

Integrating sustainable transport, planning and urban design

Presentations to:

1. NZ Planning Institute, Nelson Marlborough Branch
2. Nelson/Tasman/Marlborough Sustainability Forum

Nelson, 28 July 2010

Andrew Macbeth

Andrew Macbeth

- BE, MEng, CPEng, FIPENZ
- Director, ViaStrada Ltd, Christchurch
- Senior Traffic Engineer & Transport Planner
- 1 week in Denmark, 3 weeks in England



NZPI conference Chch March 2010

- ViaStrada urban design & planning tour



Background

- Velo-City cycling conference, Copenhagen
- Also visited Cambridge, Bristol and Bath
- Opportunity to think holistically about:
 - sustainable transport
 - land use planning
 - urban design
 - ingredients for good towns and cities

Outline

- Sustainable transport
- Land use planning
- Urban design
- Integrating all the above as encouraged by Urban Design Protocol
- Examples from Copenhagen and other parts of Europe; ideas from conference
- Possible applications for Nelson and NZ

City/district comparisons

| City | Population |
|-------------------|-----------------|
| Copenhagen | 1,900,000 |
| Christchurch | 430,000 |
| Bristol, UK | 420,000 |
| Utrecht (Vleuten) | 300,000 (8,000) |
| Cambridge, UK | 130,000 |
| Nelson/Tasman | 90,000 |
| Marlborough | 45,000 |

Sustainable urban designers

- Urban designers
- Planners
- Architects, landscape architects
- Surveyors
- Developers
- Engineers (especially traffic engineers)
- Health professionals, sustainability advocates
- Politicians and the public

Sustainable transport

- Walking and cycling
- Public transport
- Travel demand management
 - minimising car travel (other modes, car sharing, etc)
 - minimising truck travel (other modes, local supplies, etc)
- A key part of sustainable planning and urban design

Sustainable transport for NZ

- Rail; \$billions; Auckland & Wellington
- Bus; \$millions; Chch, Dunedin, Hamilton, Tauranga
- Walking and cycling; \$thousands; All the above plus all other towns and cities
- Reduce road spending



Streets – underused urban design assets

- Significant proportion of public space in towns and cities is streets
- Improve quality of life by reclaiming streets
- Reduce traffic volume and speed
- Encourage walking and cycling
- Add vegetation, seats, shelter, signs, art
- Needs leadership – technical and political

Cambridge bus – promoting cycling



Copenhagen cyclists

- 37% of work & education trips are by bike
- 55% of cyclists are female (helmets optional)
- Women and children cycling; good indicators



Young and old

- Jan Gehl: cycled with his wife to their 45th wedding anniversary dinner
- Gil Penalosa: built environment should be good for people aged 8 and 80
- <http://www.8-80cities.org/index.html>



