SOLUTIONS
Training session
Public Transport

Challenge Bibendum,
Chengdu China
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SEVENTH FRAMEWORK PROGRAMME

TRL – Transport Research Laboratory

- Established 1933
- 320+ staff including world recognised experts
- Head office in Wokingham, Berkshire, UK
  - Offices in Scotland, Wales, Abu Dhabi, Qatar, Ethiopia
  - Other Project offices overseas

A Variety of Transportation solutions –
Independent Research, Consultancy and Advice

- Traffic Modelling Software (SCOOT used in more than 200 cities worldwide)
- Traffic Management
- Road Tolling/Travel Information
- Public Transport (BRT, Rail, Interchanges
- Electric vehicles (infrastructure and vehicles advice for passenger, freight, bikes – pedelecs and scooters)
- Pedestrians and Cyclists
- Climate change

- Short round of introductions
  - Who you are
  - A little about your city
  - What your role/function/ job is
  - What is the public transport like in your city
  - What are you looking to get from this training!

Just a few words – 5 minutes each!

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Public Transport

1 BRT

2 Trolley Bus

3 Metros / LRT (rail based options)

4 Fuel Switch

5 Electric and Hybrid options

6 ITS for Public transport

7 Integrated fare systems

8 Integrated Planning

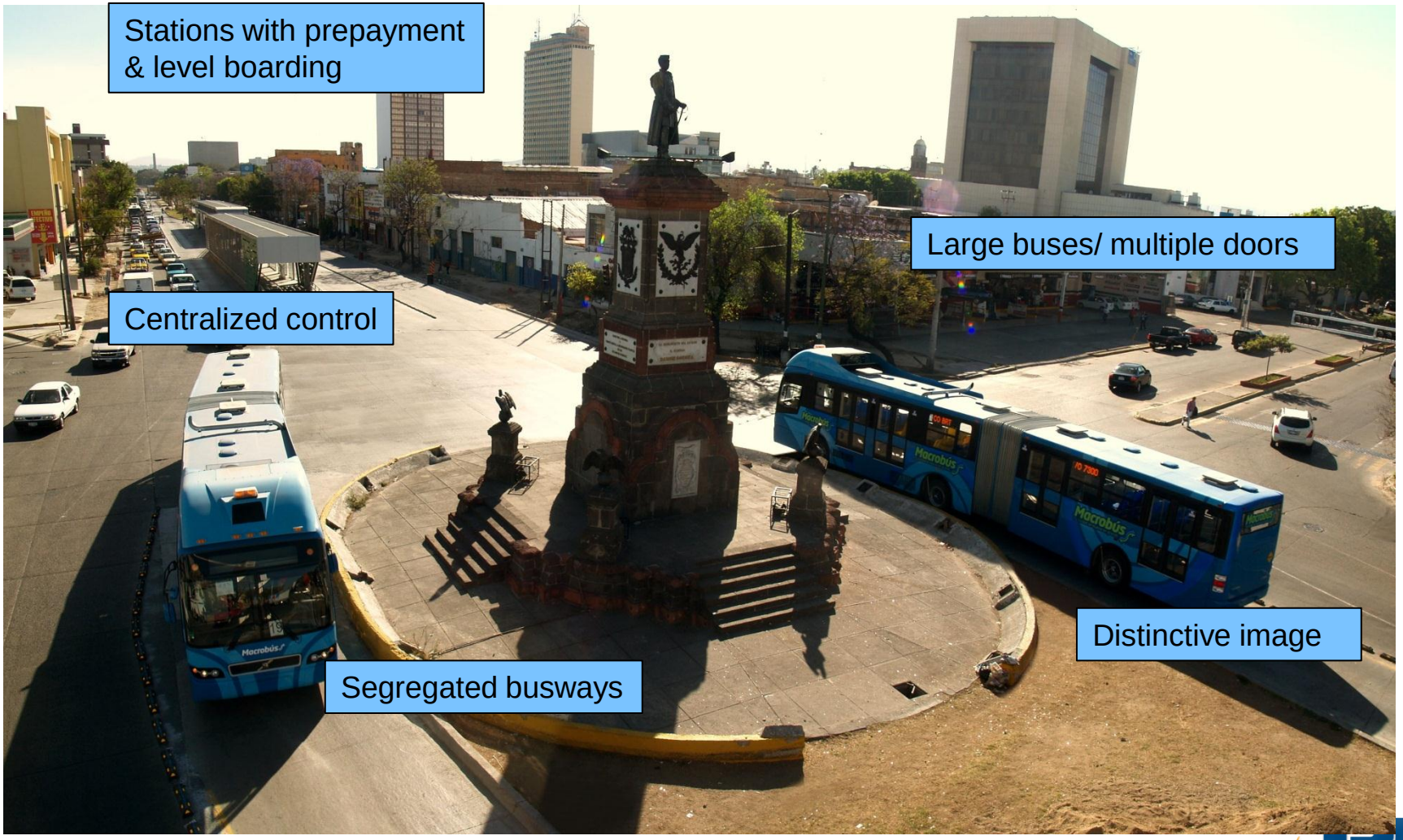
9 Financing public transport

10 Eco Driving

11 Bike /Car sharing

Solutions 1 BRT – Bus Rapid Transport & BHLS

International BRT Standard



BHLS Nantes, France

BHLS Nice, France

Huge growth

- BHLS across the Cote d'Azur
- New Tramway in Nice
