

**OPEN FORUM**

# **PARKING MANAGEMENT IN RAPIDLY EMERGING CITIES**

UNITAR Workshop on Sustainable Transport, Plock / Poland, September 2007  
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**BE INSPIRED**

**THE PICTURES ARE FAMILIAR...**

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DOES ANYTHING  
ATTRACT YOUR  
ATTENTION?



Picture: Armin Wagner/GTZ

GTZ - Sustainable Urban Transport Project

# PEDESTRIAN WAY OR PARKING ZONE?



Picture: GTZ Photo CD-ROM / Karl Fjellstrom

GTZ - Sustainable Urban Transport Project

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ACCURATE TO A  
MILLIMETER...

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# AN EXAMPLE FOR EFFICIENT SECOND/THIRD ROW PARKING?

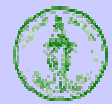


# INVERTED WORLD



Picture: Armin Wagner/GTZ

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# CAN YOU FIND THE BICYCLE PATH?



# THE SINGLE-SIDED DRIVER'S POINT OF VIEW



Picture: GTZ Photo CD-ROM / Karl Fjellstrom

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# ARE YOU ALSO MISSING ACCESSIBILITY?



Picture: GTZ Photo CD-ROM / Karl Fjellstrom

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# PARKING WITHOUT MANAGEMENT



Picture: Armin Wagner/GTZ

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# ENFORCEMENT MAKES AN ATTEMPT...



Picture: GTZ Photo CD-ROM / Jörg Thiemann-Linden

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Impressions from...Plock, Torun, Bydgoszcz, Tirane,  
Hore-Vranisht, Danilovgrad, Senta, Kragujevac, Uzice,  
Kutaisi, Varna, Geneva, Nanterre, Gdynia, Brussels  
Poznan, Warsaw...

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# CHALLENGES

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# CHALLENGES

- Fast growing car ownership and usage
- Too little space
- Illegal parking
- Reduction of accessibility and mobility in particular in the city centres
- Negative impact on the health and quality of life
- Destruction of side walks
- Generation of parking mafia
- ...



# CHALLENGES

- Increasing pollution through emission of green house gases and noise caused by parking-space-search-traffic:

- Cruising for curb parking generates about 30% of the traffic in central business districts
- Study of a 15-block business district (Los Angeles) shows (per year):
  1. 1.500.000 excess vehicle km = 38 trips around the world
  2. Wastage of 177.000 liters of gas
  3. Production of 730 tons of greenhouse gas carbon dioxide

(Source: Donald Shoup, The New York Times, March 29, 2007)

# Positive impacts of parking policy

- Has an impact on mode share
- Can support local economic development
- Major revenue earner
- Improves road safety
- Influences car ownership

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# WAY FORWARD

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# WAY FORWARD

## Major measures:

- Development / reform of parking policies
  - Smart implementation
  - Enforcement
- **Focus on highly effective low-to-medium cost measures**

## Accompanying measures:

- Support development of sustainable transport
  - Communication and public acceptancy as requirement for successful policies:
- Stakeholder involvement
- Clarification of facts
- Encourage the use of more sustainable transport

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# WAY FORWARD

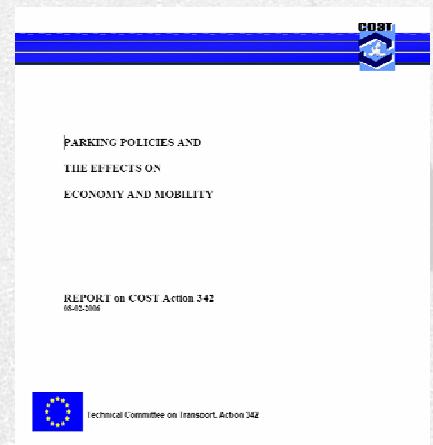
## TYPICAL DEVELOPMENT OF PARKING POLICY:

- Stage 1 - no problems,
- Stage 2 - as demand > supply, regulations introduced
- Stage 3 - demand further increases - time limits introduced to favour short stay shoppers, visitors
- Stage 4 - commuters pushed further out - conflict with residents - residents' zones introduced
- Stage 5 - more and more differentiation of parking tariffs
- Stage 6 - park and ride.
- Stage 7 - inclusion of parking in mobility management

(From COST 342-STUDY (especially relevant to on-street policy)→

Recommended reading: „Parking management and pricing”

(COMPETENCE / TREATISE / E-ATOMIUM)



# WAY FORWARD - PARKING MANAGEMENT MEASURES

- Establishment of Parking Zones ←
- Access limitation in city center
- Reduction of parking supply in city center ←
- Parking Pricing ←
- Reduced parking fee for low emission cars ←
- Improve other transportation modes
- Establishment of P+R parking facilities ←
- Enforcement improvement
- Shared parking
- Increase public awareness

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# BEST PRACTICES

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# Zone-model parking system, Pécs/Hungary

## Problems:

- Large number of cars, congestions, air / noise pollution, damages to the UNESCO protected sites

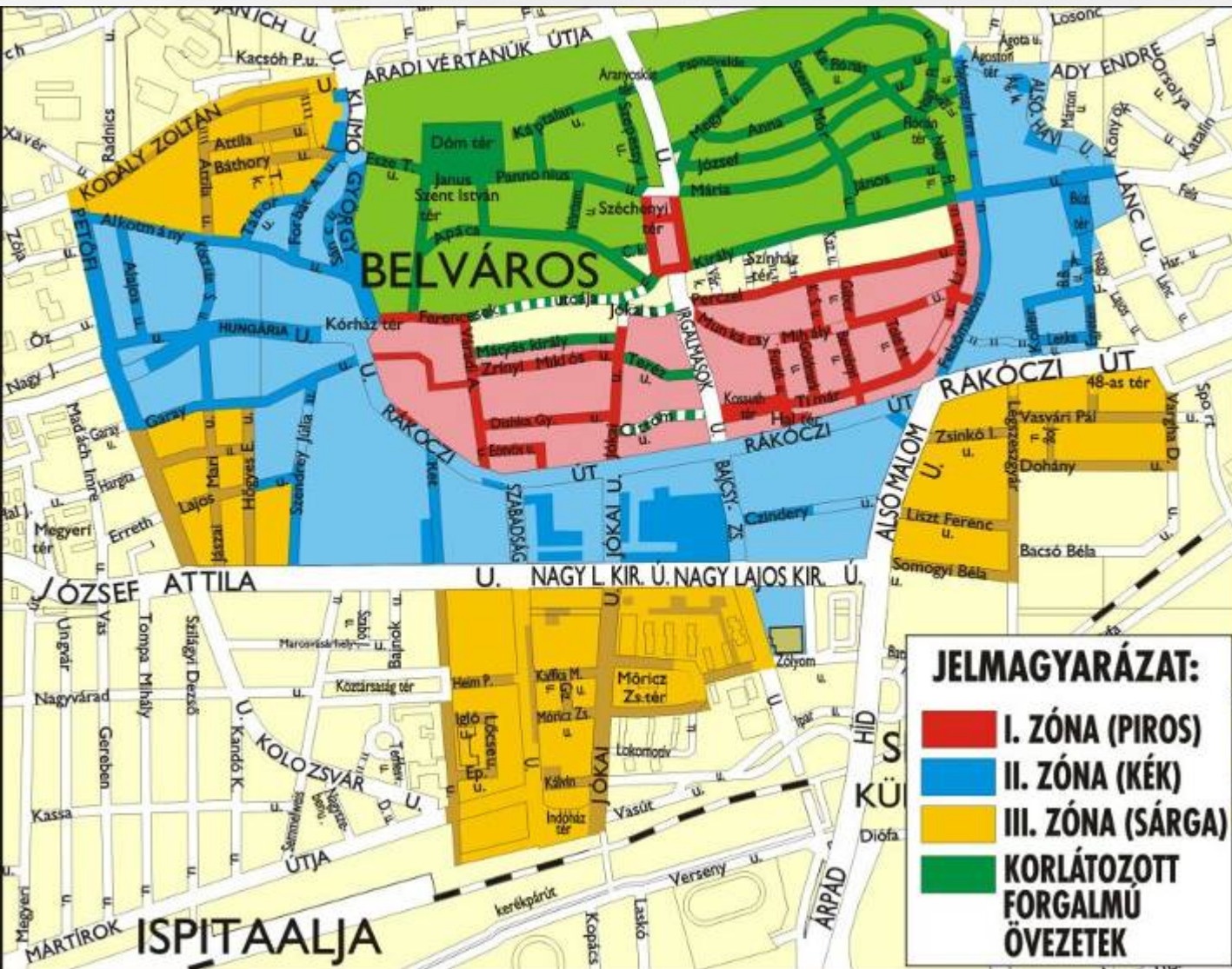
## Measures:

- Establishment of three parking zones in the central city areas
- Limited access area in the buffer-zone of the city-centre
- Car-free World Heritage Zone.

## Results:

- Reduced emissions through in the central areas (-20 to 80%)
- Decreased in the average time of parking in the centre (-20 to 30%)
- Decreased use of private cars
- Reduced the air and noise (-3%) pollution in the centre
- Better conditions to protect the UNESCO World Heritage sites

# Zone-model parking system, Pécs/Hungary



Fees:

Zone I: 200 HUF/h  
(0.78 Euro)

Zone II: 100 HUF/h  
(0.39 Euro)

Zone III: 60 HUF/h  
(0.23 Euro)

The shortest available  
parking interval: 30  
minutes

...Plock, Torun, Bydgoszcz, Tirane, Hore-  
Vranisht, Danilovgrad, Senta, Kragujevac,  
Uzice, Kutaisi, Varna, Geneva, Nanterre,  
Gdynia, Brussels, Poznan, Warsaw...

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# Establishment of P+R parking facilities, Cork/Ireland

## Problems:

- Increasing volume of motor traffic into the city centre (+ 4.5%/year)
- High demand on inner city parking

## Measures:

- Development of a new P+R parking facility 3 km south of the centre for 900 cars and additional spaces for bicycles and motorbikes
- Improvement of route frequency
- Establishment of a convenient city centre terminus

## Expected Results:

- Within 50 weeks of operation, income covered operating costs
- Removal of up to 1,400 vehicles per day (2,500 passengers) from the approach roads to the city centre
- Perceptible reduction of queuing on the adjacent national route

# Establishment of P+R parking facilities, Cork/Ireland



**Park & Ride**

**Black Ash Park & Ride**

**Monday to Saturday 07h30 - 19h15**

**Buses every 10 minutes peak;  
every 15 minutes off-peak**

**5 euro fee inclusive of bus fair for  
driver and passengers**

This location map shows the Black Ash Park & Ride facility situated at the intersection of Tramore Road and Black Ash Road. It is located near the N22 City Centre and the N25 West and East roads. The Kinsale Interchange is also shown at the bottom of the map.

# Establishment of P+R parking facilities

- Effects of P+R on traffic (COST 342)
  - Vienna - P+R takes 12% of city centre-bound traffic
  - Chester - 20%
  - Madrid - 20,000 users per day; Barcelona, 12,000; Hanover, 10,000.
  - Strasbourg - P+R key element in success of tram line. 43% of motorised trips now made by public transport.
  - Oxford, UK - 3-9% reduction in city-centre bound traffic.
- Successful P+R needs:
  - Frequent fast (cheap) public transport to centre
  - Lack of parking in centre
  - Easy road access to car park
  - High quality secure facilities

...Plock, Torun, Bydgoszcz, Tirane, Hore-  
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# Implementation of higher parking fees, Beijing / PR China

