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Tools for a sustainable mobility to clash the traffic and pollution in the urban area: a critical review

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This presentation is divided into two sections

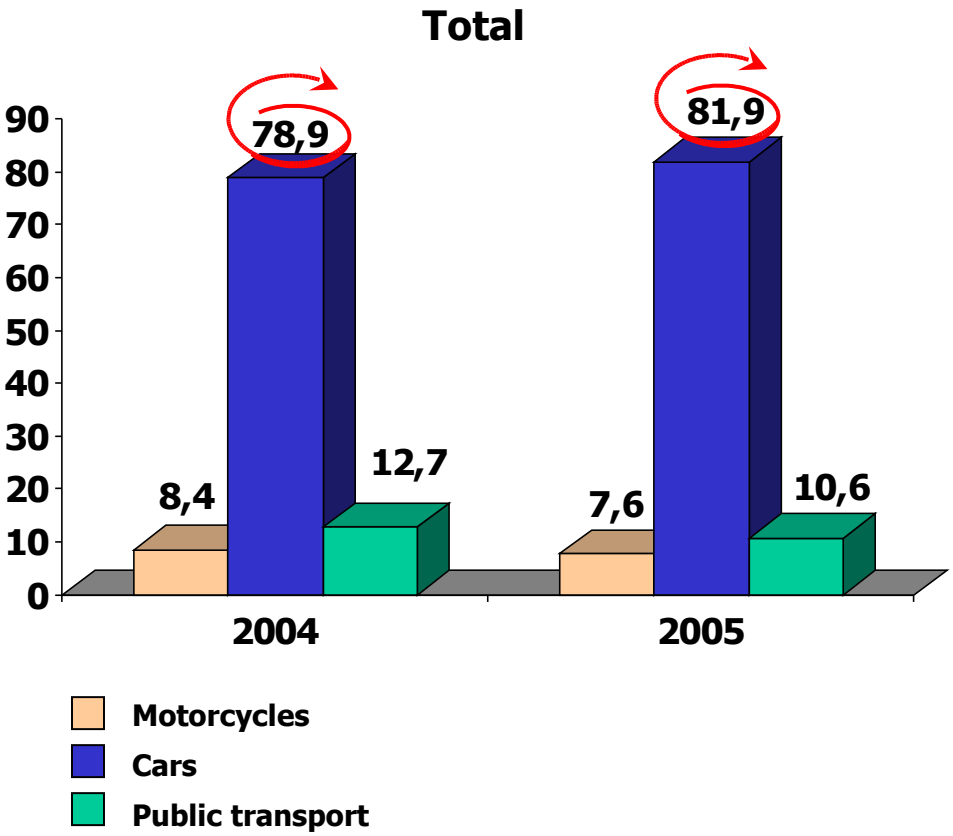
1. A short description of the characteristics of the demand for urban mobility, starting from data supplied by "Audimob", Observatory on Italians' Mobility Styles and Behaviors

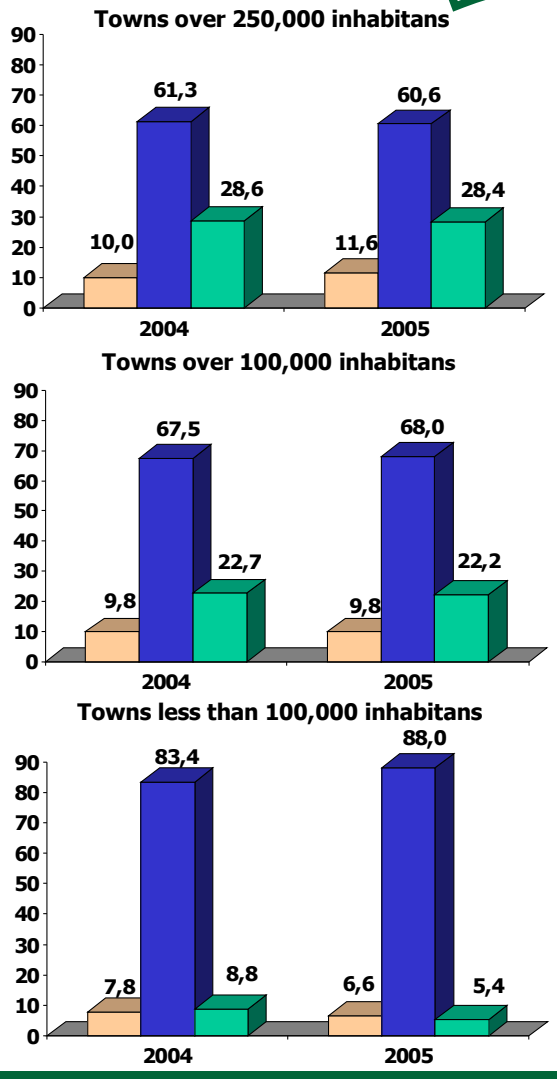
2. A concise review of the policies and measures for a sustainable urban mobility, with a few examples of good practices