- Flat 1 euro fare
- + 100% ridership
- Public art and high quality infrastructure
- New information and easier wayfinding
- Electric car sharing
- .....

Solutions 2 Trolley Buses

Trolley buses making a come back eg Lyon, Milan
Ground capture and alternative traction

Solution 3 Metro and LRT (Electric vehicles)

Victoria's first wind powered tram
5013
we're on board... are you?
make the switch to GreenPower
YARRA TRAMS

Solutions 4 Clean vehicles/ fuel switch

Alternative energies

- Stockholm =100% alternative energy – bus, tram and metro in central area
- Hybrid buses
- Regenerating interest in Ethanol buses
- Biomethane from waste
- Combined with cyling (improved infrastructure)
- Per capita CO2 budget for the city
- Travel demand eg congestion charging

Solutions 6 ITS solutions

Managed expressways and Urban Green Waves

Benefits – M42 ATM example

- Smoother and more reliable journeys:
  - Average journey times reduced **26%** during PM peak
- Reduced congestion:
  - Peak throughput increased by **13%**
  - Increased capacity by **7%**
- Safer journeys:
  - Personal injuries down by **2/3**
  - to **1.5** per month from 5.2
- Vehicle emissions down by 10%
- Fuel consumption down by 4%
- Noise reduction of 2.4 dB
- Cheaper than widening or new build

Solutions 7 Integrated Fares

- **Integrated ticketing to pay for whole trip and across modes**
- **- Denmark has a nation PT ticket**

Make information available, in real time and easy to access

Improve connections and perception of waiting time being useful time

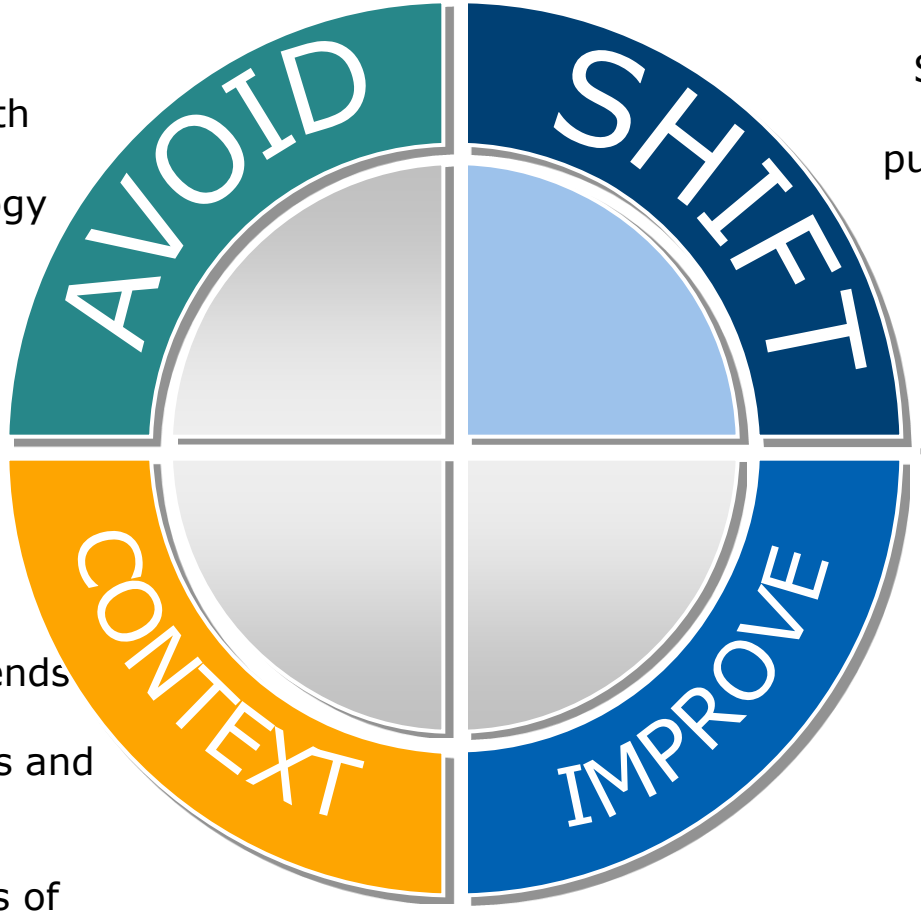
Solutions 8 Integrated Planning – (Hard)

