TRAINING
MODULE

TRANSPORT LEARNING

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Parking space management, access restriction and speed control

Photos: eltis.org, CIVITAS GUARD

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Location, Date

Training modules

1) Parking space management, access restriction and speed control
2) Mobility management measures for families, kindergartens and schools
3) Land use and housing in mobility management
4) Public transport models
5) Street design, streetscape and traffic calming
6) Walking and cycling – counselling municipalities
7) Design and implementation of sustainable mobility campaigns
8) Communication training

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Objectives of this module

To understand:

- Reasons for managing parking and restricting access for cars
- Impacts of this management on economy, transport and environmental systems
- How to manage parking, with good practice examples
- Technical and financial aspects of parking management
- How to gain public acceptance of parking management
- To start to think more about how to manage parking in your own city

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Control / restraint on car use

- Why is the car used?
- What are the effects of car use (and should it be restrained)?
- The array of restraints to car use?

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Why is the car used?

- Types of journey
- Motivation for use

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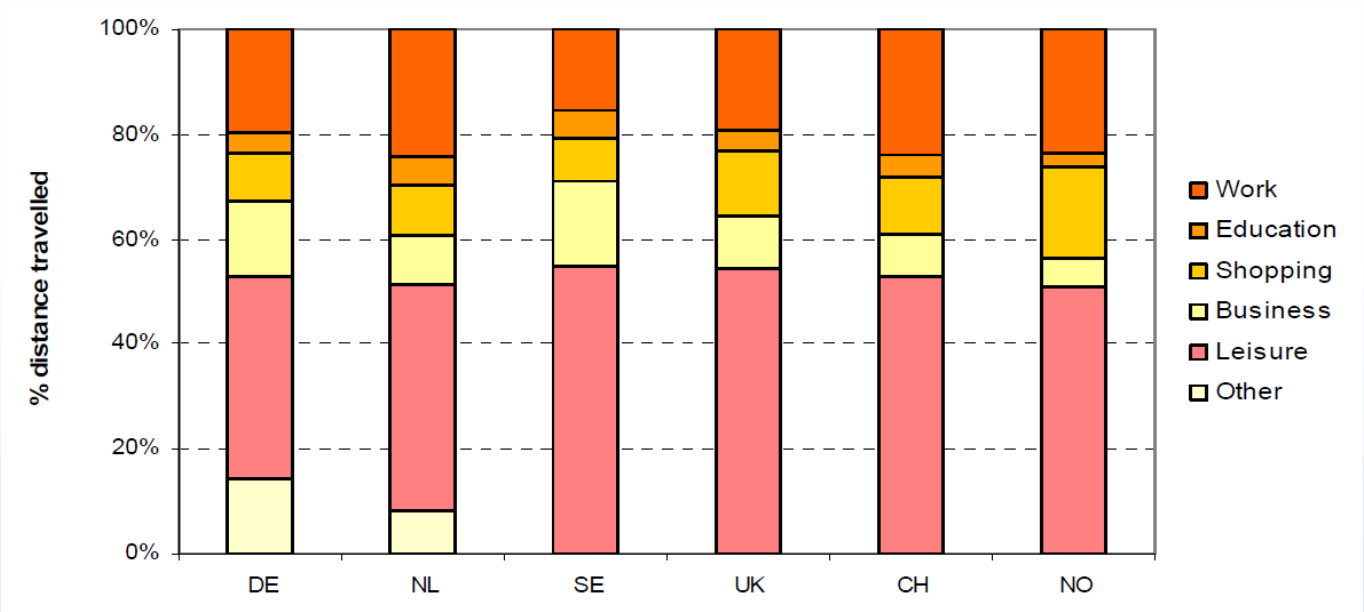
Types of journey?



Proportion of Total Passenger Distance Travelled by Purpose (in six countries)
Source Layos L.A , *Passenger Mobility in Europe*, Statistics in Focus 87/2007, Eurostat, 2007)

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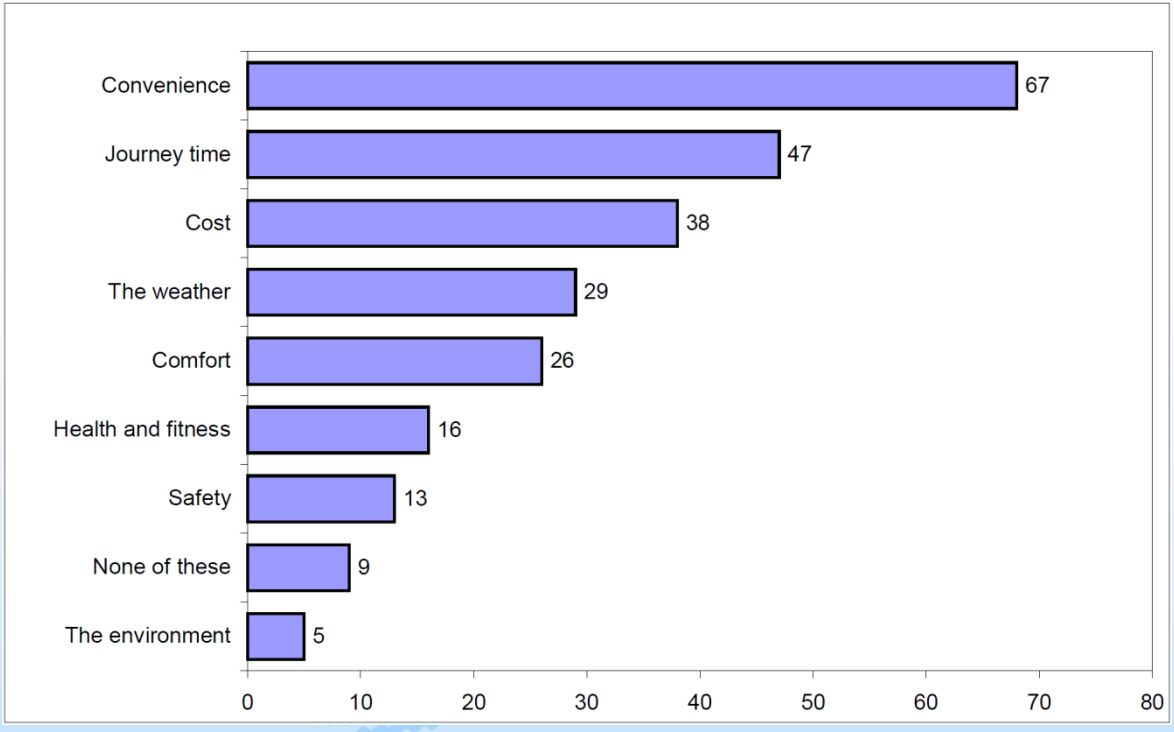
Why?



Key influences on modal choice (proportion of total respondents)
(Anderson S. & Stradling S.G., *Attitudes to car use and modal shift in Scotland*, The Stationary Office, 2004)

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Car use and why? – *Please discuss.....*

How will drivers react to different techniques for control / restraint? ……. It depends on what the cars are being used for and the reasons for car use …….

- ***What are the main uses for cars in your country – and in what proportions?***

- ***What are the reasons for car use in your country – are some more important than others?***

- ***Can cultures of car use change?***

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The effects of car use?

- Energy consumption
- Environmental degredation
- Congestion
- Other?

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Energy Consumption – Europe

	Total:	Oil:	Gas:	Electricity:	Renewables & Other:	Solid Fuels:	Heat:
Final energy consumption:	**1,176**	**497**	**279**	**242**	**62**	**55**	**41**
Industry:	**324**	50	104	98	18	43	11
Household/Services:	**482**	89	174	138	39	12	30
Transport:	**370**	358	1	6(*)	5	0	0
of which:							
• ***Road***	***303***	*297*	*1*		*5*		
• ***Rail***	***9***	*3*		*6(*)*			
• ***Inland Waterways***	***6***	*6*					
• ***Air***	***52***	*52*					

(*) Using Power Station Generation figures this 6mtoe from 'Electricity' in average would be generated by: 'Thermal' (Oil, Gas, Solid Fuels etc) - 3mtoe (55%); 'Nuclear' - 2mtoe (30%); 'Hydro' - 1mtoe (9%); and a small proportion (6%) by other 'Renewable' Sources.

Final Energy Consumption in Europe (EU27) 2006 (million tonnes oil equivalent)

(Eurostat, Panorama of Transport (2009 Edition), European Communities, 2009 & Eurostat, Energy, Transport & Environment Indicators (2008 Edition), European Commission, 2008)

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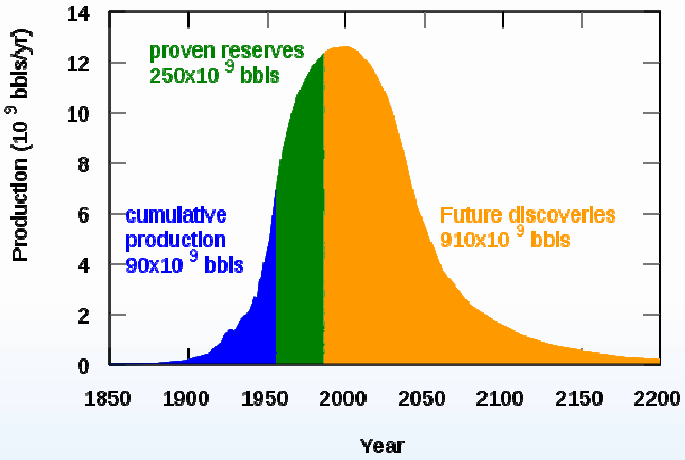
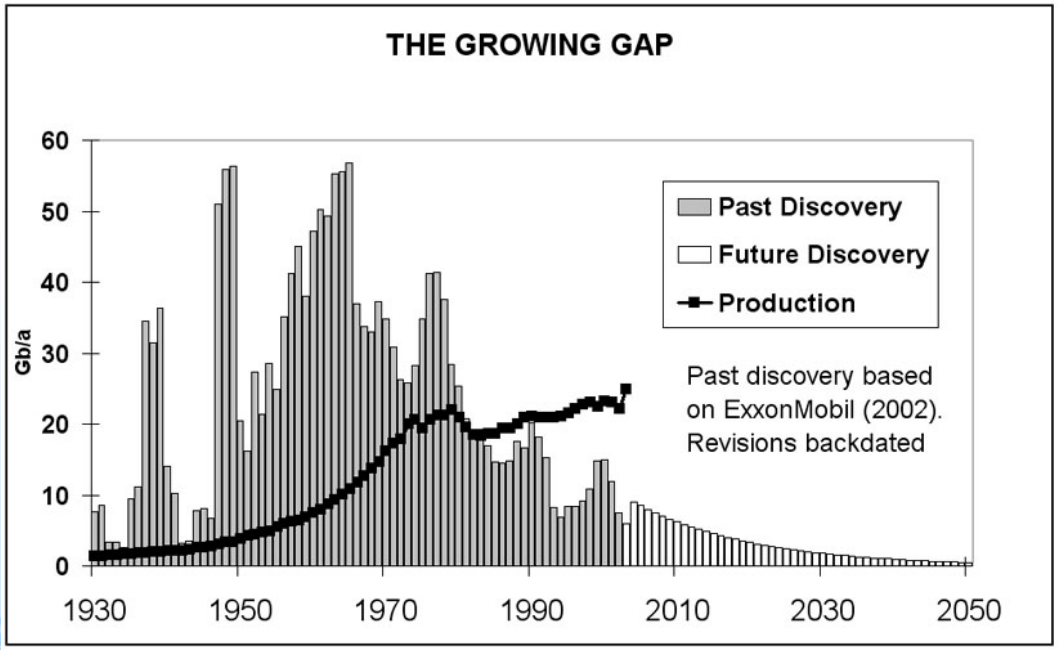
Energy Consumption – ‘Peak Oil‘



