Walkable Cities

A Presentation by Michalis Lambrinos

Ministry of Transport,
Communications and Works

Contents

- What Makes a City Walkable
- Why is Walkability Important
- The Theory of Walkability
- Restrict and Restrain the Car
- Manage Parking Effectively
- Look After the Pedestrian
- Plant Trees

Holiday Plans

Walkable Cities

Florence

Amsterdam

Dubrovnik

San Francisco

Edinburgh

Not so Walkable Cities

Houston

Cape Town

Varna

Phoenix

Toronto

Most Walkable Cities

1. Florence
2. Paris
3. New York
4. Amsterdam
5. Dubrovnik
6. Venice
7. Munich
8. Vancouver
9. Buenos Aires
10. Boston
11. Edinburgh
12. San Francisco

Florence

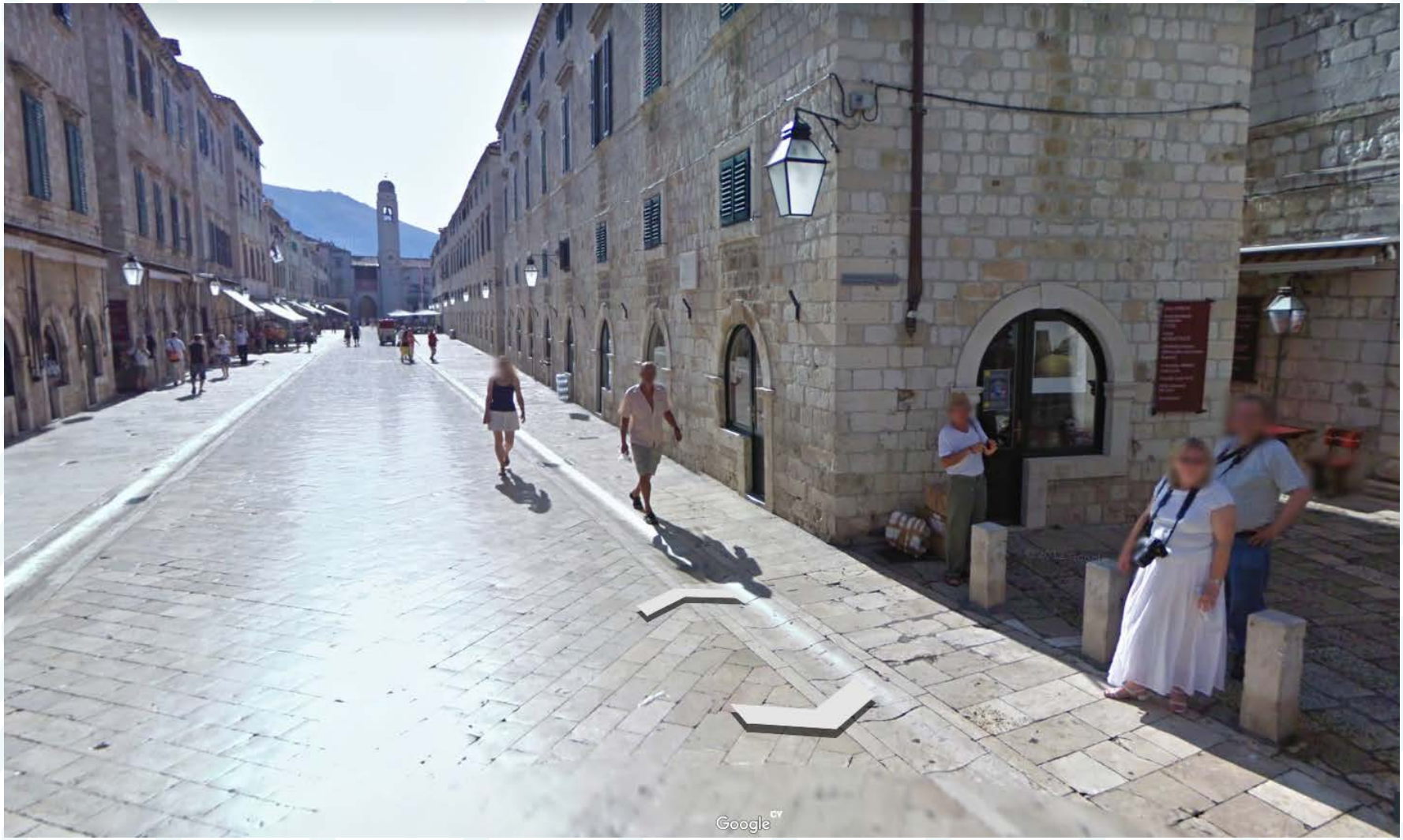

Google Earth
1943
Ημερομηνία εικόνων: 8/8/2016 43°46'20.23" Β 11°15'23.12" Ε ανύψ 50 μ eye alt 568 μ

Florence

Dubrovnik


Image © 2016 CNES / Astrium
Google Earth
2003
Ημερομηνία εικόνων: 5/31/2014 42°38'26.12" Β 18°06'34.06" Ε ανύψ 11 μ eye alt 546 μ

Dubrovnik



Edinburgh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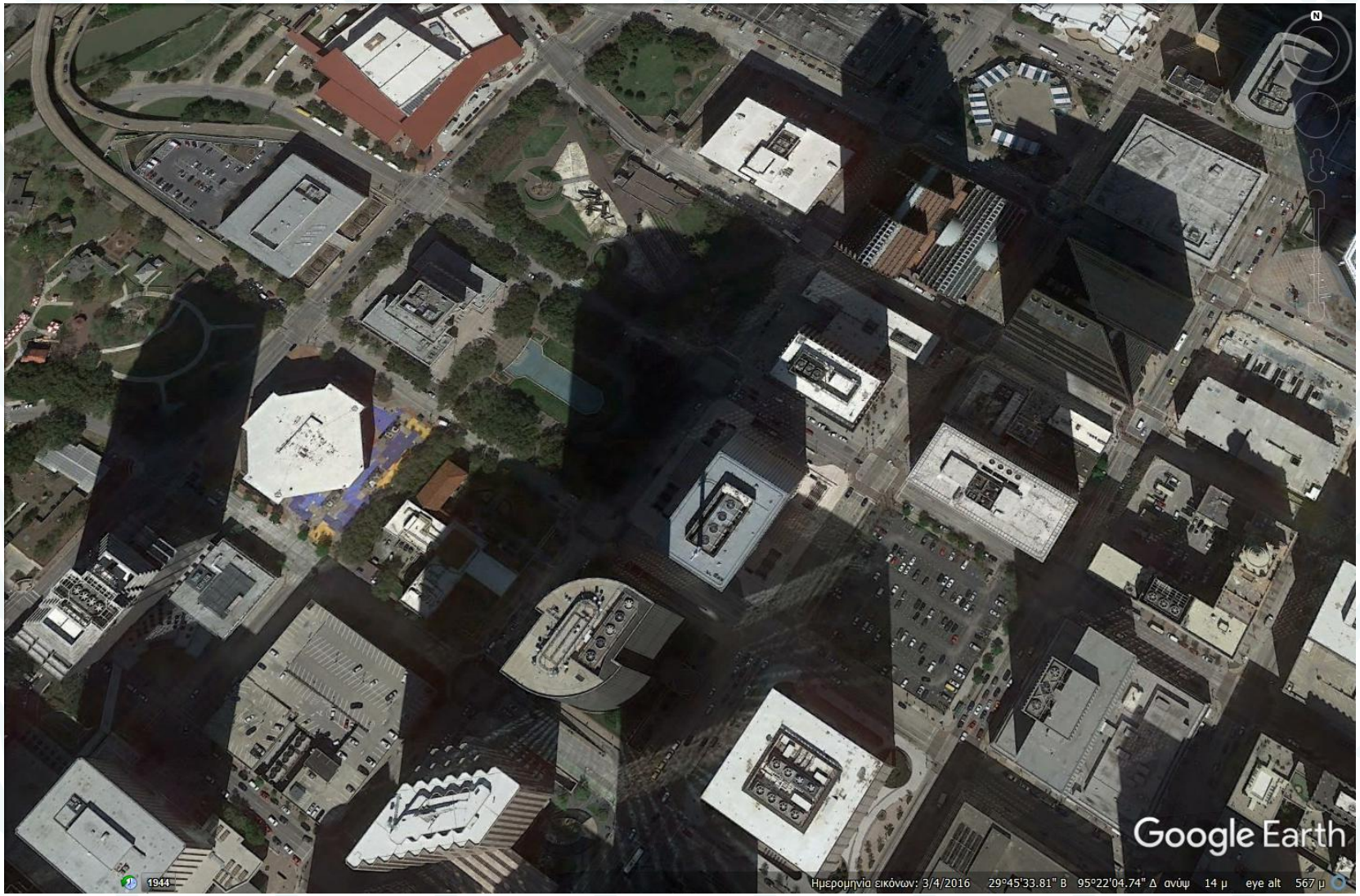
Google Earth
1945
Ημερομηνία εικόνων: 7/21/2008 55°57'14.46" B 3°11'31.26" Δ ανύψ 78 μ eye alt 556 μ