- An interchange traditionally allows people to change from one mode of public transport to another, e.g. between bus and train but attention between public transport and “feeder modes” (walking, cycling) is also required

Interchange zones (source: Network Rail, 2011)

Avoid Shift Improve – ASI a policy framwork

Avoid unnecessary motorised journeys with land use planning, behaviour and technology based measures



Shift from more to less polluting – usually to public transport, walking and cycling.

Context – success depends on the mix of policy packages and measures and in respect to the local context – but actiion is required in all the areas of ASI framework.

Improve vehicles, technologies and transport system efficiency.

	Avoid	Shift	Improve
Planning	High density mixed land-use development. Parking standards.	Integrated public transport planning. Land use planning	Planning of smart grids Planning of decarbonised electricity sources
Regulatory	Traffic restrictions and travel bans (e.g. in city centres)	Parking restrictions. Road space allocations. Restrictions on the type of vehicles that can be used. Direct charges (such as congestion charging, low emission zones)	Set standards that vehicles should adhere to (such as vehicle emissions). Set speed limits. Regulate production processes.
Economic	Fuel taxes, Vehicle taxes; Road pricing, taxes on aviation travel	Subsidise alternative modes (i.e. rail, bus). Fuel taxes. Road pricing. Purchase taxes. Emissions Trading.	Investment /public subsidies for more carbon efficient energy and vehicles. Fuel taxes.
Information	Increase awareness of the real costs of travel by various modes. Mobility management and marketing.	Increase awareness of alternatives. Mobility management and marketing. Co-operative schemes.	Improve driver behaviour (eco-driving schemes). Public awareness campaigns. Labelling of the environmental performance of vehicles.
Technological	Develop alternatives to travel (i.e. ICT).	Improve quality of public transport.	Carbon efficiency improvements. Fuel improvement. Cleaner technologies. End of pipe control devices. Cleaner production. Targeted bio-fuel production