M. K Hubbert 1956



Association for the Study of Peak Oil 2011

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Energy Consumption

Energy Use per passenger kilometre (MJ/p.km):	Western Europe	Eastern Europe
Private Car	2.49	2.35
Bus	1.17	0.56
Tram	0.72	0.74
Light Rail	0.69	1.71
Metro	0.48	0.21
Suburban Rail	0.96	0.18

Transport Energy Use Per Passenger Kilometre in Western and Eastern European Cities 1995

(Kenworthy J.R., *Transport Energy Use and Greenhouse Gases in Urban Passenger Transport Systems: A Study of 84 Global Cities*, Third International Conference of the Regional Government Network for Sustainable Development, Fremantle, Australia, 09/03)

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Environmental degradation

- Global
- Neighbourhood
- Congestion
- Other

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Environment – global warming

- Increase in concentrations of certain „greenhouse gases“ – climate change
- If temperatures rise by 5°C by 2080, predicted cut in global GDP of 10% and 30% rise in food prices by 2100 (Stern, 2006)
- European Union legal target to cut GHG emissions by 20% by 2020
- Transport has key role

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Environment - Global (Warming)

- In 2007 transport produced 28.4% of all CO_2 emissions across Europe.

	Road Transport	Navigation	Civil Aviation	Railways	Other	Total Transport
Proportion of Total Transport CO_2 Emissions:	70.9%	15.3%	12.5%	0.6%	0.7%	100.0%

CO_2 Emissions By Mode

(D G TREN, *CO_2 Emissions from Transport by Mode*, 2010)

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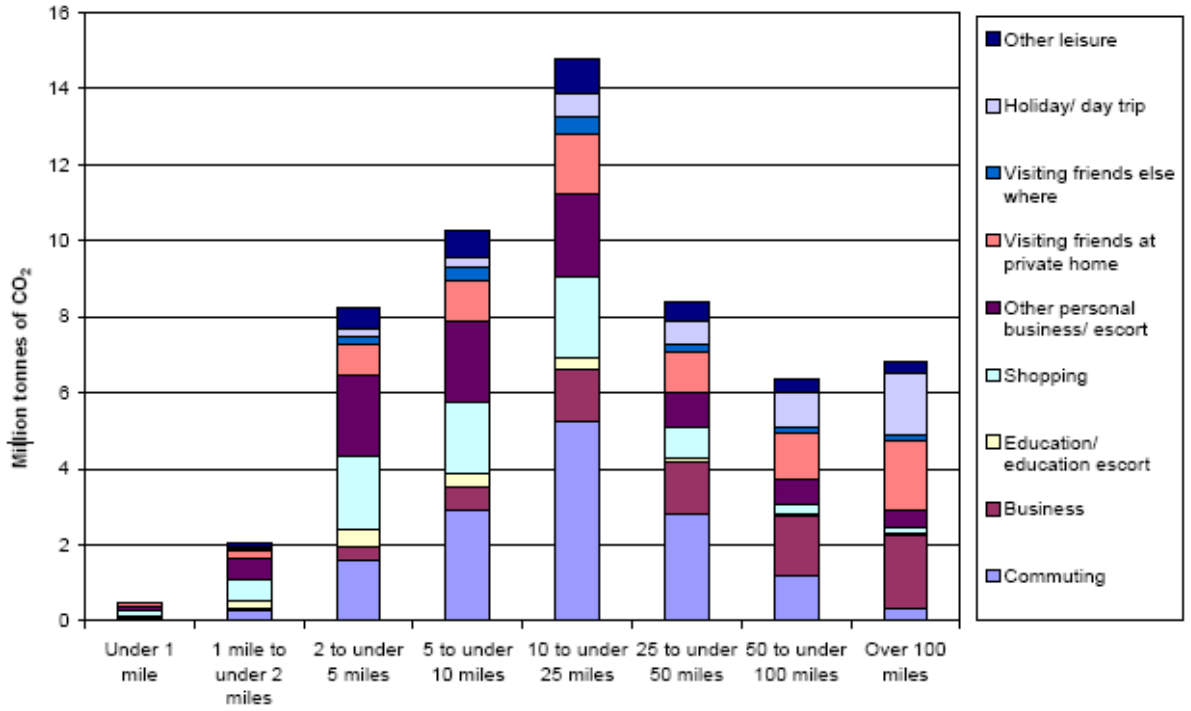
Although in personal transport it's the longest trips that contribute most CO2

Figure 3.14: Estimated CO_2 emissions from household cars by journey purpose and journey length, GB, 2002/2006 average



Source: DfT analysis

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Environment - Global (Warming)

CO_2 Output per passenger kilometre (CO_2 kg/p.km):		
Car (as driver)	UK Petrol	0.20
	UK Diesel	0.14
Rail	UK Intercity	0.11
	UK Other	0.16
	UK Underground	0.07
Bus	London	0.09
	UK Outside London	0.17
	UK Express Coach	0.08
Air	Europe	0.51
	Outside Europe	0.32

CO_2 Emissions By Mode
(Hillman M. & Fawcett T., *How we can save the planet*, Penguin, 2004**)**

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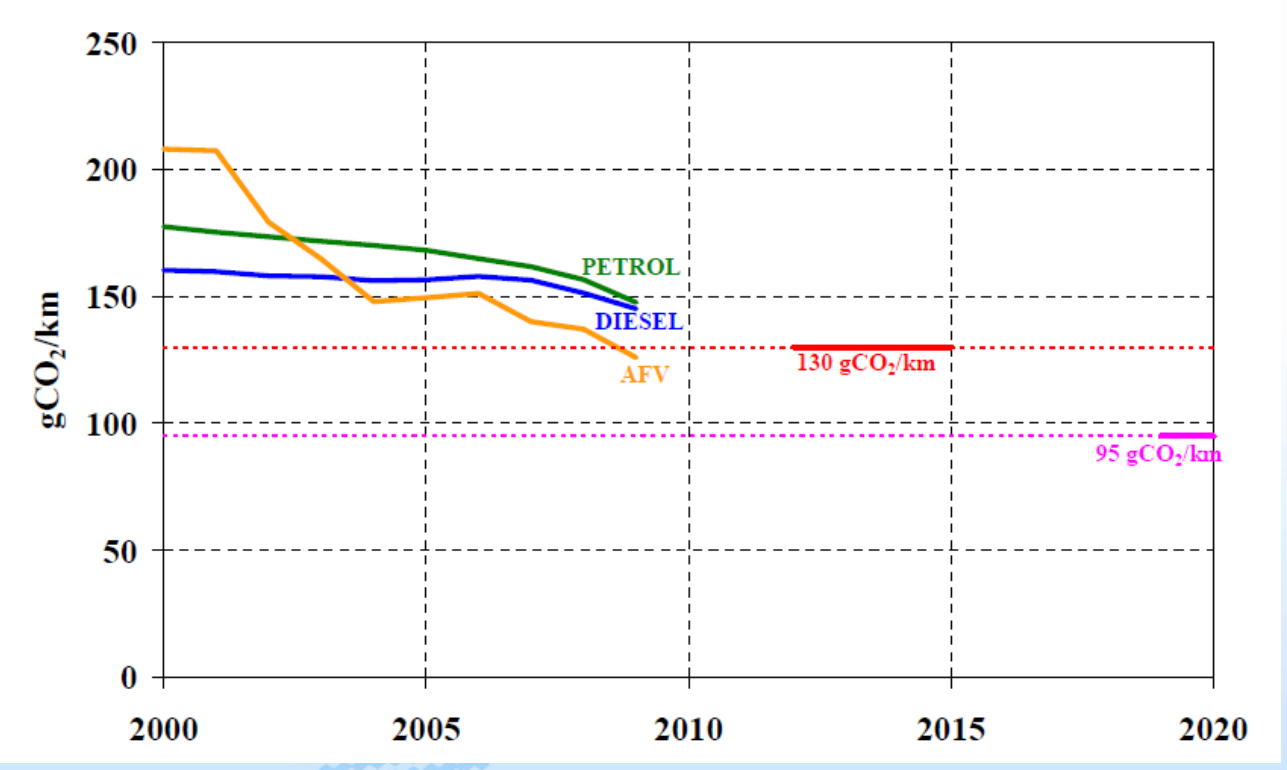
Environment - Global (Warming)



CO_2 Emissions from new passenger cars by fuel within Europe

(Report from the Commission to the European Parliament, the Council and the European Economic & Social Committee – 'Monitoring the CO_2 Emissions from new passenger cars in the EU: date for 2009')

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Environment - Neighbourhood

- Accidents / injuries
  - ≈ €116,000 per personal injury accident (UK – DfT);
- Air pollution
  - ≈ €27- € 282 per tonne of carbon (2010)(UK – DfT);
- Noise
  - ≈ €10 per household per dB(A) change at 45 $L_{Aeq, 18hr}$ dB(A) → €118 per household per dB(A) change at 80 $L_{Aeq, 18hr}$ dB(A) (UK DfT);
- Community severance;
- Congestion
  - Unstable flows / slower speeds / queuing / unpredictable travel times
  - 1 additional car on an already congested major urban road has a marginal external cost of €0.86 per kilometre (UK – DfT)
- Visual intrusion;