Edinburgh

Houston


Google Earth
Ημερομηνία εικόνων: 3/4/2016 29°45'33.81" Β 95°22'04.74" Δ ανύψ 14 μ eye alt 567 μ

Houston

What Are the Traits of a Walkable City

- Residential Density
- Commercial Density
- Land Use Mix
- Connectivity
- Presence of Trees and Vegetation
- Frequency and Variety of Buildings
- Plenty of places to go to near the majority of homes
- Street designs that work for people, not just cars
- Access to mass transportation

Problem: Cities develop and grow, based on plans and designs of experts, solely on their professional expertise

Questions to be asked:

- What kind of city will thrive economically?
- What kind of city will keep its citizens safe and healthy?
- What kind of city will be sustainable for future generations?

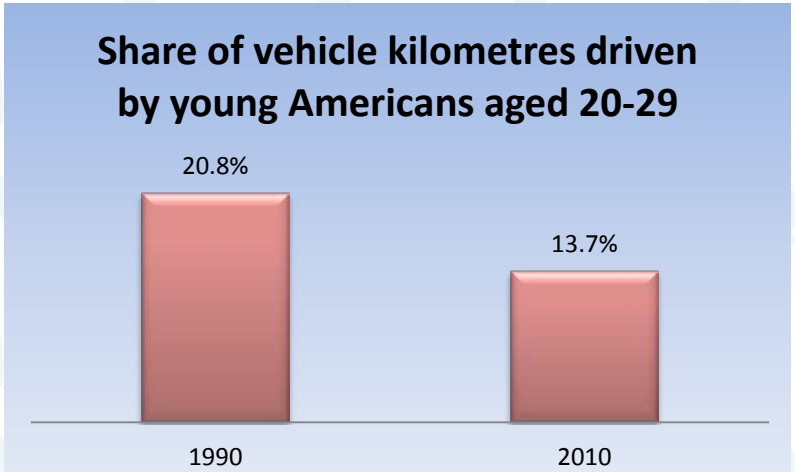
Answer: Cities need to be planned by multi-disciplinary teams

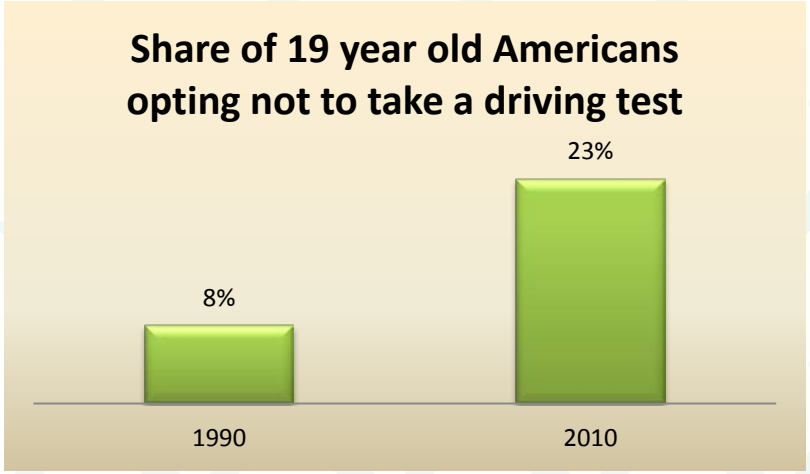
Why is Walkability Important?

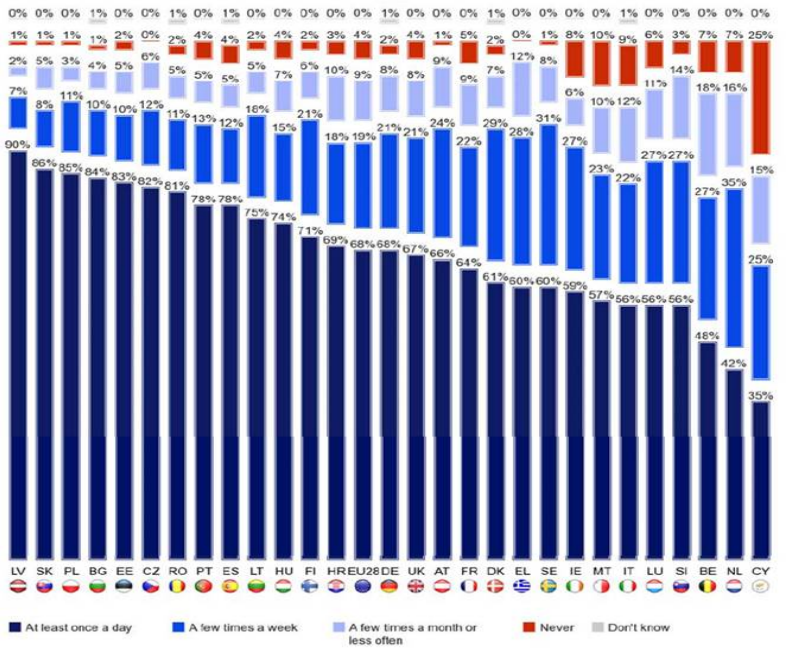
"The metropolitan area that does not offer walkable urbanism is destined to lose economic development opportunities, the creative class will gravitate to those areas that offer multiple choices in living arrangements"