“Cargo” bikes



Typical Copenhagen cycle track



Not all streets have cycle tracks



Copenhagen – suburban ribbon parks



Groningen – service lane on a boulevard



Munich – boulevards



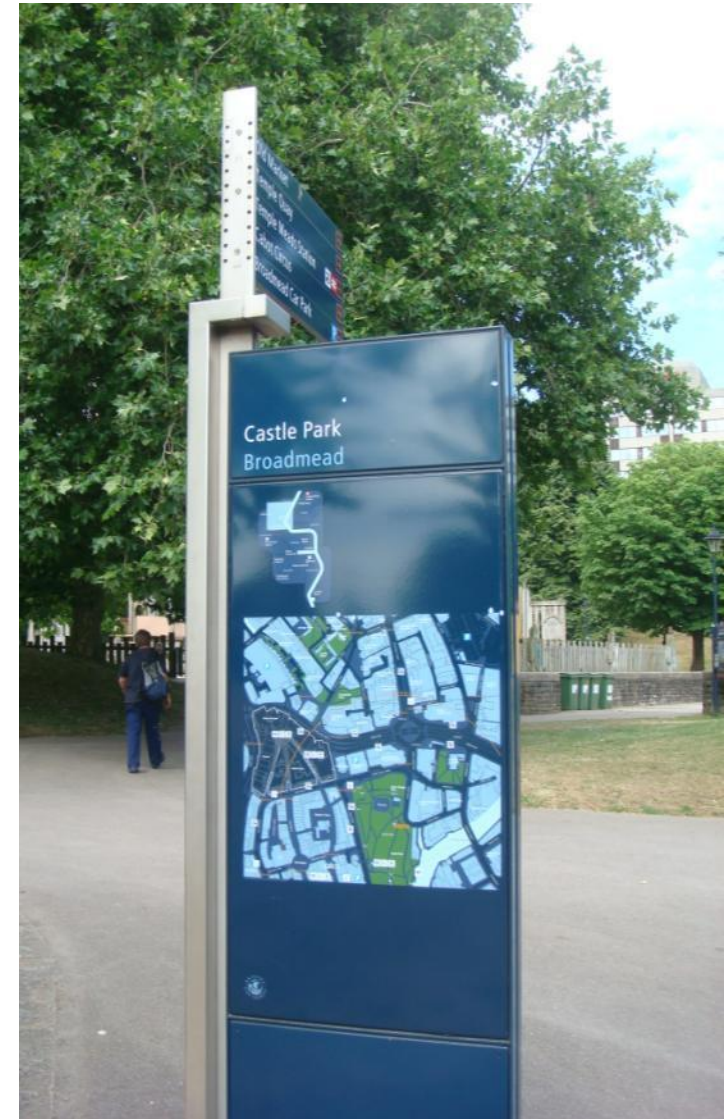
Groningen – wedding procession



Cambridge – bikes mean business



Information and direction signs



Cycling central part of future plans

- Not just a nice add-on; ticks all the boxes:
 - health
 - safety
 - peak oil
 - CO₂
 - air quality
 - noise
 - equity
 - accessibility



Copenhagen land use planning

- Developments quite dense (but < 6 stories)
- Incorporates sustainable transport
- Focus on “brownfield” developments
- Requires private and public bicycle parking



Carlsberg brewery site redevelopment

- 33 hectare site; 3 km to city centre
- Planning 5,000 residents and 3,000 jobs
- Retention of key historic buildings
- Sustainability key focus



Nordhaven redevelopment

- 350 ha; 6 km to centre; 50 year time frame
- 40,000 residents and 40,000 jobs
- Bicycle “super-highway” – 20,000/day
- Bicycle parking requirements:
 - 2.5 spaces/100 m² (“may not be enough”)
 - 20% of bike spaces for cargo bikes
 - 2/3 inside buildings, 1/3 on street

Cambridge cycle parking rules

- Residential
 - 1 space per bedroom up to three bedrooms
 - 3 spaces for 4 bedrooms, 4 for 5, etc
- Retail (food and non-food)
 - 1 space/25 m² GFA up to 1500 m²
 - 1 space/75 m² thereafter



Vleuten (Utrecht) planned community



- Car parking outside (1 space per 3 bedroom unit)
- Range of housing types
- Front doors look onto shared park
- Walk & cycle paths for children to play (passive supervision)

Vleuten – multi-modal transport

- Municipality of Utrecht; pop 7,600 (1999)
- Major investment in public transport and cycling
- Major growth in suburban housing estates



Railway station sign shows bike parking location (not car parking)