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Restraints on car use – access controls

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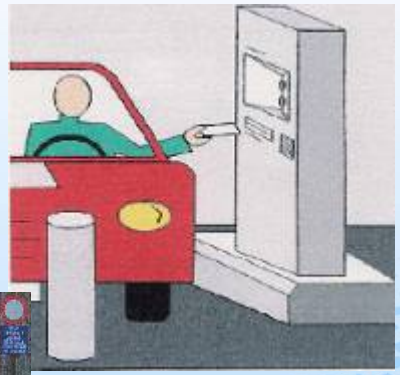
Restraints on car use – On-street 1

- Road availability (access controls)
  - Pedestrian priority zones
  - Access through gates / retractable bollards
  - Need for complementary measures (pt, car share, etc)
  - Barcelona / Bologna / Krakow / Ljubljana / Namur
- *20%-78% reduction in traffic / 19% reduction in accidents*



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Example of Gent, Belgium – 35 hectares of pedestrian zone

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Ten off-street public car parks
29.000 parking spaces off-street

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Parking space management, access restriction and speed control

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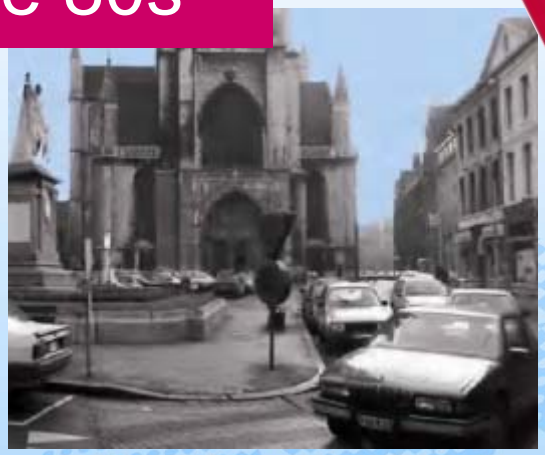
The 80s



gent:

Today

Photos: City of Gent

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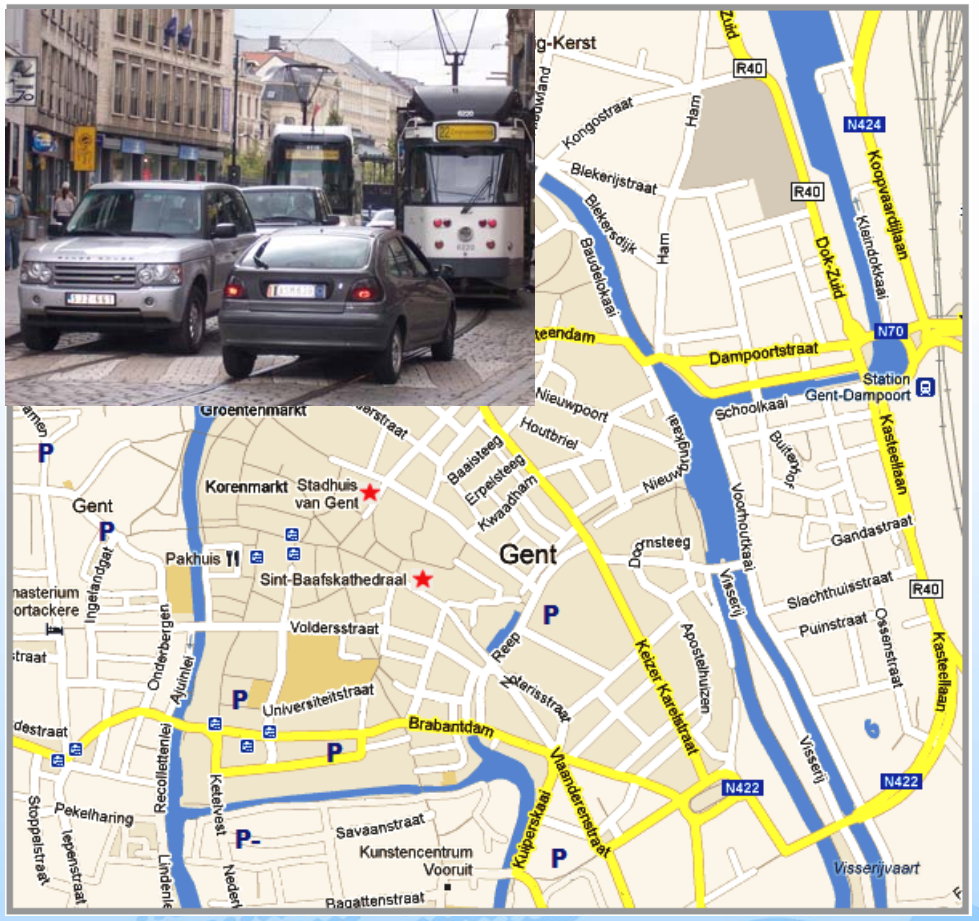
But… some negative experiences in Gent



- Substitution of surface parking spaces with underground but in same location
- Traffic looking for a parking space produces congestion
- This affects public transport and the environment

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Another option – York, England, UK

Off-street parking in city centre replaced with park and ride on edge of town

2001-2006:

➔Passenger numbers up 45% in PT (bus)

➔Peak hour traffic lower than in 1999

➔Very successful city economically – including city centre

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Restraints on car use – On-street 2

- Routeing
  - – Priority use of road network by people rather than vehicles (pt / cycling / walking)
  - –One way streets for cars, exemptions for others
  - –Result: less direct car routes

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Restraints on car use – On-street 3

- Speed controls
  - – Community / environmental speed limits (30kph)
    - Graz / Portsmouth / Oxford

  - –Major route speed management

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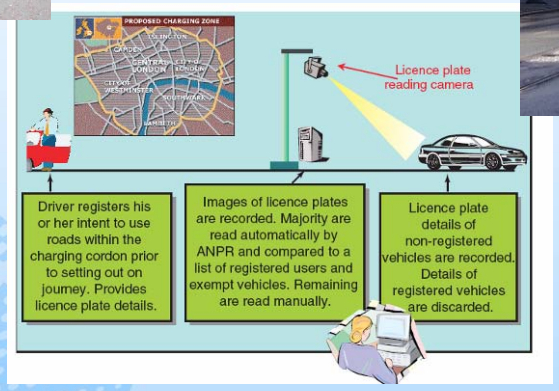
Restraints on car use – On-street 4

- Road rationing or charging
  - Restrictions on access / use at times of congestion



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Restraints on car use – On-street 5

- Traffic calming (street design)
  - Narrowings / Islands / 'Rumble' devices / Overrun areas /Chicanes / Single lane 'build-outs'
  - Covered in Module 5 '*Street design, streetscape and traffic calming*'

- Other (specific to .....)

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On-street restraints on car use – *Please discuss.....*

- ***Are there particular 'barriers' to the use of these on-street restraints in your country?***

- ***Which forms of on-street restraint do you think would be most acceptable and/or effective in your country?***

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Parking problems

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Parking – Possible ‘Problems‘ 1

Problem:
People who get the parking spaces are those who arrive first, but this may not be the most beneficial use of scarce spaces.
On-street parking causes safety and congestion problems.
Poor management of and lack of information on on-street parking availability leads to large amounts of traffic looking for spaces.

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Parking – Possible ‘Problems‘ 2

Problem:
Parking on pedestrian areas (footways / across street corners) – problems for pedestrians.
On-street parking is often priced cheaper than off-street, causing competition for the former while the latter has empty spaces.
The fact that there is some (free) parking available in city centres encourages people to drive there.
Town and city centres are concerned about losing custom to edge of town developments with lots of parking so they respond by trying to make it easier to park.

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But – surely there are many other parking problems?

- Brainstorm

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How parking management influences how people travel

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Types of parking

- A car has to be parked somewhere (95% of their lives)!

- Four types of parking place – (City Centre)
  - On-street (public) (≈10-30%)
  - Public off-street (≈ 30-50%)
  - Private non-residential off-street (≈ 25-60%)
  - Private residential off-street (≈ 0-25%)

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Parking's effect on car and public transport use

Parking Spaces per CBD Employee	Park and Ride Spaces per CBD Employee	AM Peak Hour CBD Transit Share
0.79	—	14.6%
0.51	0.029	32.0%
0.46	0.084	38.8%
0.38	0.270	48.7%
0.36	—	39.7%
0.29	0.034	46.0%
0.29	0.122	64.1%
0.28	0.008	48.8%

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Parking's effect on car and public transport use

- (From COST 342 – 2006 European research)
  - Wiener Neustadt – new parking zone caused 25% of employees who had previously parked in area to switch to walking and cycling
  - Vienna Districts 5-9 – new parking zone caused:
    - 30% decrease in traffic volumes
    - 30% of visitors and workers in the area who previously came by car switched mode
    - 7% visitors switched destination

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But – reasons we might want to manage parking – not all about mode choice?

- What are the other objectives of parking management? – Brainstorm… then divide into groups, each group gets at least one objective, has to decide how to manage parking to achieve objective

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Ways to manage parking

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Parking

Location	On-Street				Off-Street				
Use	Public				Private	Public			
Owned	Public				Private	Private	Public		
Operated	Public or Private				Private	Private	Private	Public	
Type	Free	Priced	Permit	Duration Control	Free	Priced	Priced	Free	Priced

Parking Type and the sector controlling and/or supplying it

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Parking – Developing a policy

- **Stage 1** – No problems - use available parking space
- **Stage 2** – Demand starts to exceed supply – regulations introduced / parking prohibited in some locations - basic driver information
- **Stage 3** – Demand increases - time limit in centres to increase turnover of spaces - off-street parking to supplement / replace on-street parking - real-time driver information
- **Stage 4** – Commuters pushed into surrounding areas - competition with residents for parking space - 'Residents' Zones' introduced
- **Stage 5** – Different parking tariffs for different groups
- **Stage 6** – Park-and-Ride facilities on edge of town
- **Stage 7** – Inclusion of parking in transport demand management

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Parking – On-street regulation

- Most streets uncontrolled / unregulated parking, **but** demand increases -
  - No parking at any time at junctions for sightlines / safety / access
  - Main route peak restrictions for traffic flow
  - One side restrictions on narrow roads for two-way traffic flow
  - Time limits for on-street parking to ensure availability for short term parkers
  - Restrictions to provide kerb space for commercial vehicles to load / unload at shops / offices alongside roads
  - Time limits for parking around stations (e.g. no parking 1300-1400 weekdays) to stop informal park and ride
  - Parking only for local residents

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Parking – On-street enforcement

- Enforcement agencies -
  - Police
  - Local authorities (only some countries - under non-criminal law)
    - Can local authority enforcement be better
- Generally funded from central government taxation
  - If local authority - may be part funded from parking income and charges

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Parking – On-street regulation and enforcement – *Please discuss.....*

- What is the situation in your country for the regulation and enforcement of on-street parking?
- Who undertakes the enforcement and how is it financed?
- Can cultures of enforcement change?

