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Reducing UK Oil Dependency: The Role of Public Transport

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Transport policy aims

Less emissions

Less oil consumption

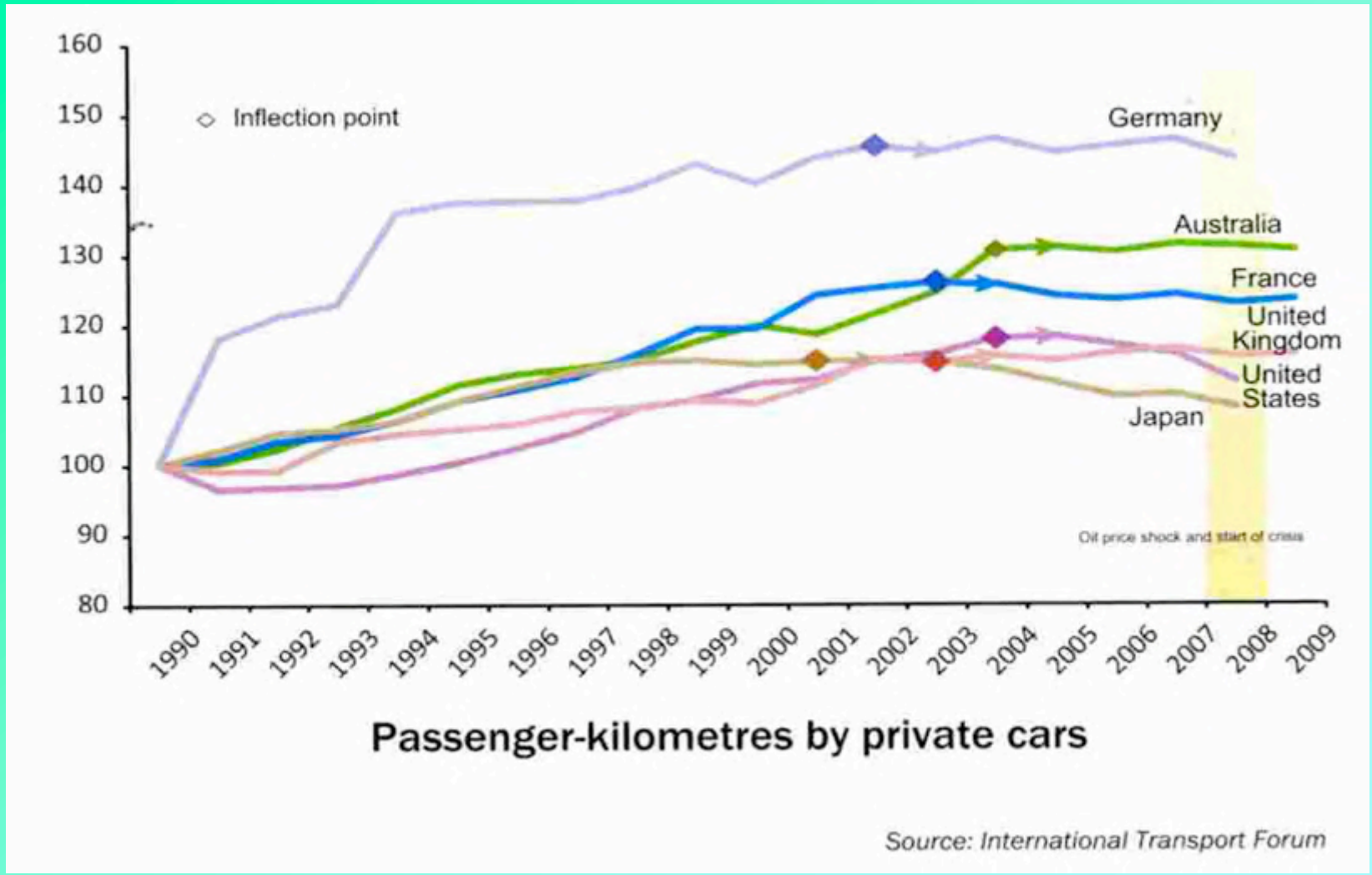
Less environmental impact

Economic encouragement

Social inclusion

Better quality of life

Peak Car ?



- Distance travelled in GB increased 3½ times 1952 - 2009
- 96% of this is explained by the car

What role for public transport?

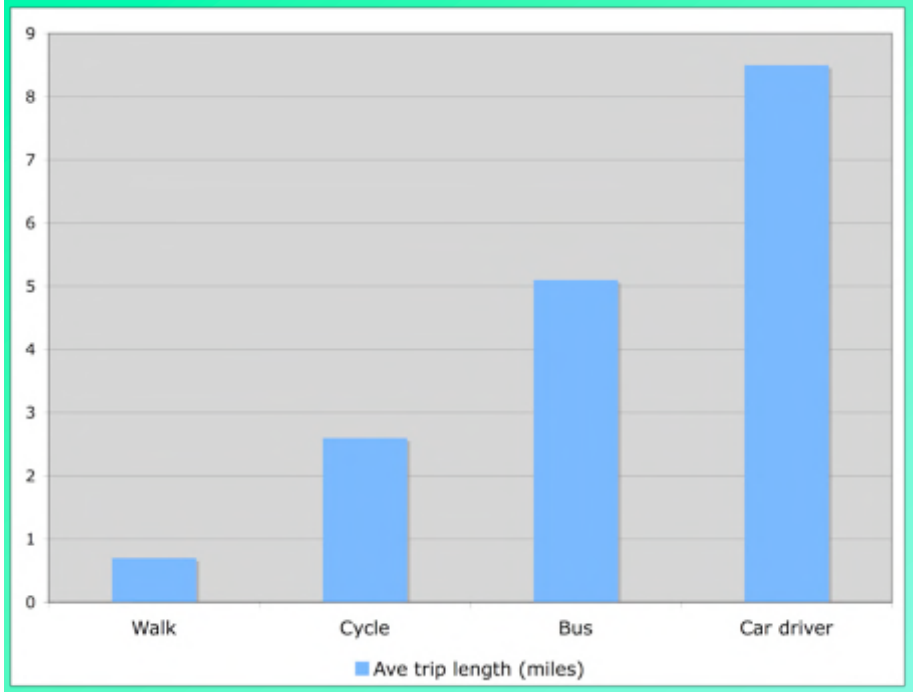
Help meet all transport aims

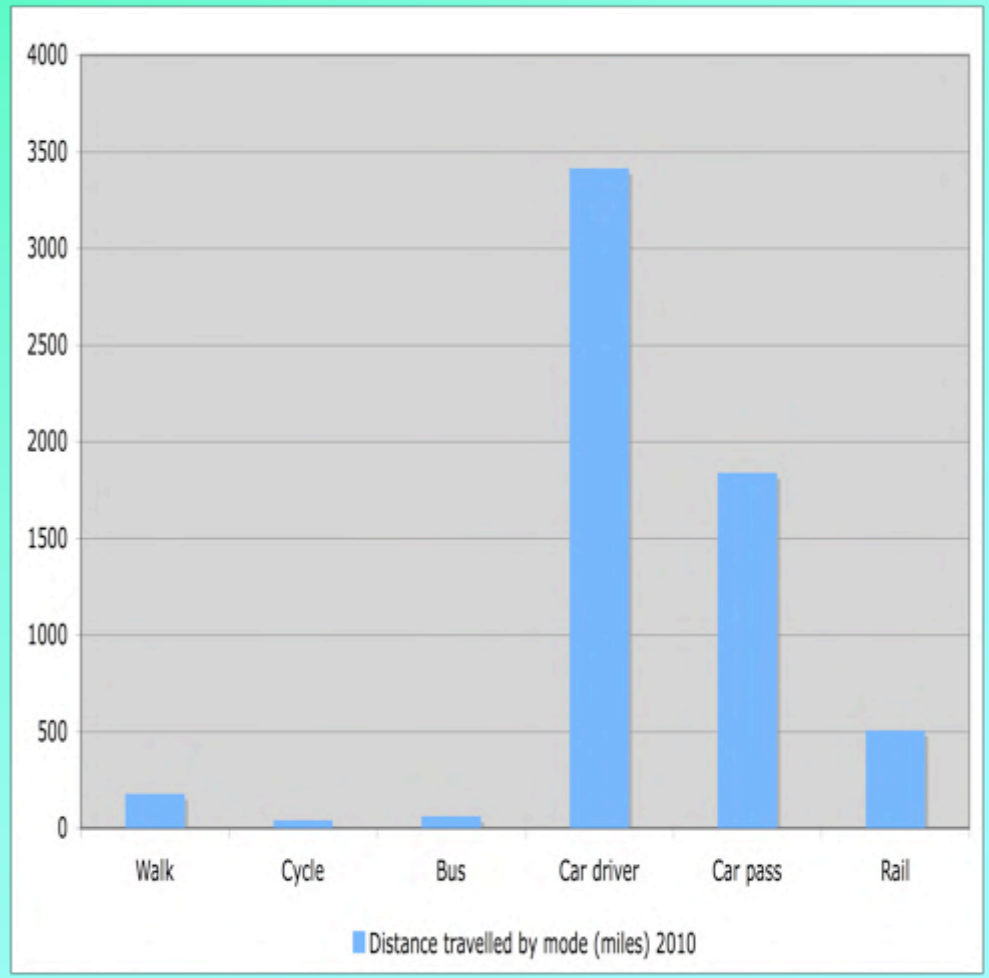
IF switch from car to PT

(Switch from walk/cycle of little value)

How much is feasible?