First section

THE DEMAND FOR URBAN MOBILITY: MAIN OUTLINES

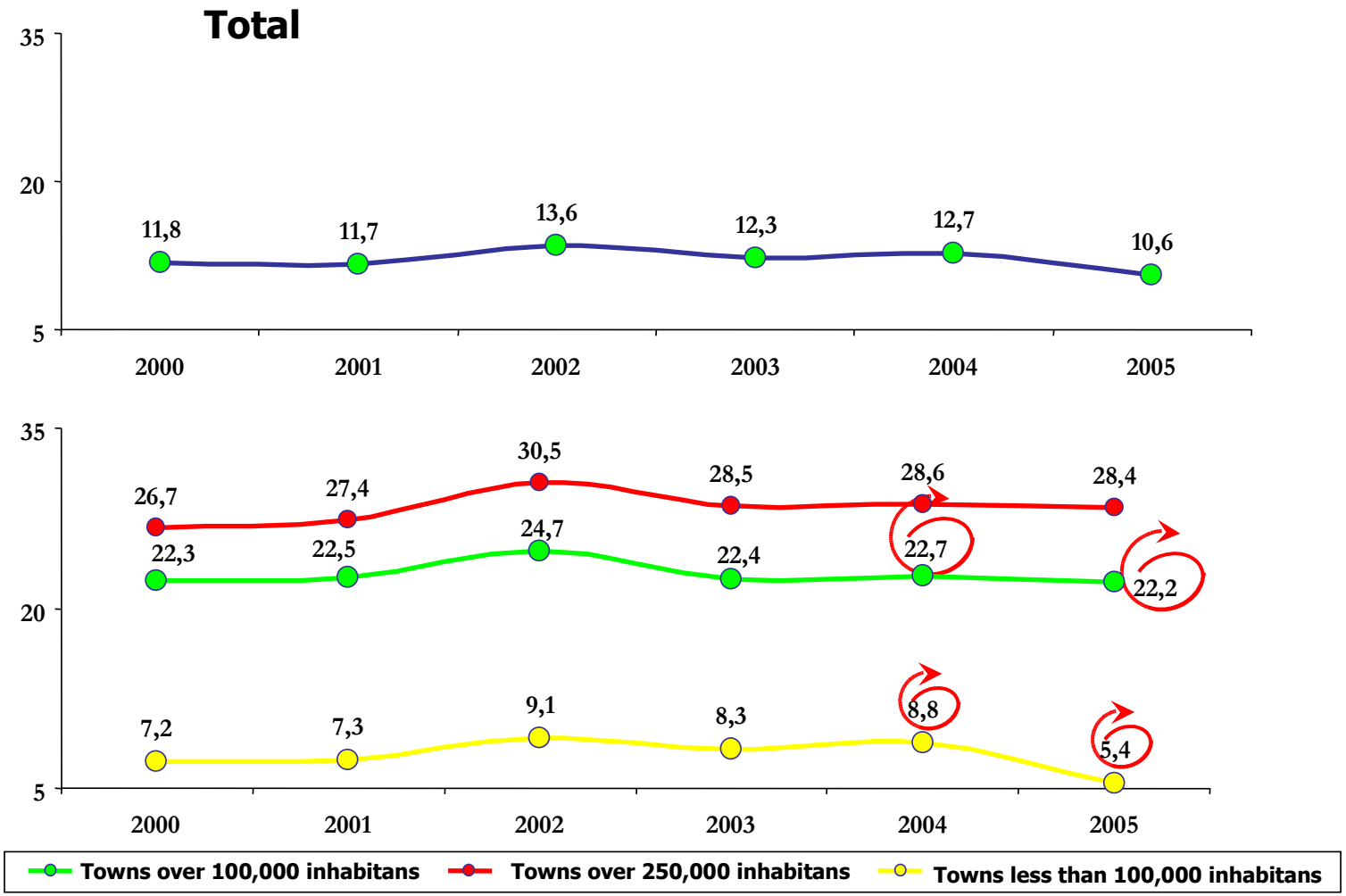
Cars, increasingly more the monopolists in urban transport *(percentage share of journeys)*