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Example of Istanbul…

- The company ISPARK controls 17.000 on-street spaces
- It changed completely the enforcement and payment system for these spaces

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Role of parking attendant (enforcer on or off-street)

- Public face of parking policy
- Public resentment against them
- Often attacked!
- Low status job

- Solutions:
  - Training
  - Publicity on reasons for parking policy
  - Act as ambassadors, advisors on parking and for visitors
  - Work with police to stop attacks
  - Compliance based contracts

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Parking – Off-street public

- Why?
  - Visitors have somewhere to park – public / private
  - Control price of parking (short cheap / long expensive) - public
  - Replace on-street provision - public
  - Maximise profits – private
- But control – who owns?
  - Majority private (Edinburgh)
  - Majority public (Nottingham & Southern Europe)

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Parking – Off-street public

- Considerations for new car park near City Centre -
  - Where people want to go
  - Local authority can influence pricing structure (even if it is privately operated)?
  - Prices lower per hour for short stays and higher per hour for long stays
  - Prices lower than that of adjacent on-street parking
  - Car park pleasant / secure
  - Traffic to / from car park does not cause congestion (particularly to public transport)
  - Reduce / remove on-street parking to compensate (give space to public transport / pedestrians)

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Parking – Off-street public

- Costs (UK/Netherlands)-
  - Investment
    - Land - ??
    - Surface space, asphalted, with drainage and lighting - €3000
    - Parking structure - €15000 - €20000 per space
    - Underground - €40000 per space
  - Operating
    - Maintenance and security charge for each space, can be €150 - €450 per year
    - Taxes ?

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Parking – Park-and-Ride

- Why?
  - Part of strategy to tackle traffic congestion on main routes into town / city centres
  - (3% to 20% reduction in city centre bound car traffic achieved)
- But can have perverse results -
  - Can attract existing public transport users
  - May be underused because potential bus users go to another site with better public transport services
  - May deliver more costs than benefits

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Parking – Park-and-Ride

- To be successful -
  - Public transport route fast, frequent and reliable
  - Frequency of urban P-&-R at least every 10 minutes
  - The (*perceived*) cost of using lower than fuel+parking for driving to centre
  - Over time, parking – both PNR and public parking – in centre reduced / more expensive than P-&-R
  - Easy access from the main road network to P-&-R and, preferably, priority exits from P-&-R for public transport vehicles
  - Capacity great enough to cater for demand; but not so great that walking distances from furthest parts of the car park are excessive.
  - Security for passengers + cars should be very high

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Parking – Park-and-Ride

- Costs
  - Capital
    - Public transport service (train / bus - new?)
    - Public transport stop
    - Parking / access
    - Land
  - Operating
    - Public transport service (new / supported / ?)
    - Maintenance of facilities
    - Staffing / security
    - Taxes (?)
    - But Revenue from users (VAT?)
- Management
  - Public / Private / Public transport operator ?

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Parking – Park-and-Ride – Case Study

- Edinburgh
  - Ingliston - 2005
    - 550 spaces - € 3.5m (since extended to 1,050)
    - Two bus services – commercial (no subsidy)
      - One limited stop (10min frequency) – direct to centre
      - One local service across city
  - 6 further sites opened since (80% capacity)
  - Fare to centre per passenger €1.56
  - Survey of drivers -
    - 92% thought parking conditions were good
    - 85% were impressed with service
    - 90% thought good value for money
    - 84% said security was excellent / good

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Nottingham

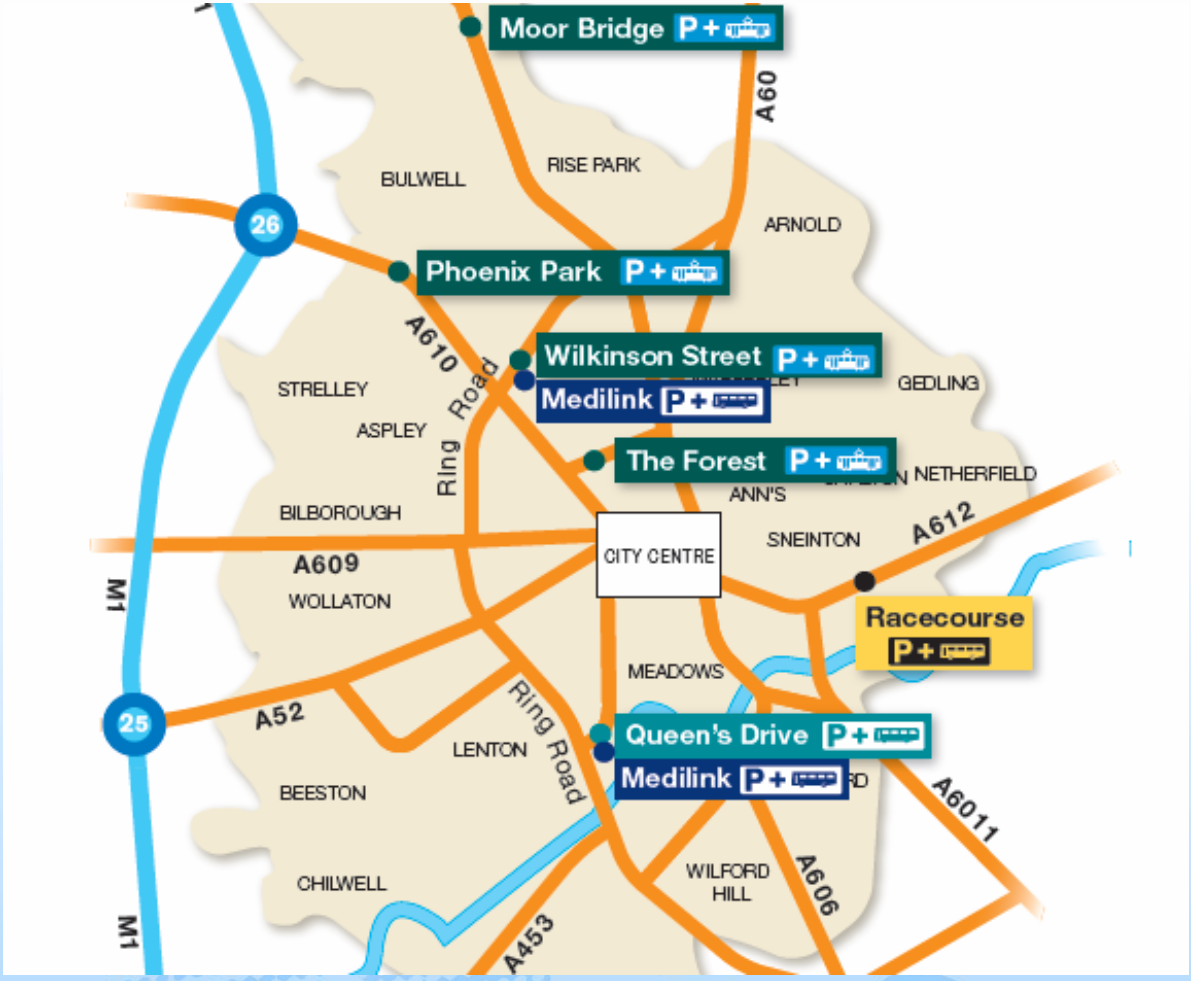

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Figure 9.4: Bus and tram patronage levels in Greater Nottingham