View from the train station



Large public spaces for events, central focus



Radhuspladsen



Private and public spaces



Gent – impromptu meetings



Murals add life, interest, civic pride

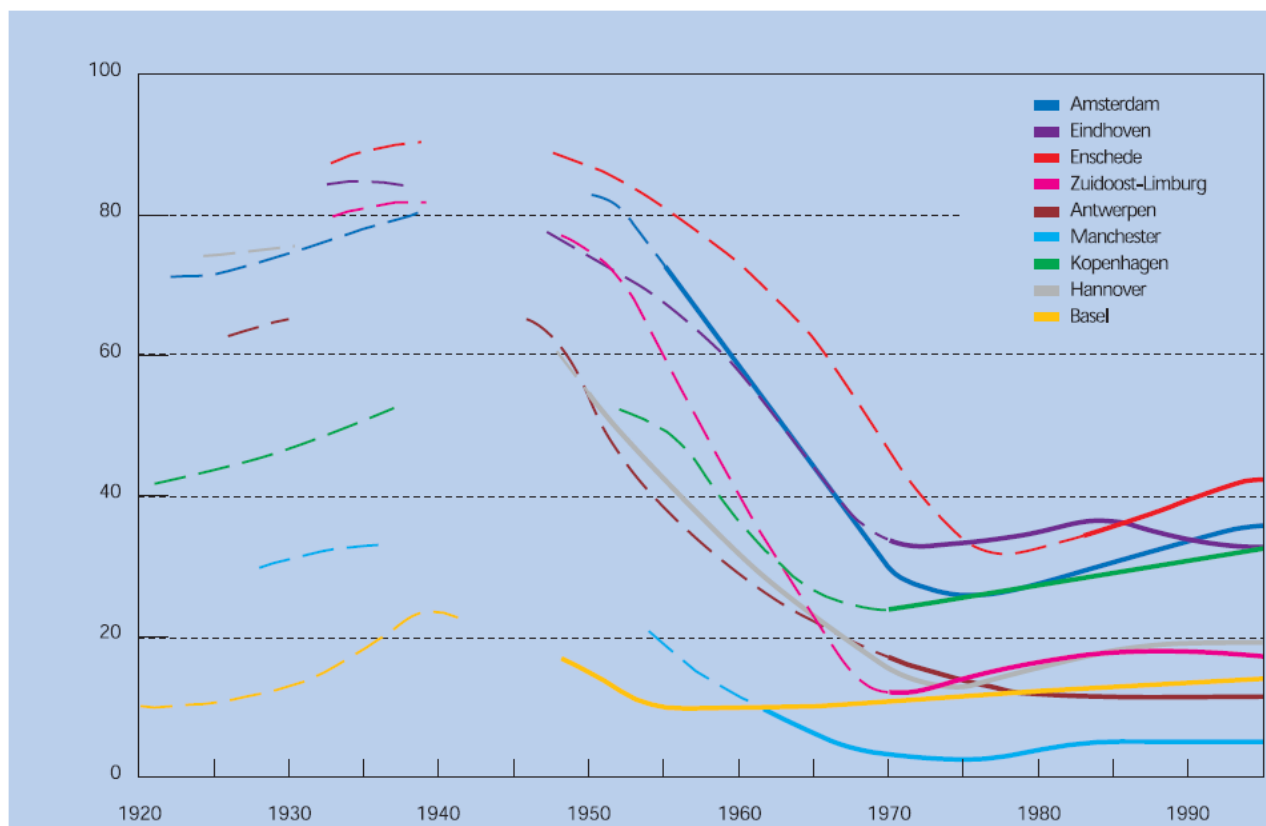


Groningen – shopping street (deliveries)