## Problems:

- Congested city centre, lining up for roadside parks instead of using underground park

## Measure:

- 150% rise of parking fees in downtown commercial areas

## Results:

- Decreased parking space search traffic, average time reduced to 1/3
- Increased use of means of public transportation
- Reduced traffic congestion and noise pollution

# PARKING PRICING

- Retailers justify their request for free parking or reduction of parking fees with the aim of improving the competitiveness of the inner city retail trade.
- However, free parking only induces long-term parking.
- Parking fees increase the parking chances for customers and therefore the sales may rise.



# PARKING PRICING

Positive effects of parking pricing:

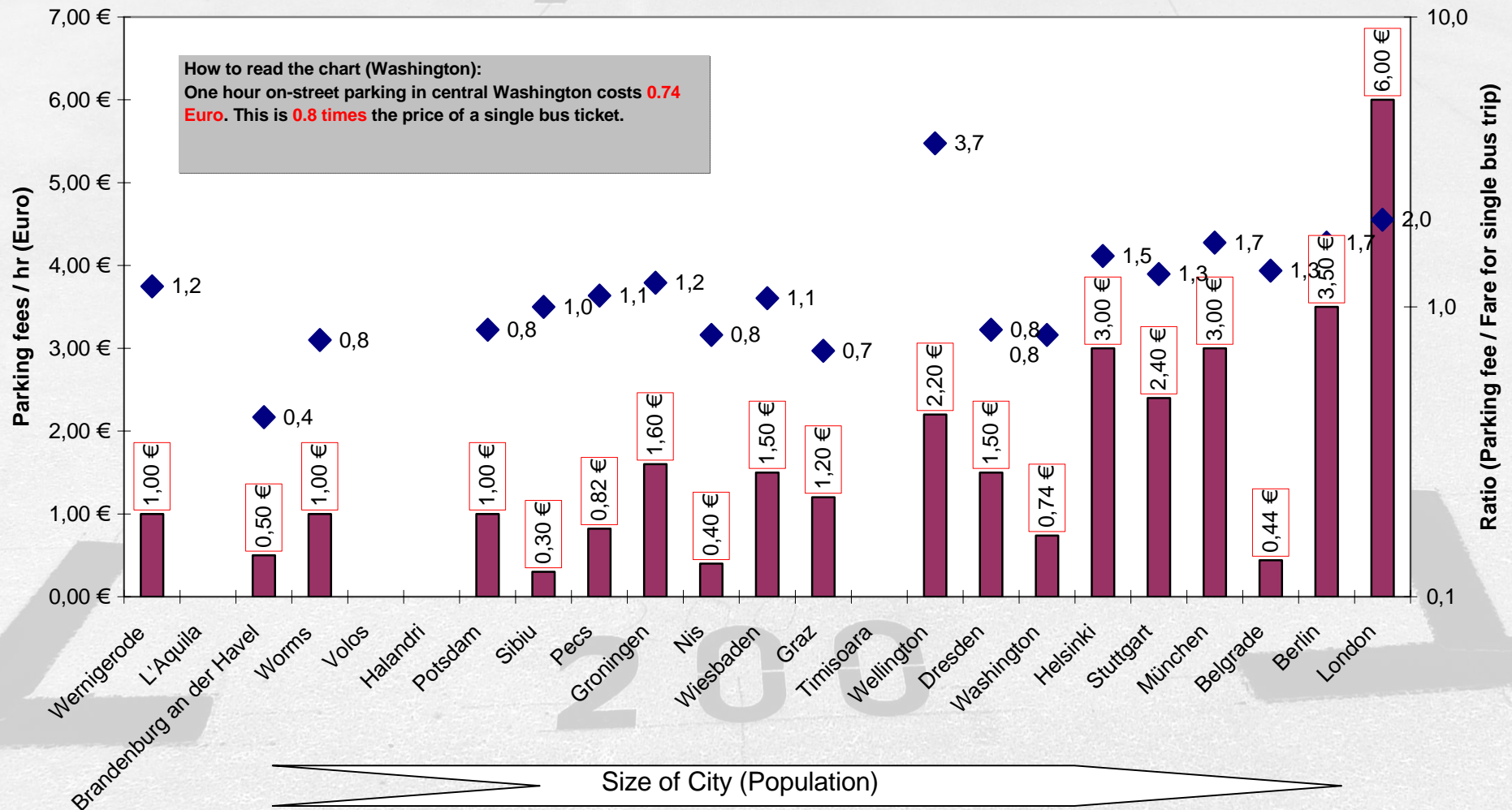
- Increase of revenue base (e.g. for reinvestments in mobility projects / public transportation)
- Shifting car-drivers to public transportation
- Reduction of traffic congestions and pollution in the city
- Vitalizes the centres and contributes to a higher quality of life
- Higher vehicle turnover → more customers

