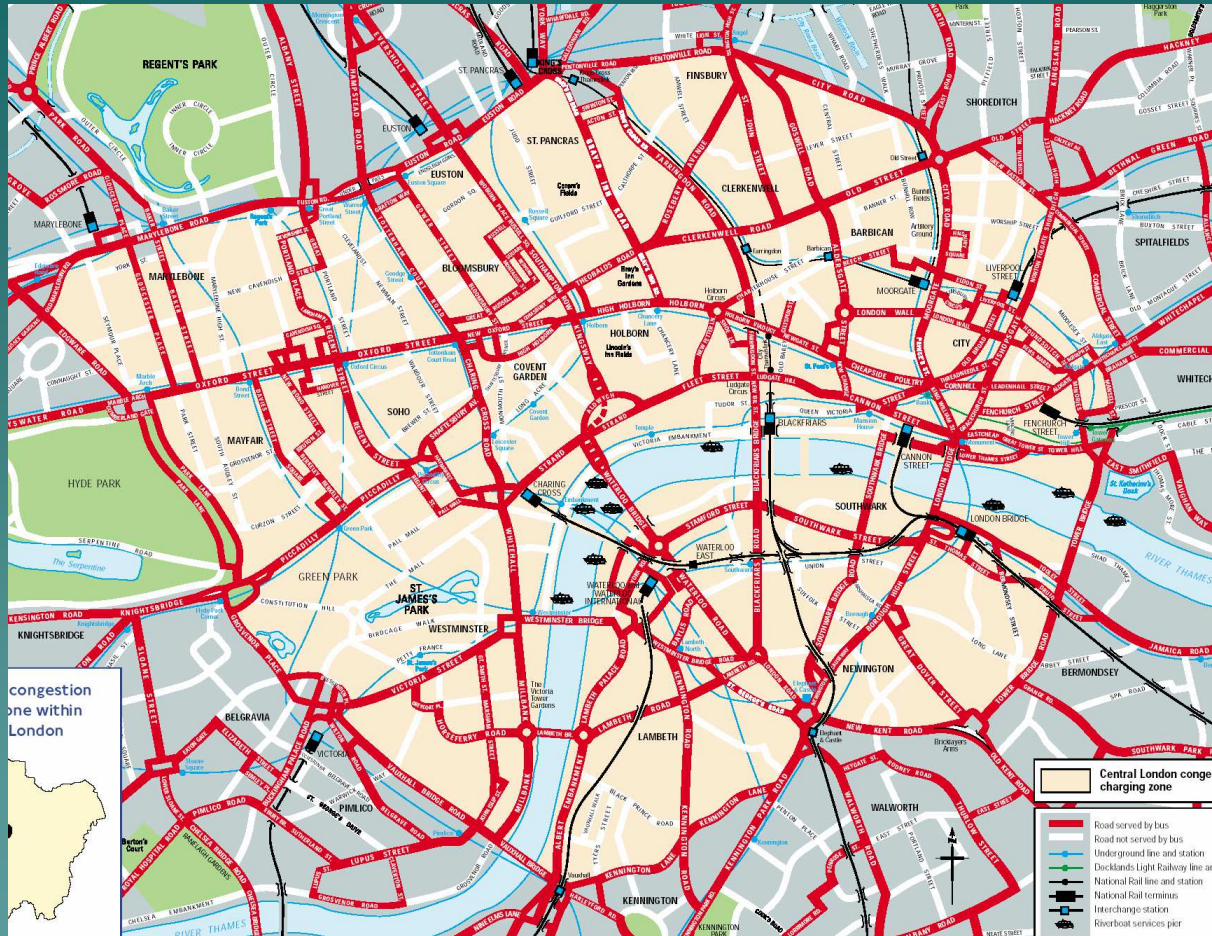


Figure 1 Total external costs 2000 (EU 17) by means of transport and cost category. Road transport is responsible for 84% of total external costs.



