

# The critical Importance of Non-motorised Transport Planning for Modern Asian Cities

Jeroen Buis, MSc.Civ.Eng.

Urban transport specialist

I-ce, Interface for Cycling Expertise ([www.cycling.nl](http://www.cycling.nl))  
[buis\\_j@yahoo.com](mailto:buis_j@yahoo.com)

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# 1. Asia and urban transport in Asia



# My experience in Asia

- For work
  - India (4 months)
    - Pune, Nanded (design, technical assistance)
  - Philippines (6 weeks)
    - Marikina City (cycle network design assistance)
  - Thailand (1 week)
    - Bangkok (capacity building)
  - (My main experience: South America & Europe)
- For holidays:
  - Thailand (11 months), India (2 months), Japan (4 weeks), Laos (3 weeks), Cambodia, Vietnam, Singapore

# Asia

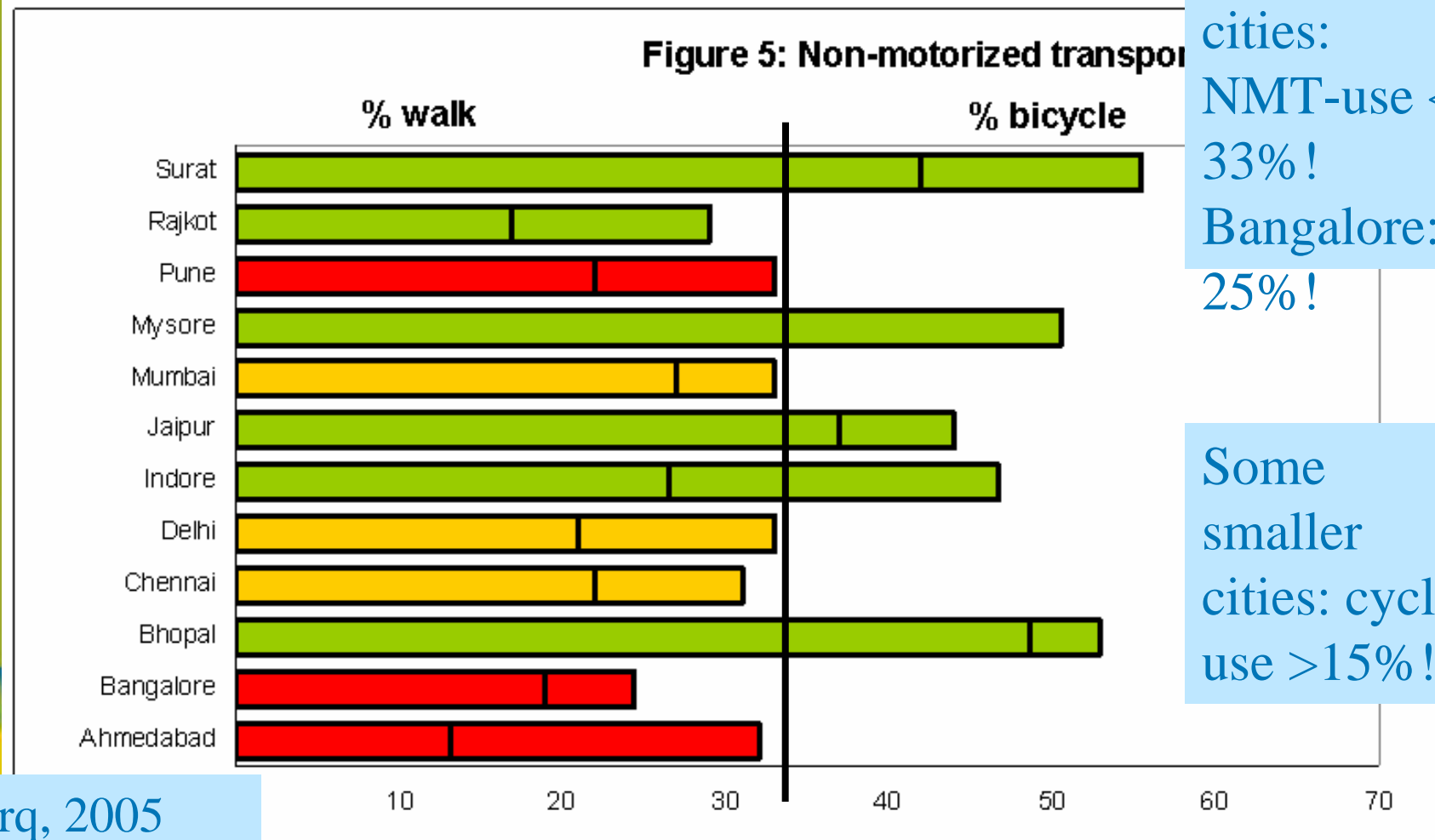
- Impossible to talk in general terms about Asia: most diverse continent
- At least three 'Asias'
  - Low Income (Cambodia, Bangladesh, etc.)
  - Middle Income (Thailand, Malaysia, etc.)
  - High Income (Japan, South-Korea, Singapore)
- My main focus: Developing Asia (LIA, MIA)
  - My experience (India, Philippines, Thailand)
  - Most to win

# Low- & Middle-Income Asia

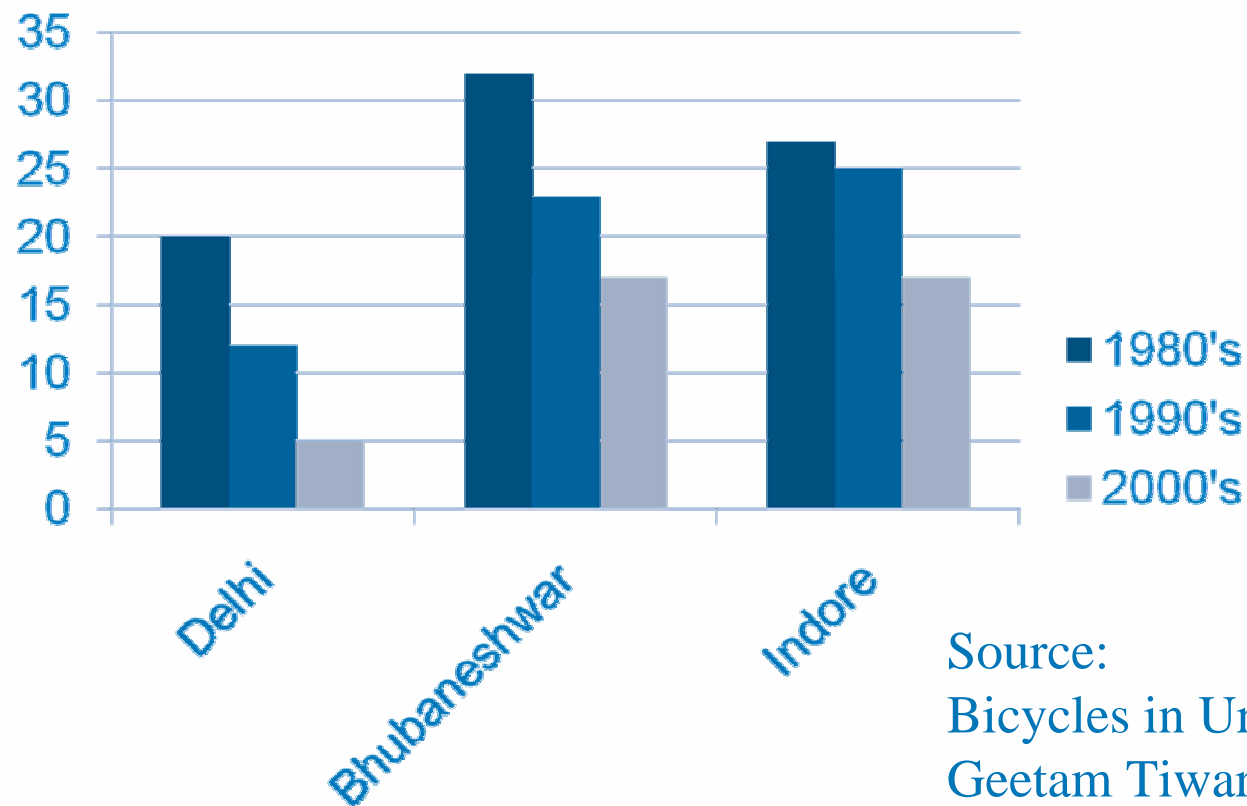
- Traffic and Transport in (most) cities:
  - Income is important → Determines motorisation
  - (Extremely) high motor cycle use
  - Inadequate public transport without priority
  - (Rapidly) falling NMT-use

# Example:

## NMT-use in Indian cities



# Cycling (India)



Source:  
Bicycles in Urban India:  
Geetam Tiwari, Himani  
Jain (IIT Delhi) 2008

- Sharp declines in use!
- As in cities in developing Asia everywhere
- But many Indian & Chinese cities still have high levels of cycling (and walking)