Cars dominated Europe in 1970 too

- % cycle trips for various EU cities



1920

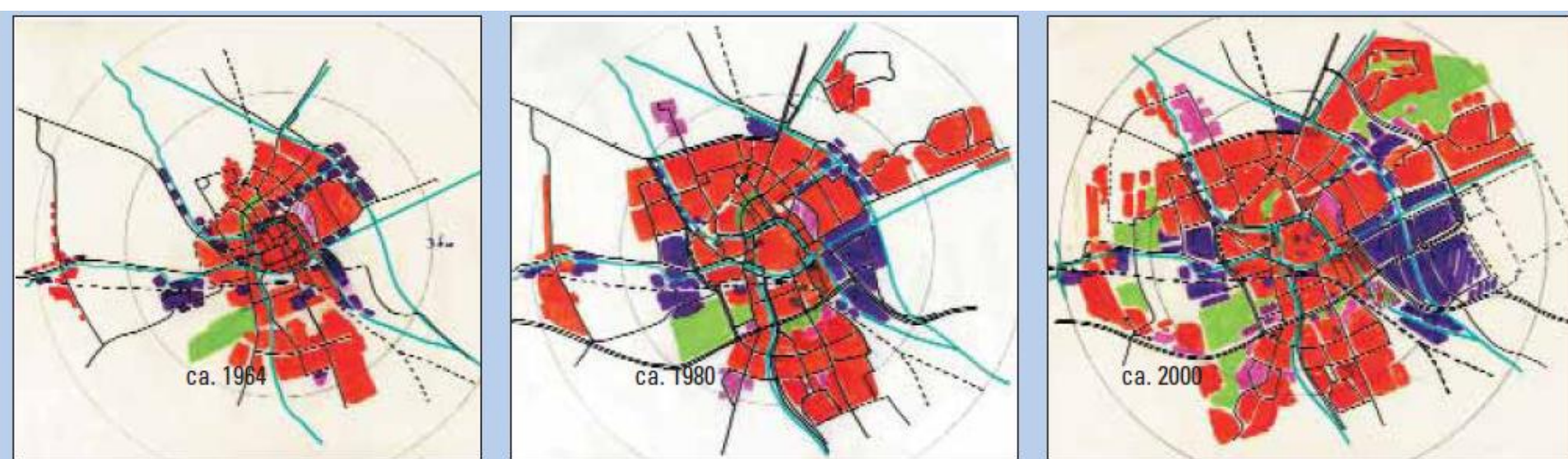
1940

1970

2000

Groningen – urban growth

- Principle of compact growth since 1964



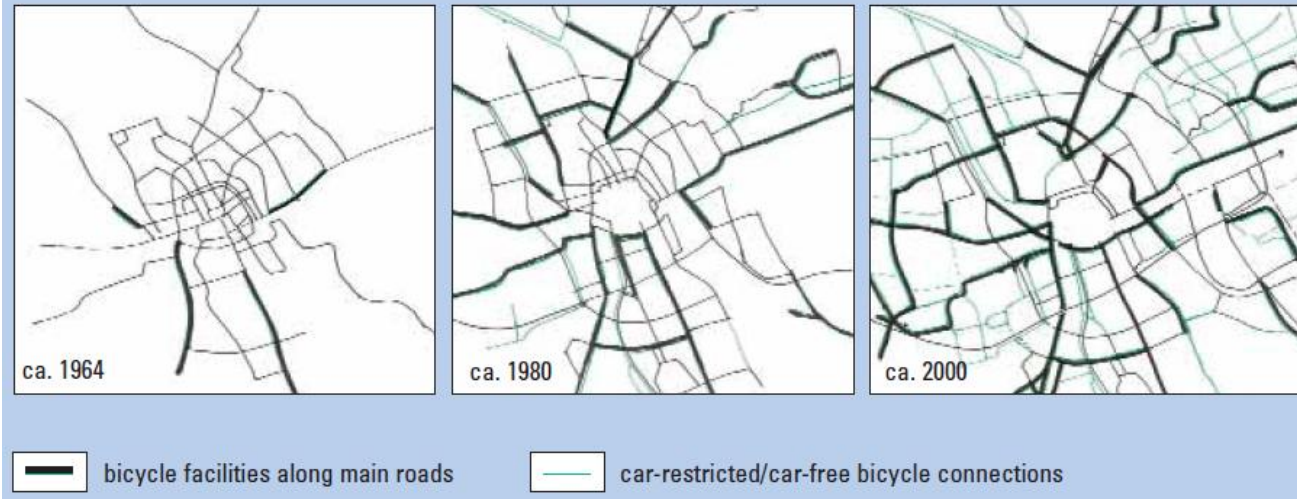
1964

1980

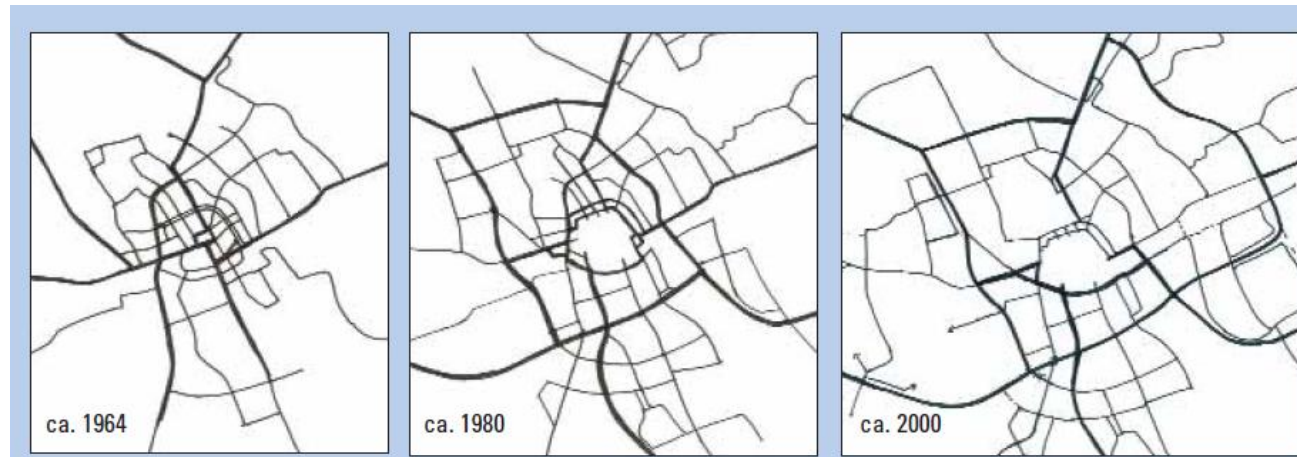
2000

Groningen – cycle network growth vs car

Cycle network



Car network

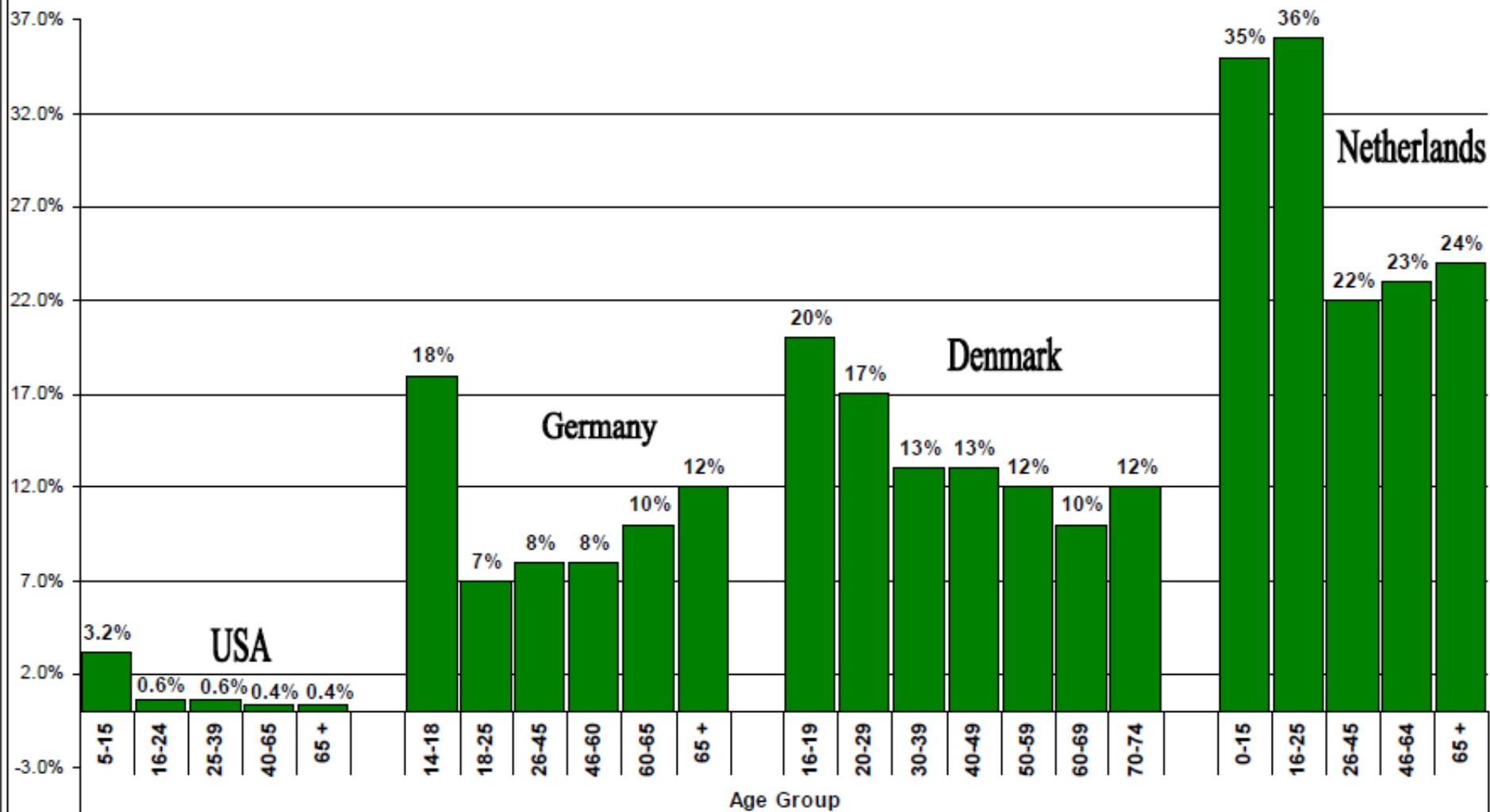


1964

1980

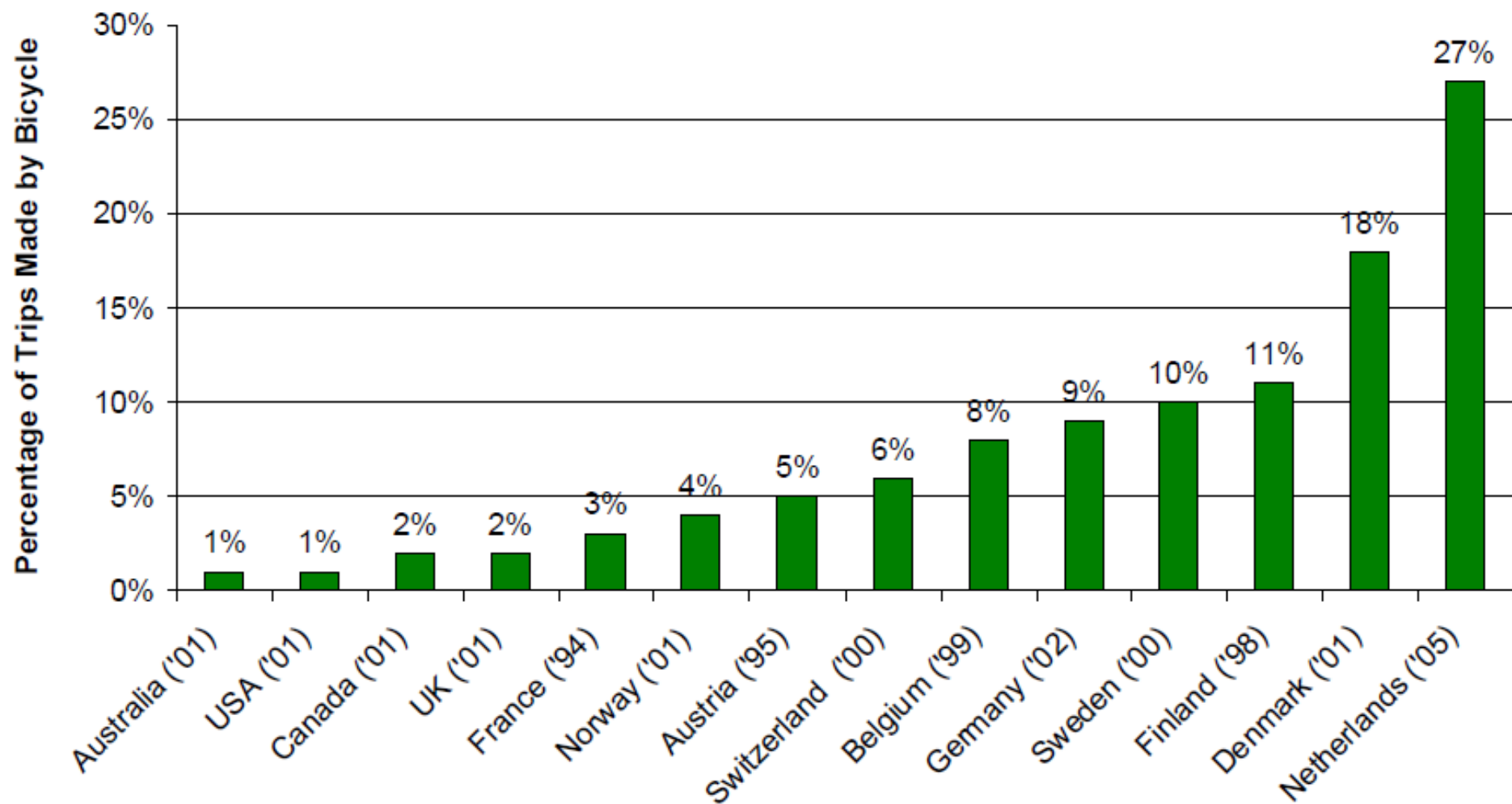
2000

Bike Share of Local Trips by Age Group in the USA, Germany, Denmark, and the Netherlands (2000-2002)