£5 daily charge (€7) –
now £8 (€11)

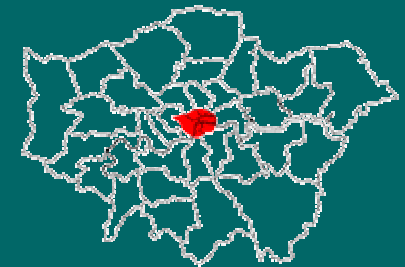
174 entry points

£80 penalty for non
compliance (€110)

Requires registration
of all vehicles

About 50% vehicles
have discounts or
exemptions

The congestion charging area



Outcomes 2005



- ◆ Traffic down 15% entering
- ◆ Delays down by 30%
- ◆ 15% speed increase in zone
- ◆ Increase in traffic of 5% on IRR but journey times remain the same
- ◆ Bus services improved – 4% shift from car to bus
- ◆ Bus patronage inside area +10%
- ◆ 125,000 payers/day
- ◆ Environment – emissions -12%
- ◆ Net Revenues £68m

Technological Solutions



Technology has always solved the problems in the past and will solve them now

- ◆ Catalytic converters
- ◆ Electric, hybrid and hydrogen vehicles
- ◆ Alternative fuels

Electric Cars



Free electric recharging in Copenhagen and Free unrestricted parking for electric vehicles in London

Hybrid Cars and Lean Burn Technology



Alternative Fuels

Focus FFV can use 85% Bioethanol and produces 30% the CO₂ of the same conventional fuelled car.



Hydrogen Fuel buses – 3 operating in London from January 2004

Land Use and Planning



- Reduce journey lengths – higher use of public transport and green modes of transport
- Encourage trip chaining – location of services and facilities in close proximity
- Promoting high quality locations, including public transport interchanges – where people want to spend time at with facilities – transport development areas