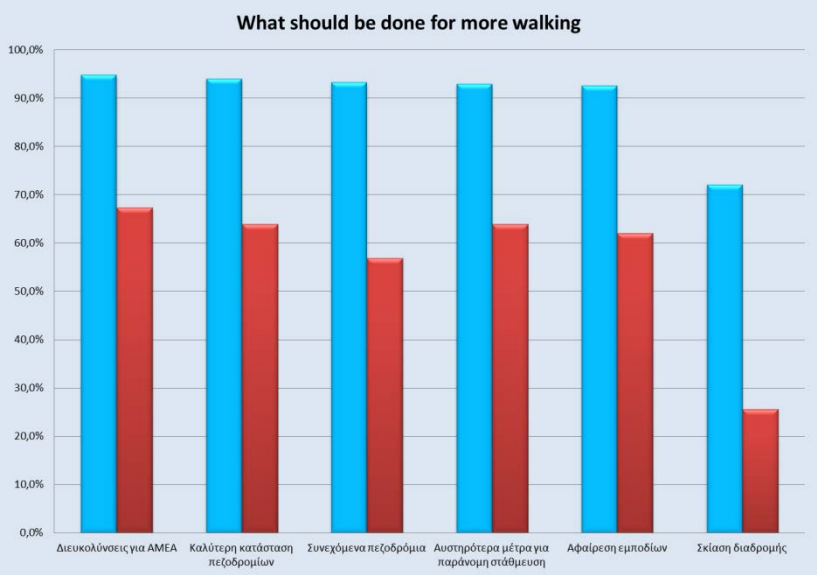
- Christian Leinberger, ex real estate advisory firm owner.

Do People Want to Walk?









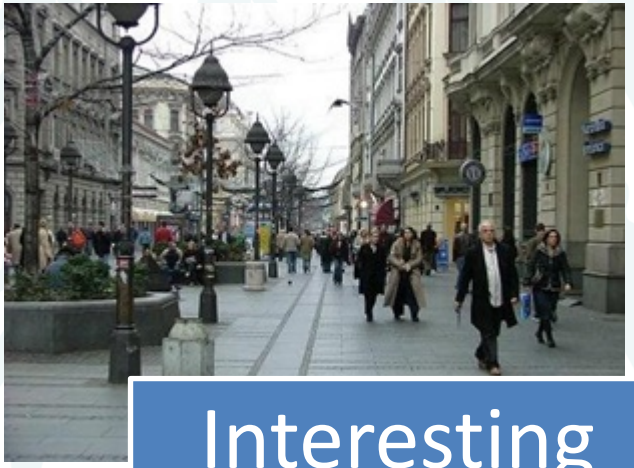
The Theory of Walkability

In order for someone to walk, the walk must be:

Useful

Safe

Comfortable



Interesting

Factors Affecting Walkability

The Useful Walk

- Restrict and restrain the car
- Create mixed use neighbourhoods
- Manage parking effectively
- Support public transport

The Safe Walk

- Look after the pedestrian
- Encourage cycling

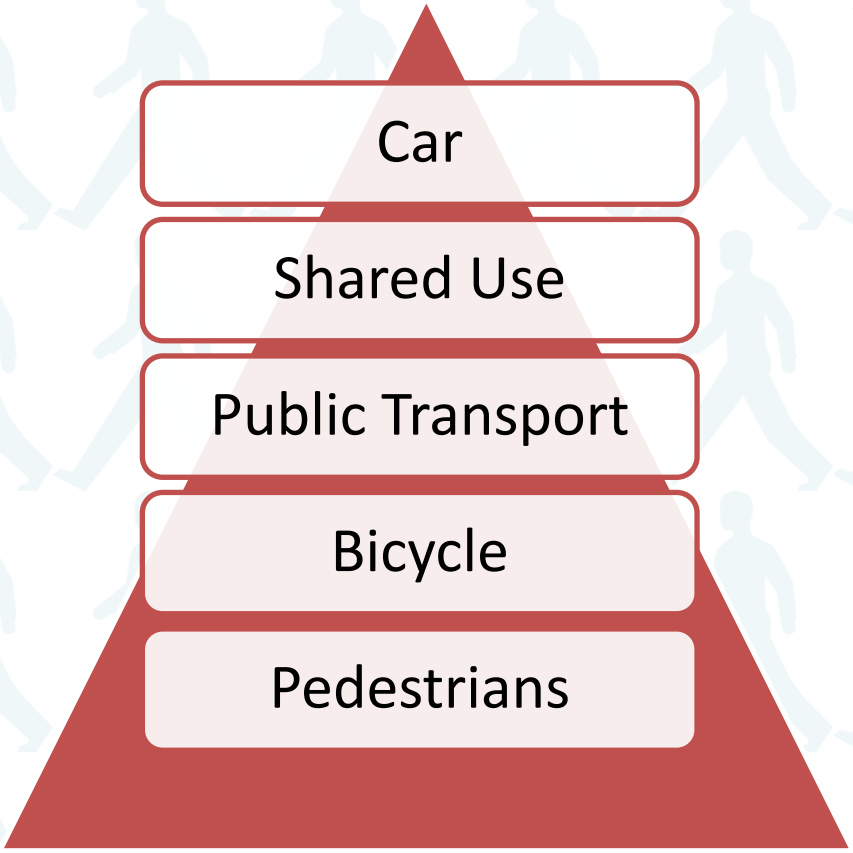
The Comfortable Walk

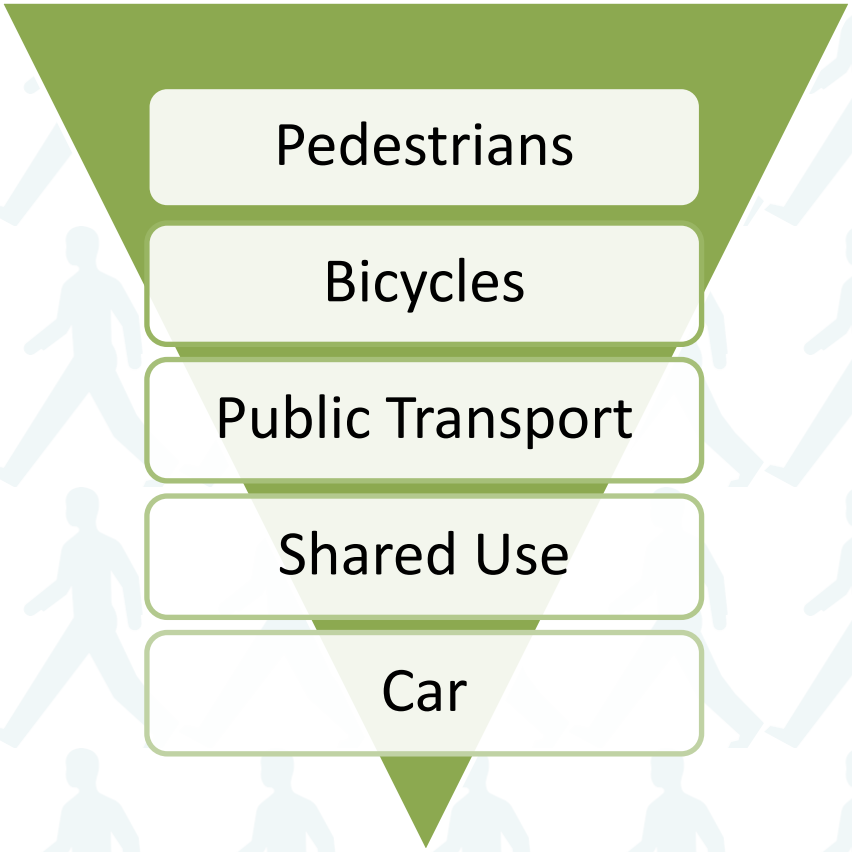
- Provide a sense of enclosure
- Plant trees