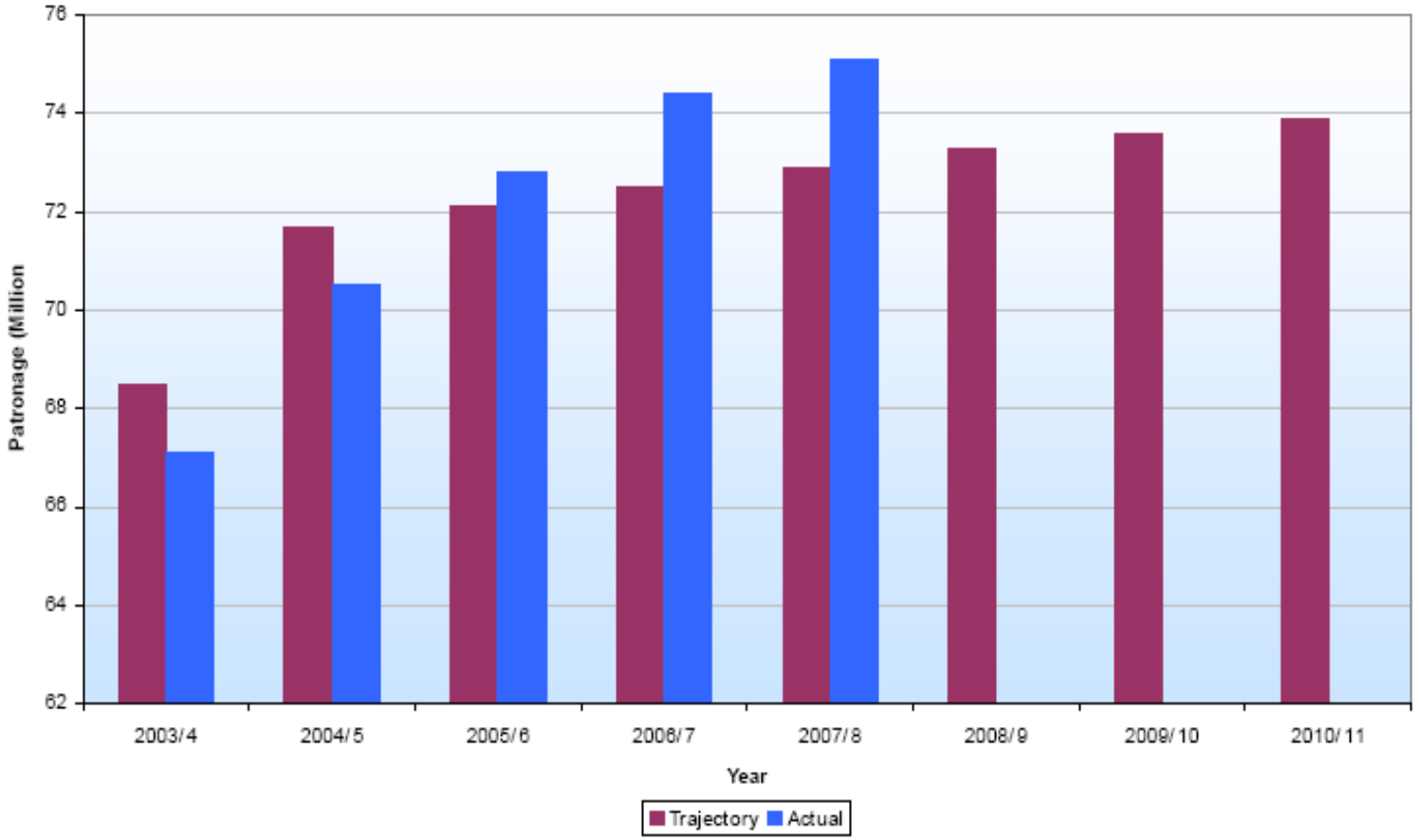

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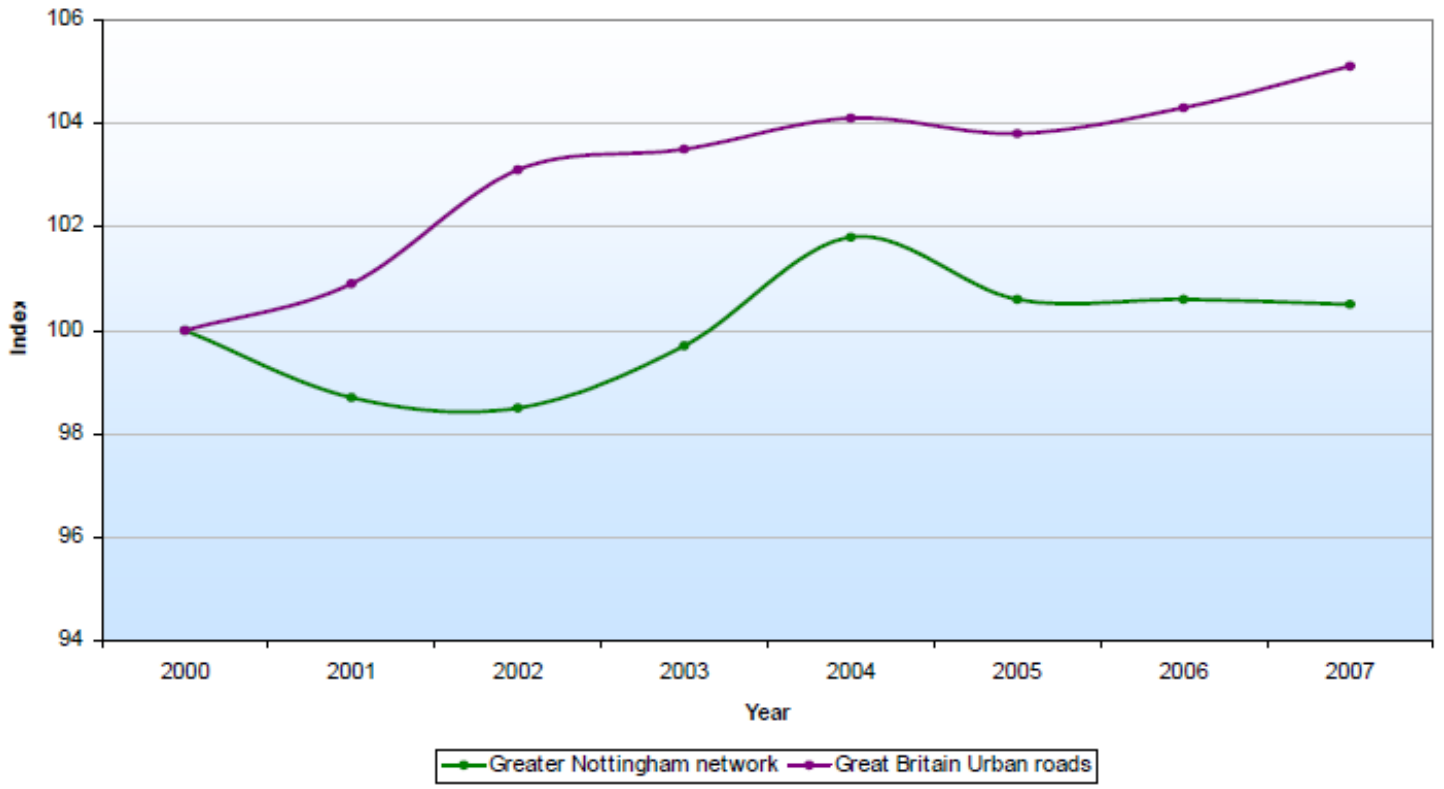
Figure 9.3: Traffic Growth in Greater Nottingham vehicle km travelled comparison with Great Britain urban roads



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Parking – Park-and-Ride – *Please discuss?.....*

- Are there any good examples of Park-and-Ride in your country?
- Why are they ‘good‘?
- Does your city require Park-and-Ride – and why?
- What are the constraints on developing Park-and-Ride in your country?
- How would you fund a new Park-and-Ride service?

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Parking - Private

- Private non-residential
  - Employer
  - Shopping
- Residential

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Parking – Private non-residential (Employer)

- Not controlled by public authorities
- 40% - 60% of total city centre parking
- 81% of employees with parking spaces drive to work (34% without) – Swiss Survey

- Employers with accessibility / congestion / staff mobility-related problem – may implement mobility management at their site(s)
- This may include management of parking spaces

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Parking - Residential

- Home is ‘hub‘ of mobility
- 90% of trips (Germany) start / finish at home
- Car-reduced or care-free housing
  - to enable residents to organise their lives using sustainable means of transport without dependence on own car
  - easy access to comprehensive range of transport choices

•Education

•‘Car clubs‘

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Parking management – acceptability and impacts on local economy

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Parking management – how to make it more acceptable

- Changes fully communicated / reasons fully explained
- Public know about / understand the measures
- Likely benefits of measures explained
- Fees / regulations related to scale of existing problem
- Alternative transport modes available / to a high standard
- Any additional revenue used fairly and transparently
- Parking regulations enforced consistently and fairly
- Fines not excessive and related to seriousness of offence

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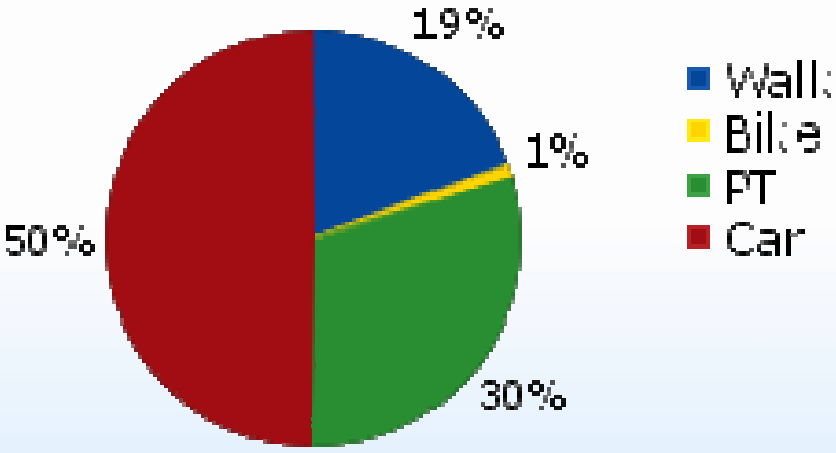
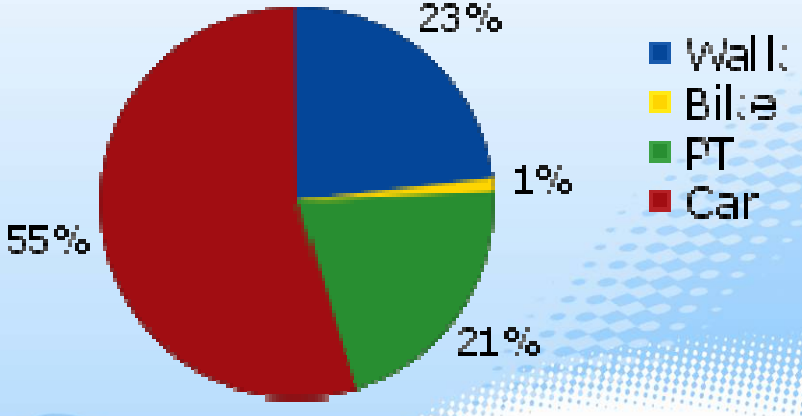
Which city is in northern/western and which in southern/eastern Europe?





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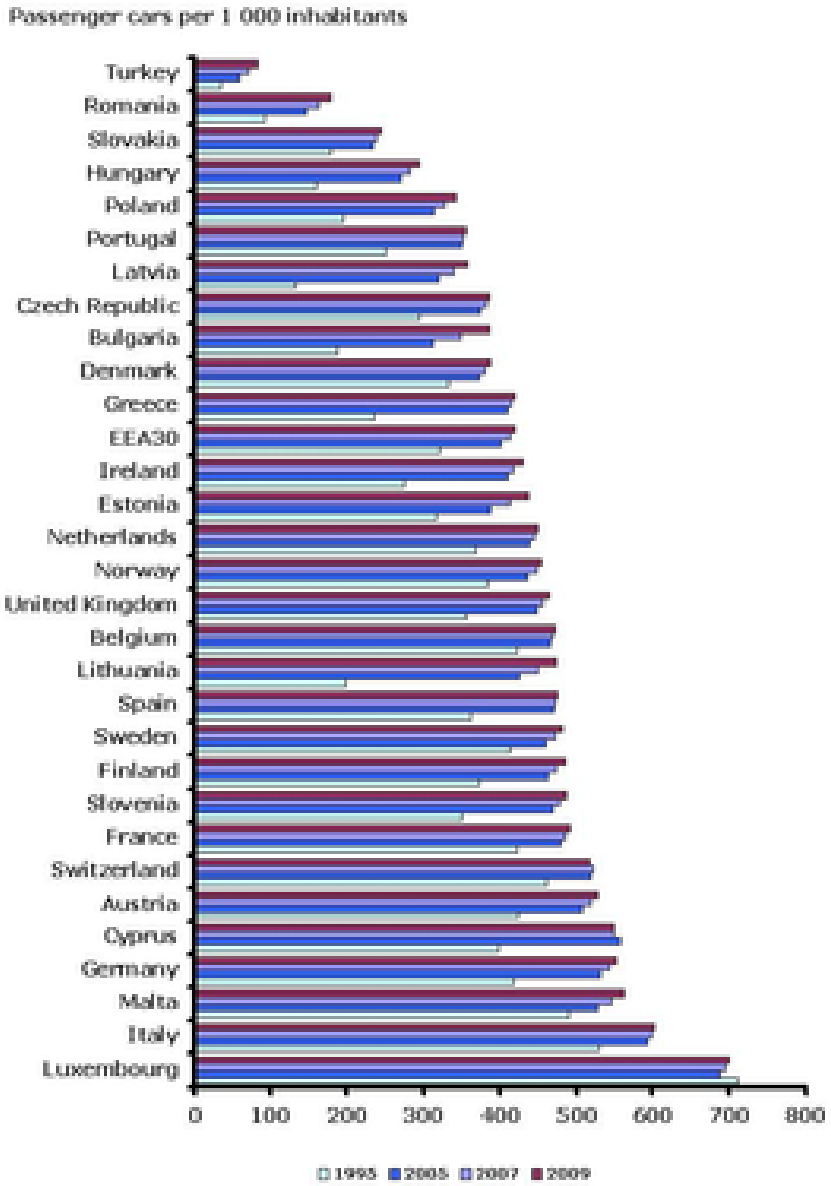