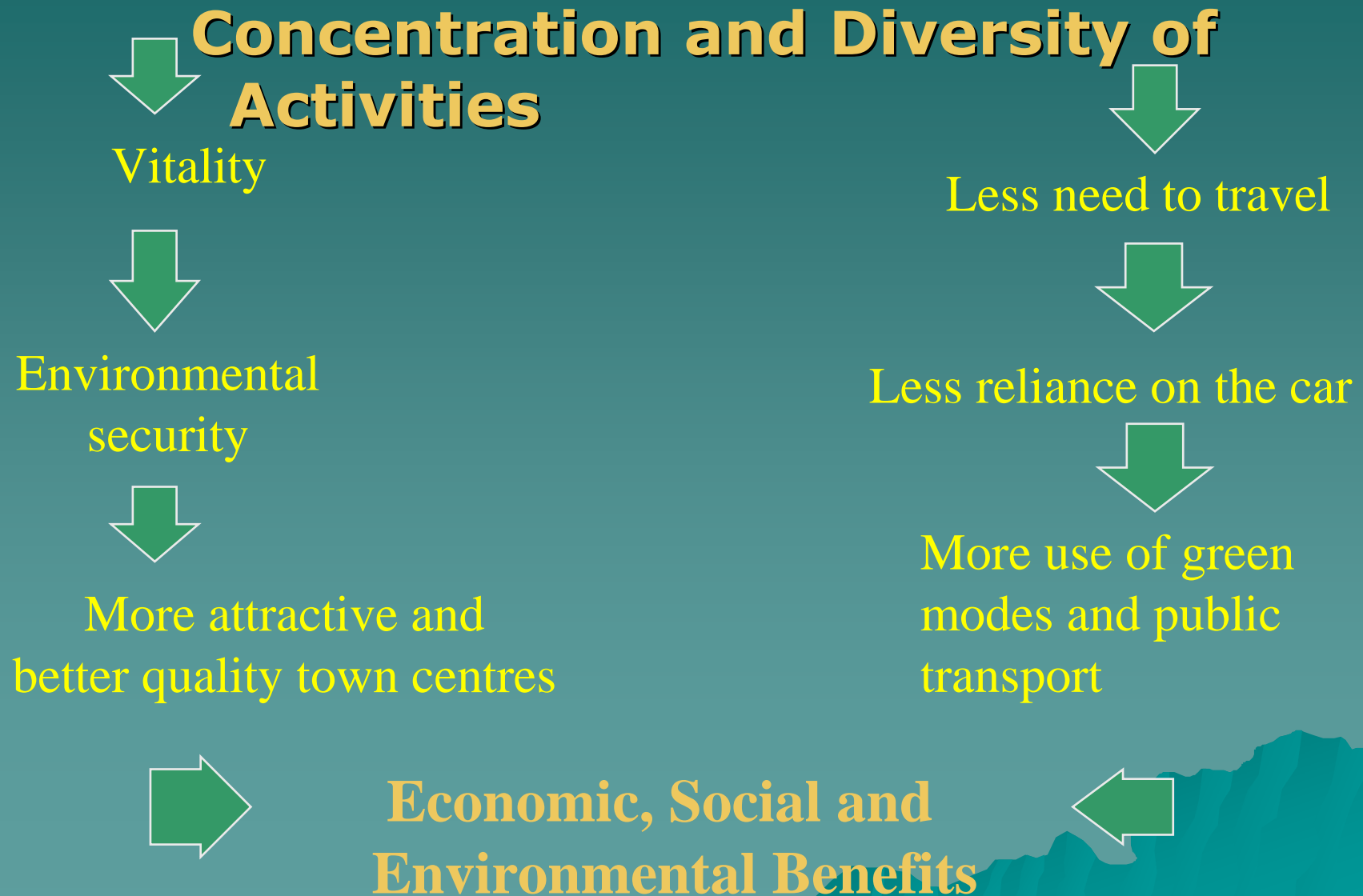
Land Use and Planning Solutions



Sustainable transport policy - Sustainable development

1. Development Principles
2. Social Audit
3. Quality Neighbourhoods and
Transport Development Areas

Development Principles



Development Principles



1. Density of Development

As density increases

- ◆ Average trip length reduces
- ◆ Use of the car reduces
- ◆ Distance travelled reduces

But causality has not been proved



High density development in London

2. Size of Settlement

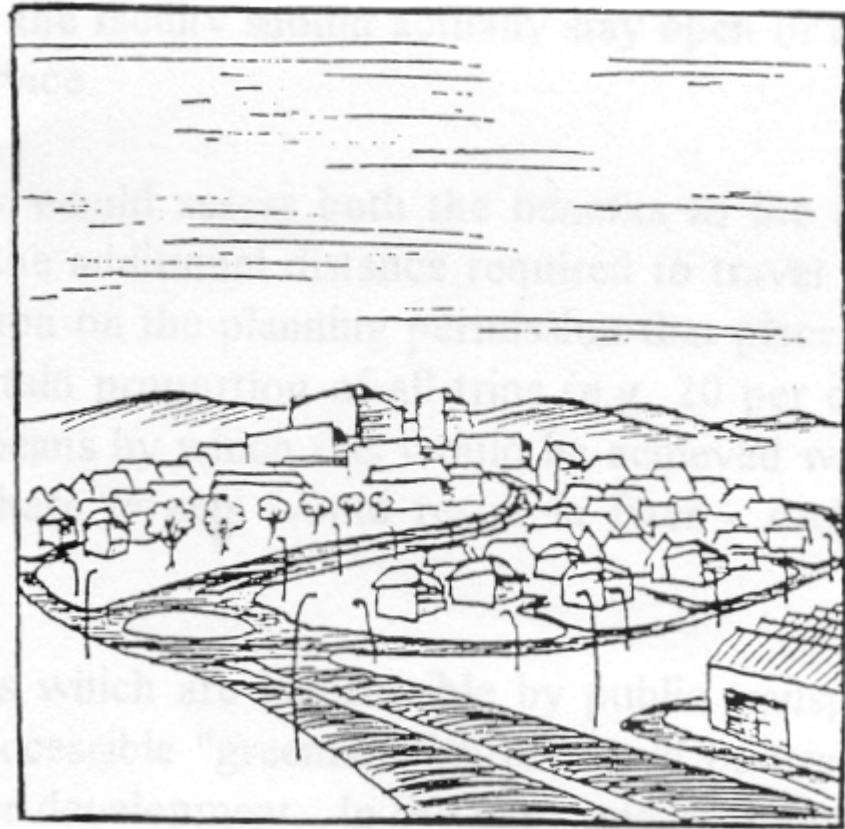
The larger the settlement

- ◆ Shorter the trips
- ◆ Greater proportion of trips by public transport
- ◆ Use of car and total distance travelled decreases