The Interesting Walk

- Make the facades interesting
- Choose your projects wisely

Restrict and Restrain the Car





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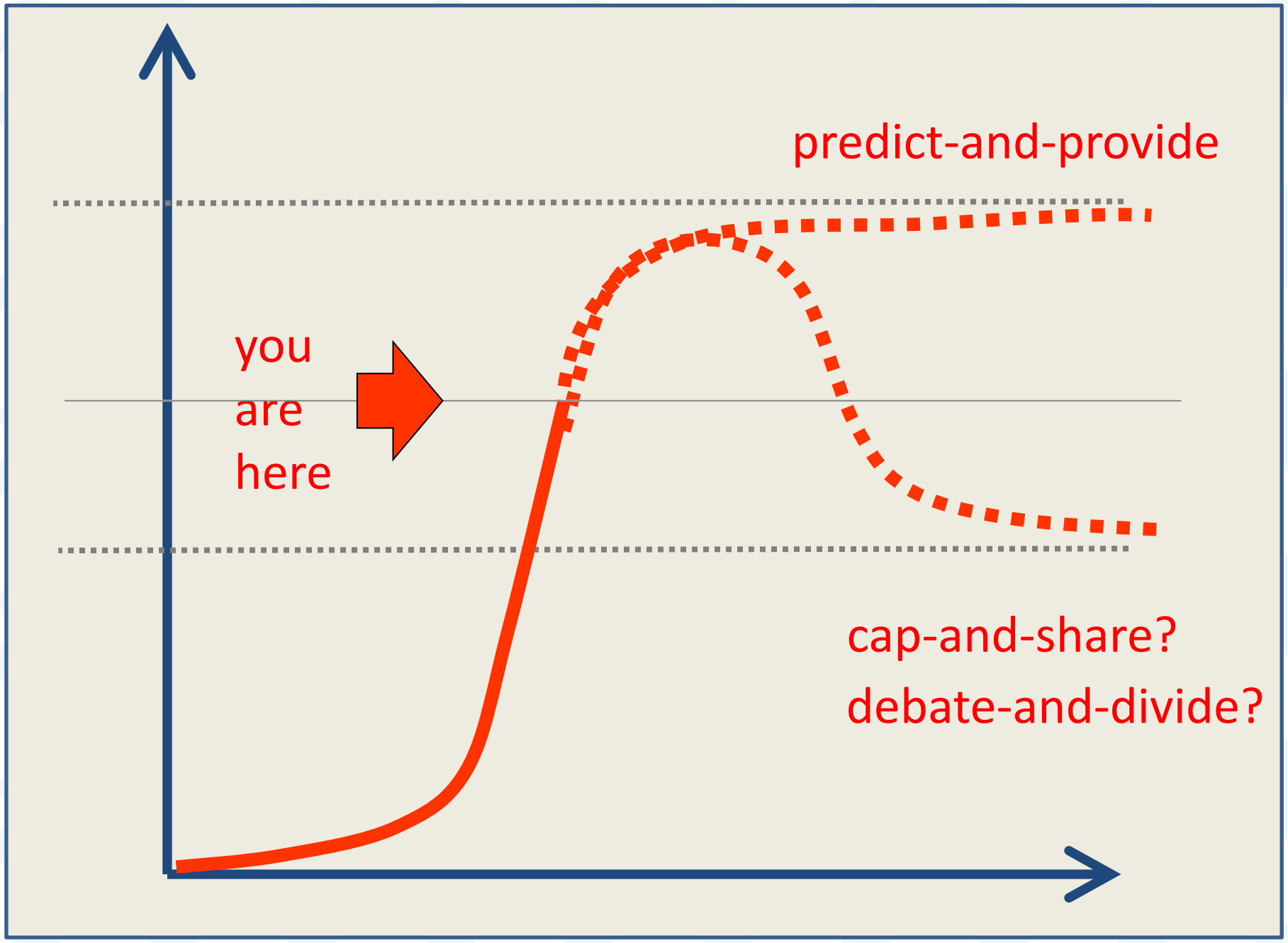
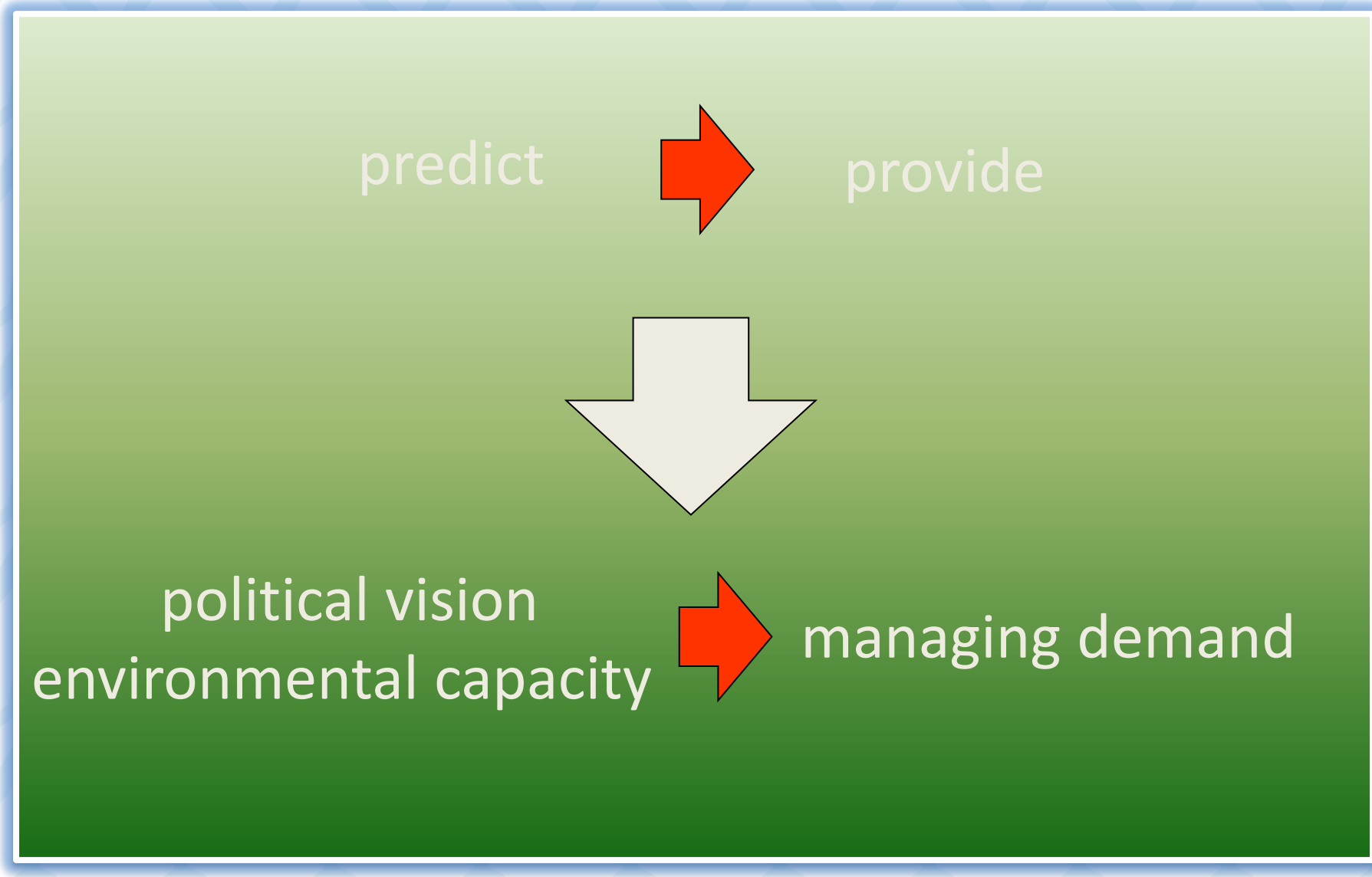