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Relationship between parking and economic development

- Common misconceptions:
  - *'Free' parking*?
    - Does not exist!
    - Either paid for – or included in price of goods/services
    - The attraction attracts not the parking!
    - Parking only worth providing if it generates usage (turnover) for attraction
  - *No business without parking*?
    - But need to consider –
      - Proportion of visitors that use various available modes
      - Frequency of visitors by the various modes
      - Level of expenditure on each visit by the various users (related to the modes of use)
    - Survey in Rotterdam (Meent) showed –
      - 56.8% of shopkeepers believed that over 50% of visitors came by car
      - Actually only 21.5% of visitors arrived by car and generated 23.8% turnover

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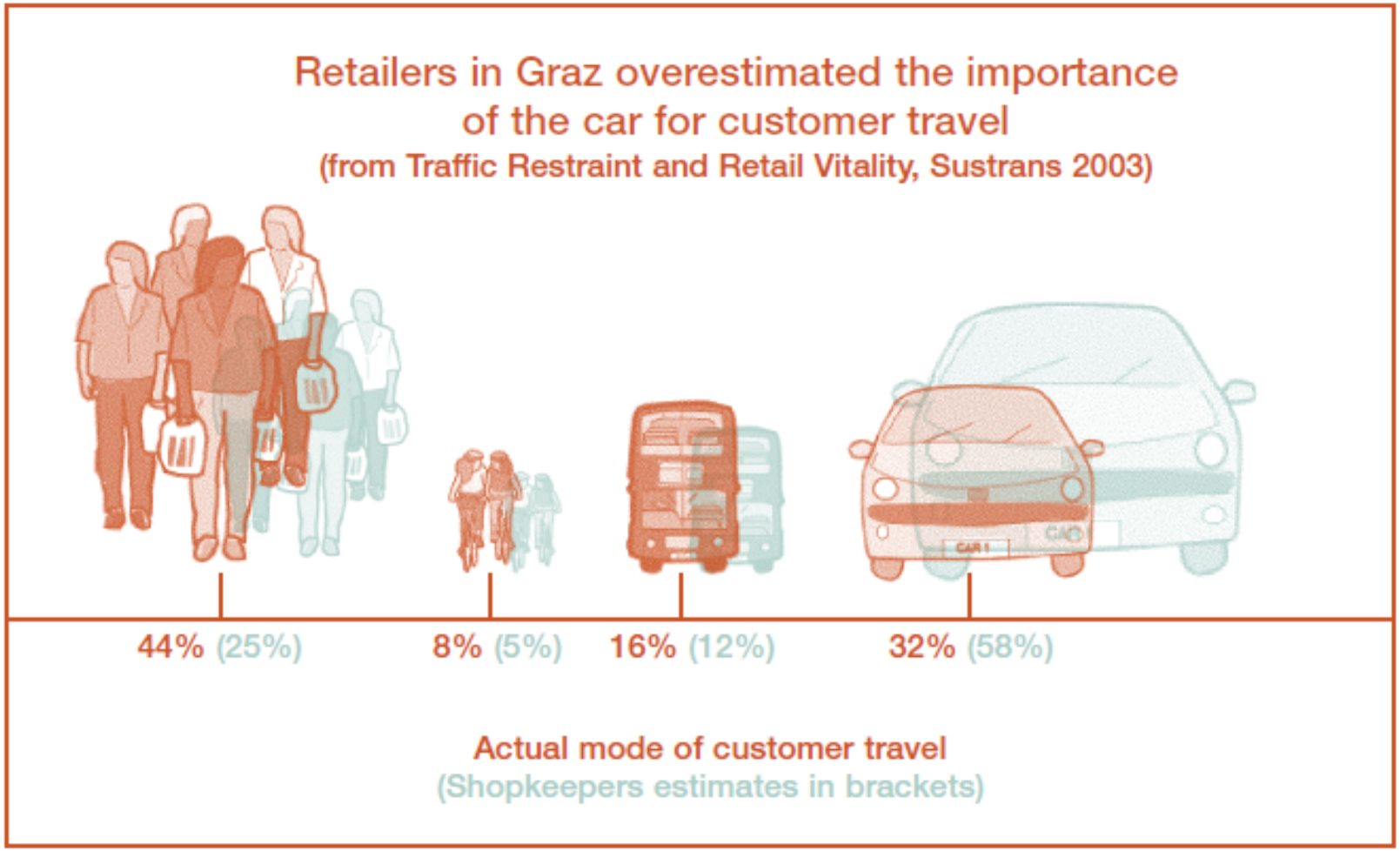

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‘Quality of Living‘ Index for Cities (Mercer)

- 39 criteria grouped into 10 key categories
- Each category weighted to reflect its importance for overall quality of living
- Top 5 cities in world
  - Vienna
  - Zurich
  - Auckland
  - Munich
  - Vancouver / Düsseldorf (joint 5th)
- All relatively hard to use a car / park! (except Auckland)

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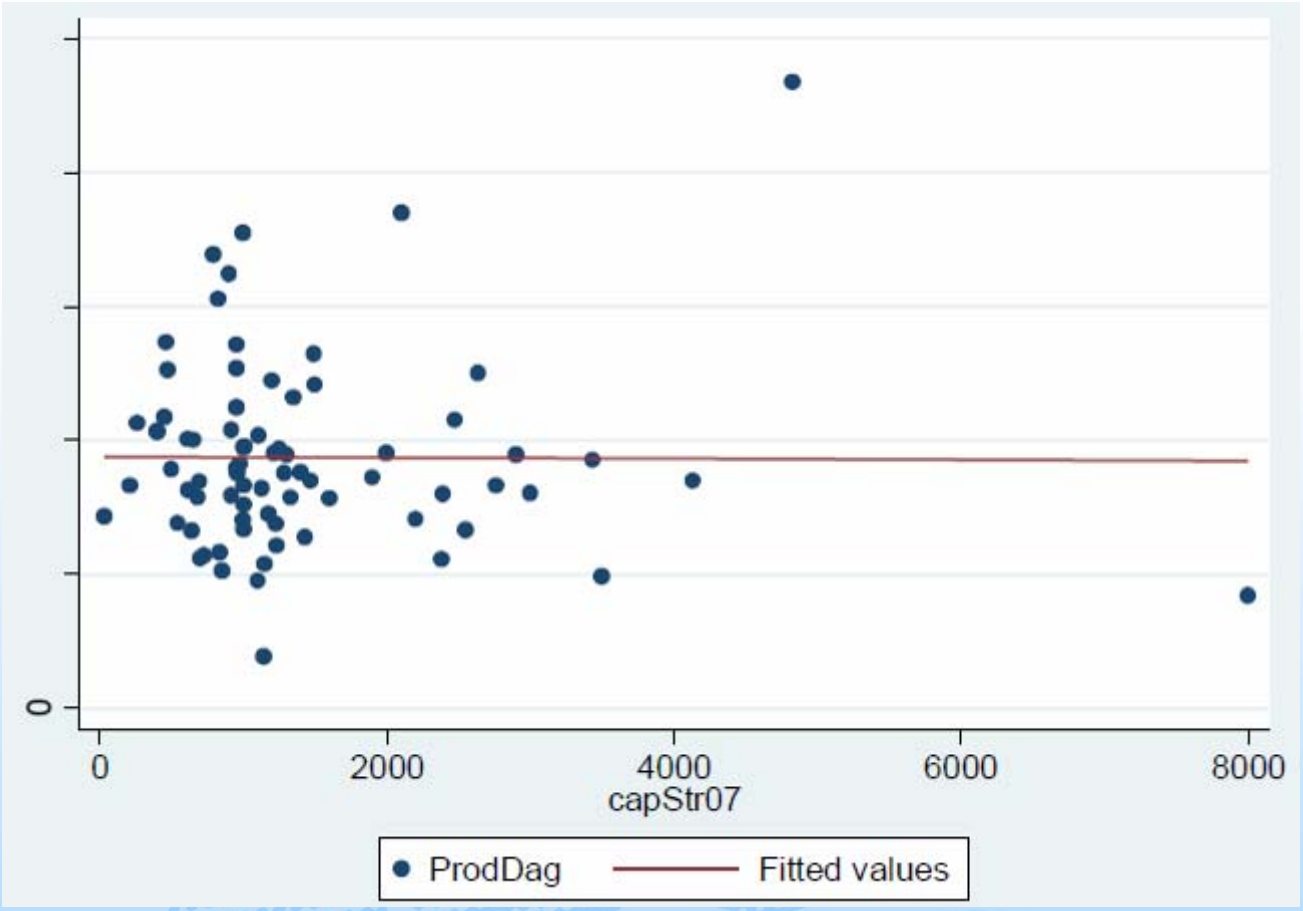
TRANSPORT LEARNING