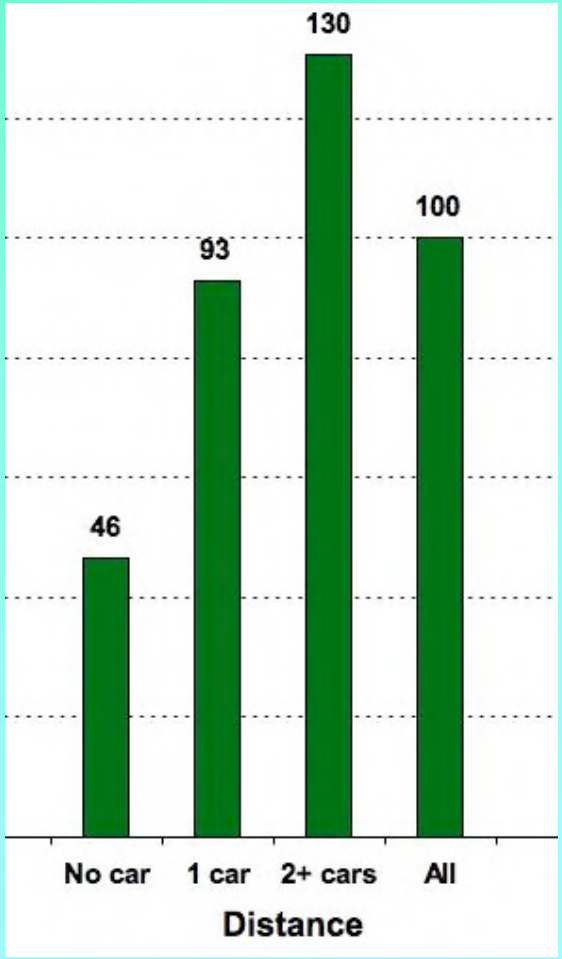
Less car trips will mean shorter trips



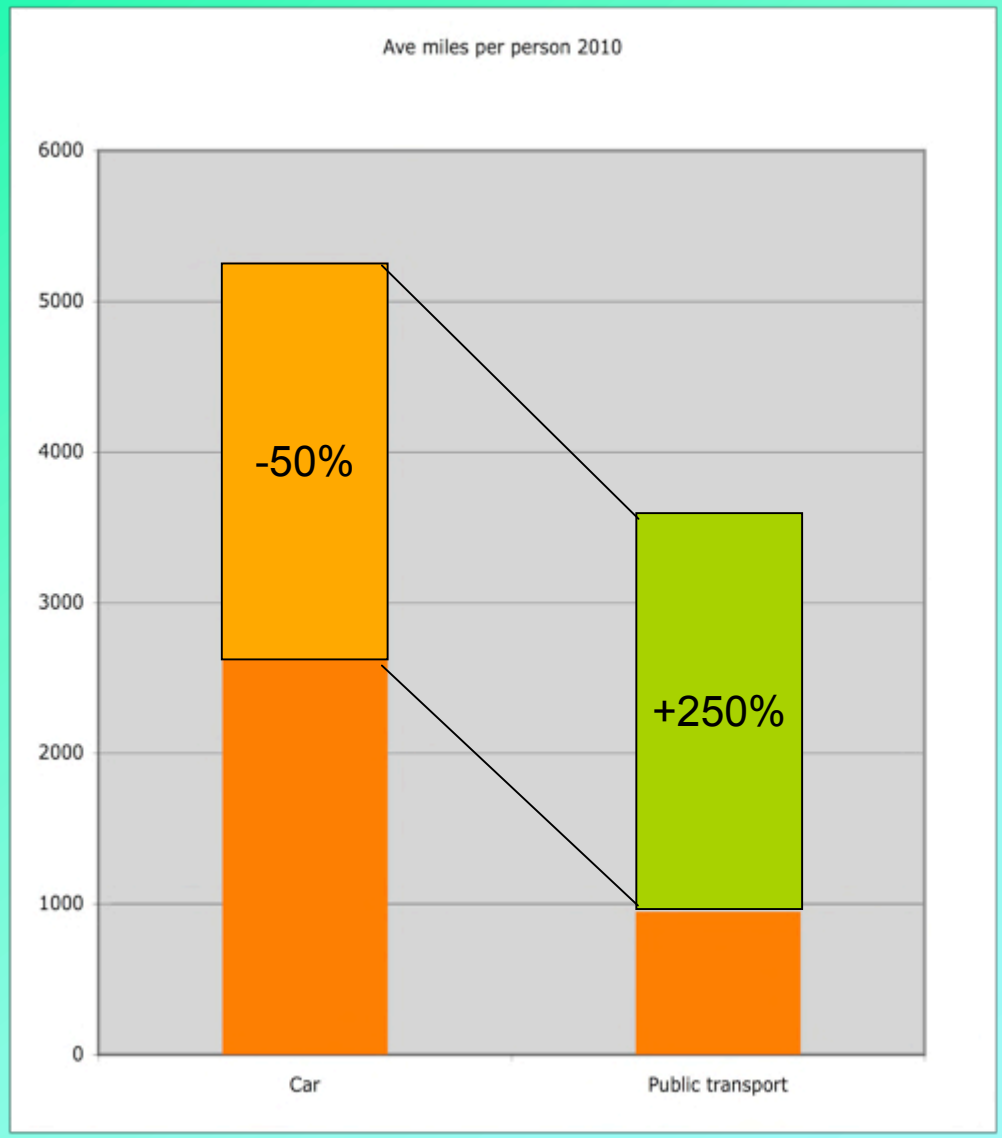


Time spent travelling is constant

- The time spent travelling is constant at 60 minutes per person per day
- Therefore the distance travelled depends on the speed
- Speed depends on the mode
- Switch to bus (or walk or cycle) means shorter acceptable distance



Switch from car to public transport?



Car to Public Transport - feasible?

Public transport share of distance travelled:

GB current	15%
GB future scenario (car use halved)	52%
European average 2008	18%
Switzerland	20%
Denmark	15%
Austria	15%
Germany	11%
Netherlands	8%

Mode switch means shorter trips

Logic:

- Time spent travelling is constant
- Number of trips is (roughly) constant
- Public transport is slower than car (door to door)
- Therefore trip distances by PT will be shorter

Shorter trips = choosing nearer destinations

Trips switch Car to Public Transport - feasible?

Public transport trips per person (per annum):

GB average	92
GB (excl London)	69
London	245
Zürich	520

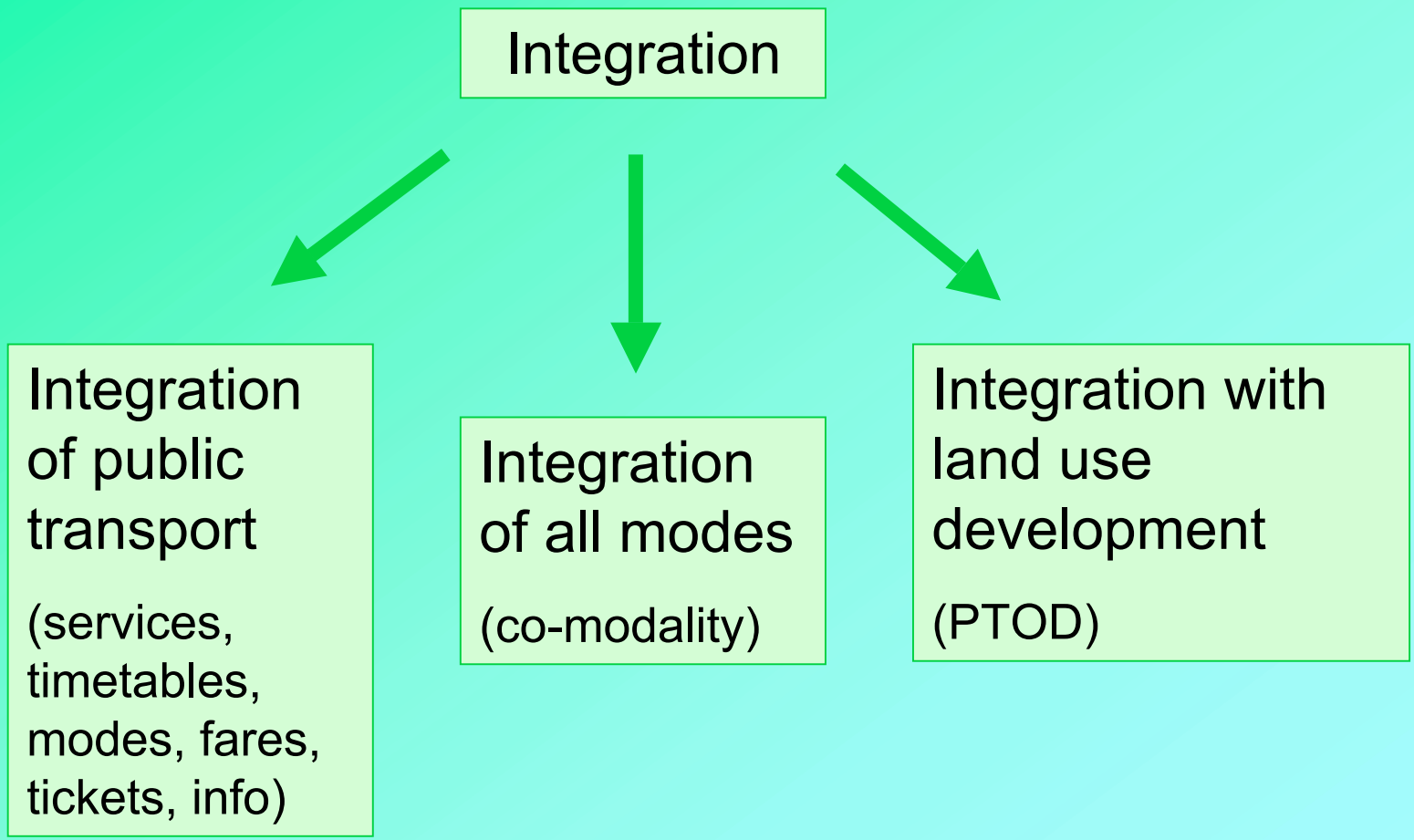
How can we grow public transport?

Push and Pull

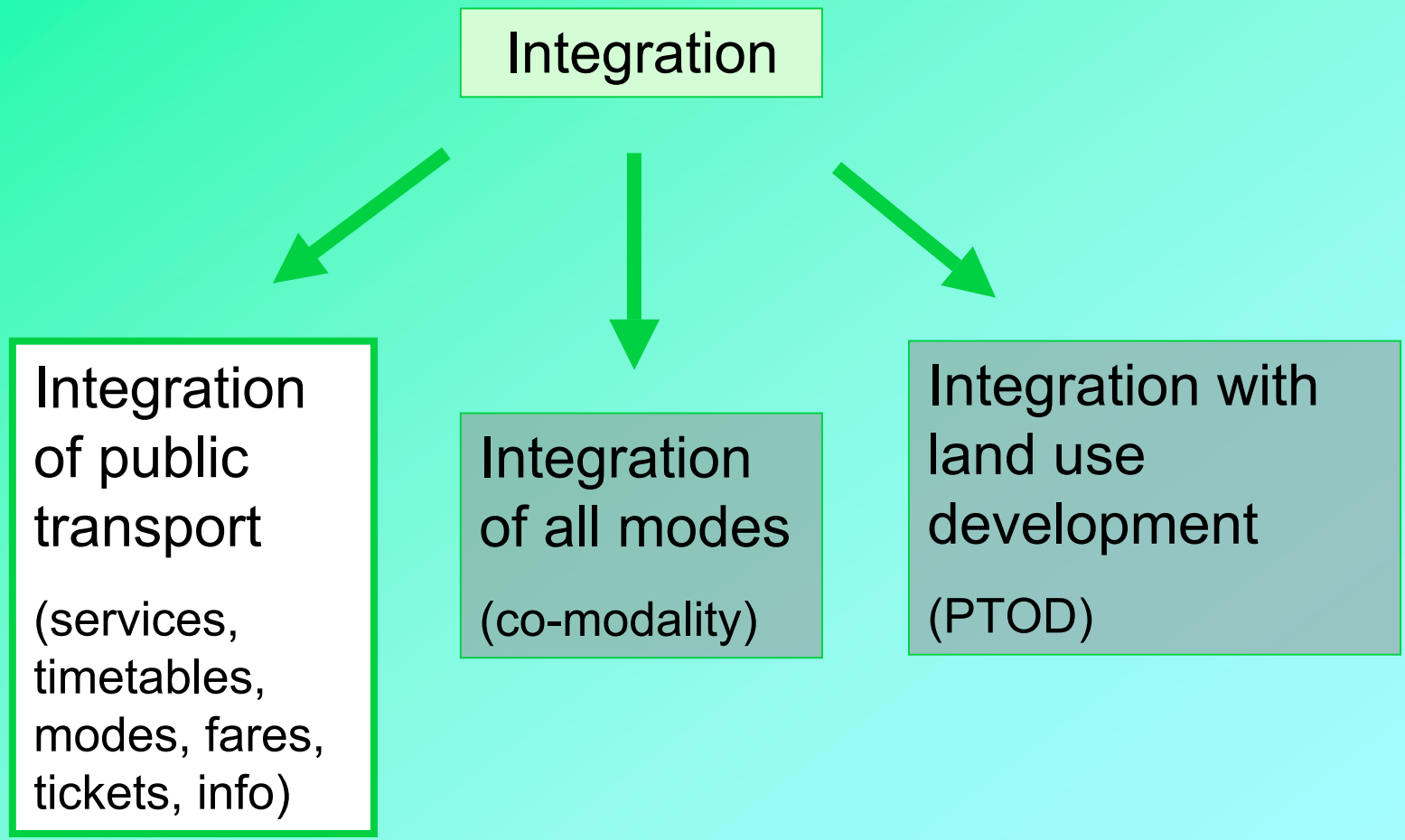
Less car

Better alternatives

What can we learn from northern Europe?