predict-and-provide
you
are
here
cap-and-share?
debate-and-divide?

Build it and They will Come, Remove it and They will Go



The Case of the Embarcadero Freeway in San Francisco

The Case of the Embarcadero Freeway in San Francisco

The Case of the Embarcadero Freeway in San Francisco

The Case of Cheonggyencheon Expressway in Seoul

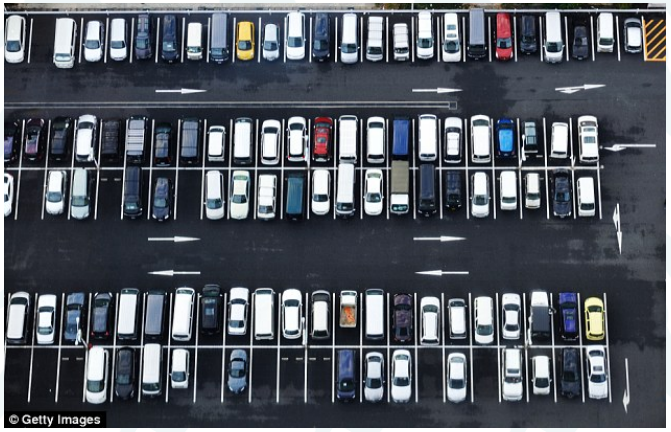
The Case of Cheonggyencheon Highway in Seoul

The Case of Cheonggyencheon Highway in Seoul

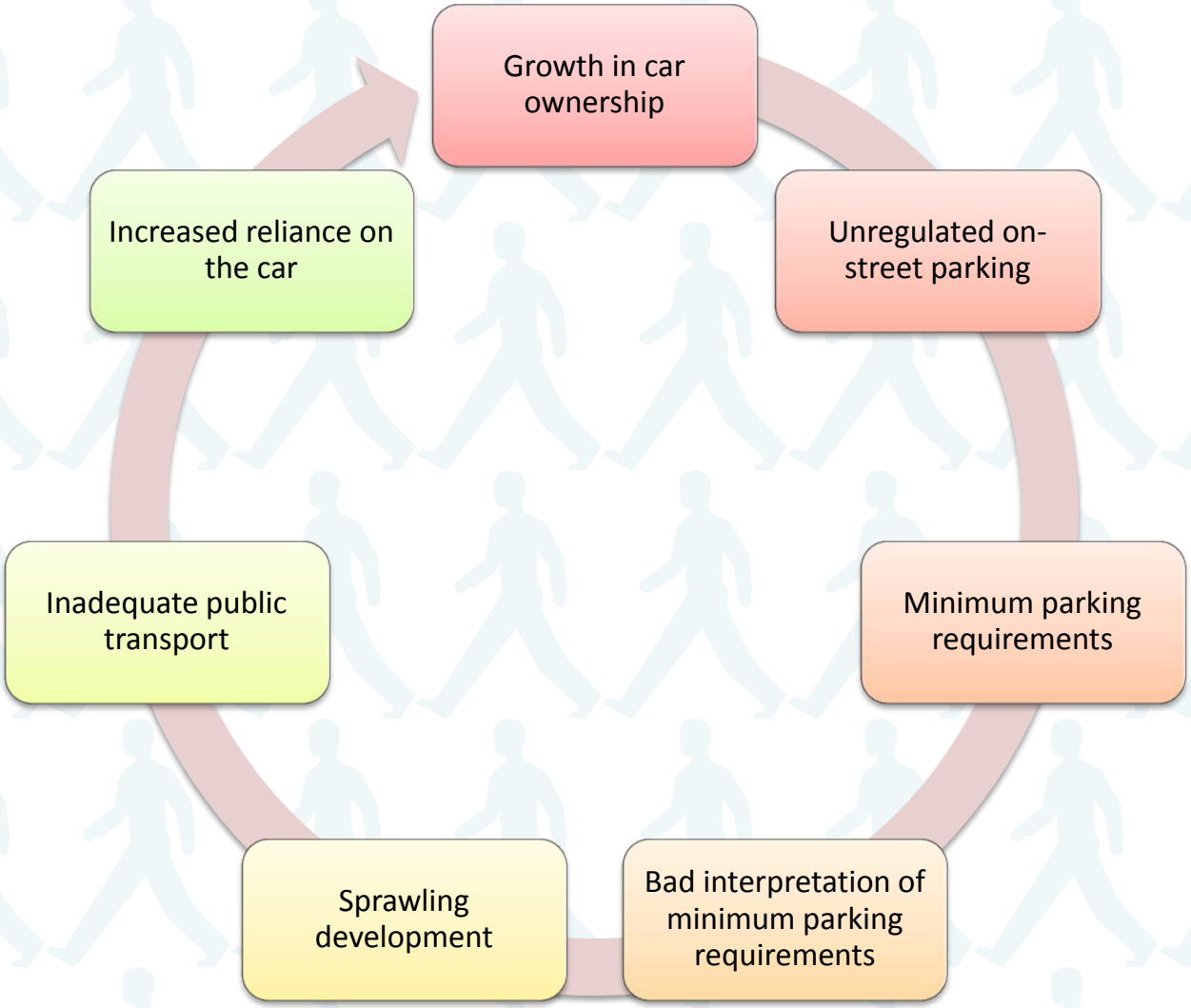
"In every case, attempts to relieve traffic pressure by building more roads and parking garages have generated more traffic and more congestion. The volume of car traffic almost everywhere is more or less arbitrary, depending on the available transportation infrastructure"

- Jan Gehl, Danish city planner

Manage Parking Effectively



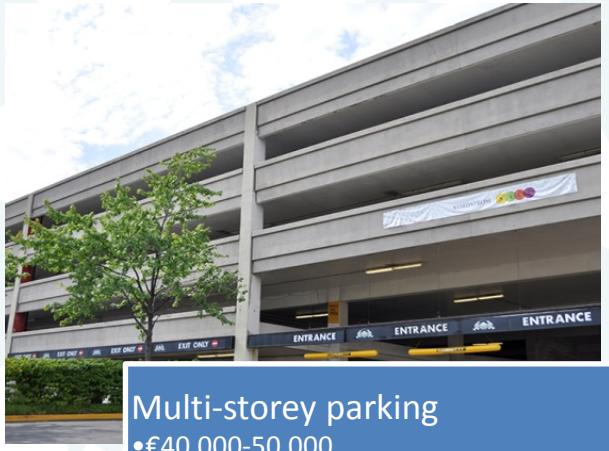
The Vicious Cycle of Parking Inefficiency