Solutions 9 Financing and funding

Parking a key lever in mobility behaviour

Gent, Belgium

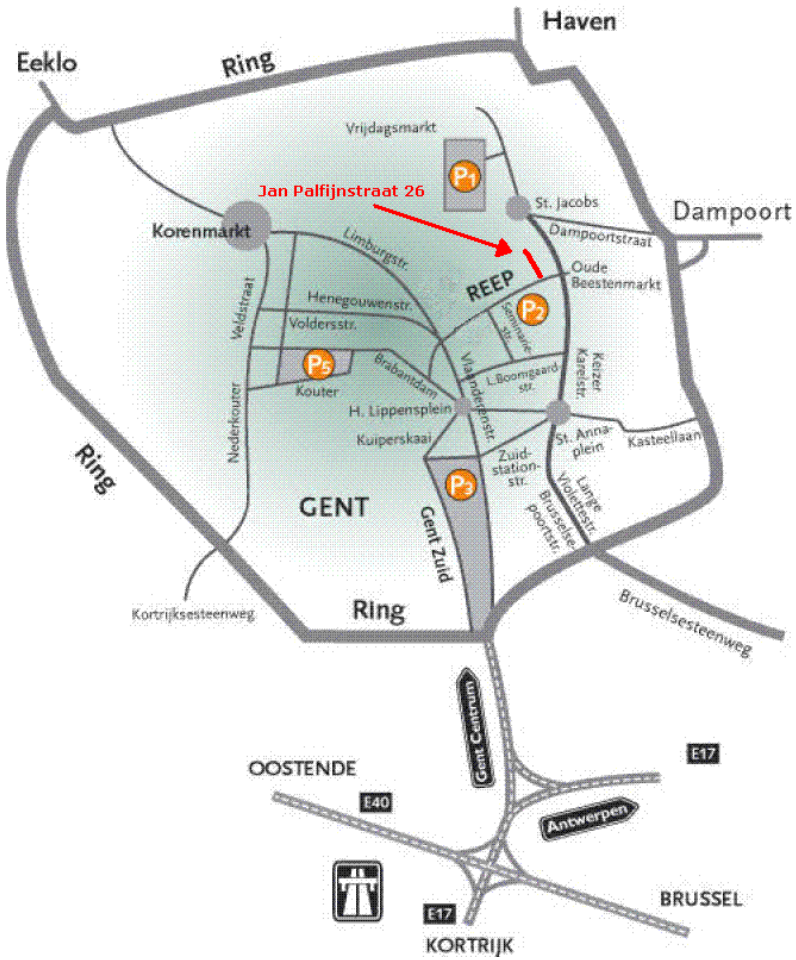
- Mobilty plan with integrated parking management, improvements to public transport and pedestrianisation
- City parking company and mobility department have merged

Montpellier, France

- City parking in managed by the public transport operating company
- Extra revenue is used to improve public transport

Parking data and business models

- Dutch parking dataware house (national parking register)
- UK DoT National Car park database with details of location of 23,000 car parks (public and private sector)



Solutions 9 Financing and funding

Many options now available:

- **Role of public and private agencies**
- **Many different models**
- **Different mechanisms**
  - **Land Value Capture, TIF**
  - **Earmarked taxes (versement transport)**
  - **Access charges**
  - **Polluter pays, carbon pricing….**
- **National/local support and programmes**
  - **EU, India; Mexico**

+++ New ways ++++

Solutions 11 Soft modes: Bike and Car Sharing

Occasional need of a car

- New and growing concept based on internet
- Zip, Cambio, Greenwheels, Mobility
- 'Club' for occasional use – half a day, even 2 hours
- Combined /sister /brother companies created owned by PT operators OR PPPs
- Challenge to find the right locations for sharing stations
- One car shared takes 7-9 others off the road
- Demand responsive - Flex ride

Auditing the space and facilities (PERS and CERS)