Relationship between parking and retail sales,



- Data from Netherlands
- 42 shopping centres
- Source: Mingardo y Becker 2011

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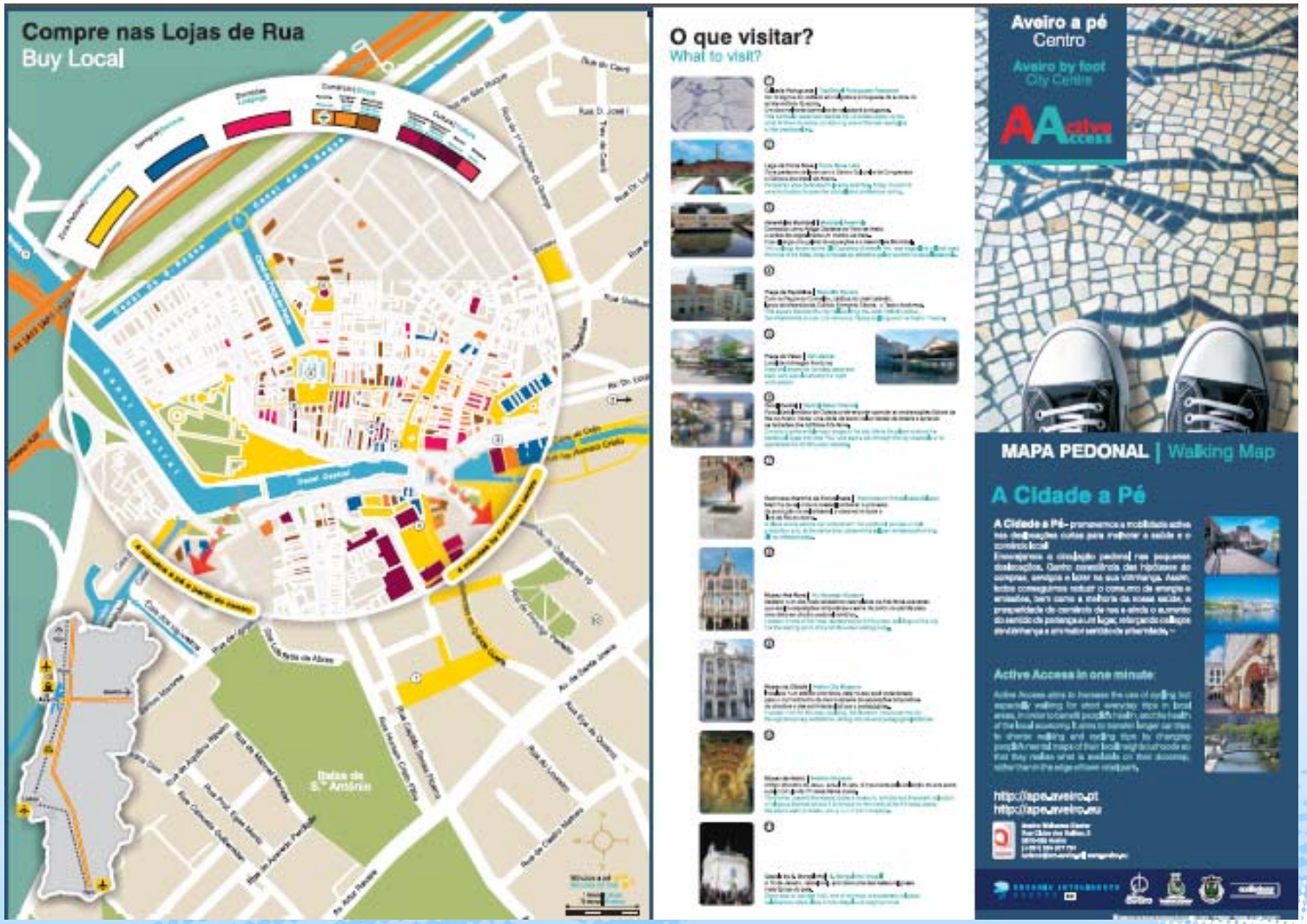
TRANSPORT LEARNING



Aveiro – buy local

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Practical Training Projects (PTPs)

- What they are?
- How they might be developed?

75

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Possible ideas for PTPs

- Preparation of the car restraint aspects of a SUMP
- Development of a comprehensive integrated on-street car restraint scheme
- A parking policy for an urban area
- Development of a park-and-ride scheme
- Bollards to stop footway parking in dangerous areas e.g. school crossing points
- Place a frame of a car in a parking spot and inside you can park your bike
- Temporary change of use for parking spaces into e.g. grass, sunbed area, public space (as in Sofia in EMW), terrace for bar, bike parking
- Informal prohibition of parking e.g. with signs and leaflets
- Temporary short term parking cash out – pay employee not to use parking space at work
- Reduced parking costs for environmentally friendly vehicles
- Reserved parking places for carpooling

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PTPs

- What are the agreed PTPs?
- Who are involved?

- The agreed timescales for the PTPs
- How the PTPs can be evaluated

•.....Questions?

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Parking in new developments

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Parking in new developments

• Old assumption that new developments should provide adequate parking on-site to meet all their potential requirements - therefore developers required to provide at least a ***minimum*** level of parking

•New approach considers that providing for all potential demand allows for maximum car use – therefore developers should restrain car use in new developments by providing a ***maximum*** number of parking spaces (within the context of a travel plan).

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Parking in new developments

- Does ***maximum*** parking provision have negative effects:
  - Parking is very important demand management tool
  - Restrictive parking measures influence mode choice
  - Clear link between parking availability and car use
  - No evidence to suggest that there is significant negative impact on economic development within urban and rural areas
  - No indication that there has been any effect upon inward investment or economic development
  - *But developers see parking as important as they consider that it adds value to their asset*

    (http://www.dft.gov.uk/publications/maximum-parking-standards/)

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Parking in new developments

- Example of ***maximum*** standards (English)
  - To be interpreted by local authorities to meet their specific local requirements –
    - Food retail - 1 space per 14m2
    - Non food retail - 1 space per 20m2
    - Cinemas and conference facilities - 1 space per 5 seats
    - Offices - 1 space per 30m2 = 1 space per 2-3 staff
    - Higher and further education - 1 space per 2 staff + 1 space per 15 students
    - Stadia - 1 space per 15 seats
    - Residential - 1.5 spaces/house or flat

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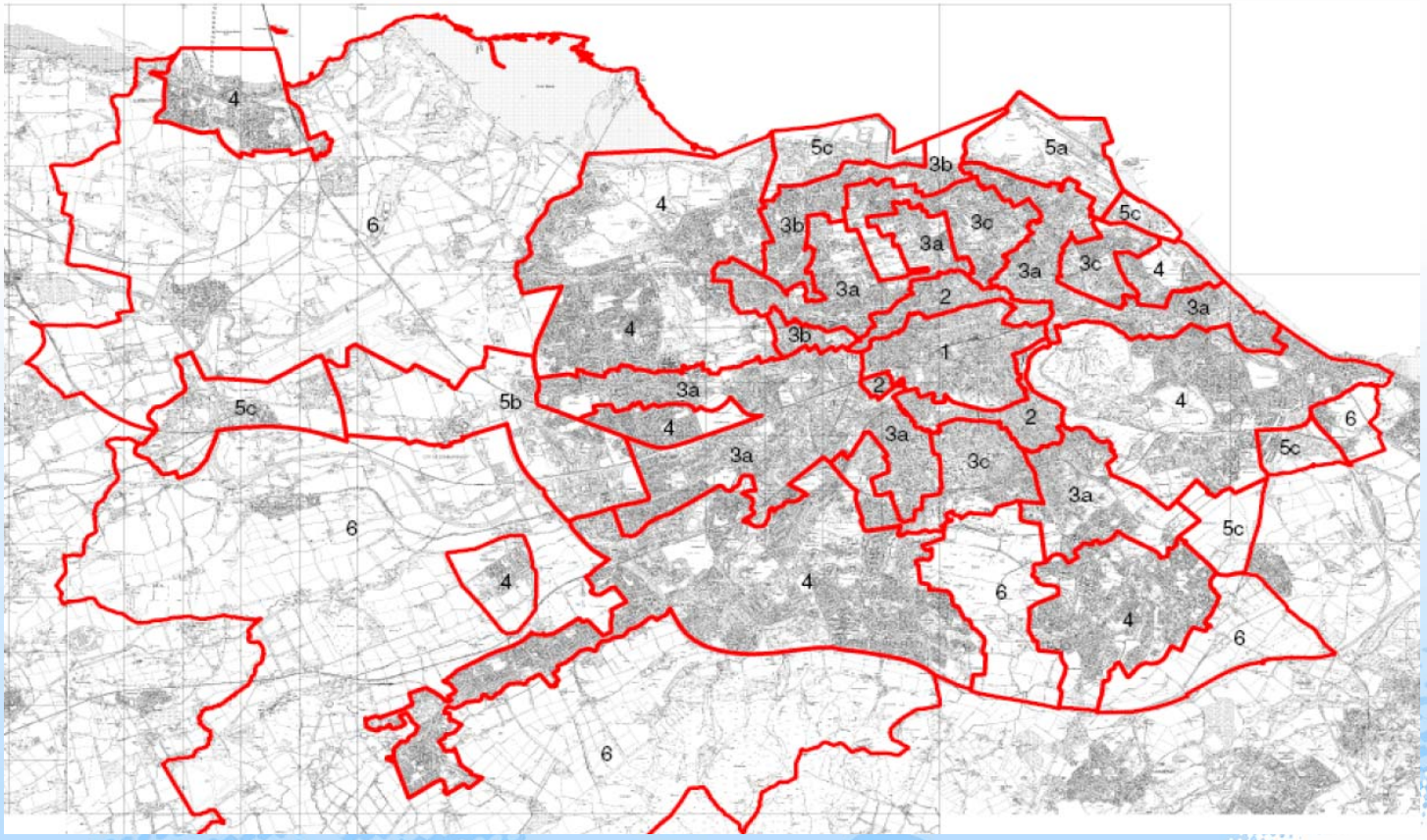
Maximum parking standards and public transport accessibility - Edinburgh



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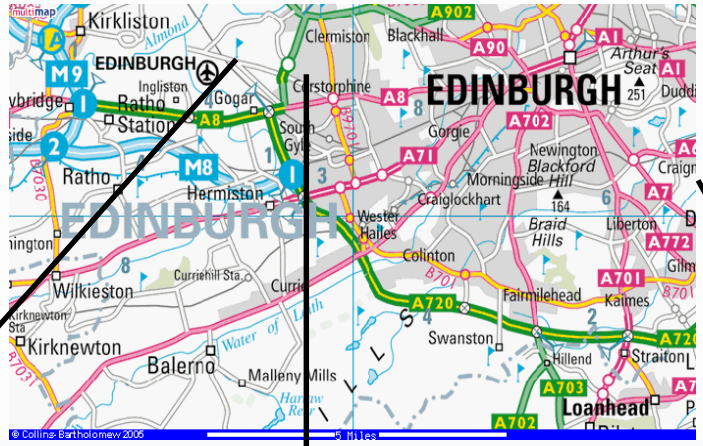
TRANSPORT LEARNING

- % non-car travellers



- All have limited on-site parking

- 2000-2006 total bus use in Edinburgh up 25%

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Micro-location of parking - important

- Supermarket close to main bus route, underground and railway station, and close to local shopping centre
- Originally developer wanted more parking spaces and the building at the back of the site
- In the end agreed to 25% fewer parking spaces and building at front of site, near public transport and walking routes

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Managing parking in more (technical) detail

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How do I know that it's time to start managing on-street parking – and that it will solve my problems?