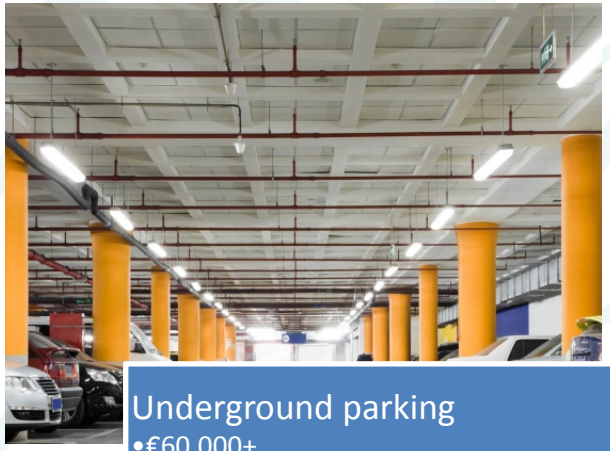
The Cost of a Parking Space

Simple 2,6x5,5m on-street place
- €5.000-8.000

Standard parking structure
- €20.000-30.000



Multi-storey parking
- €40.000-50.000



Underground parking
- €60.000+

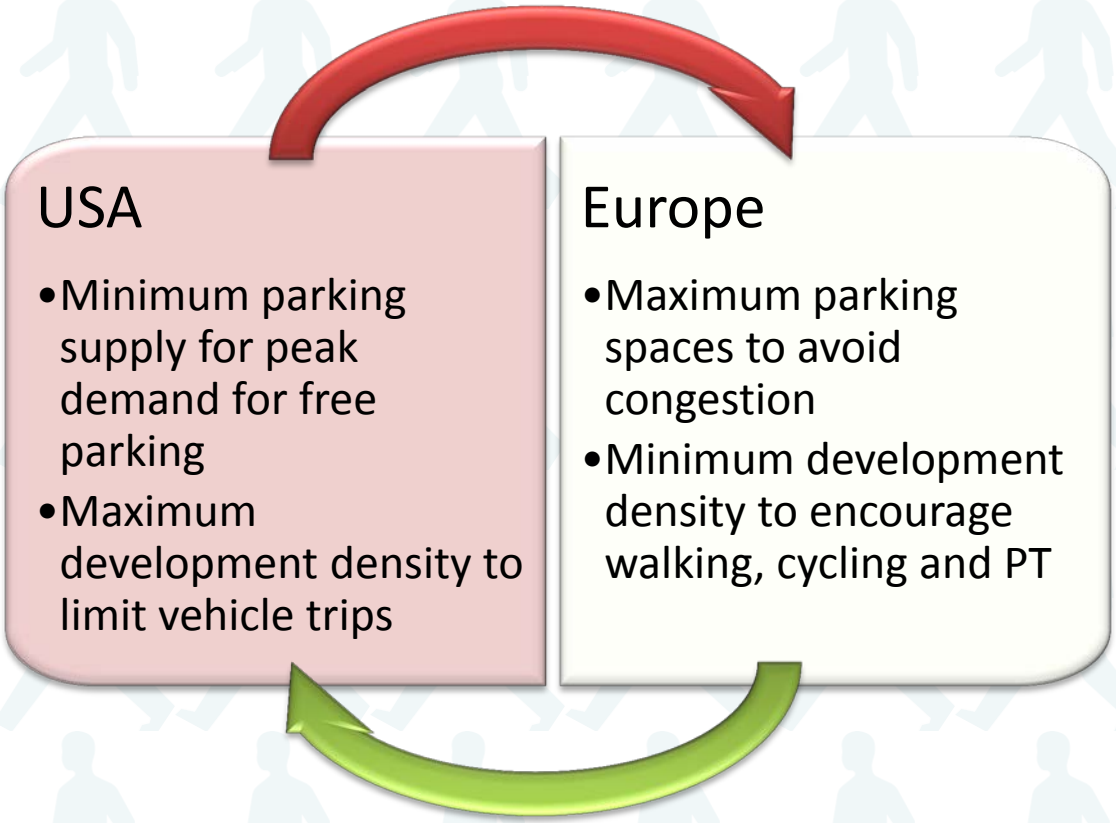
The Subsidy of Parking

Average daily cost of a parking space €4-5
Any space, that generates less than this, is subsidised
But who pays the subsidy?

- Private Investments
  - The developer
  - The tenants
  - The customers
- Public Investments
  - Municipal or state authorities
  - Tax payers

Subsidy is paid by everybody (car drivers, pedestrians, cyclists, public transport users, old people, handicapped, etc)

Problem 1: Minimum Parking Requirements



Which works better?

Which model does Cyprus follow?

Problem 2: Cheap/ Free On-Street Parking

Studies indicate that up to 1/3 of congestion is caused by drivers looking for parking

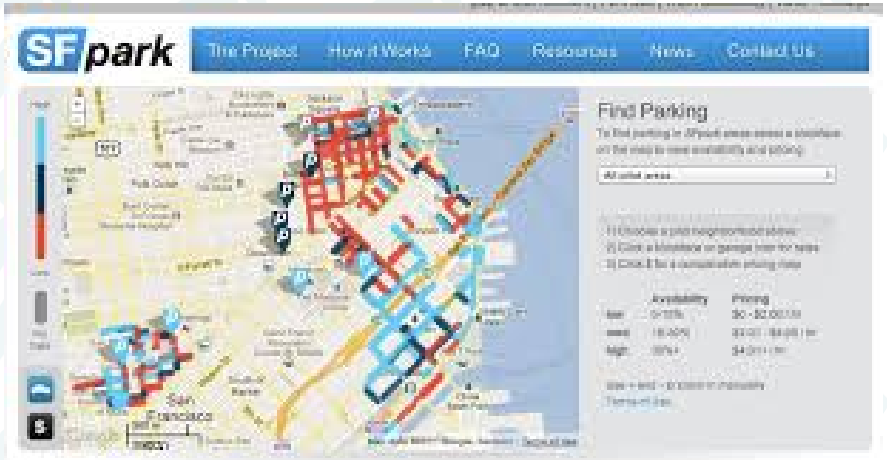
Congestion, pollution, wasted time, slow emergency response

Free/ cheap parking is bad for business

- Paid parking increases turnover

What's the right price for parking?