Public transport holds out in medium and large towns

(percentage share of journeys)



The basic segmentations of the demand for urban mobility *(% of journeys)*

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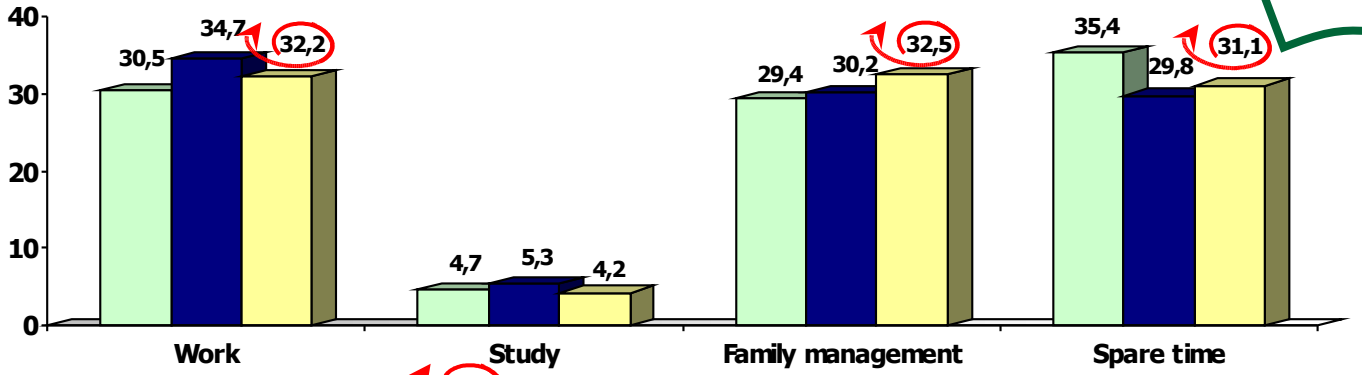
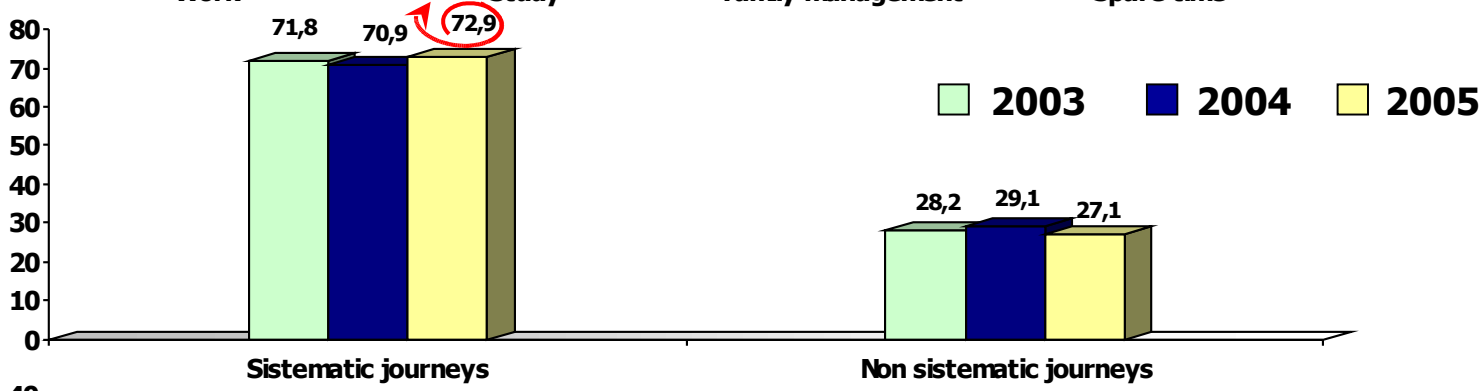
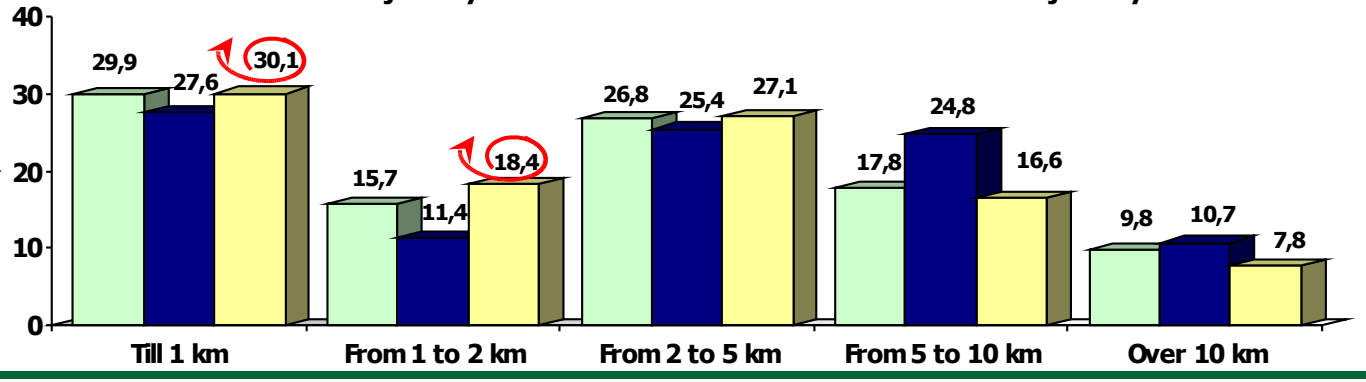
Motivations