What can we learn from northern Europe?

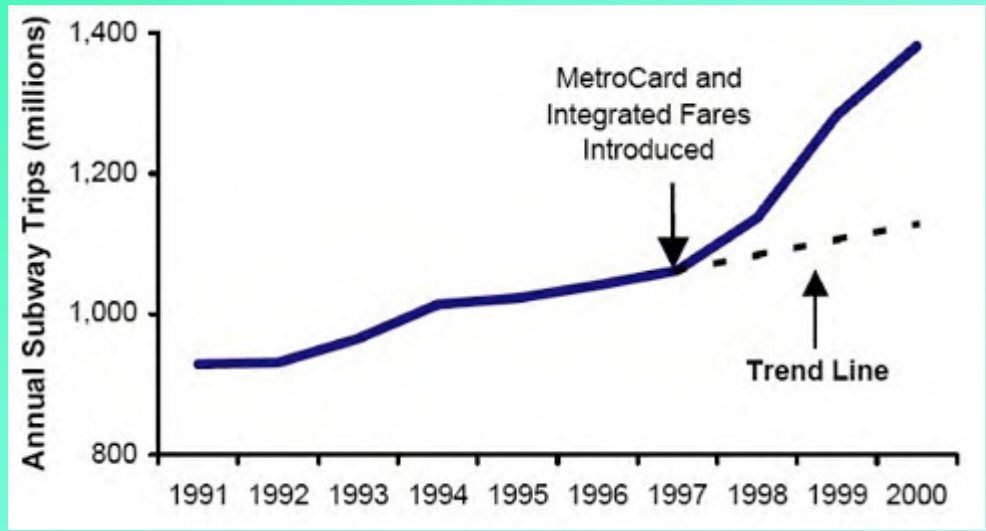


Integrated tickets

Netherlands
Integrated national ticket since 1980
Replaced with chipcard 2010

Switzerland
All-mode annual pass

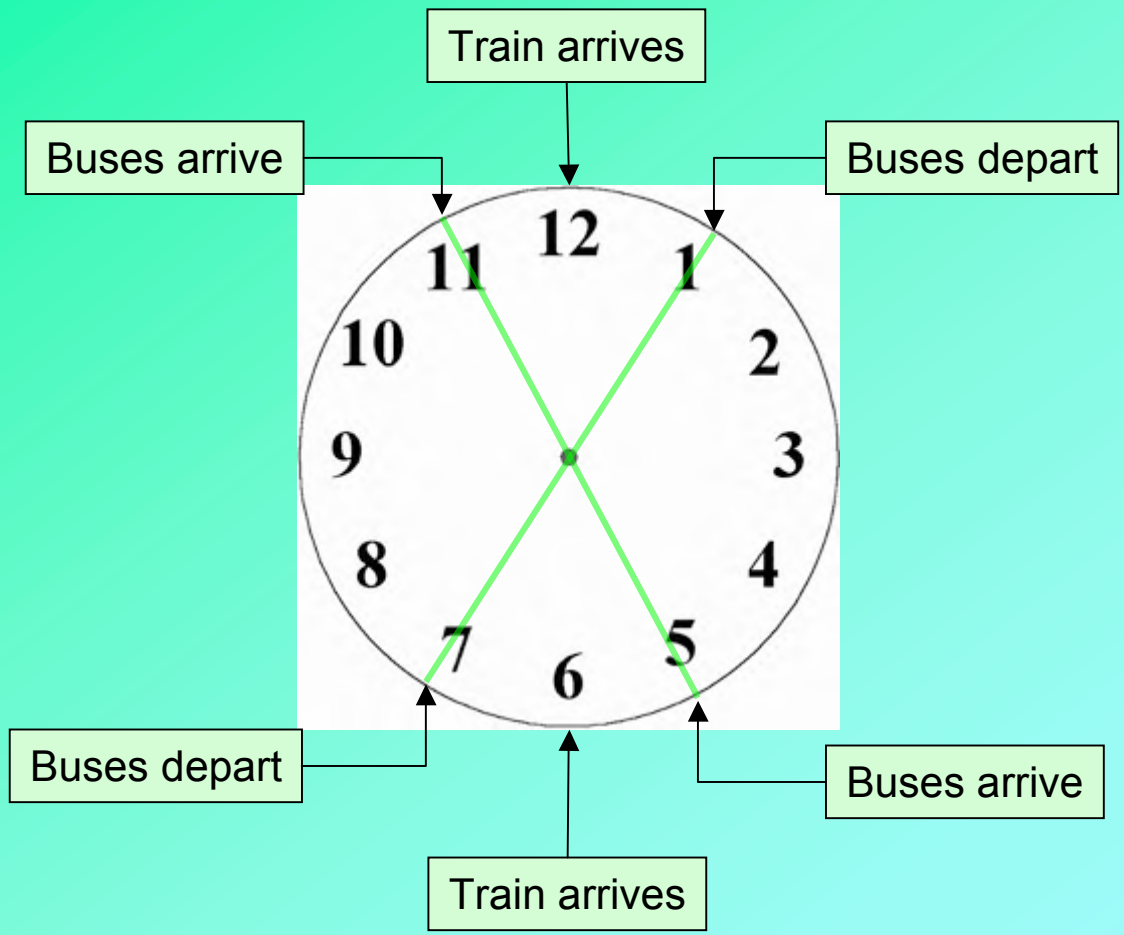
New York: the impact of integrated tickets