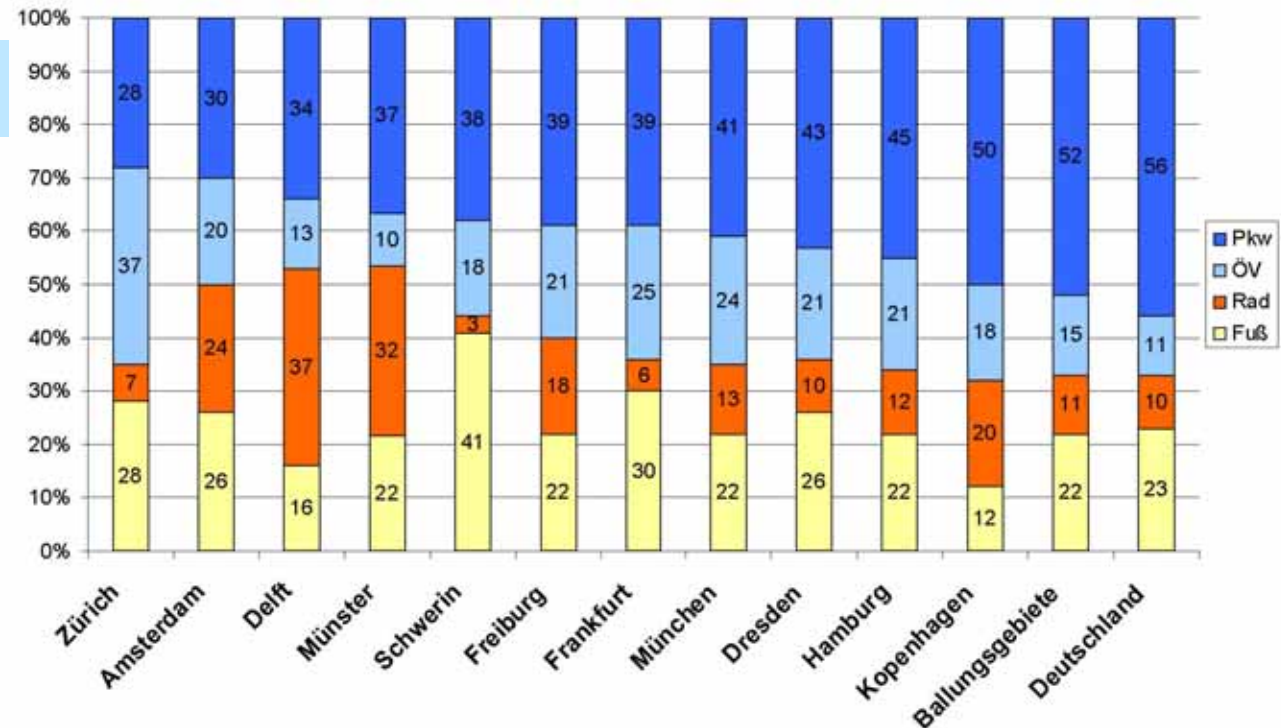
# NMT use in Western Europe

Car + M2W

Public  
Transport

Cycling

Walking



- Netherlands:**

- Amsterdam: NMT = 50%,
- Delft: NMT = 53% (37% cycling)

- Germany:**

- Muenster: NMT = 54%
- Munich (BMW) = 35%

- Spain:**

- Barcelona: NMT = 32%
- Vitoria: NMT = 66%

Source: Axel  
Friedrich

# This means

...that many Indian (Indonesian, Thai, etc.) cities have higher levels of motor vehicle use than much wealthier cities in Europe (and probably Asia)



## 2. The history of urban transport planning worldwide



# Example: The Netherlands

- 1960's
  - Rapid growth of car use car
  - Focus:
    - More room made for the car in and outside cities
    - No policies for cycling and walking
- 1970's
  - Increased congestion and pollution
  - Economic loss in cities
  - High fatality rates (3200 in 1972, 800 in 2007)





So.....The individual dream...

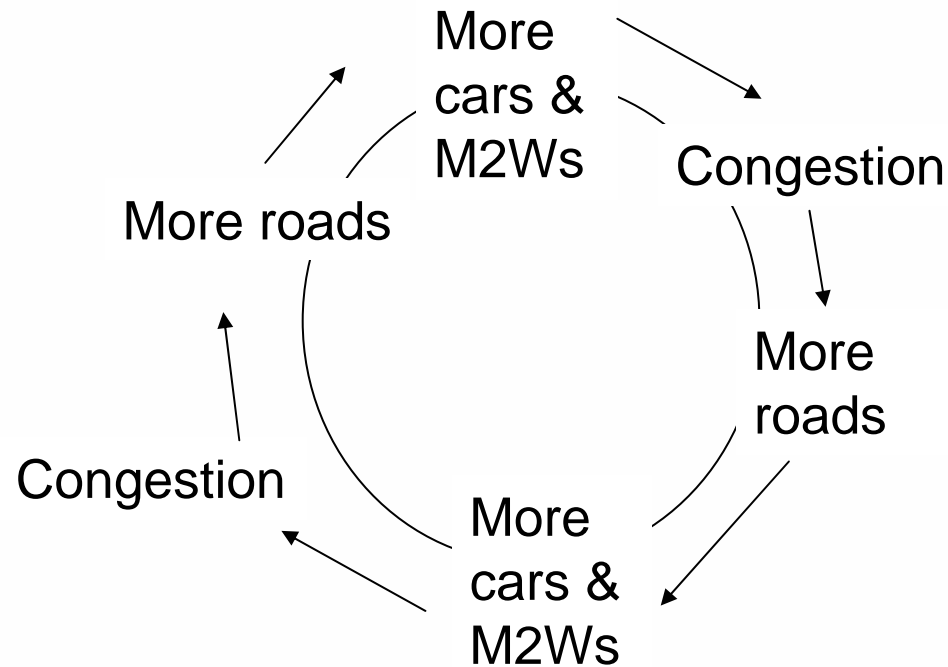




...led to a collective nightmare



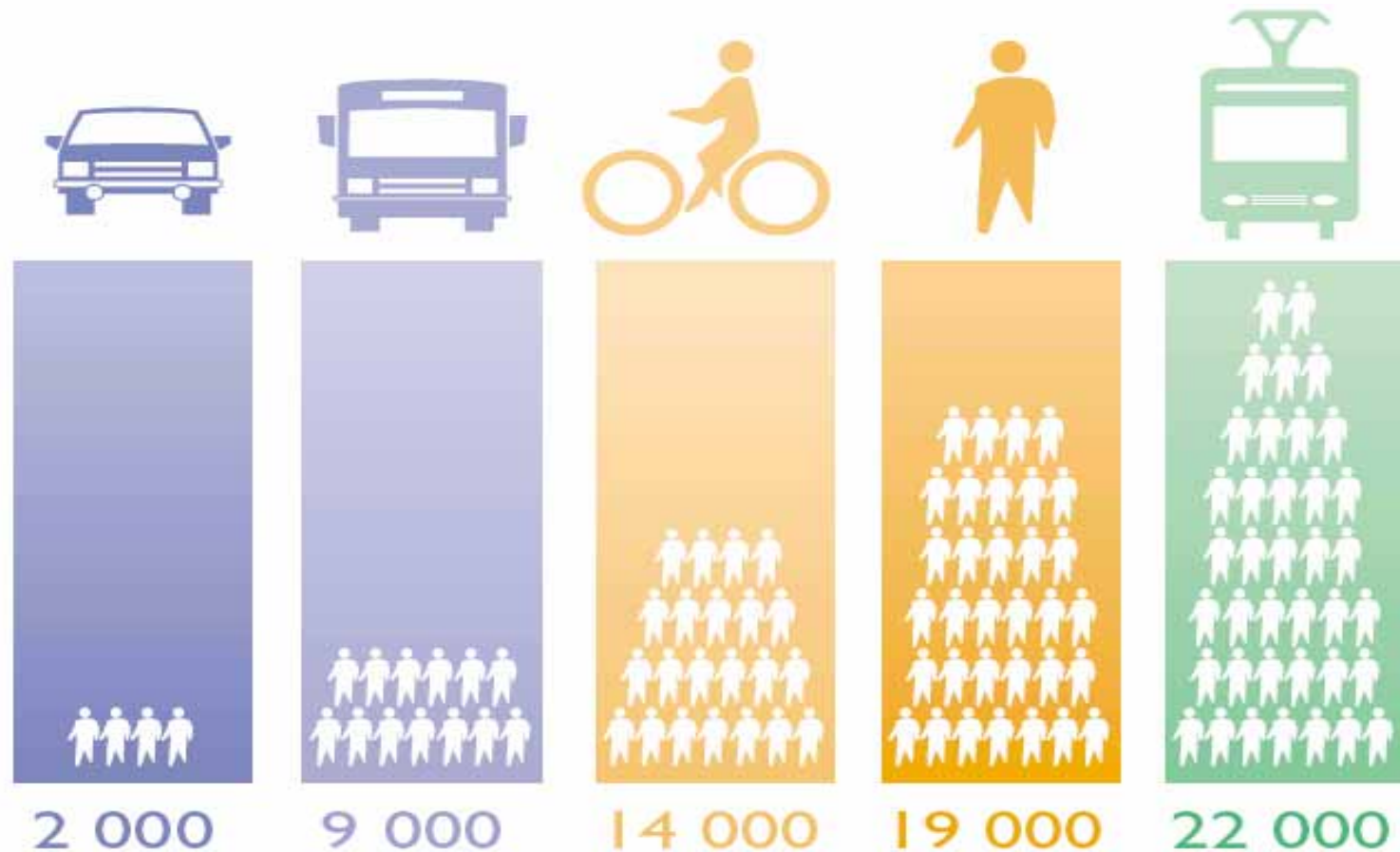
# The vicious circle of the provision of infrastructure for motorised transport