Sources: DIW (2003), U.S. Department of Transportation (2003), National Statistical Offices of Denmark and the Netherlands (2005)

Bike Share of all Local Trips in North America, Australia, and Europe (Percentage of total local trips by bike)



Source: Organisation for Economic Cooperation and Development (2005); European Union (2003); and U.S. Department of Transportation (2003 and 2005)

NZ has some good resources

- Urban design protocol and forum <http://www.urbandesignforum.org.nz/>
- Sustainability and active transport forums
- Quality Planning <http://www.qp.org.nz/>
- Well-educated and widely-travelled workforce



Nelson's competitive advantage

- Compact, great climate, scenery, tourism
- Good w & c infrastructure, leadership
- Good programmes:
 - 0800 cyclecrash
 - cycle training, events
- Already has a sustainable transport culture
 - highest cycle-to-work mode share in NZ (7%)
 - railway reserve
 - Broadgreen Intermediate has 60% cycling

Nelson is onto it!



Thanks to Marg Parfitt and the internet!



BAYLEYS

Hopgoods

284

BASECAMP

Coffee Afternoon
-MILKSHAKES-
-CAKES-
-QUICK LUNCHES-

ARQUUESA

BCW911

BNV952

Applications for Nelson/Marlborough

- Ensure subdivisions have walking and cycling links
- Increase permeability for w & c in centres
- Reduce motor vehicle speeds, volumes and parking in centres
- Review District Plan rules re cycle and car parking requirements
- Maximum parking provisions, not minimum
- Restrict urban sprawl through Plan & RMA

Conclusions

- Integrating sustainable transport, planning and urban design is the way of the future
- Walking & cycling a key part of the solution
- All of us have a role in great urban design
- Leadership is needed; technical & political
- Denmark started 40 years ago!
- Take small steps (1 project at a time)
- http://viastrada.co.nz/Velo-City_2010