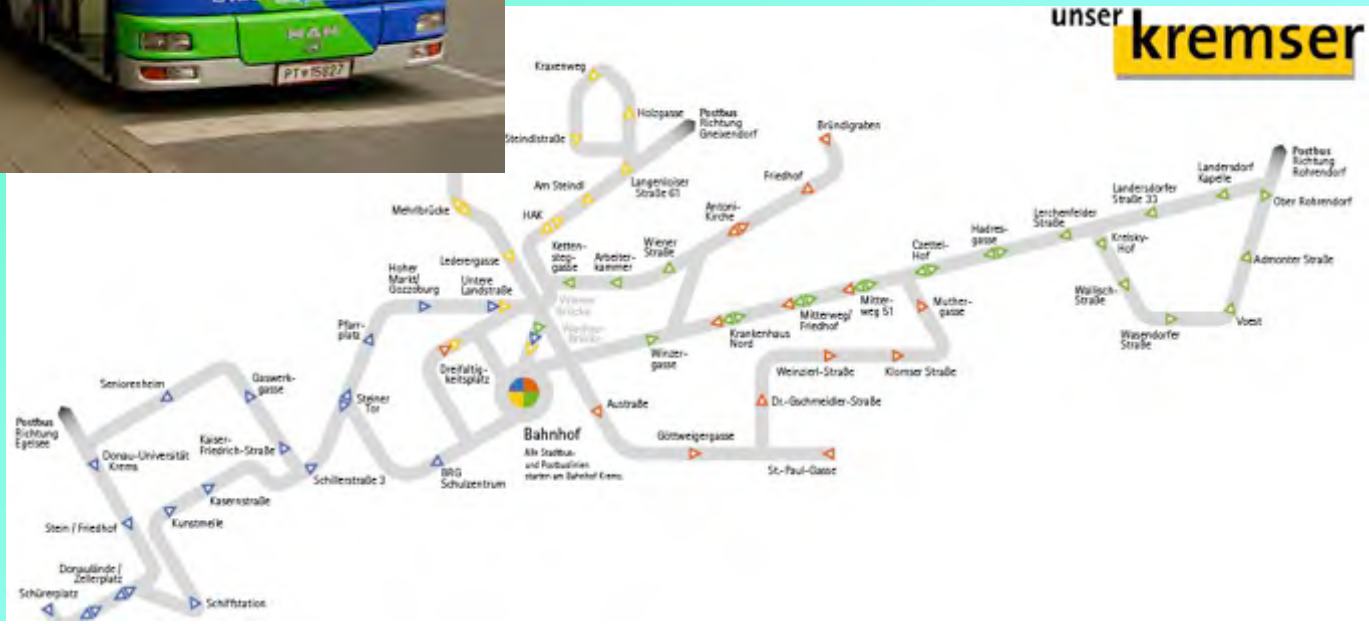
Tram-trains - Karlsruhe

Tram-train:
in city centre;
a village street;
on the mainline tracks

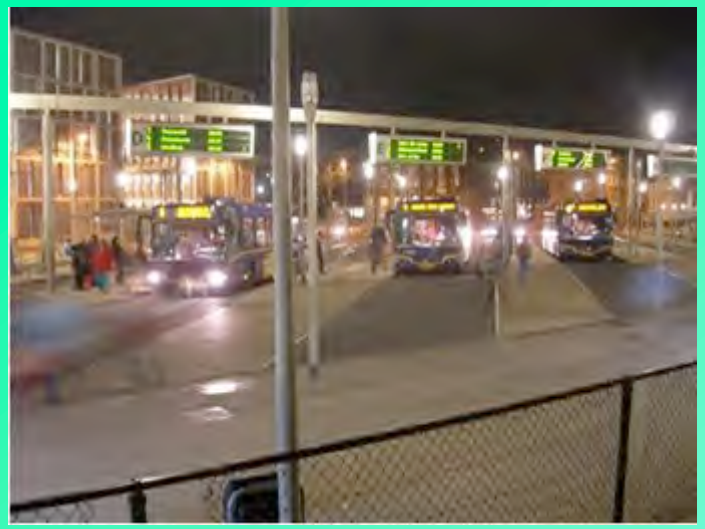
Bus Rendezvous



Bus rendezvous at rail station - Krems, Austria



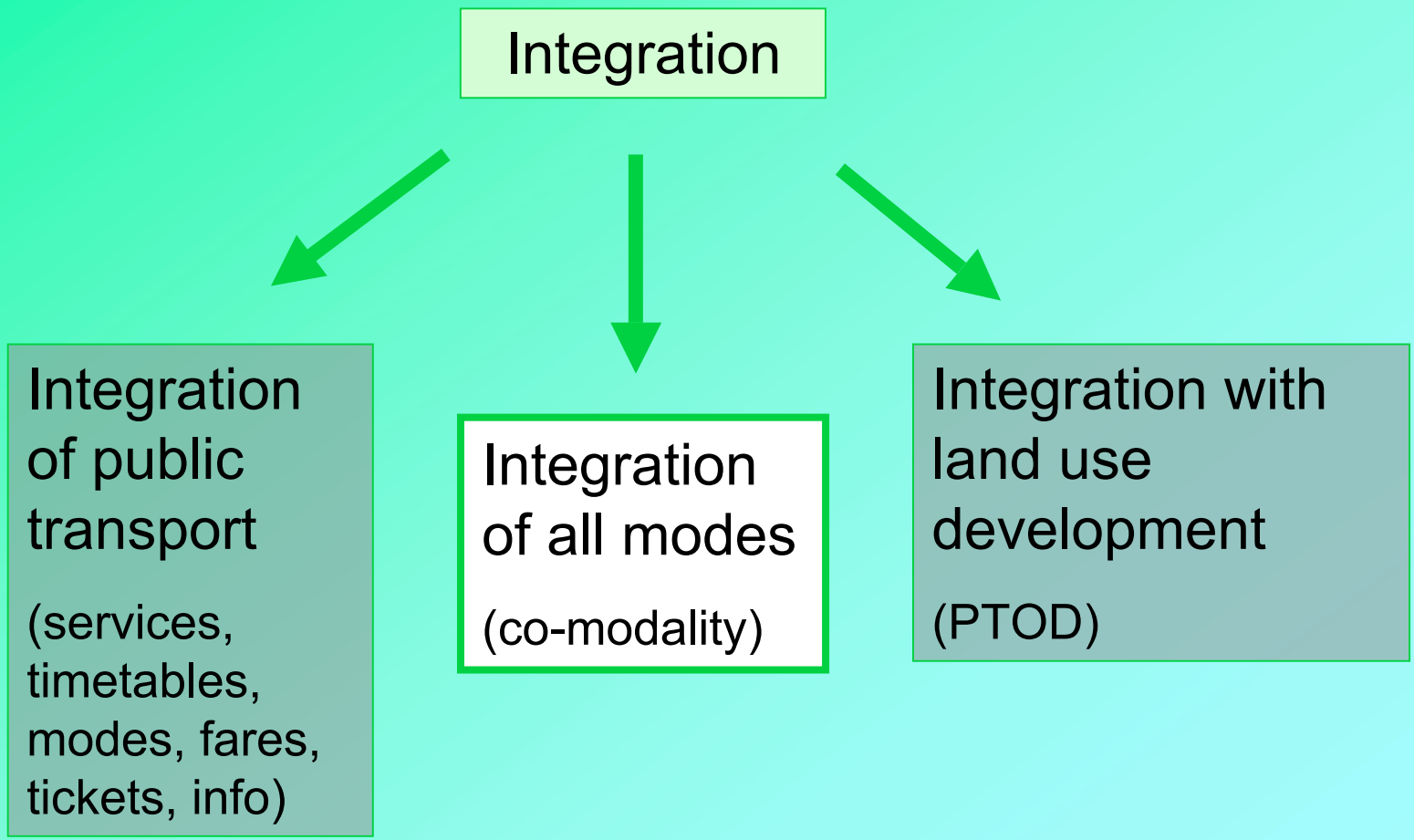
Interchange



Apeldoorn, NL
“Dynamic” bus station

Ballerup interchange, Copenhagen suburb

What can we learn from northern Europe?



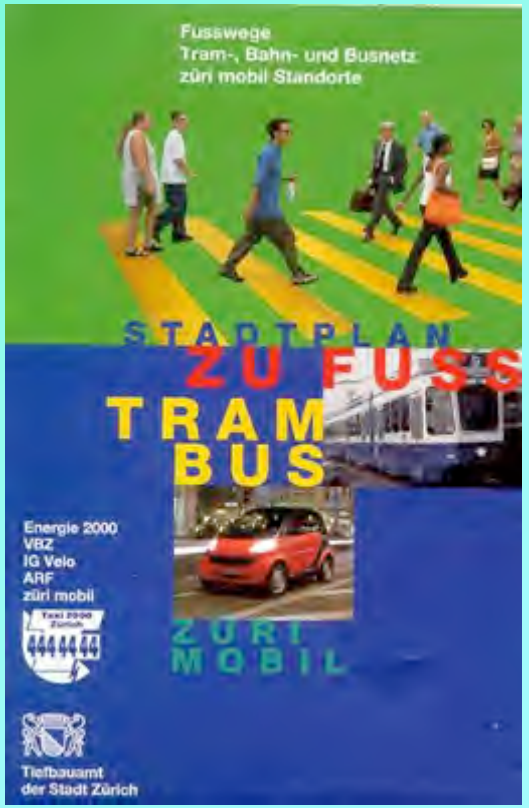
Building custom: example Zürich

- Decided against a metro
- Opted for dense / high frequency tram network

(Lower cost, better integration with fabric of city)

- Integrated hierarchy of modes

  - National rail
  - SBahn (city rail)
  - Trams
  - Buses
  - Boats
  - Cycle
  - Car club



Stations as hubs

Freiburg main station, cycle hub:

- 1,000 bikes
- Café
- Rental
- Repair
- Info

Dortmund station access

Rural example: Vinschgerbahn, northern Italy

Railway reopened in 2005 between Meran and Mals.
Area directly served has only 35,000 population

In 2007 2,000,000 passengers

Bike and Rail

Stops as a community focus

Tramstop, Nieuwegein, Utrecht, NL

New Addington, Croydon

Landmark bus stop - Beveren, Belgium

Bus stops - a presence in the community

Brauweiler, near Cologne

Dolomites, Italy

Bus stops - how not to do it - UK examples

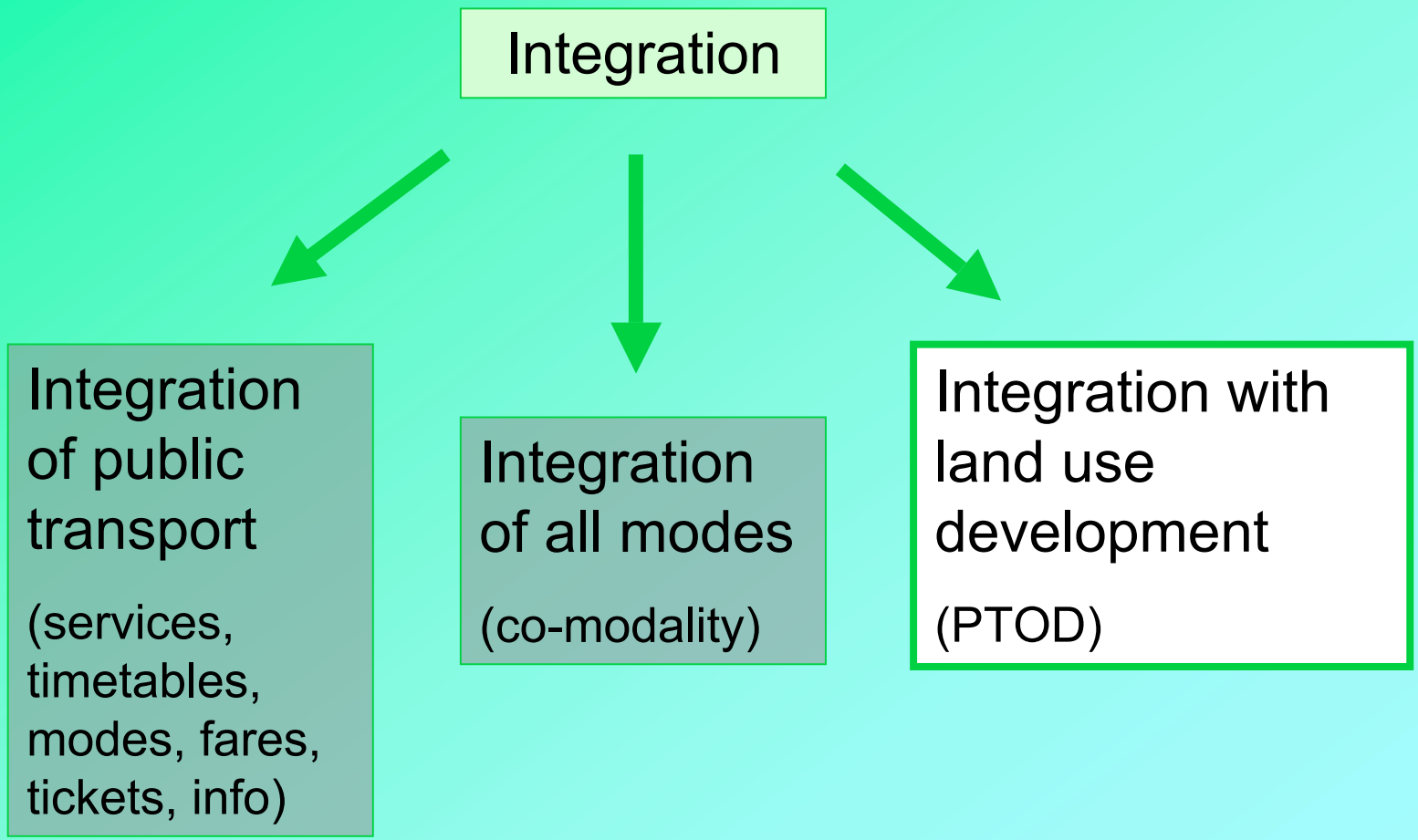
Co-modality - Cycle and Ride

Copenhagen suburb 1968

Amsterdam central station 2010

Karlsruhe suburb
1997

What can we learn from northern Europe?