- Universal law: all over the world



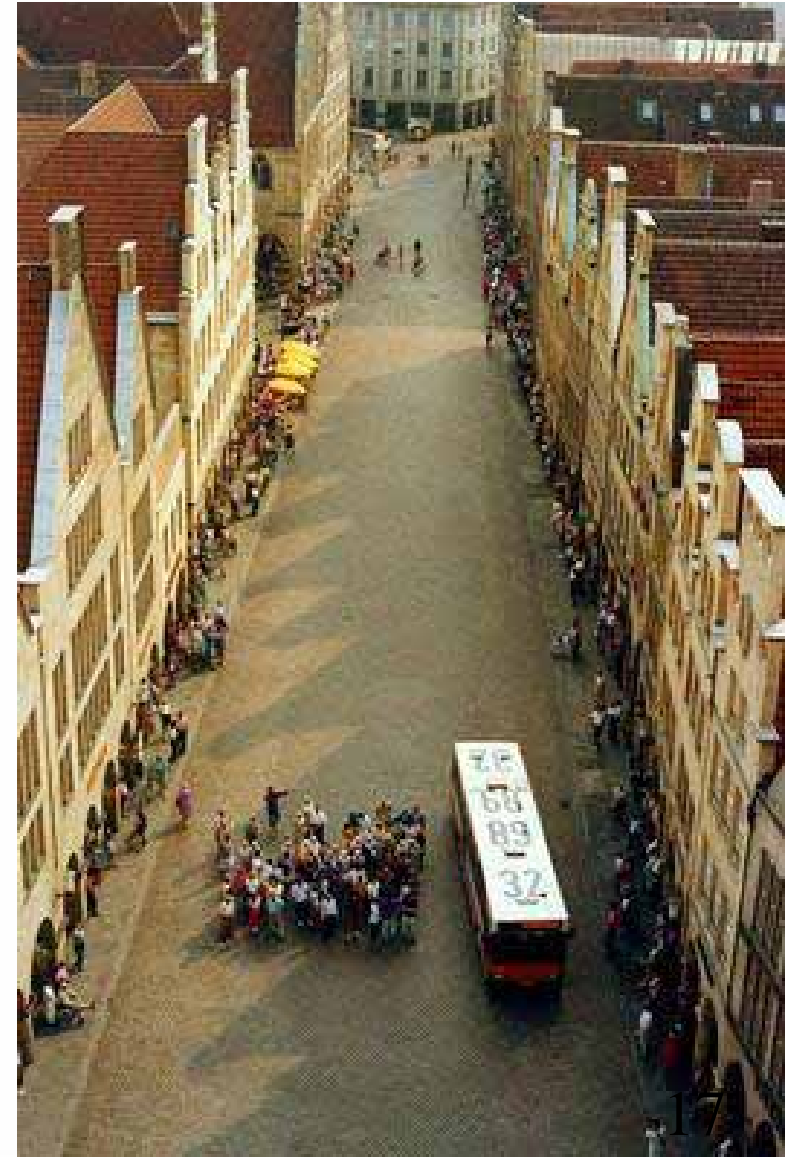
# Road capacity (people per hour on 3.5 m width in the city)



Source: Botma & Papendrecht, TU Delft 1991



# The car: inefficient use of scarce public space!

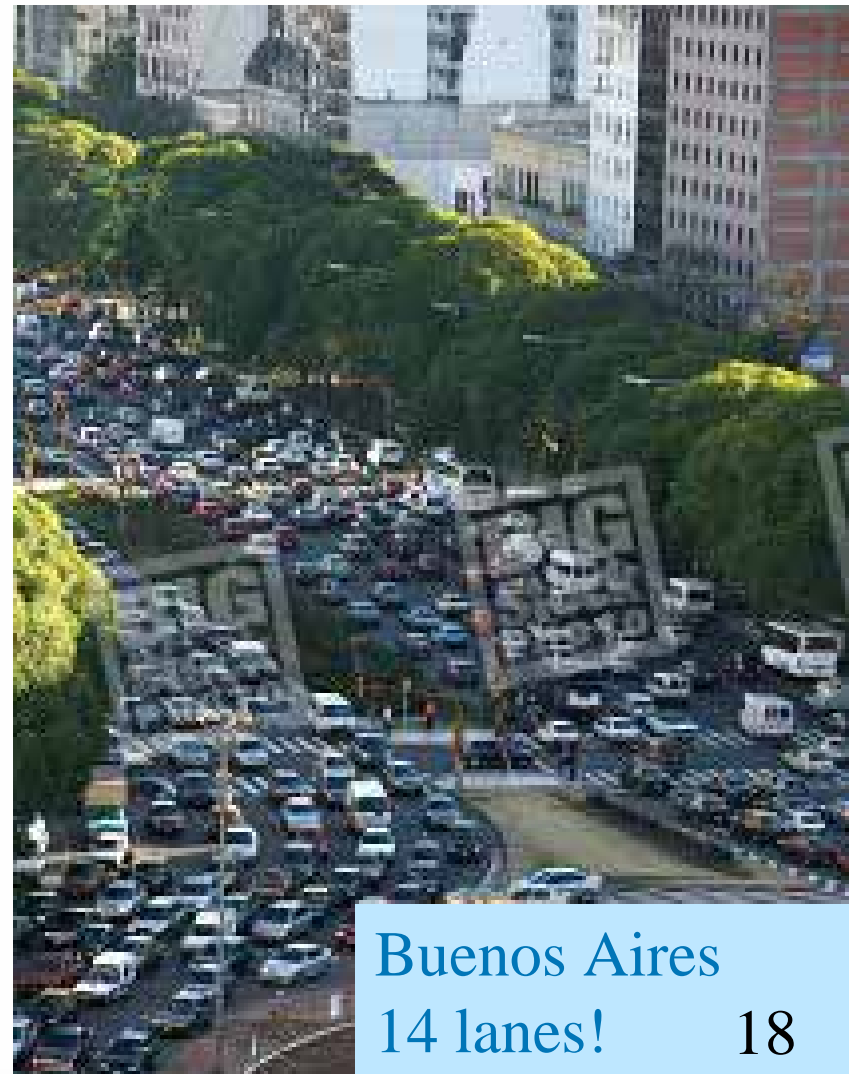


# Building more and ever wider roads...



Los Angeles,  
12 lanes!

will attract more and  
more cars (and/or  
motorcycles)