Frequency



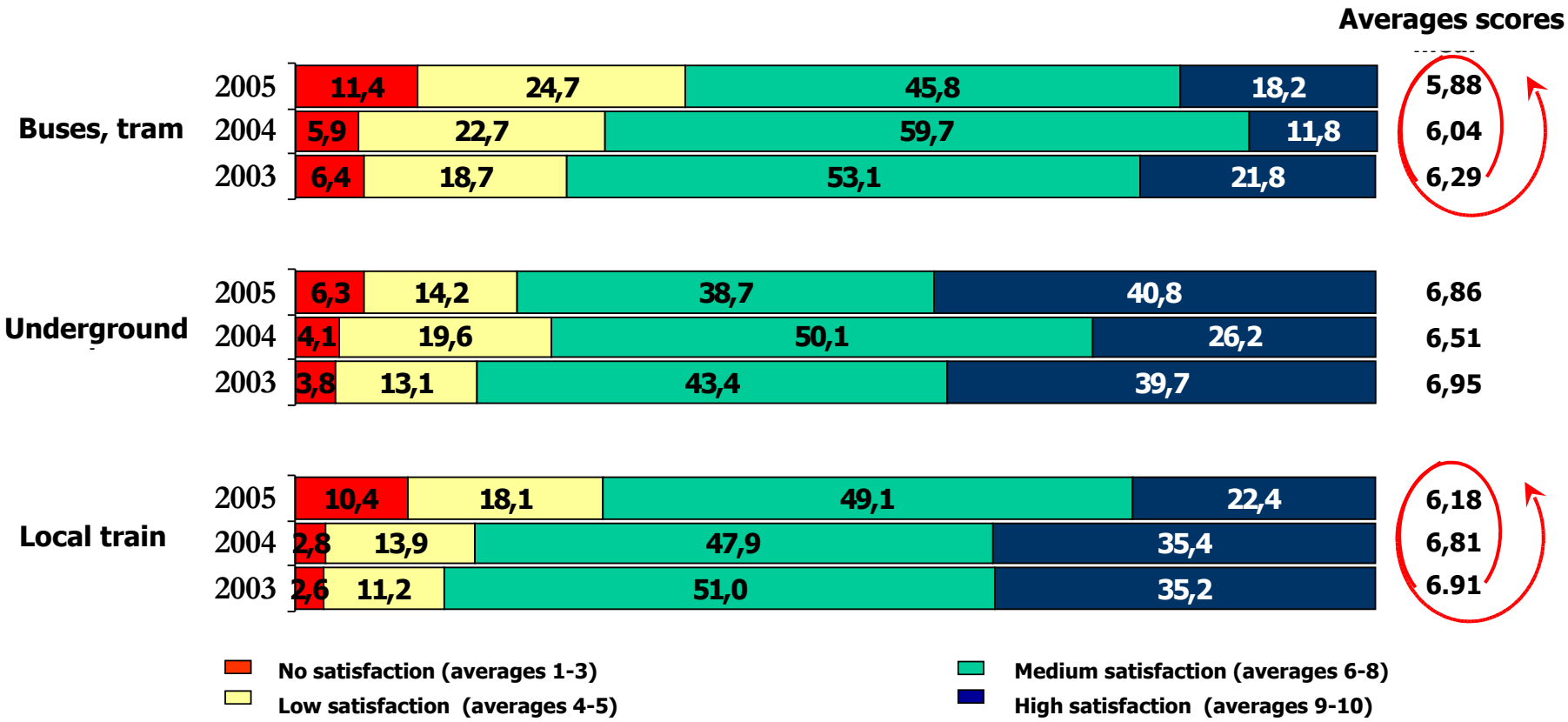
Length



Urban mobility in towns with over 100,000 inhabitants: length of journeys by transport means *(% of journeys)*

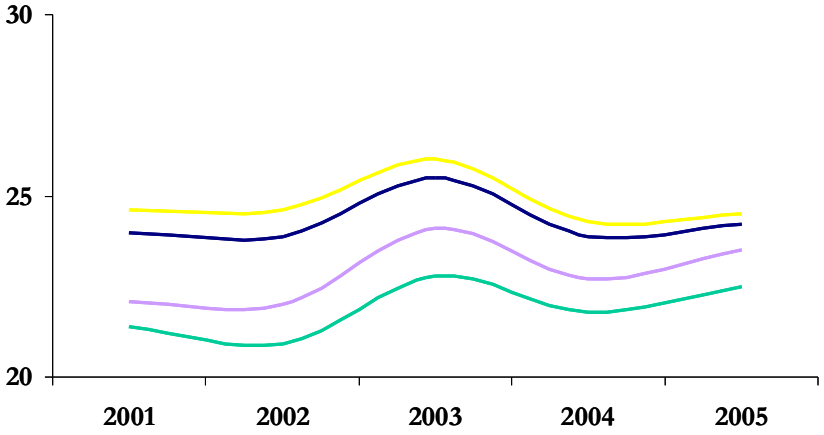
	Till 1 Km	From 1 to 2 Km	From 2 to 5 Km	From 5 to 10 Km	Over 10 Km	Total
Pedestrian mobility	75,0	31,3	9,1			24,8
Bicycles	4,4	9,5	3,5	1,3	0,4	3,8
Motocycles	2,7	6,2	8,0	9,4	9,9	7,0
Cars	15,4	42,8	59,7	63,3	67,7	48,4
Public transport	2,3	10,0	18,8	20,7	12,4	13,4
Combined transport (public and private means)	0,2	0,2	1,0	5,4	9,6	2,6