The challenge of population growth

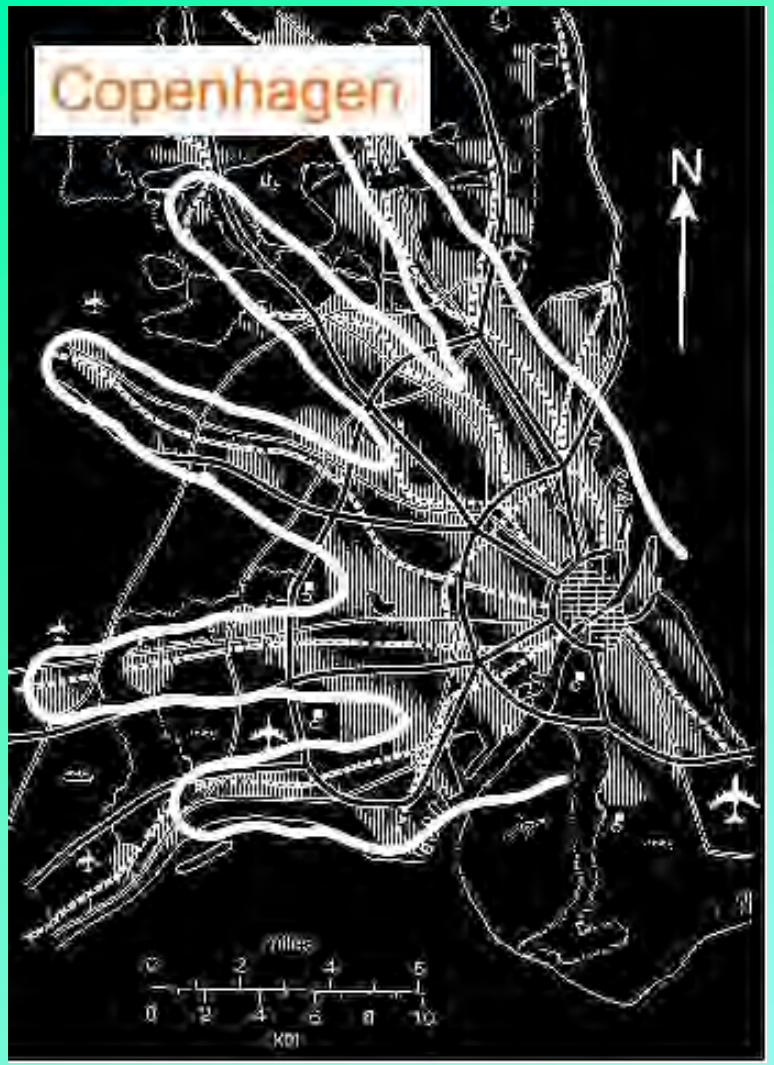
By 2030

- 9 million people? (another London + Sheffield)
- 4 million jobs? (four central Londons)

Need to locate and design for low oil, low car use:

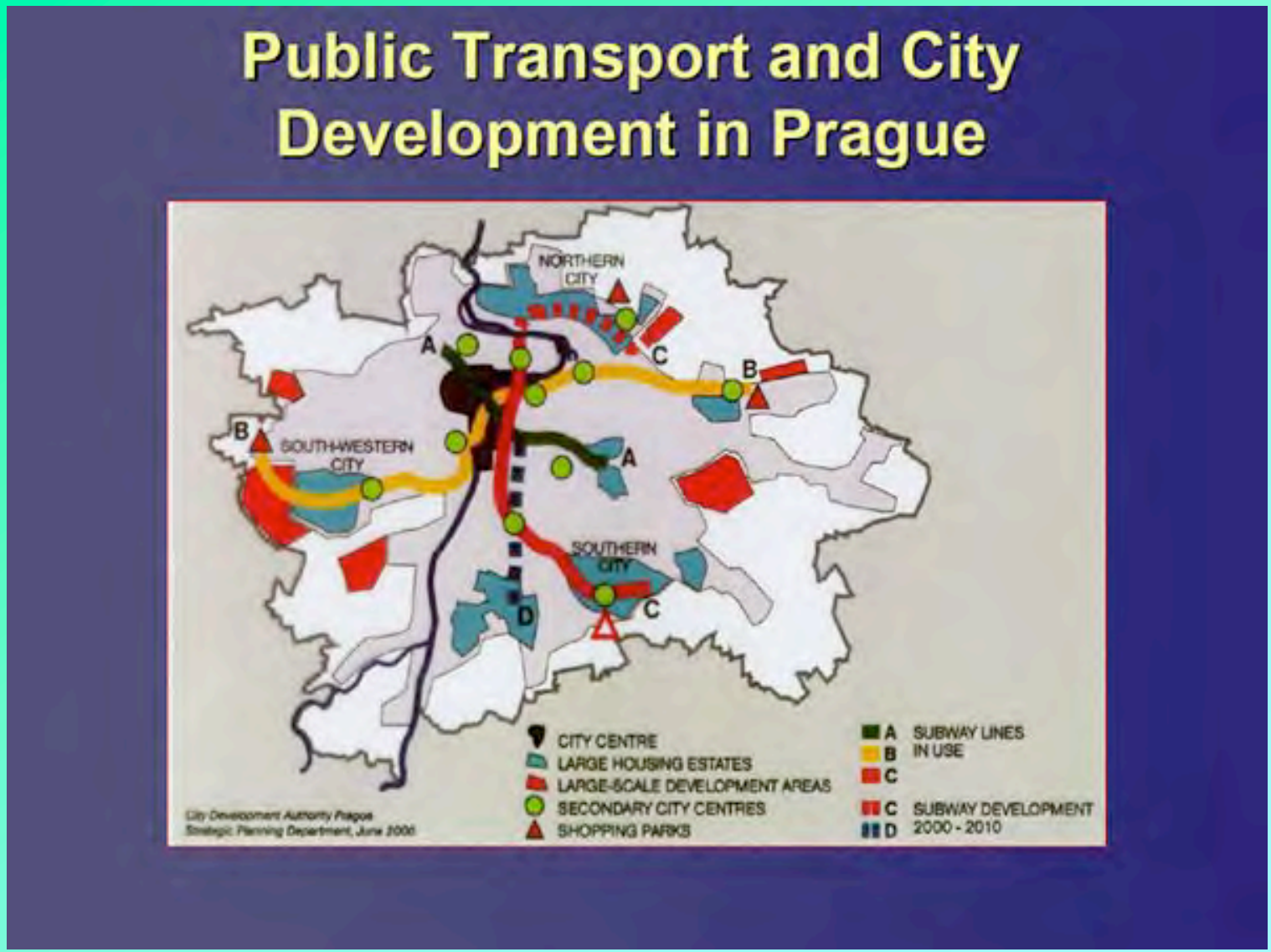
1. Build in corridors and nodes
2. Stop building car-based developments

Dealing with growth
Strategy example: “Fingerplan” 1947

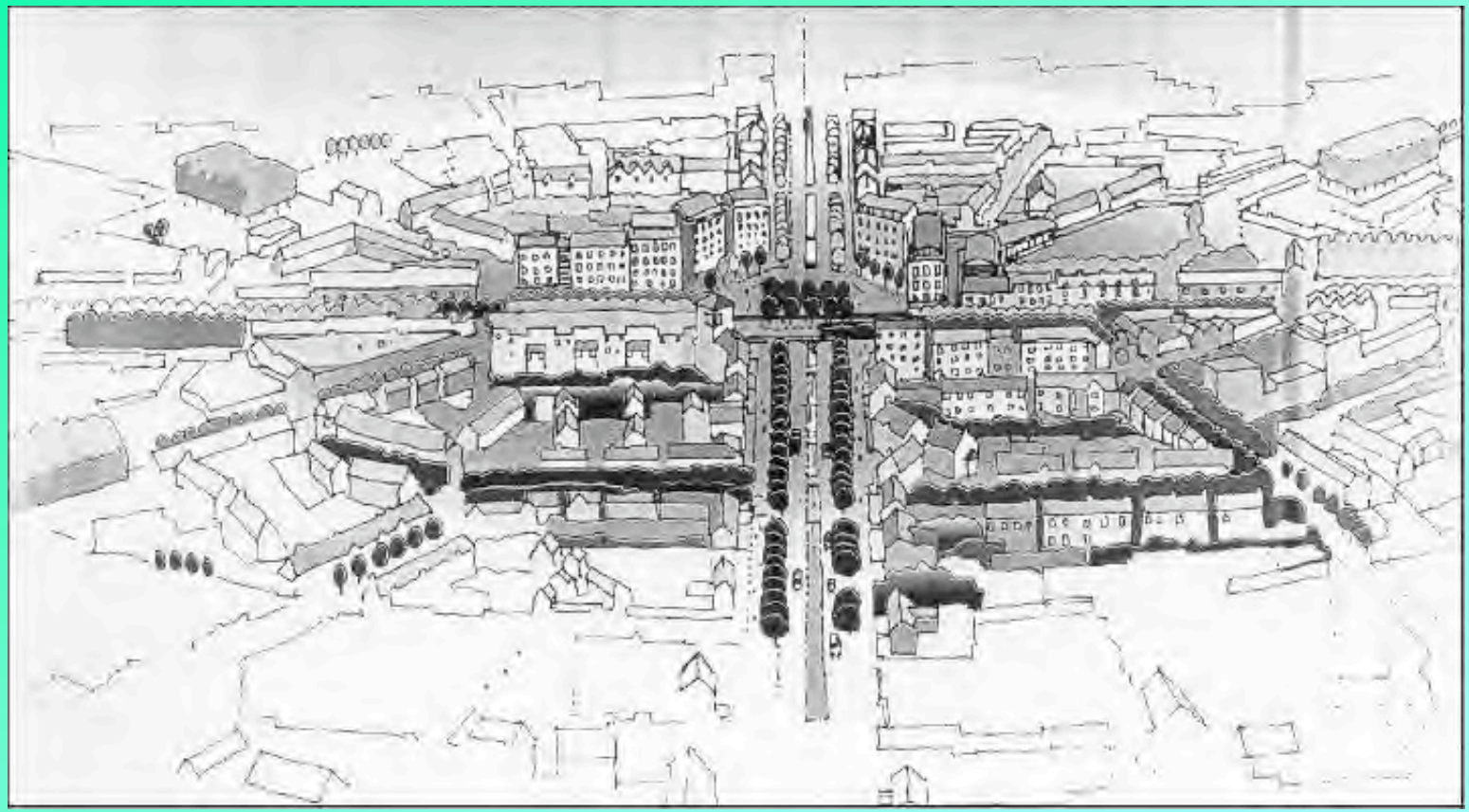


Ørestad: A new finger!