Thresholds need to maintain balance between people, jobs and a full range of facilities



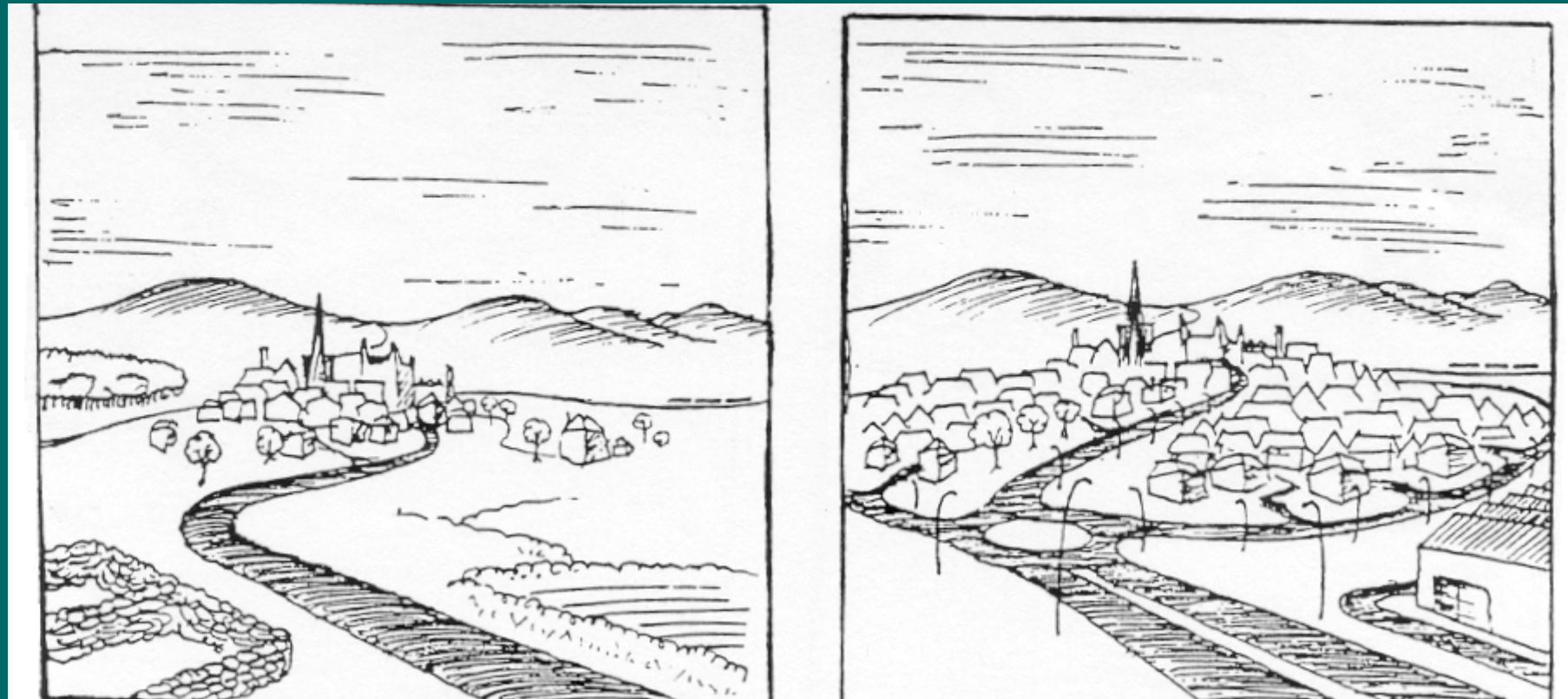
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New settlement development on green field site



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New development around existing settlement

3. Availability of Employment

Increases in consumption of travel by car commuting in UK is 60% from 1981-1991

- ◆ Need to put workplaces nearer to where people live, but the nature of work is changing
- ◆ Also locate workplaces in larger and public transport accessible locations

Social Audit



1. Social Costs of Closure
Savings to provider and additional costs to user
2. Social Costs of New Development
Benefits to local economy and users of the new facility, extra travel (if any)
3. Development Levy
On locations inaccessible by public transport