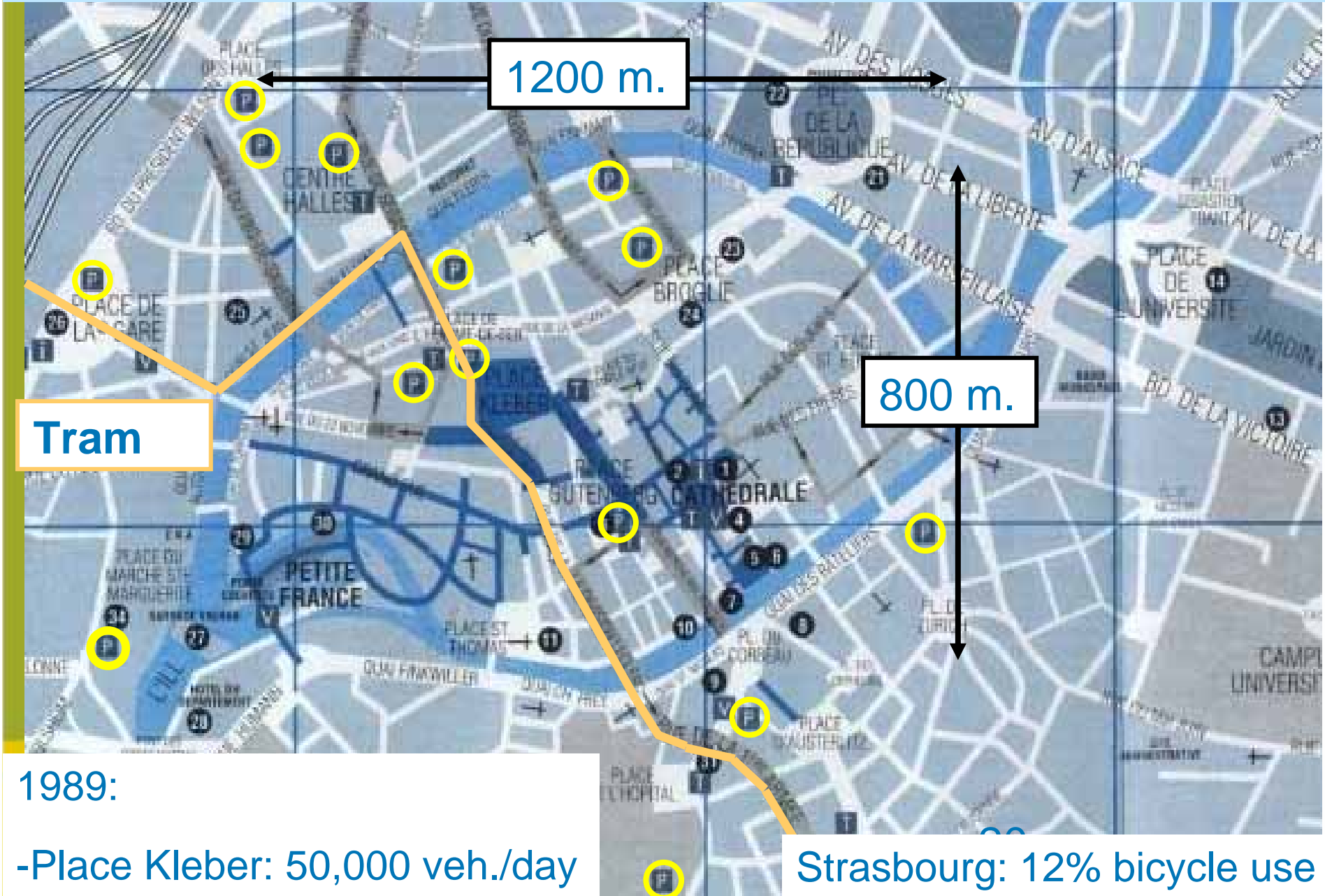


Buenos Aires  
14 lanes!

## Many European cities, however, have partly reversed policies

- **E.g the Netherlands from mid 1980's**
- **Local Policies :**
  - Car-free areas in city-centres
  - Access to the city-centre by car is restricted
  - Steep car-parking fees in city-centres
  - Cycle networks in all cities
- **Result in the cities:**
  - The use of the car in cities diminished
  - Cycle use increased
    - (currently 26% of all journeys nationwide,  
> 30% in many cities)
  - Quality of life and local economy improved

# Strasbourg car-free city-centre (F)



# Place Kleber today





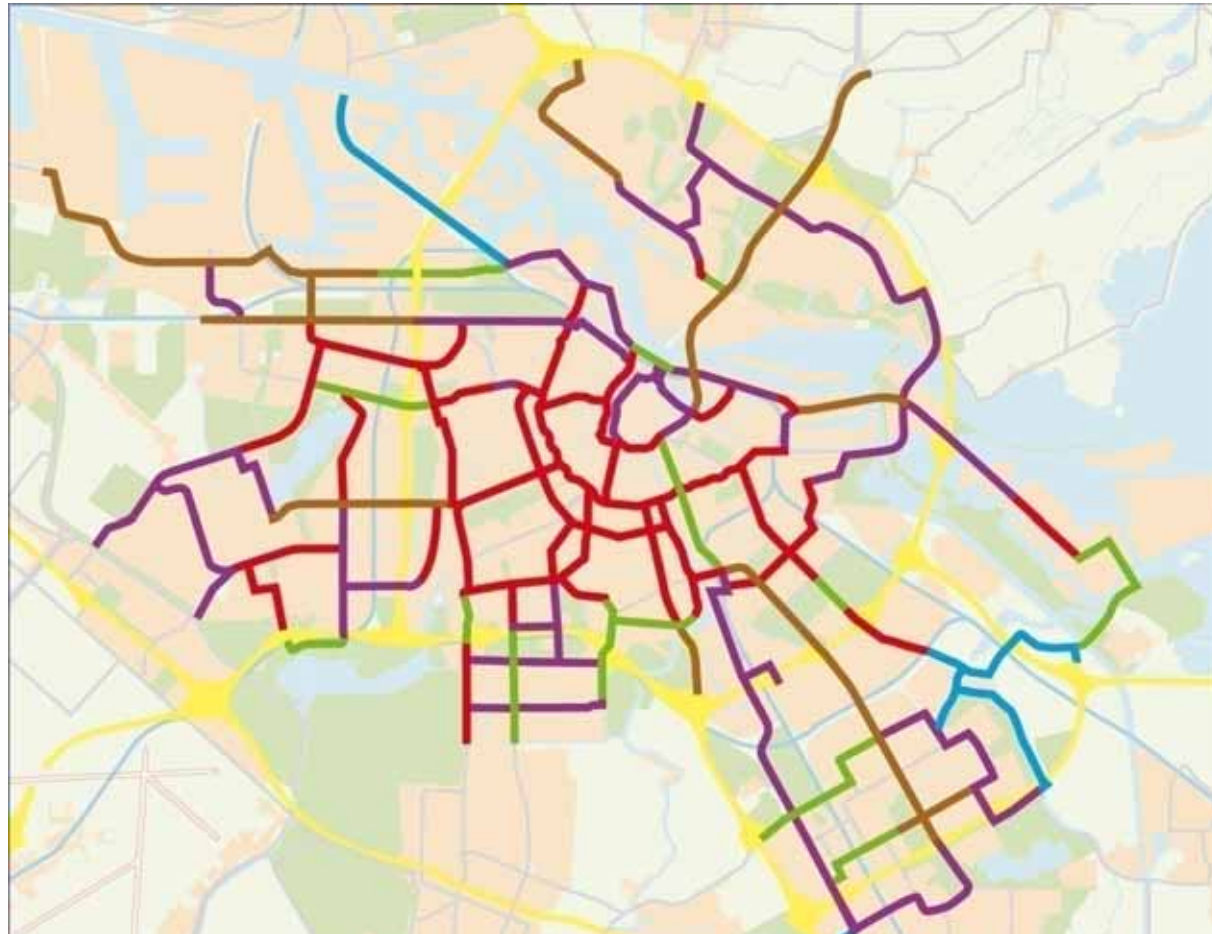
# Narrower roads: Amsterdam



- From 4 lanes for cars to 2!
  - Still there is space for 4 lanes
  - Traffic moves better (less congestion than before)

# Narrow roads: Amsterdam 2005

Yellow = 2 x 4 100 km/h, Brown = 2x2 70 km/h, Green = 2x2 no parking.  
Blue = 2x1 70 km/h, Purple = 2x1 no parking, Red = 2x1 with parking



Only a few roads have more than 2 lanes (2 x 1)