- Complaints – normal starting point
- Back these up with **parking beat** surveys:
  - Estimate theoretical capacity (one space = 4-5m kerb space); take into account existing restrictions
  - Walk same route around streets in area every hour from e.g. 0700-2000
  - Note occupancy – when and where above 85% ?
  - Note number plates
  - Time of arrival and departure – indicates type of trip, and so type of user
- Where occupancy > 85% - parking management will improve things

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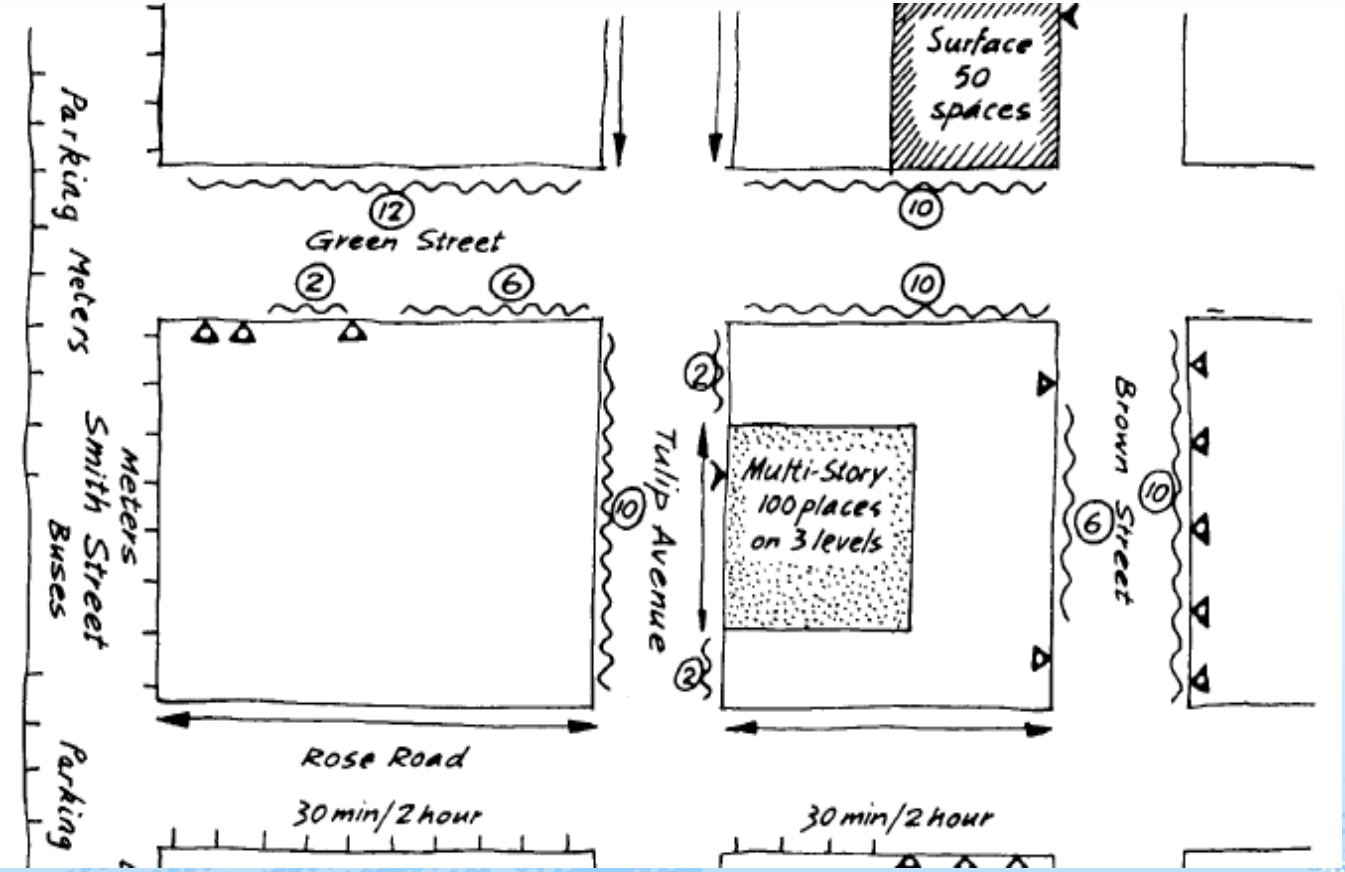
Diagram of parking beat



Source – TRL Overseas Road Note 11 (1993)

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Actual reductions in parking demand – Camden, London

- Shows decrease in demand after introducing “blue” zone

		Reduction in parked vehicles (%)	
Zone		**Daytime**	**Evening**
	CPZs with 'standard control hours' 8.30am-6.00pm or longer		
CA-J	Primrose Hill	45	33
CA-L	West Kentish Town (Outer)	60	43
CA-M	East Kentish Town	45	27
CA-N	Camden Square	57	29
CA-P (a)/(b)	Fortune Green	27	24
CA-Q	Kilburn	38	40
CA-R	Swiss Cottage	31	33
Average		**43**	**33**
	CPZs with 2-hour controls		
CA-P (c)	Fortune Green	40	28
CA-L	West Kentish Town (Inner)	47	41
CA-S	Redington/Frognal	58	34
CA-U	Highgate	32	18
Average		**44**	**30**

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How (else) to find out who's using available parking?

- Ask sample (100-200) local residents, employees, visitors, businesses:
  - If they have a car
  - How they travel and how often for different trip purposes
  - Where and when they park
  - How easy it is to find parking
  - How important parking is in their decision about where to travel (shoppers, visitors)
  - If there is under-used parking near the area with parking problems, ask them why they don't use it
  - Problems caused to them by parking/parked cars
  - Etc…
- Useful evidence to counterbalance anecdotes and "loudest voices"

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Options for managing parking on-street

- Time limits in certain locations:
  - Full time, peak hour only, limited stay
  - Loading/unloading only with no parking
- Target certain users:
  - Residents only spaces
- Price:
  - Cheap or free for residents with no time limit
  - Higher cost for others, time limited
  - Setting price:
    - Theoretically - equalise supply and demand.
    - In practice – political. Same price as in similar local cities?

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What capabilities needed to manage parking?

- Controls in place with clear legal signs
- Payment methods – machines, vouchers, scratchcards, mobile phone
- Maintenance for above
- Methods to advertise and issue residents' permits
- Enough trained enforcement staff – 2 hrs per week per km of regulation
- Equipment to issue and record issuing of fines
- Equipment to clamp ("block") and/or remove cars
- "Back-office staff" to:
  - Collect money
  - Issue permits
  - Process fines and appeals against fines
  - Monitor enforcement
  - Do accounts

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How much money will it cost me?

- Ticket machines
  - Per machine: E2500 investment, E250/yr maintenance (UK)
  - Close enough to parked car to buy ticket without being fined!
  - One machine per 10-20 bays

  BUT!
  - Mobile phone parking – parts of London 60% market share, Tallinn 80%
  - Mobile phone permits also possible
  - Switch to mobile parking in Southwark, London, 2010:
    - Cash collection and processing costs down 35%
    - Meter faults down 56%
    - Revenue up 6%
  - See video at http://www.youtube.com/watch?v=8_-9Mk5XvKc

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Other costs

- New/replaced signs and lines to clearly mark regulations
- Staff
  - In UK around € 35.000 per year each
- Enforcement computers to issue fines
  - UK E1.500 each
- Database, other software – € 10.000

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Example predicted costs, UK 2011

- Small authority with 100 km on-street regulations (most just time regulations, small area of 1000 blue zone spaces)
- Needs 8 on-street enforcers, 2 back-office staff
- Operating cost £250.000 per year
- Income £320.000 per year
- Investment costs below:

Amend TROs[3] & Upgrade signs & Lines to comply with regulations	£55,268
On-Street. Hand held ticket processing hardware & uniforms	£16,962
Off-Street. Hand held ticket processing hardware & uniforms	£3,581
Ticket Processing -Accommodation, Office set up hard/software	£35,179
Publicity & Consultancy Advice	£23,934
Stationery, Telephone, Training, Web-site & Cash processing	£19,413
TOTAL	**£154,337**

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How much money will I make?

- Durham, England – historic city of 50,000 people

Km streets with no parking allowed	60
Total controlled parking spaces	1173
Number of residents' only streets	46
Number of off-street car parks	20
Charges (approx)/hour	£0.90
Revenue (inc off-street)	
Ticket revenue	£2,088,000
Fines revenue	£306,000
Operating costs	£1,923,000
Fines issued	9,300

- Full info at http://content.durham.gov.uk/PDFRepository/CPEAnnualReport1011.pdf

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What technologies are there to help me and how much do these cost?

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San Francisco real time parking guidance and pricing

- San Francisco USA – measures occupancy of 12,000 off-street AND 7,000 on-street parking spaces
- Changes prices in real time to keep occupancy close to 85%
- Info to drivers via internet, smartphone App, GPS
- Implementation cost – US$?????

- Film at http://www.streetfilms.org/mba-the-right-price-for-parking/
- See www.sfpark.org (in English)
- And http://www.prnewswire.com/news-releases/streetline-raises-the-bar-on-what-consumers-can-expect-from-parking-guidance-apps-with-release-of-parker-30-151761085.html

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Task

- Work individually.
- You are responsible for the parking policy of your own town or city.
- For your city/town, you have to develop **an outline** of a parking strategy. You have 45 minutes to do this. In it, you must consider:
  - What are the most problematic issues?
  - What policies will you choose to implement, and why?
  - What will be the biggest barriers to implementing policy – and how might you try to overcome these?
  - Are there any problems/issues that you won't be able to address effectively?
  - What further information do you need to be able to make effective decisions?

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Thank you very much for your attendance and participation

Much further information on parking is available here www.eltis.org or from me, Tom Rye, at tom.rye@tft.lth.se

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