The Case of San Francisco: Dynamic Parking Charging



How to Use Parking Revenue

Make revenues work locally

- Fix pavements
- Plant trees
- Improve lighting
- Upgrade street furniture
- Hire employees

Have a parking plan

- Manage comprehensively
- Target community success, not revenues

Retail areas

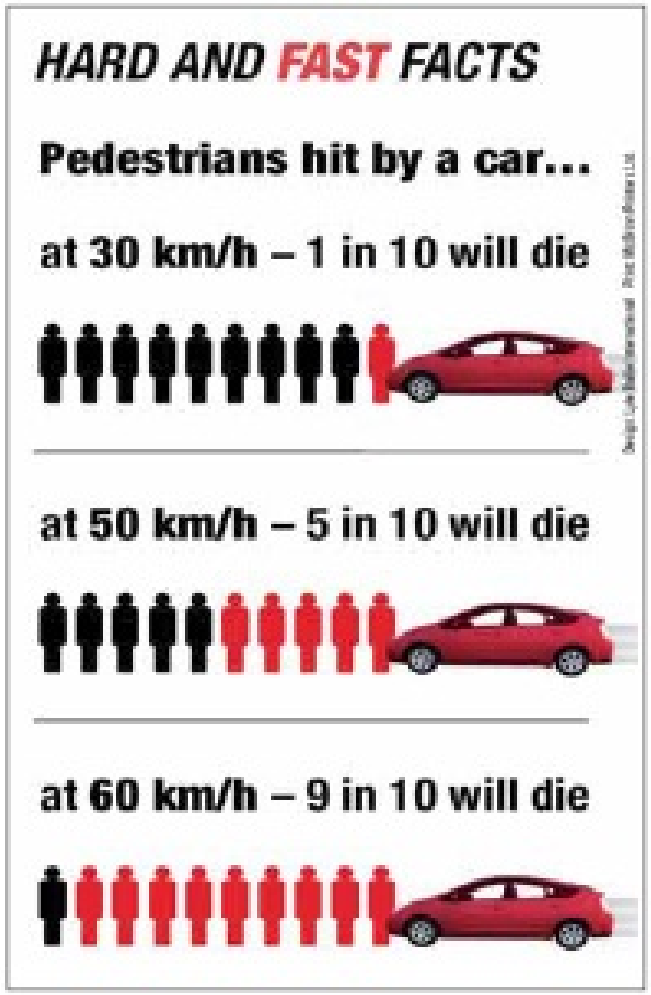
- Non- residents pay on-street
- Money spent to the benefit of residents

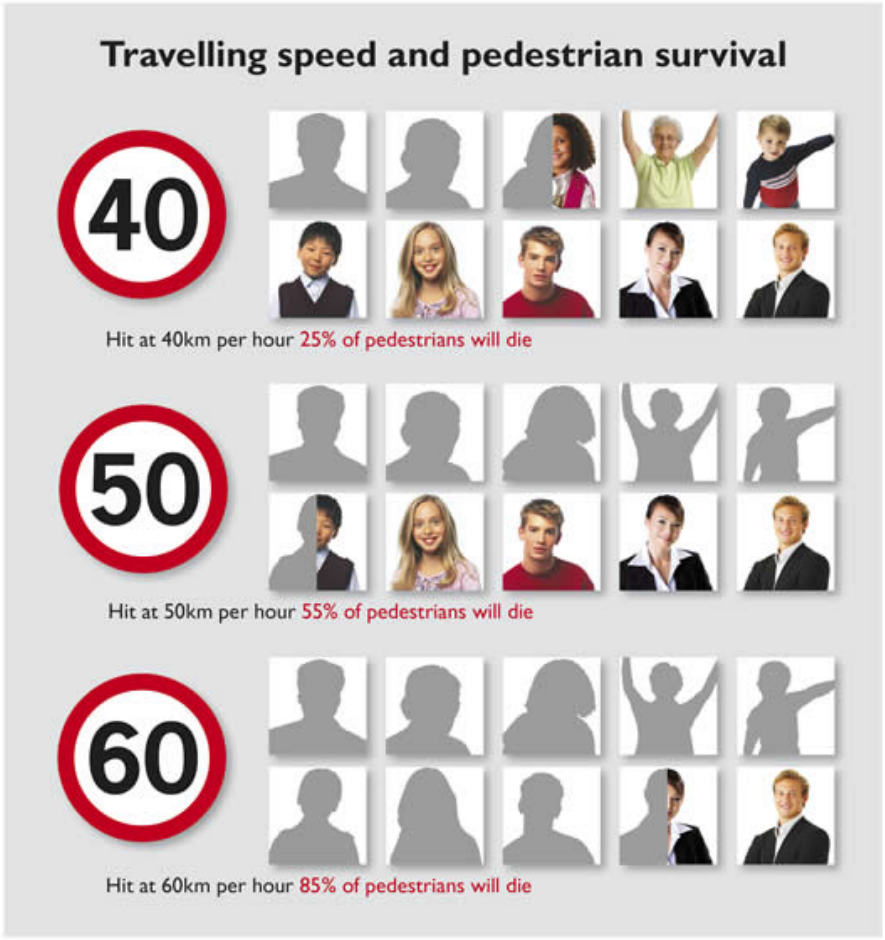
Residential Areas

- Residential parking permits
- Charge at nominal rates

Looking After the Pedestrian

The Importance of Low Speeds





The Importance of Low Speeds

48 km/h

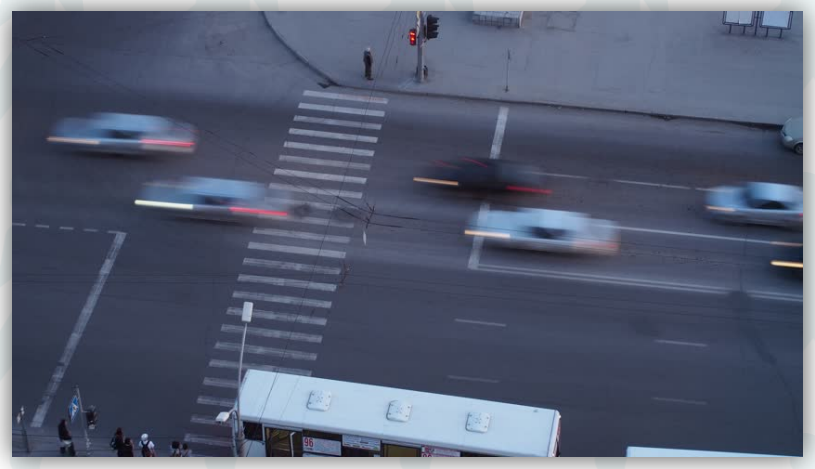
Threat: Big Blocks

Big blocks

Wider multiple lanes

Easier for cars to speed

Very difficult for pedestrians to cross



Threat: Extra Right Turn Lanes

- Right turn lane too long
- A lane too wide for pedestrians to cross
- Traffic speeds higher
- Pedestrian more easily distracted

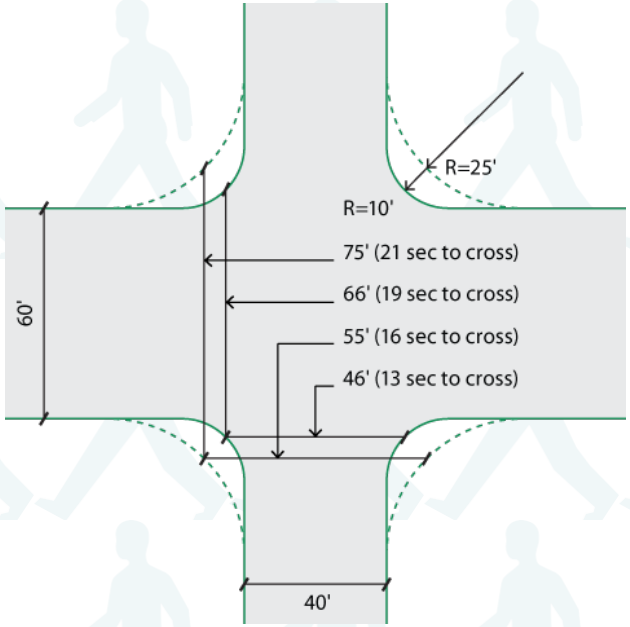
Threat: Wide Lanes

Study by National Association of City Transportation Officials (NACTO)