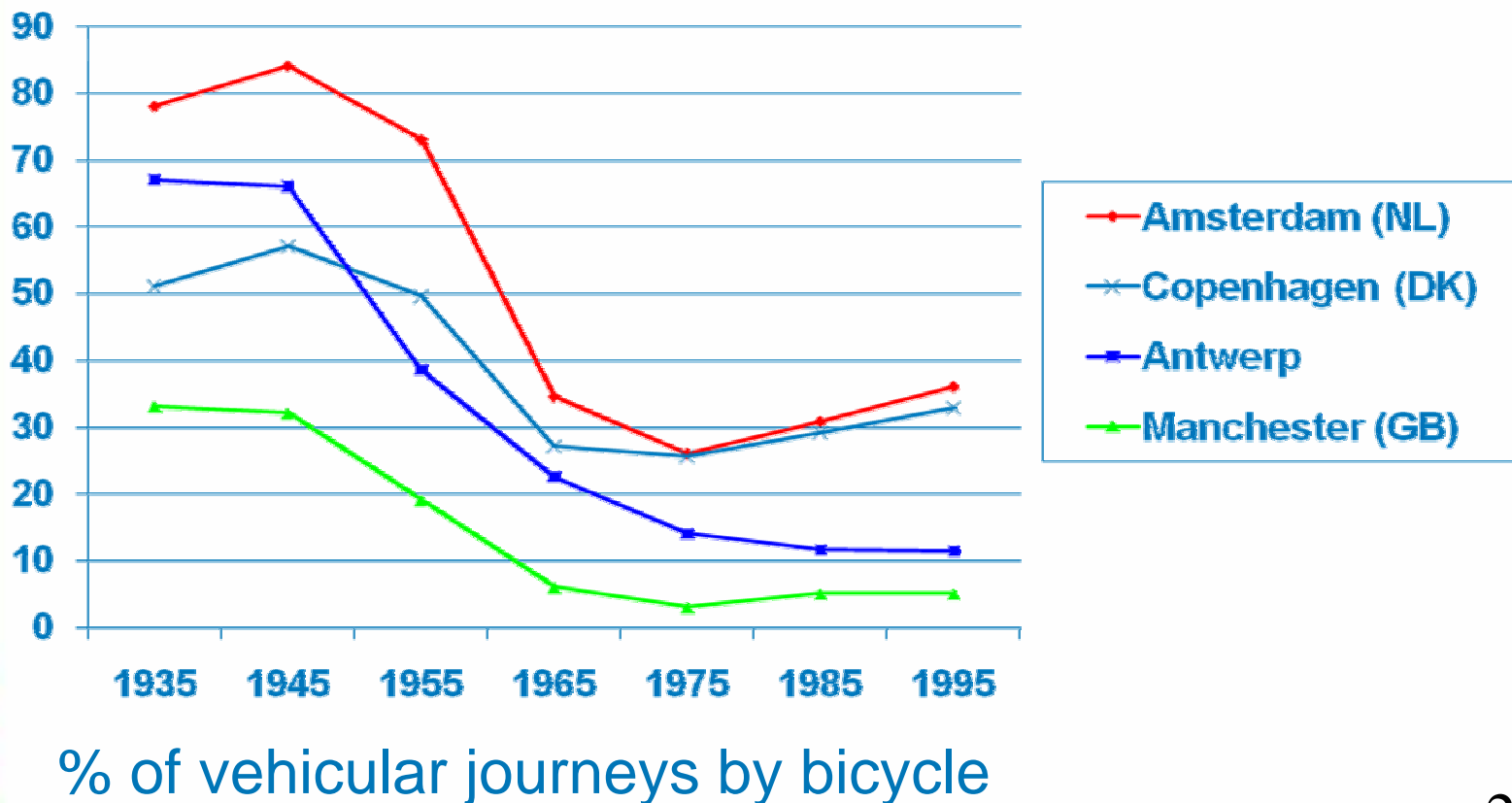
# Utrecht city inner ring road



Widening was proposed, but never realised



# Result of all this & pro cycling policies: more cycling!



But while, though late, the tide is turning in developed countries (as is happening in Korea now) unfortunately

many cities in developing countries, still follow the same (or worse) car-based traffic and transport policies that cause(d) so much problems in the West...

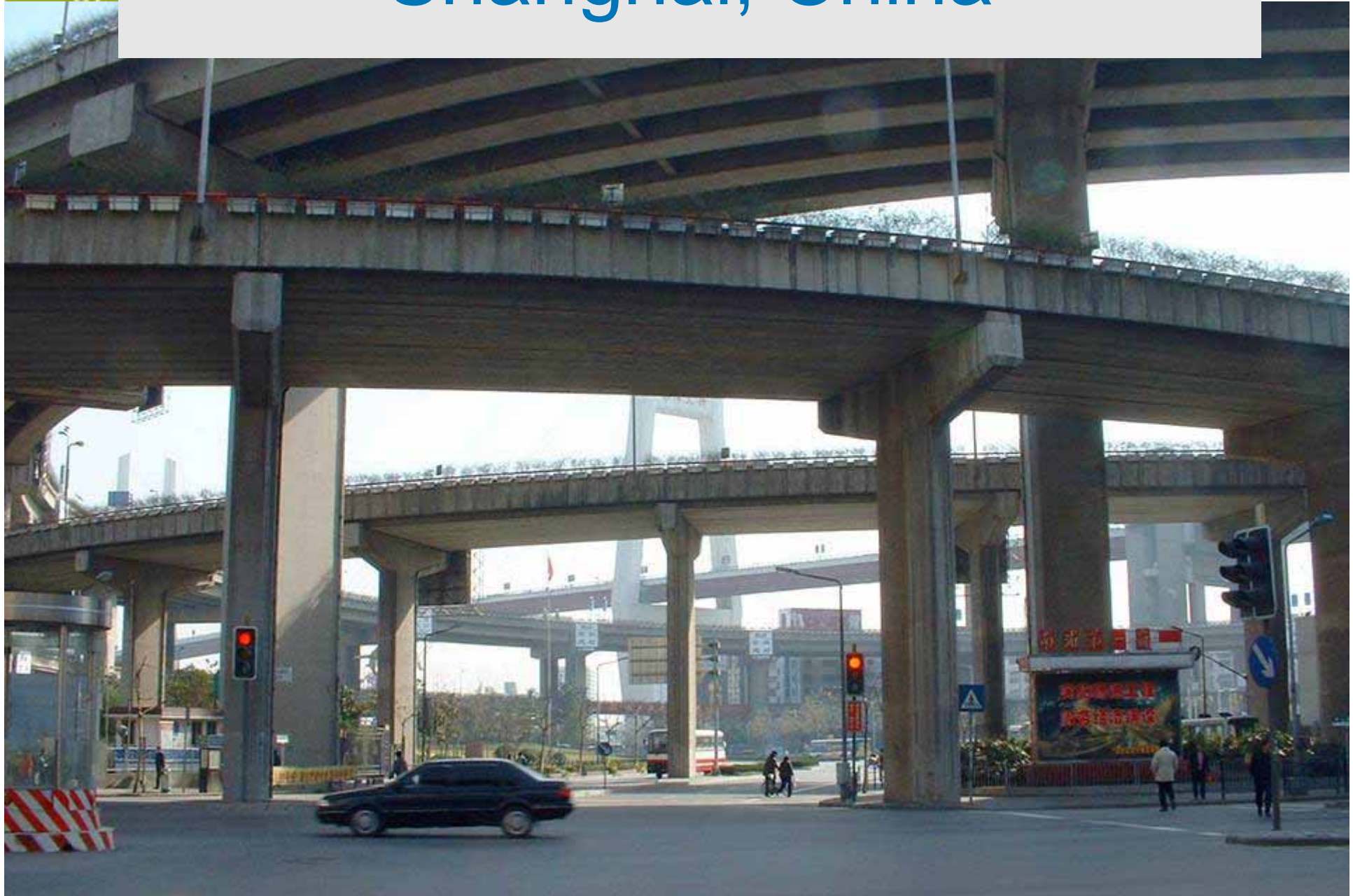
# Mexico-city



Following the US-model:  
and congestion & pollution  
keeps worsening every year



# Shanghai, China



# A brand new road in Pune, India



- Which...
  - Will attract more motor vehicles
  - Will lead to high speeds
  - Is difficult to cross → will discourage walking and cycling



expertise

For many Asian cities sustainable transport is not just about what to do but also about, what NOT to do



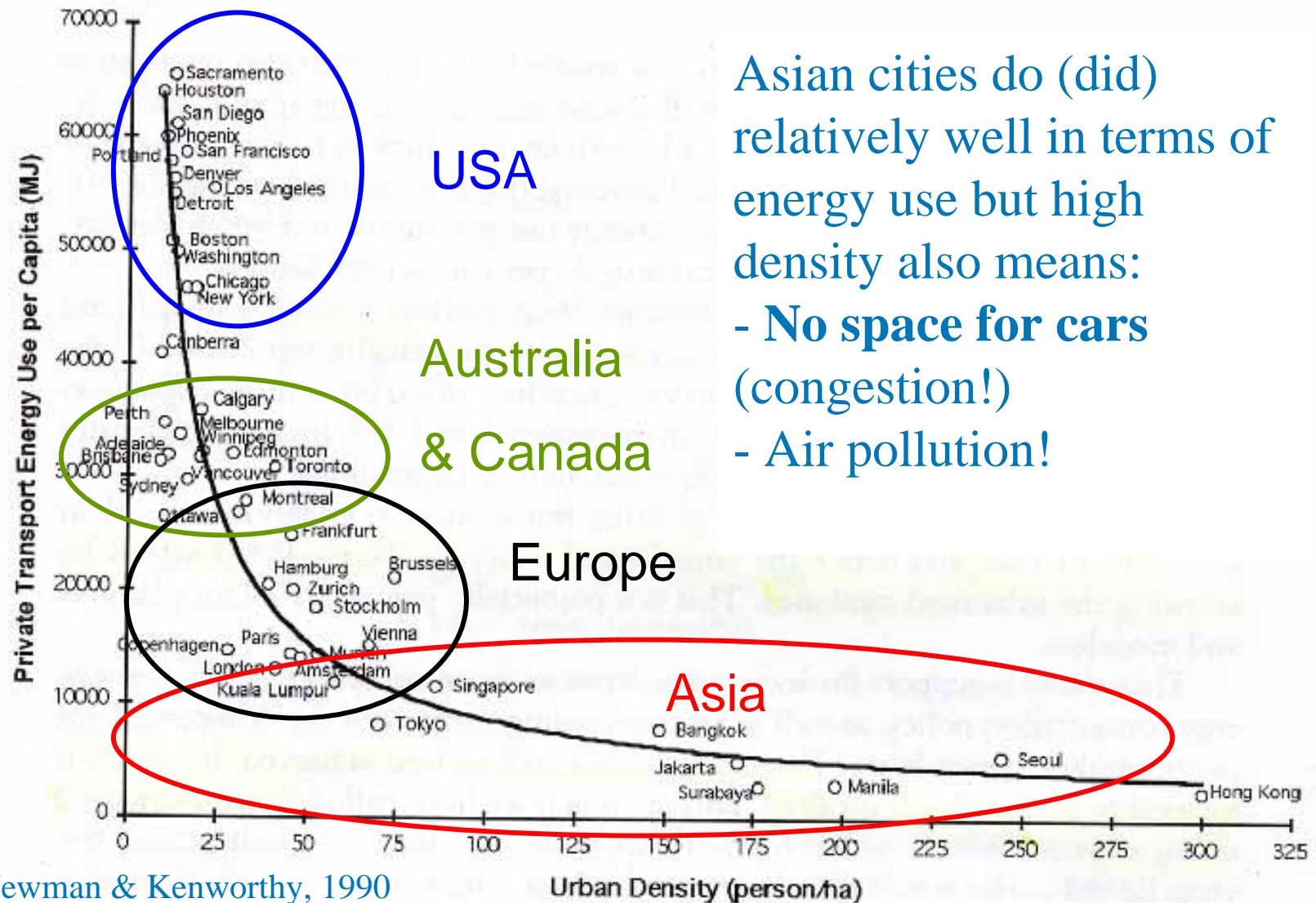
The Hyderabad (India) case  
(ring-road, spreading traffic)