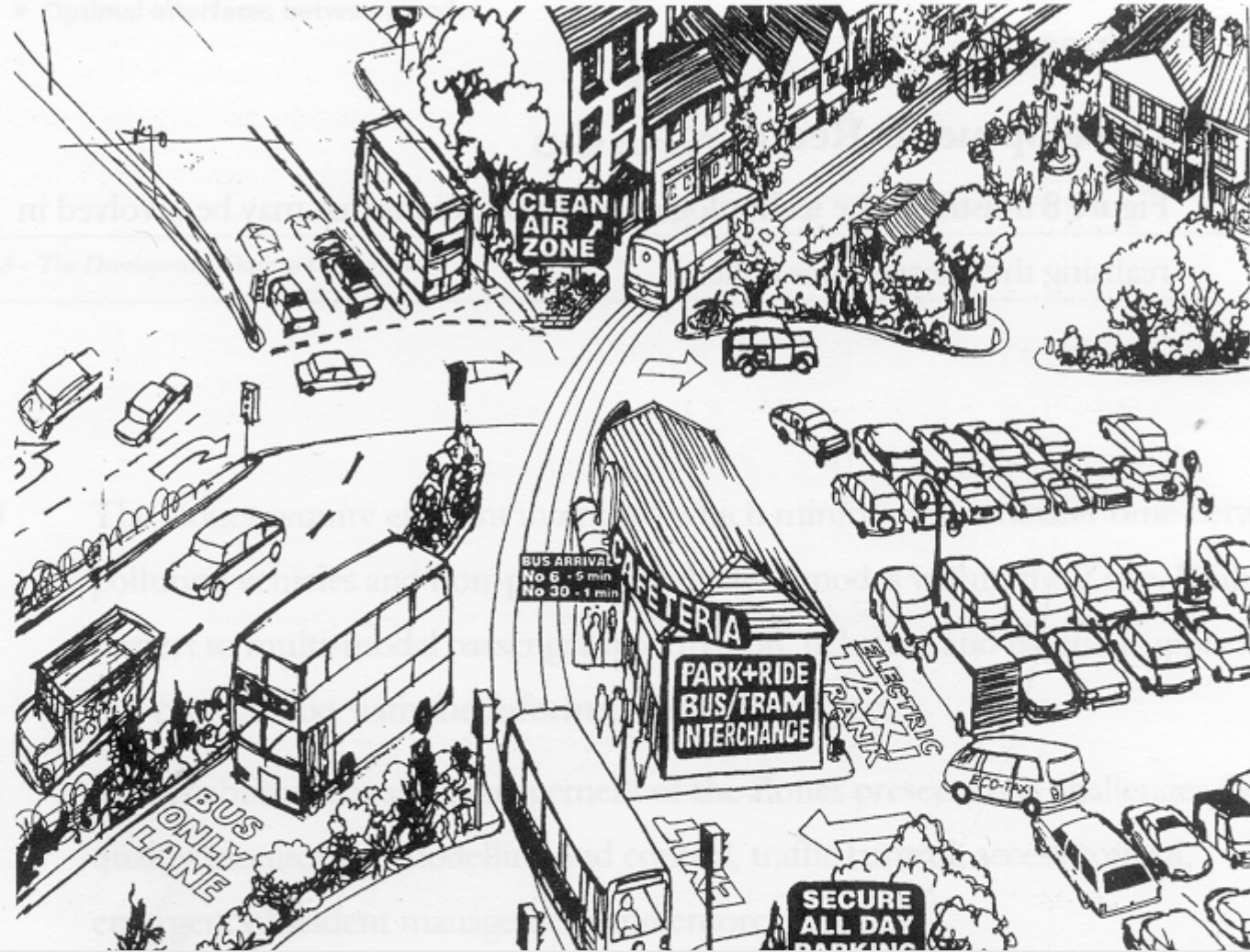
Quality Neighbourhoods



Locations where people, public transport and local facilities take precedence over the car

- ◆ Clear zones – home zones
- ◆ Streets for people – pedestrianisation
- ◆ Car free areas
- ◆ Transport development areas
- ◆ New urbanism – traditional neighbourhood design – transit oriented developments