Dealing with growth: Prague strategy



Corridors and nodes for public transport



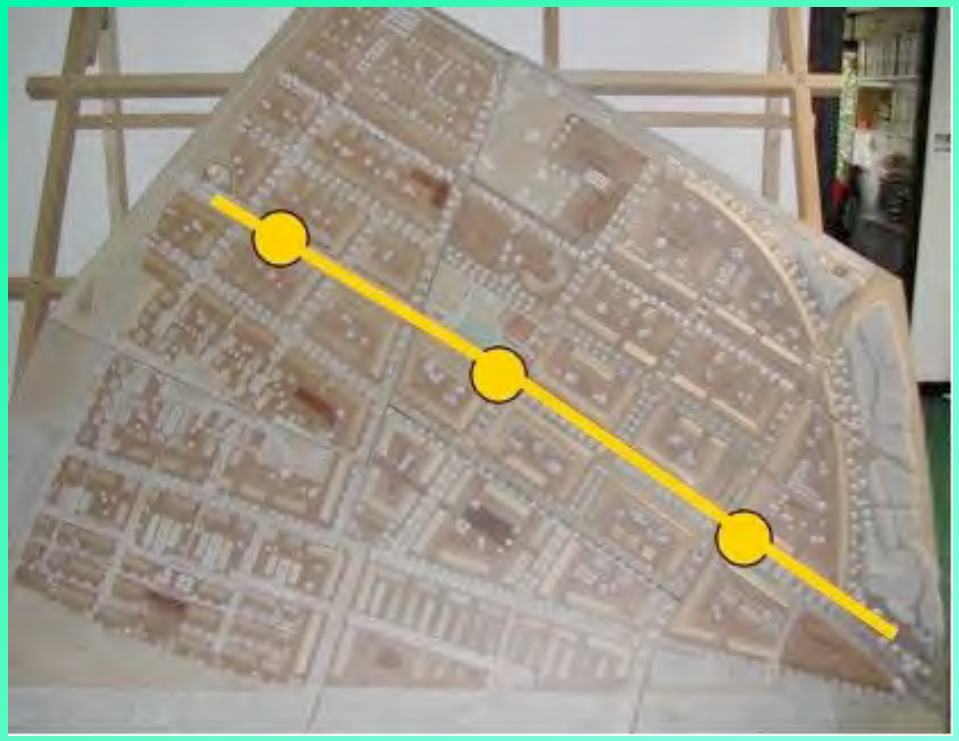
Schematic centre (node)

PTOD Example: Almere, NL

Busway through housing area

Almera station and main square

Dealing with population growth
Example: Rieselfeld Freiburg



Public transport Oriented Development "PTOD"

- 4,200 homes (58dph)
- Tram extension with direct service to the city centre
- Mixed use around tram stops

Trams from Day 1

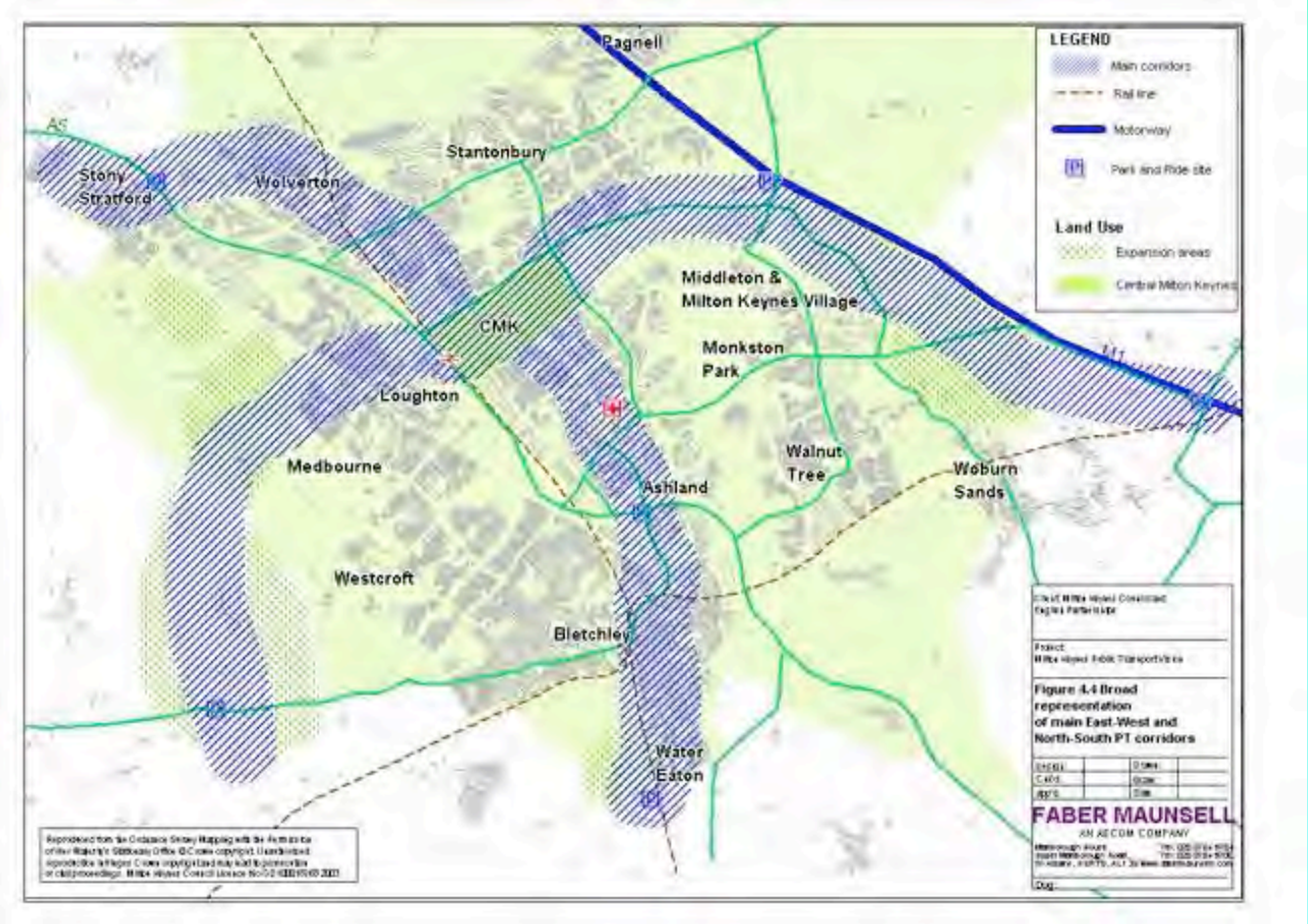
Wateringsvelde, The Hague
New area for 8,000 people

Rail hubs - Compare UK and NL

Ebbsfleet (near London):
- a car park

Sloterdijk (near Amsterdam)
- a major commercial centre

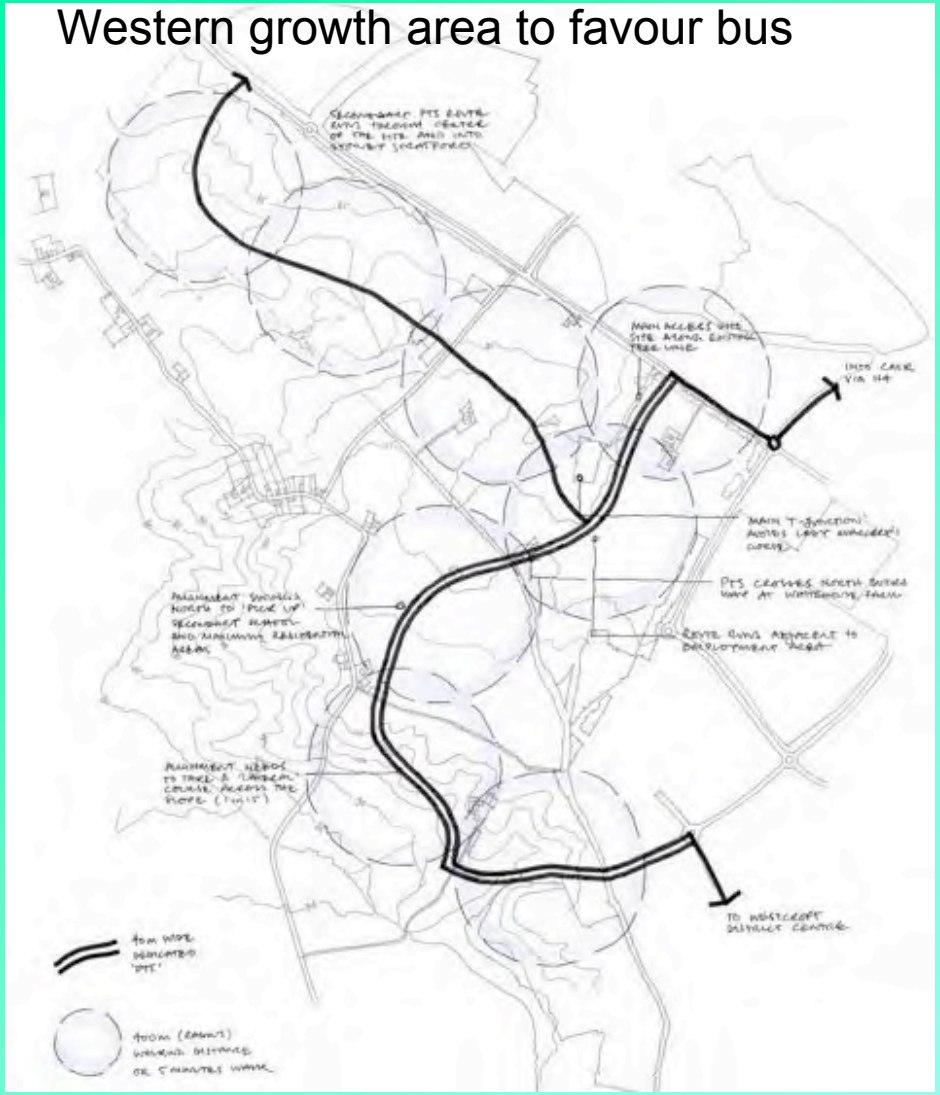
Milton Keynes: plans are not enough



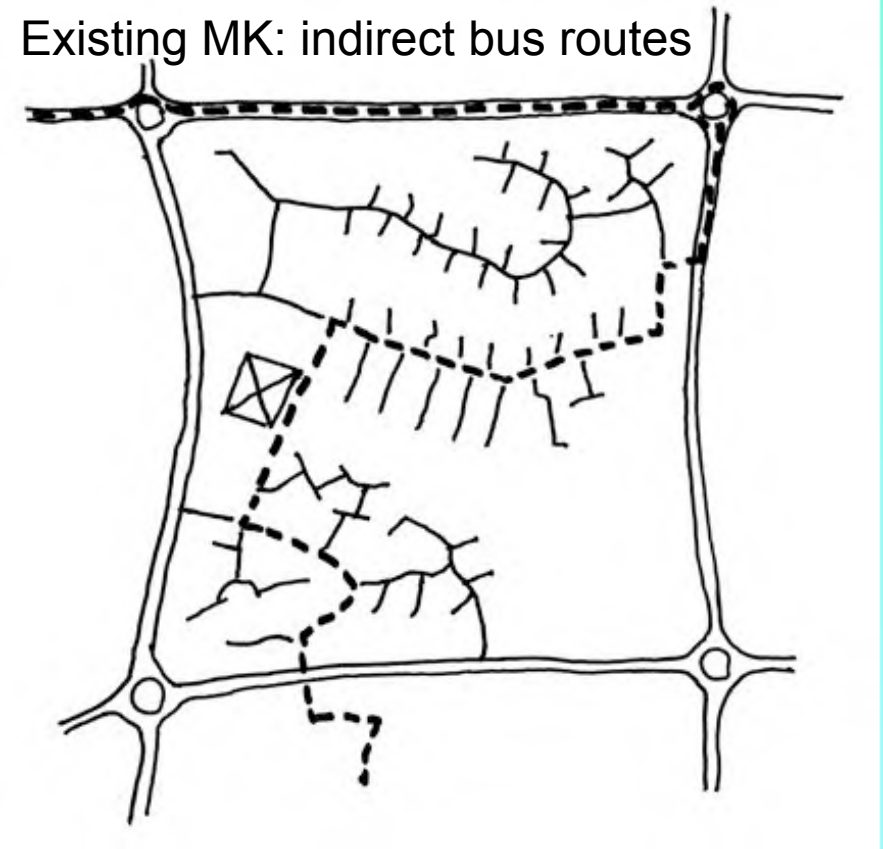
Growth plan to favour public transport

Milton Keynes - plans are not enough

Western growth area to favour bus



Existing MK: indirect bus routes



No Council control / responsibility

What else can we learn?