### 3. Why Asian cities have really no choice

...then to plan for walking and cycling (and high-quality public transport)

# (1) High urban density - congestion

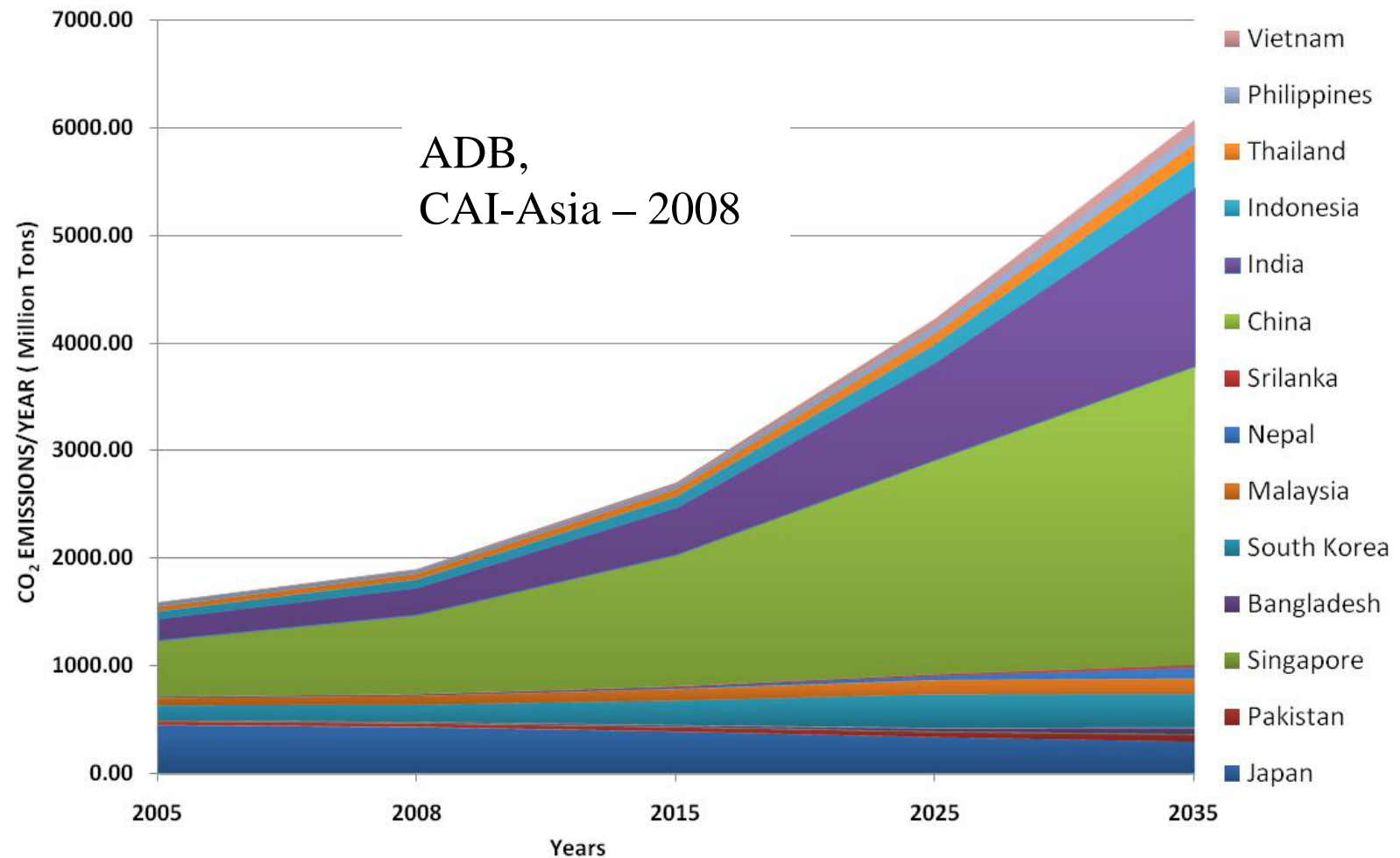


Asian cities do (did) relatively well in terms of energy use but high density also means:

- No space for cars (congestion!)
- Air pollution!



# And, Asian mobility is rapidly becoming more energy-intensive



CO<sub>2</sub>-emissions from Transport in Asian Countries

## (2) Air pollution (São Paulo)



- But: Almost all of India and many Asian cities are covered with such a layer of smog!

# Pollution: Ex. Bangalore, India

**“30 per cent of Bangalore's children suffer from asthma”**

**“Record that at least 1500 new vehicles are registered daily. “**

**“It is up to the parents to take utmost care and ensure that their children wear masks every time they are out in the open, he said. “**

**“Statistics reveal that in 1979 only 9 per cent of the children were affected with asthma, but the figure rose to almost 30 per cent in 2007. “**

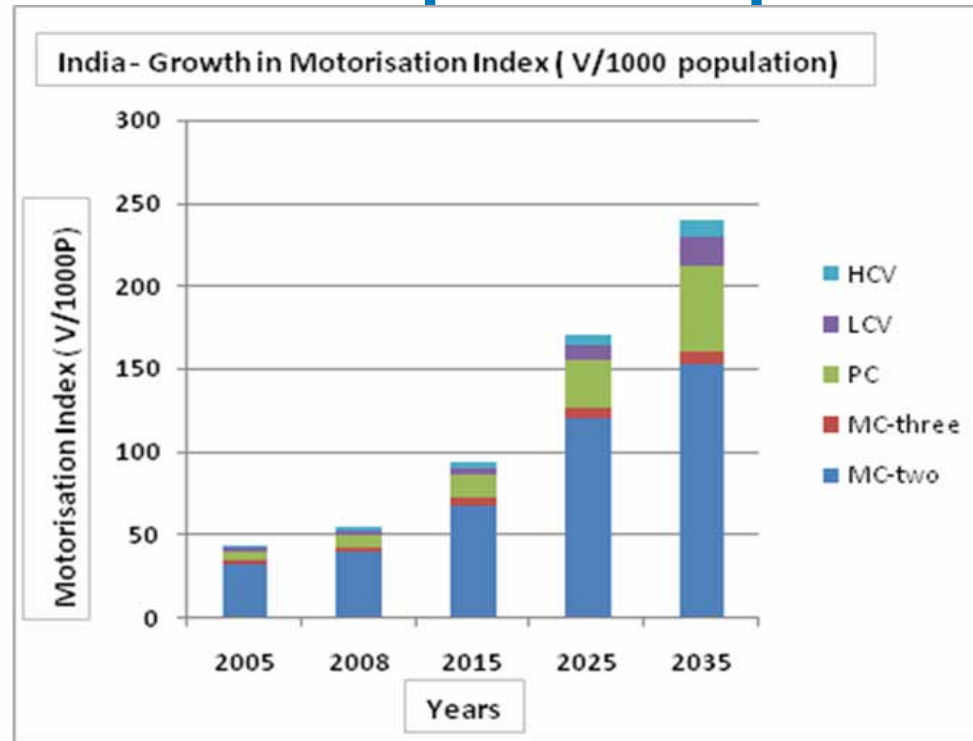
**→ There are many ‘Bangalores’ in Asia**

**Source:** *Rediff website, November 6, 2007*

Asia's high-density cities  
are the least appropriate for  
the car,  
but ideal for non-motorised  
transport and mass public  
transport



# India: 5 times more motor vehicles per capita in 2035



ADB,  
CAI-Asia – 2008

In cities, more roads can never ever accommodate this

→ Promoting NMT and PT and restricting PMV use is a must not an option!