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# PARKING PRICING



Comparison of on-street parking fees  
(in selected cities; 1 hr parking in CBD)



Source: TRANSPOWER-Project: <http://www.transpower-6rp.org/>

...Plock, Torun, Bydgoszcz, Tirane, Hore-  
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# Reduction of parking fee for low emission cars, Graz/Austria

## Problems:

- High emissions, noise level and energy consumption

## Measures:

- Lower parking tariff for low emission cars
- Increase of tariff for all ordinary vehicles

## Results:

- Higher awareness on the part of media and citizen about car-emissions
- Initiated a discussion about a common standard for illustrating low emission cars on part of manufacturers

## Expected:

- Reduce emissions, noise levels and energy consumption
- Increase motivation to buy low emission vehicles

# Reduction of parking fee for low emission cars, Graz/Austria

Euro Norm IV Limit for gasoline-powered cars: 140g CO<sub>2</sub> pro km and  
for Diesel-powered vehicles: 130g CO<sub>2</sub> pro km + particulate filter



# General Economic Effect of Different Parking Measures

Type of measure	Target group	Effect
Reduction long-term parking	Residents	Enhancement of residential quality (property values)
	Workers	No (hardly) shifts in workplace perceived
	Visitors	Might reduce the number of visitors unless occupied by other measures
Introduction of residents parking scheme	Residents	Enhancement of residential quality (property values)
	Workers	No (hardly) shifts in workplace perceived
	Visitors	Might reduce the number of visitors unless occupied by other measures
Introduction of time-restrictions	Residents	None if accompanied by residents parking scheme
	Workers	No (hardly) shifts in workplace perceived
	Visitors	More place for visitors
Introduction of paid parking	Residents	None if accompanied by residents parking scheme
	Workers	No (hardly) shifts in workplace perceived
	Visitors	More place for visitors
First half hour Free parking	Workers	No (hardly) shifts in workplace perceived
	Visitors	Creates more traffic without adding visitors
Creating Park & Ride	Workers	Enhances accessibility
	Visitors	Attracts in principle visitors and enhances accessibility

Source: COST 342-STUDY „Parking management and pricing”

# Gaining acceptance for parking policy

- Communication of changes and reasons for them
- Public know and understand the measures.
- Perceived benefit
- fees and other regulations related to size of problem.
- Alternative transport exists to a good standard.
- Revenue used fairly and transparently
- Parking regulations enforced consistently and fairly,
- Fines not excessive and related to seriousness of the offence

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# Reduction of parking lots in the city centre, Seoul / South Korea

## Problem:

- 80% of vehicles entering the city centre were commuter cars with a single driver or cars for shopping

## Measures:

- Reduction of parking lots within the downtown area accompanied by a rise of parking fee and an implementation of traffic congestion fee

## Expected Results:

- Increase use of public transportation
- Reduce number of cars entering the city centre
- Improve the quality of air
- Reduce the number of cars being used and parked on the street