- Network evolution

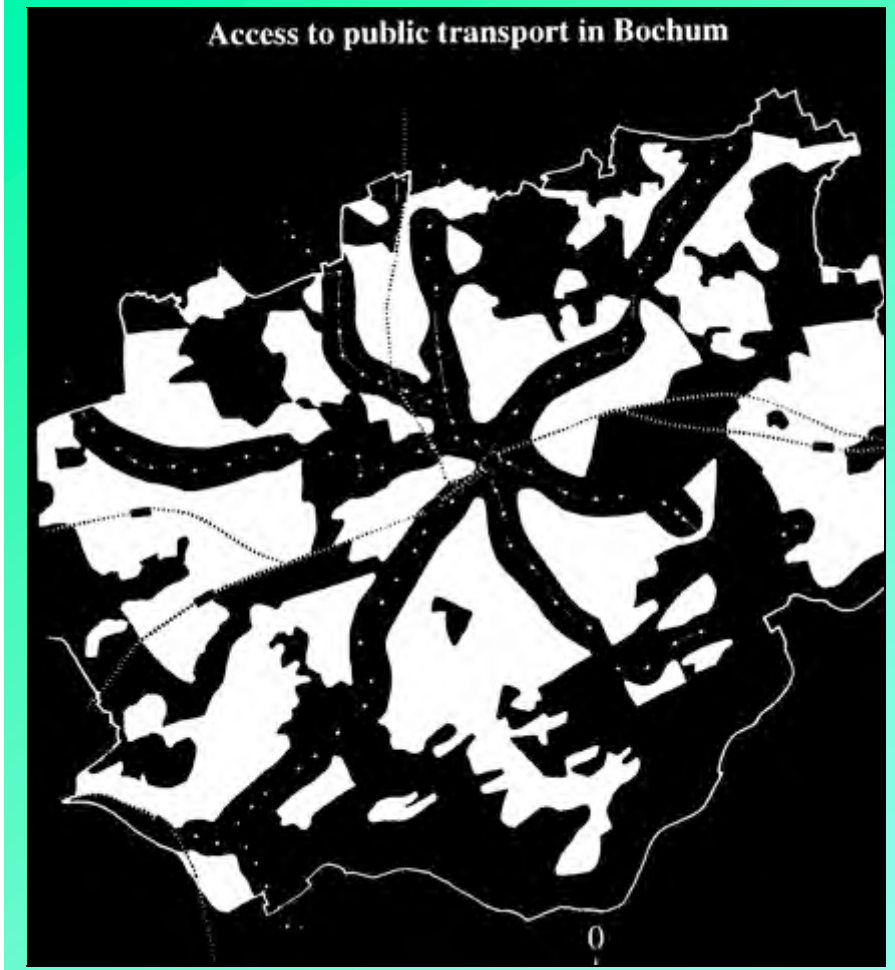
  (not just grand schemes or vanity projects)
- Stable organisation
- Avoid car-dependent development

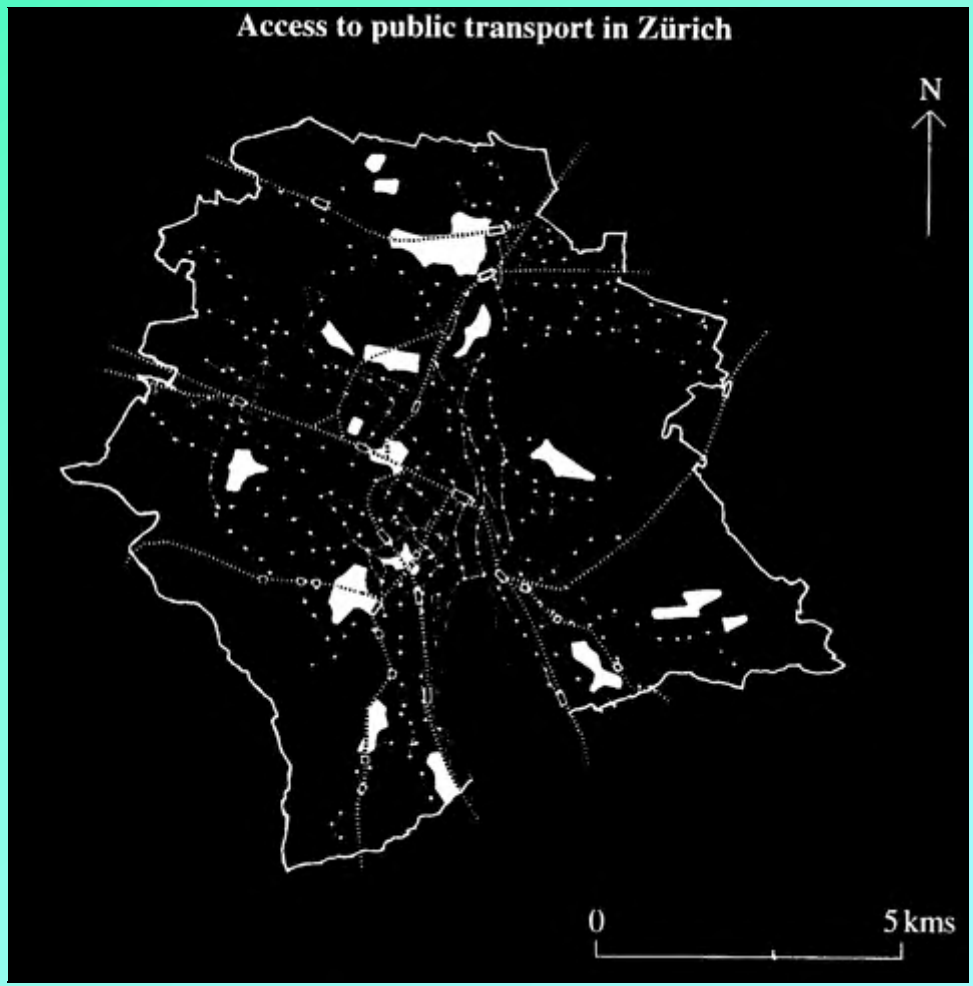
  (The “push” factors)
- Innovation does not depend on privatisation
- Elected authorities specify services
- Surpluses go to service improvements,

  not to shareholders

Zürich network plan (part)

Access to public transport

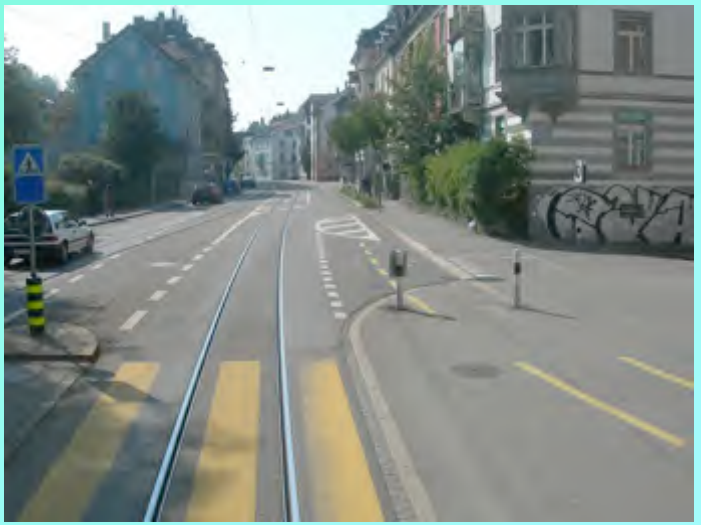




Areas within 300 metres of a 10 minute (or better) service

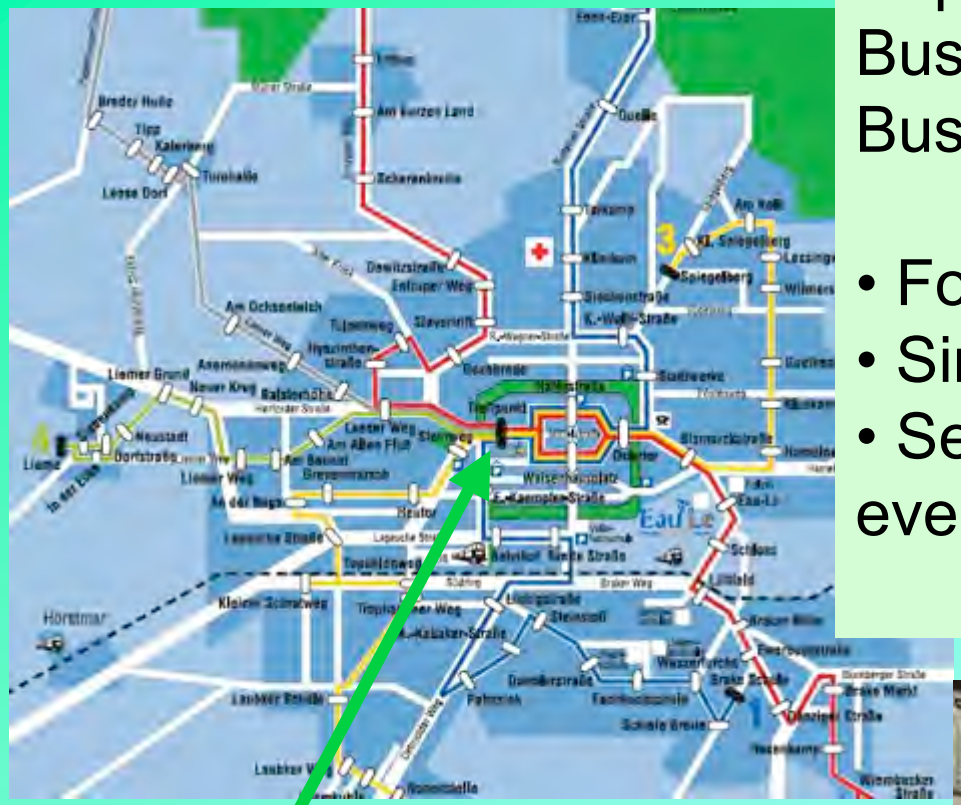
Zürich network development

Public transport “plaza”



Tramstop enhancement:
traffic lane closed

Building custom: example Lemgo, Germany



Meeting point

Population 30,000
Bus trips before - 1 pppa
Bus trips after - 60 pppa

- Four routes
- Single interchange - “treffpunkt”
- Services are timed to meet every 30 minutes

Building custom: example Frauenfeld, Switzerland

Do trams only work in big cities?