### (3) Cycling and pedestrian inclusive planning saves lives

India 2007:

- 130,000 killed (China 2007 : 90,000)
- about 90 million motor vehicles (70% two-wheelers)
- **140 fatalities per 100,000 MVs**

Netherlands 2007:

- 800 killed (1973: 3200)
- 8 million MVs
- **10 fatalities per 100,000 MVs**

The Department of Road Transport and Highways,  
Government of India

## 4. Public transport alone is not enough

NMT is essential



# Public transport alone is not enough: NMT is essential

- Pedestrian and cyclists are there
- NMT does not pollute, PT does
- NMT is faster and more appropriate for short trips than mass public transport  
→ e.g. Indian cities typically 56% - 72% of all trips is under 5 km<sup>1</sup>
- unlike PT, NMT offers flexibility of car or motorcycle,
- NMT provides egress and access to public transport

<sup>1</sup>Geetam Tiwari, Himanji Jain, Bicycles in India



# Central station of Groningen

NL: 40% of all journeys to train station is by bicycle





# Maua, Sao Paulo State



Suburban rail station

## 5. Cycling and pedestrian-inclusive planning: better for all



# Good planning for cycling and walking leads to:

- Better quality of urban life
- Lower maximum speeds of motorised traffic
  - Less accidents
  - Less noise and pollution
- Less air pollution
- Less traffic and congestion
- Better health for users
  - Exercise
  - Inhale less pollution than motorists
- Better economy (Bangkok –2.4 billion US\$/yr)



# Goal: Equilibrium: Space for all!

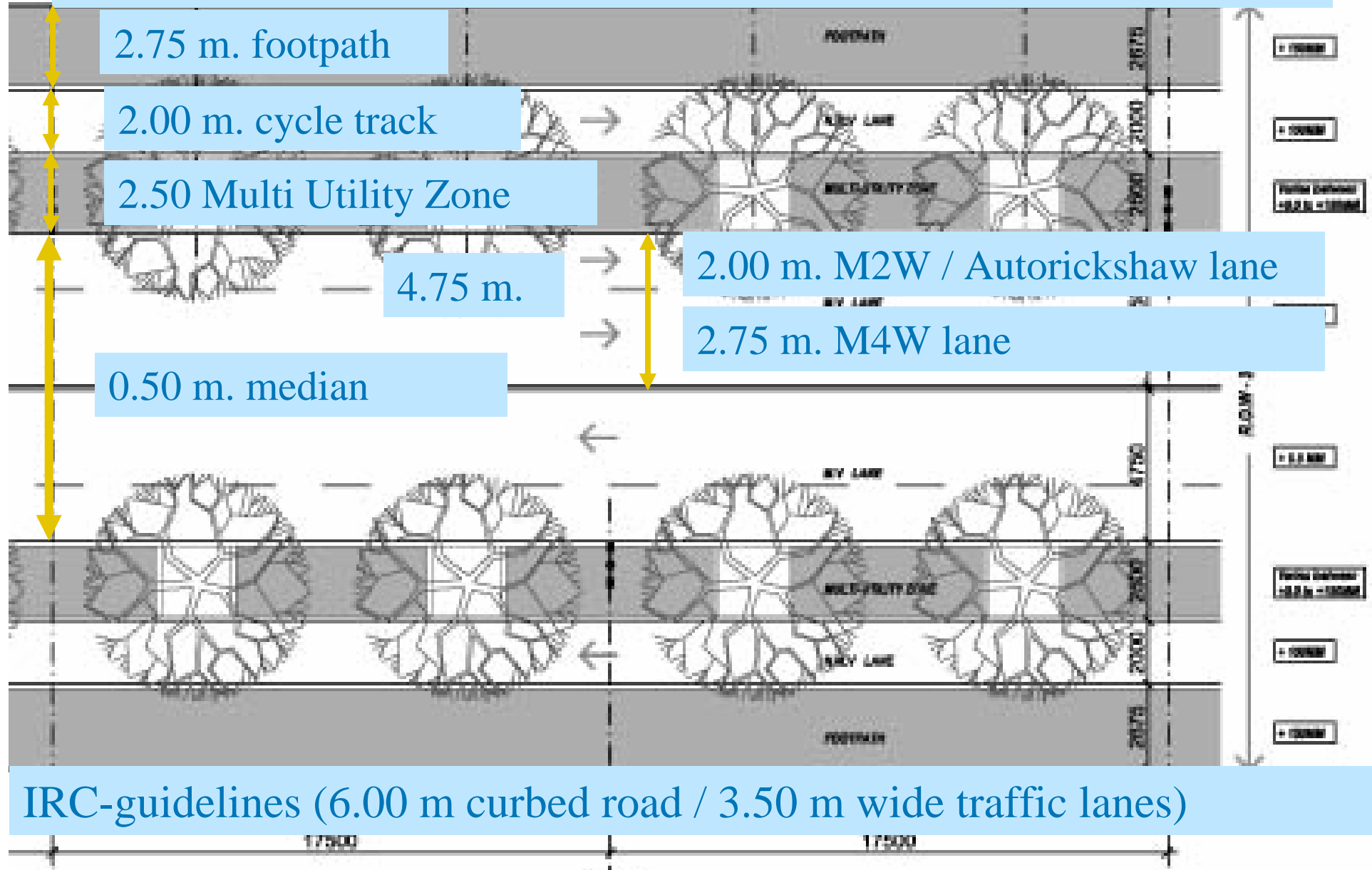




## 6. Some issues in planning for NMT in developing Asian cities



# (1) Guidelines and design habits





# Walking & Cycling: plan for the reality (current use)

Road (Nanded, India), mobility study (by consultant) did not include pedestrian counts  
→ How to design the road?

## Our counts:

- Pedestrians: 47%
- Cyclists + cycle rickshaws: 25%
- Motor cycles: 14%
- Auto rickshaws: 13%
- Cars: 2%

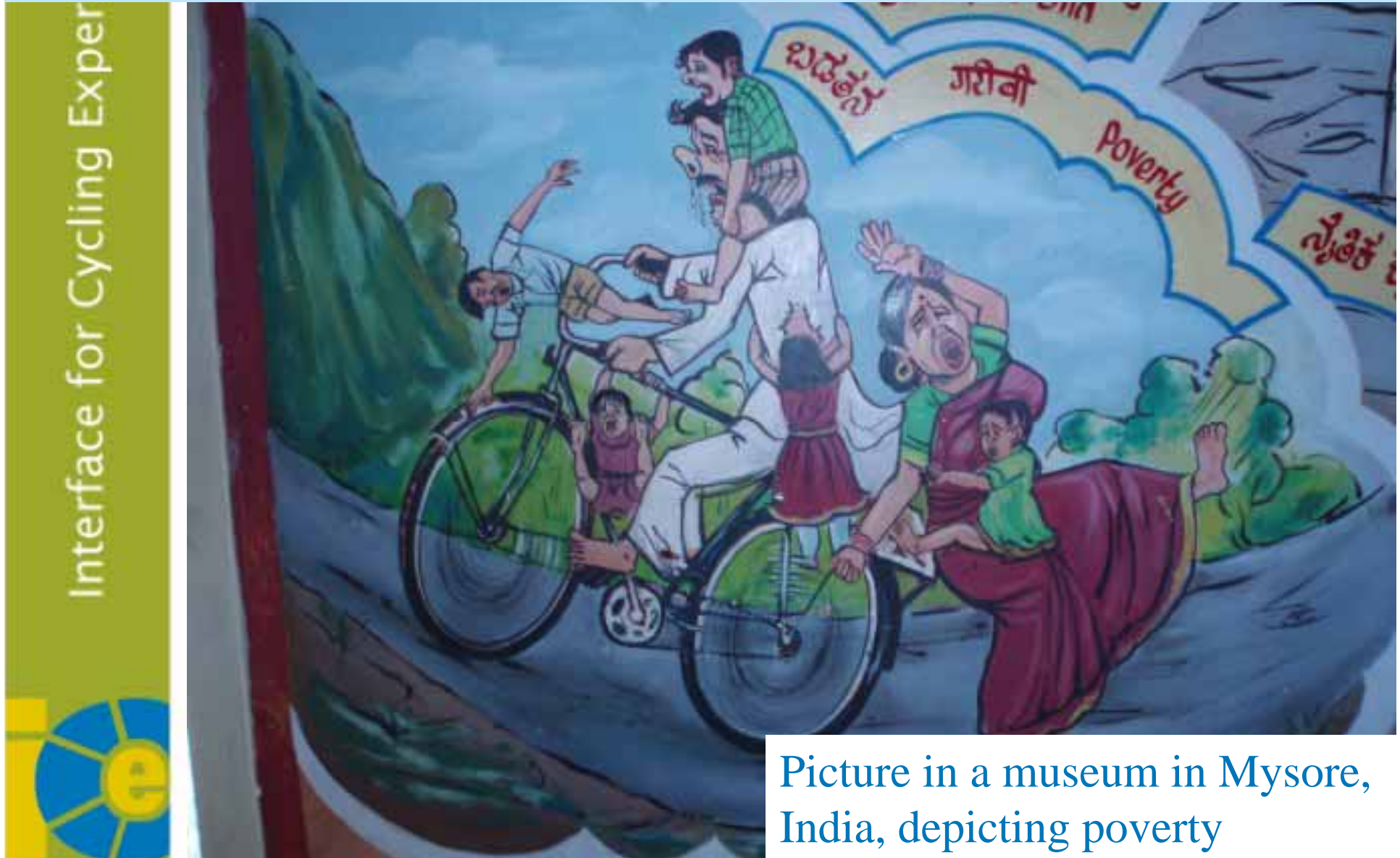
# Traffic projections

Traffic studies in India:  
In many cases MT-growth is  
extrapolated 30 years ahead  
→ Leading to very wide roads