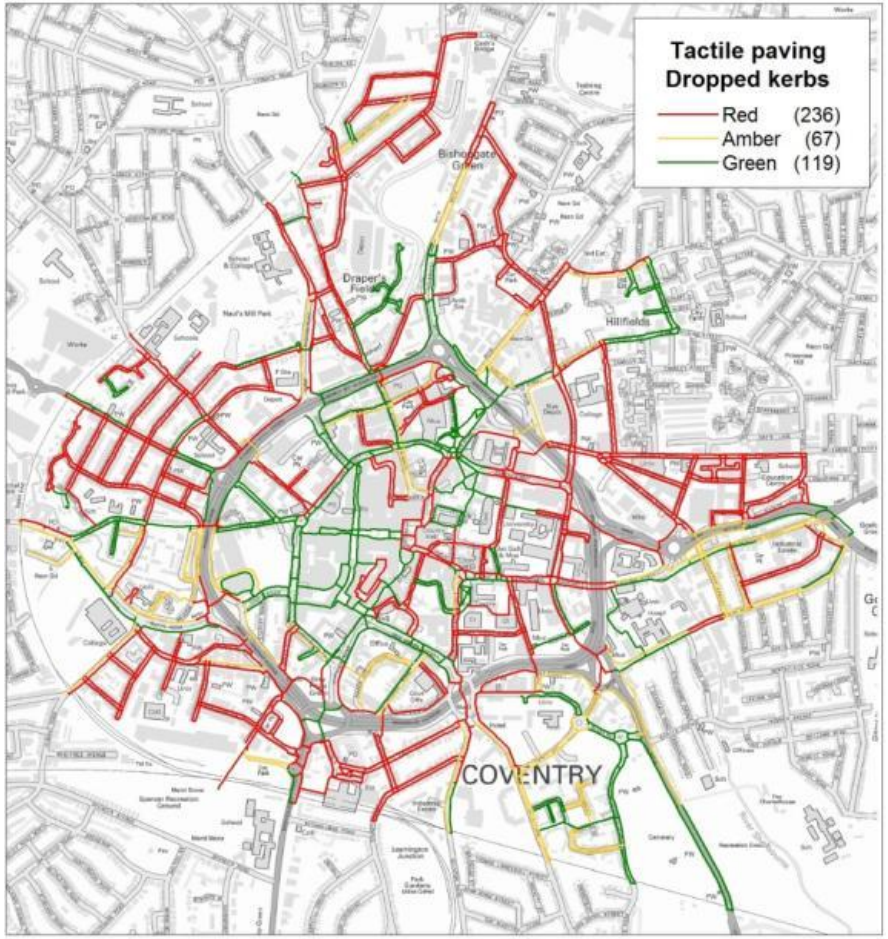
- Environment is reviewed from the end user's perspective
- Design end users are vulnerable people on foot or on a bike!
- Considers links and interchanges to other transport modes, such as bus and rail

Pedestrians	Cyclists
Permeable	Convenient
Accessible & safe	Accessible & safe
Coherent	Comfortable
Clean & attractive	Maintained