Clear Zones and limited access areas - Interchange point at boundary





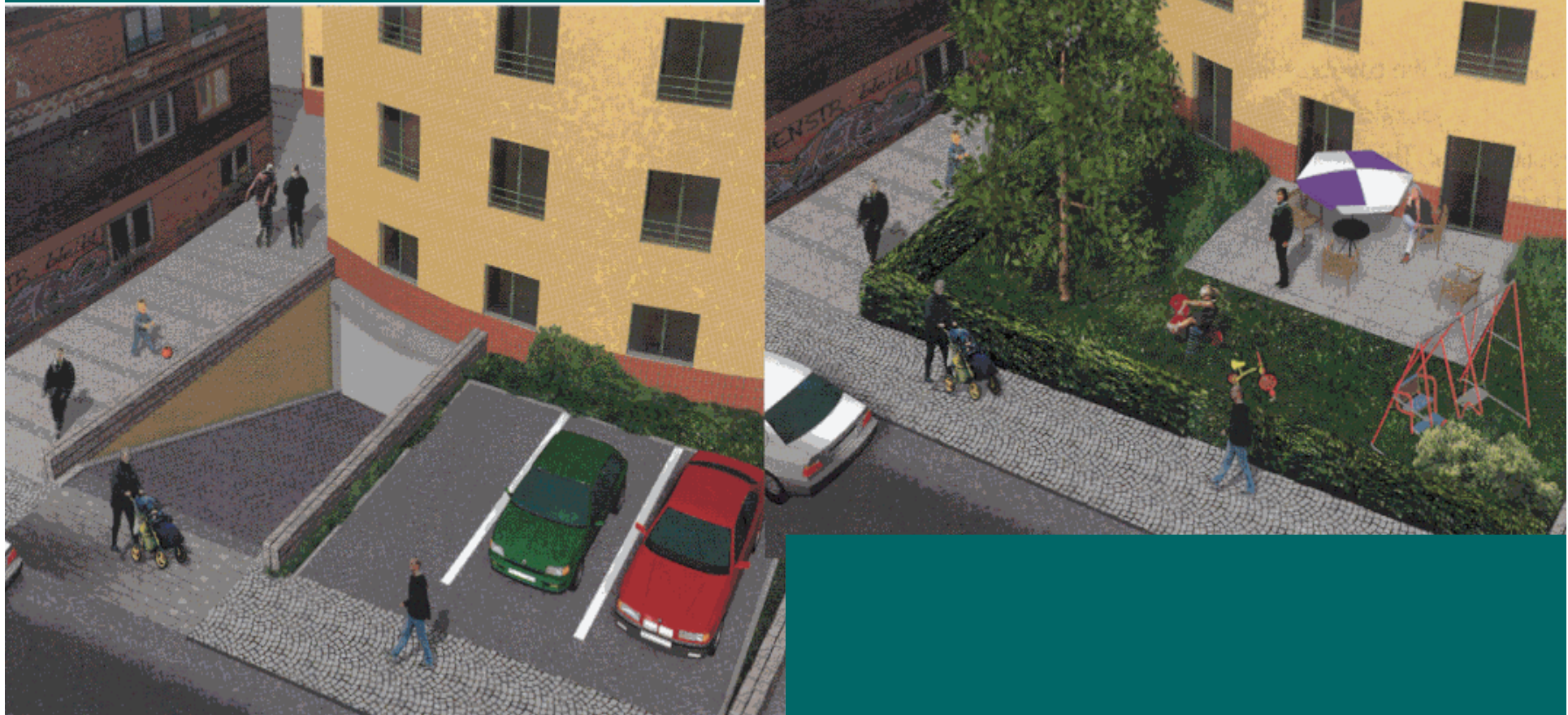
Streets for People



City Bikes in Copenhagen – 33% of commuting is by bike, with 300 kms of cycle tracks and networks of cycle routes



Car Free Development Gruenenstrasse in Bremen



Transport Development Areas



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1. At public transport accessible locations
2. Encouragement of multi modal trips
3. Office location and retail centres at TDAs
4. Affordable housing units and car free developments
5. The new interchange points where people want to meet and spend time and money



Conclusions

Importance of land use and transport in creating sustainable urban environments

- Tackles the causes of unsustainable transport.
- Meets social concerns about the equity.
- Creates a more efficient transport system.
- Improves the quality of life in cities.