### (3) For discussion: Cycling often seen as mode for the poor



Picture in a museum in Mysore, India, depicting poverty

# In contrast to wealthy countries



Amsterdam





Amsterdam



Even Dutch  
ministers cycle

Minister Donner of  
Justice visits the  
queen



## 7. Some advice for Asian cities



(1) Make space for walking, cycling and public transport, **at the expense** of space used by cars and motorcycles



Quito, Ecuador

**Not like this:**  
cycling **at the expense of pedestrians**  
(creating conflicts)



Santiago de Chile

**But like this:**  
cycling at expense of carriageway  
(design can be improved)

## (2) Restrict car & motorcycle use and access in the city-centre



Carfree square in Delft (The Netherlands), was car parking



## City-centre Popayán

10.5 m:

1.25

8.00

1.25

## Road narrowing: City-centre Bogotá

10.5 m:

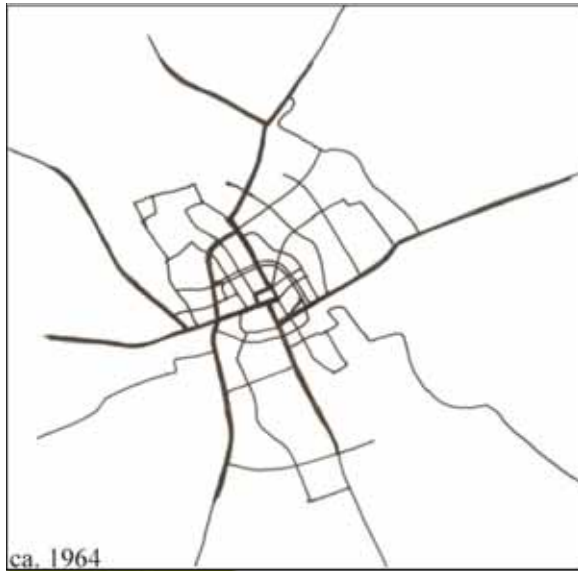
3.50

2.75

4.25

Wide  
footpath





**car**

Groningen,  
1964



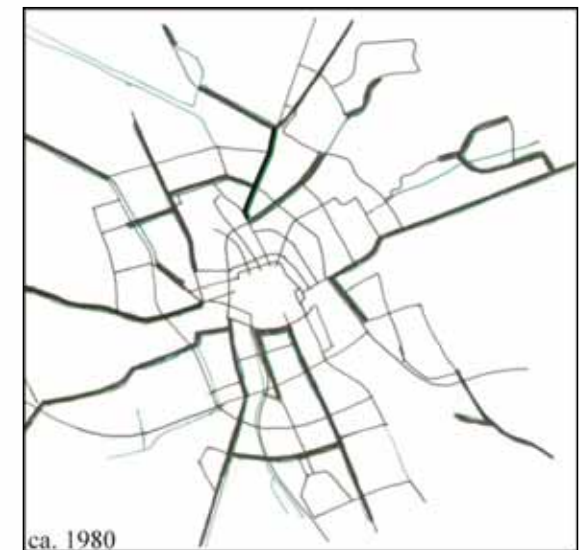
**bicycle**

Less space for  
the car,  
more for the  
bicycle



**car**

Groningen,  
1980



**bicycle**

### (3) Avoid road widening & construction of elevated highways in cities → Plan for the traffic you want

- Wider roads lead to higher speeds & more accidents
- Wider roads are difficult to cross
- Wider roads & elevated highways attract more motorised traffic (into the city) & discourage cycling
- Wide roads lead to delays at junctions



# No elevated highway in Bogota

Bogota highway  
(Proposal 1998)



Mayor Peñalosa's  
project instead



## (5) Provide good and sufficiently wide footpaths along ALL urban roads

- Walking is the essence of urban life
- Many citizens depend on walking



Delhi, India

Not like this  
(if pedestrians do not use the  
footpath it is not good)



Mysore, India

But like this



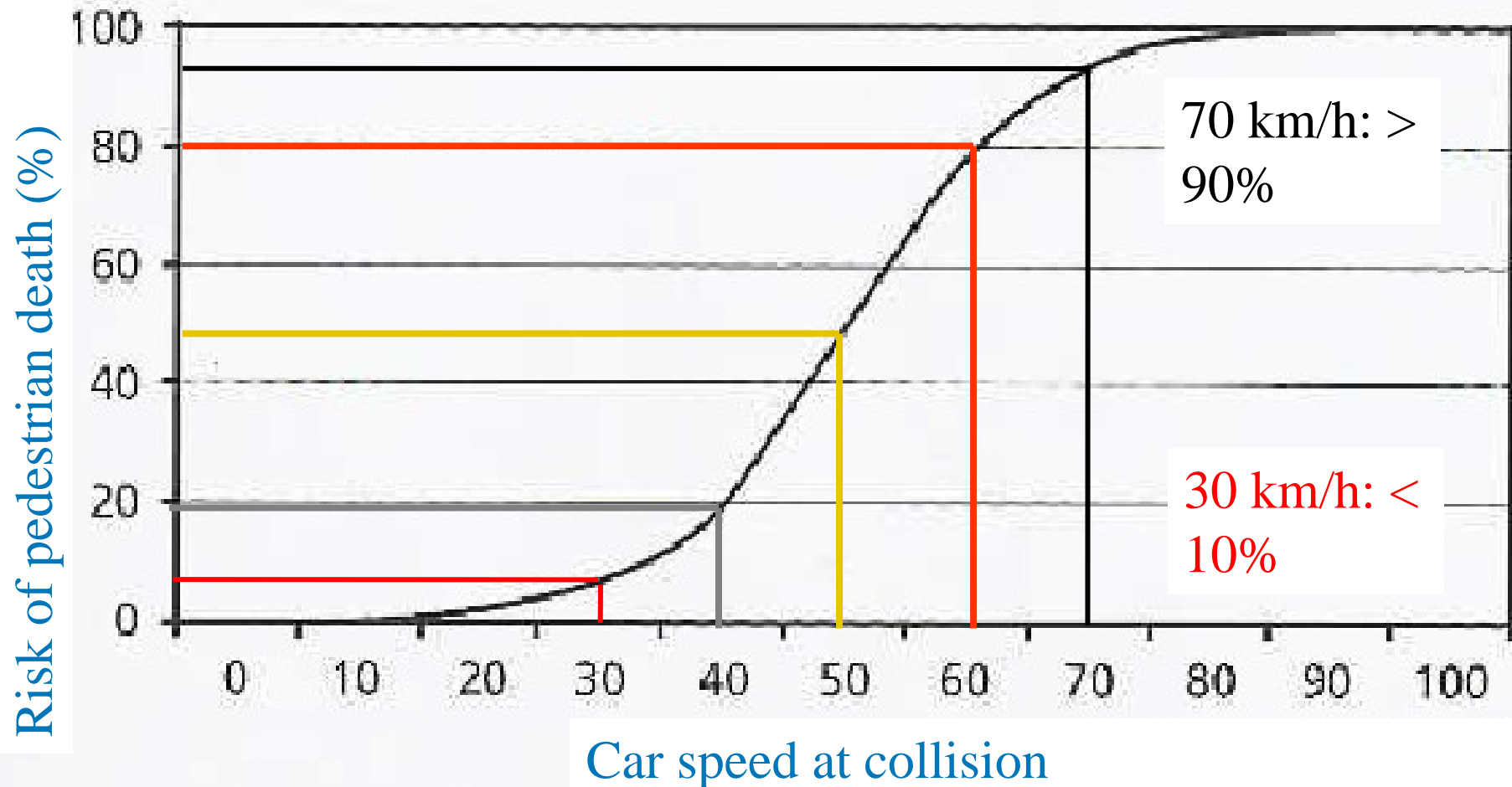
What, as a car-owner, is the chance that I walk (or cycle) if this is how the street outside my house (or hotel) looks?



(Law in Netherlands)



## (6) Create 30 km/h zones (and narrower roads)



Netherlands: 50% of cities are 30 km/h zone

NL 2008: 800 road fatalities, only 39 (5%) in 30 km/h zones!



## (7) Create cycle networks



## 8. Positive developments in Asia?

- Oh, yes....
  - Beijing: (restriction of car-use 1 day a week, public bicycles)
  - Many cities started planning for cycling (incl. Seoul)
  - India: JWNURM invests in NMT & BRT, NUTP: “**equitable space allocation with a focus on people rather than vehicles**”
- And... many countries still have high levels of cycling and walking (China, India, etc) and chances to maintain (some of) this.



A brand new cycle track & footpath  
Nanded, India...



Seoul: Demolished urban highway to restore river front and reduce traffic and pollution

# Final remarks

The key is:

- Rational use of car and motorcycle
- Where and when appropriate

The task of planners and policy makers is:

- To provide all alternatives (where appropriate) and to encourage those that are most sustainable





We all recognise quality of urban life  
when we see it, why not plan for it from  
the beginning

Kyoto, Japan



Car-free city centre  
Utrecht, Netherlands



Thank you very much for  
your attention!

And the best of luck with your  
work making Asian cities more  
liveable and sustainable...

Jeroen Buis  
buis\_j@yahoo.com  
[www.cycling.nl](http://www.cycling.nl)