People will not use it if it is not attractive and safe

Public space

‘Walkability’ increases the property values



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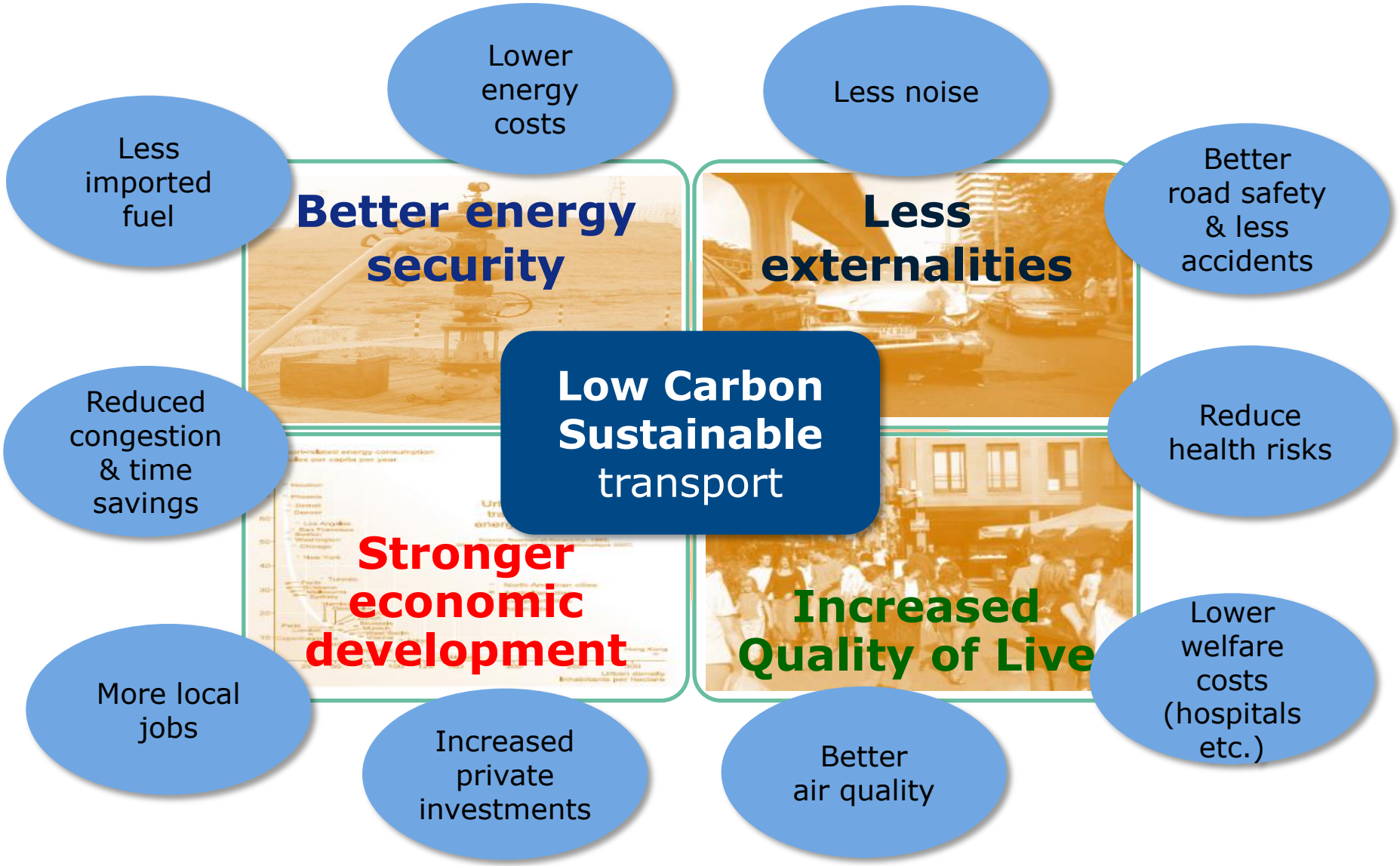
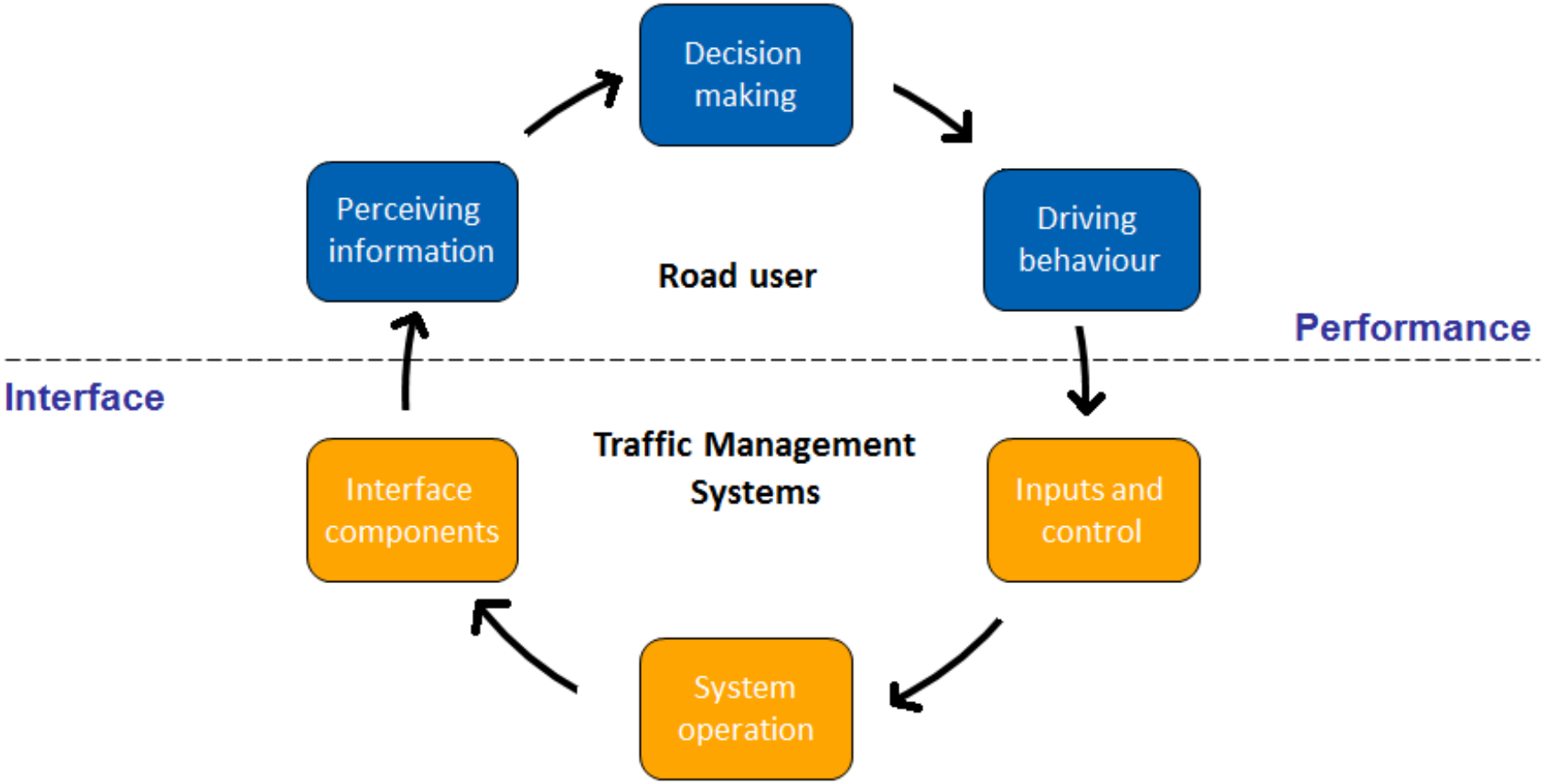
- Pedestrian-friendliness levels directly link to house and rent prices
- Walkability measured using a Pedestrian Audit tool PERS (TRL)
- Each PERS point increase correlates to a 5% increase in property value