"When lanes are built too wide, pedestrians are forced to walk further across streets on which cars are moving too fast and bikes don't fit"

- Jeff Speck, American Urban Planner

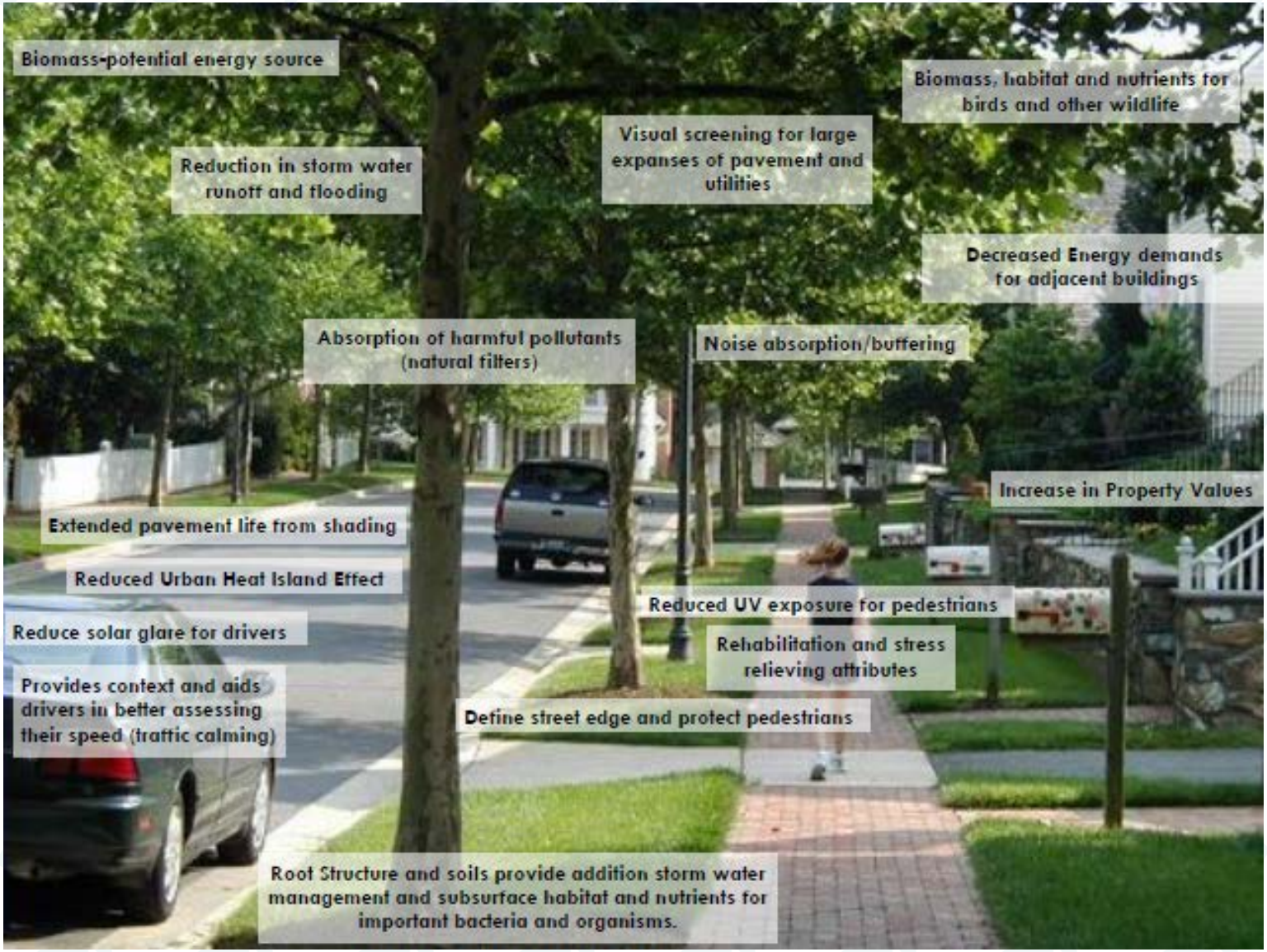
Threat: Large Turning Radii



"Corner radii directly impact vehicle turning speeds and pedestrian crossing distances. Minimizing the size of a corner radius is critical to creating compact intersections with safe turning speeds. While standard curb radii are 10–15 feet, many cities use corner radii as small as 2 feet. In urban settings, smaller corner radii are preferred and actual corner radii exceeding 15 feet should be the exception".

•Urban Street Design Guide, NACTO

Plant Trees


Biomass-potential energy source
Biomass, habitat and nutrients for birds and other wildlife
Visual screening for large expanses of pavement and utilities
Reduction in storm water runoff and flooding
Decreased Energy demands for adjacent buildings
Absorption of harmful pollutants (natural filters)
Noise absorption/buffering
Increase in Property Values
Extended pavement life from shading
Reduced Urban Heat Island Effect
Reduced UV exposure for pedestrians
Reduce solar glare for drivers
Rehabilitation and stress relieving attributes
Provides context and aids drivers in better assessing their speed (traffic calming)
Define street edge and protect pedestrians
Root Structure and soils provide addition storm water management and subsurface habitat and nutrients for important bacteria and organisms.

Why Are Street Trees Essential for Pedestrians

- Offer shade
- Reduce the ambient temperature
- Absorb tailpipe emissions
- Absorb rainwater
- Provide UV protection
- Limit the effects of wind
- Slow cars by “necking down” the street space with their canopies

Trees and Pedestrian Safety

Designers, considering the risks to drivers only, neglect to use trees in their design, assuming soft pedestrians to be much less of a threat to moving vehicles than hard trees.

In fact, street trees are safer for both drivers and pedestrians, because drivers respond to the absence of trees by speeding (principle of Homeostasis)

A Toronto study has indicated that the presence of trees and other objects along road edges correlates with a 5-20% reduction in mid-block accidents

Safety from Heat Waves

In 2010 in Moscow 700 died every day during a heatwave

Ambient temperature differential of 3-9°C between shaded and unshaded streets

A healthy tree is equivalent to 10 room-size air-conditioner working 24 hours.

The Economics of Trees

University of Pennsylvania study: Trees within 15m of houses increase property value by 9%

Estimated increase in property tax in Portland, $15,3m/yr against $1,28m/yr cost of planting

Shops in tree lined trees have 12% higher income

In Melbourne 70.000 street trees provide $14m in value

New York set a goal to plant 1m trees in 10 years

In London, trees remove 2.241 tonnes of carbon from the air each year. They also hold 3m m3 of water, saving £1,5m in stormwater management

Thank you very much for your attention.