Frauenfeld population 19,000
Tram 13km 56 trips pppa
5% mode share
(Not including local buses)

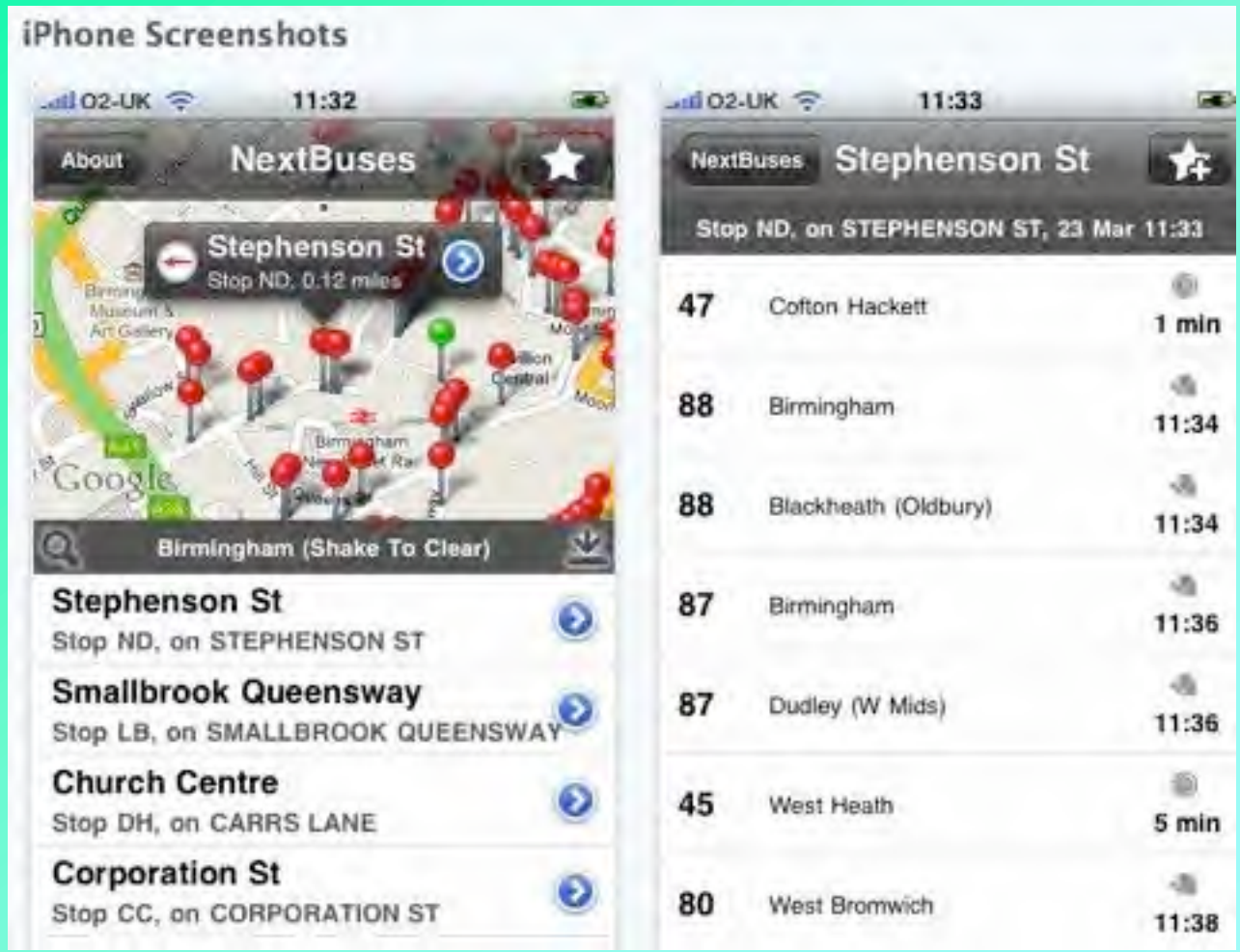
Role of the bus: a comparison

Population:
Redhill 49,000
Schaff. 44,000

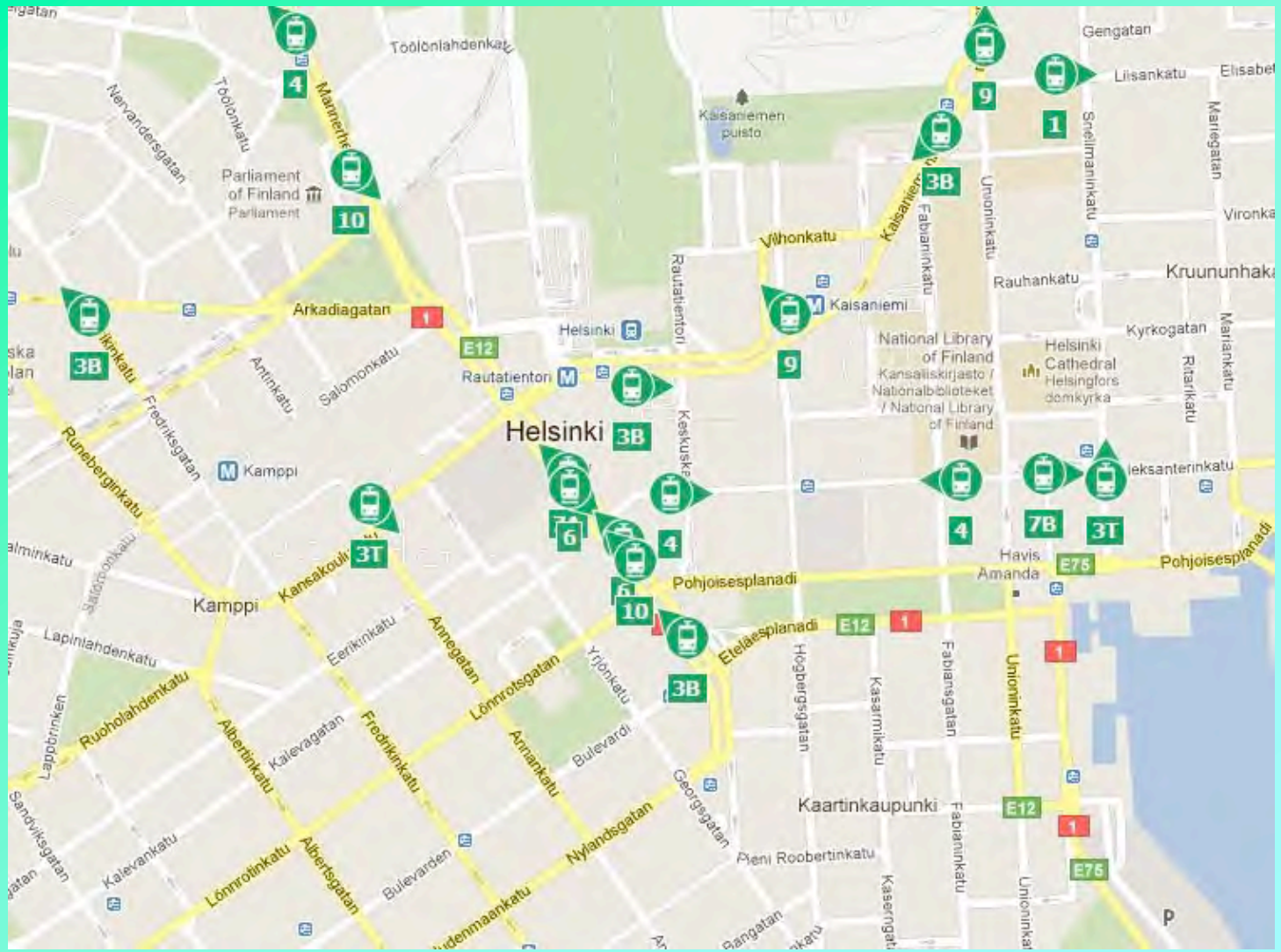
Bus performance comparison table

	Schaffhausen	Redhill
Weekday bus departures from the main rail/bus station	967	327
Number of routes	15	13
Routes with 10 minute frequency or better	10	0
Routes with 20 minute frequency or better	11	2
Number of routes with hourly frequency or better	16	9
Tickets interchangeable between all services	Yes	No
Annual bus trips per head of population	278	26

Information Technology



Real-time location of trams - Helsinki



Busways as a development tool

Zuidtangent: 25 kms A’dam Schiphol - Haarlem

Trams?

Strasbourg

Montpelier

UK tram schemes proposed

Location	Outcome by 2011
Aberdeen	Nothing
Belfast	Nothing
Birmingham	One line partly constructed
Bradford	Nothing
Bristol	Nothing
Cardiff	Nothing
Chester	Nothing
Cleveland	Nothing
Croydon	System implemented
Dartford	Nothing
Doncaster	Nothing
Dundee	Nothing
Edinburgh	One line partly constructed
Glasgow	Nothing
Gloucester	Nothing
Hull	Nothing
Leeds	Nothing
Leicester	Nothing
Liverpool	Nothing
London docklands	System implemented, extensions planned
Manchester	System implemented, extensions planned
Medway Towns	Nothing
Nottingham	System implemented, extensions planned
Portsmouth	Nothing
Sheffield	System implemented, extensions planned
Sunderland	Nothing
Swansea	Nothing
Washington	Nothing

French tram schemes proposed

Location	Outcome by 2011
Angers	12 km line 2011
Besancon	One line planned for 2014
Bordeaux	3 lines 44 kms opened 2003
Brest	Line under construction
Caen	2 lines opened 2002
Clermont-Frd.	One line opened 2001
Dijon	Two lines planned for 2013
Grenoble	Two lines by 1990, two more in 2007
Le Havre	Planned line
Le Mans	One line 2007
Lille	Two lines by 2000
Lyon	Four lines by 2000 (4 years to build)
Marseille	Two lines by 2007
Montpellier	Two lines in 2000
Mulhouse	Two lines 2006
Nancy	One line 2002
Nantes	4 lines, 49 kms opened 1985 (1st modern trams in France)
Nice	One line 2007
Orléans	One line by 2002, Second line 2012
Paris	Four lines by 2010, 8 more lines planned
Reims	Two lines, 2011
Rennes	(VAL metro system)
Rouen	One line, 15km
Saint-Étienne	3 lines, 17kms
Strasbourg	6 lines, 57kms since 1994
Toulon	Failed due to political changes (2000-2008)
Toulouse	One line, 10 kms
Tours	Plans for 15 km line by 2013
Valenciennes	One line, 18 kms

Role of public transport - to sum up

- Integration, integration, integration
- Public and social infrastructure
- A major role to reduce oil/emissions
- Essential for sustainable growth

Thank you