Co-benefits deliver more than transport

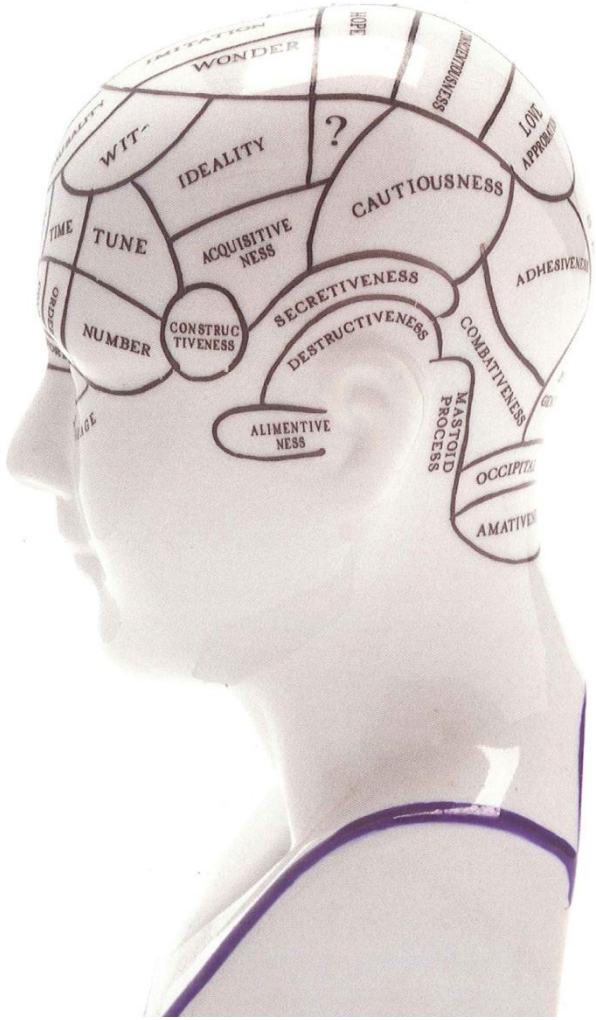


Source: Bridging the Gap

Local level action - 'managing' the system better Efficiency gains from better traffic management



The majority of trips today are quite complex



- **Remove the focus on Transport**
- **Information** before and during the journey;
- **Interchange** between different public transport services and between public transport and other modes;
- **Making Connections easy** between different public transport services and other modes
- **Partnerships and quality**
- **New financial and business models required**
- **Compensation rather than subsidy**

Discussion

Every trip starts with the most sustainable mode of transport...
让您的每段旅程都采用可持续的出行方式……

Thank you 谢谢！

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