Total	100,0	100,0	100,0	100,0	100,0	100,0

Satisfaction indexes for public transport *(% of population and averages scores 1-10)*

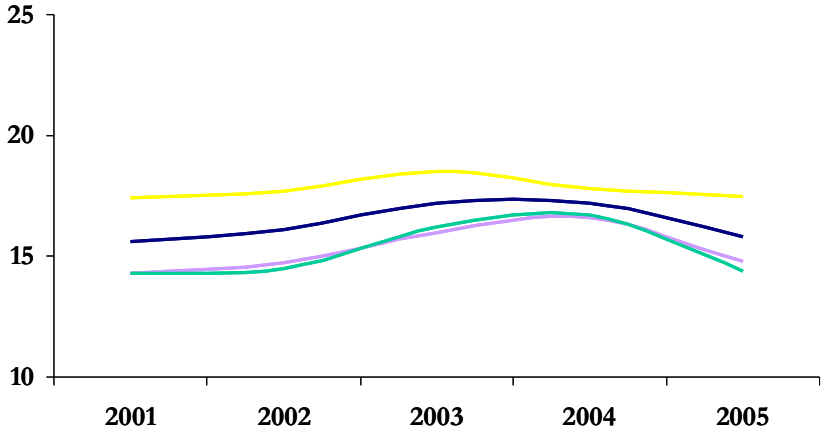


The average speed of public transport is on the decrease

Cars



Public transport



	Cars			Public Transport		
	2005	2004	2001	2005	2004	2001
Towns over 100,000 inhabitants	23,5	22,7	22,1	14,8	16,6	14,3
Towns over 250,000 inhabitants	22,5	21,8	21,4	14,4	16,7	14,3
Towns less than 100,000 inhabitants	24,5	24,3	24,6	17,5	17,8	17,4
Total	24,2	23,9	24,0	15,8	17,2	15,6

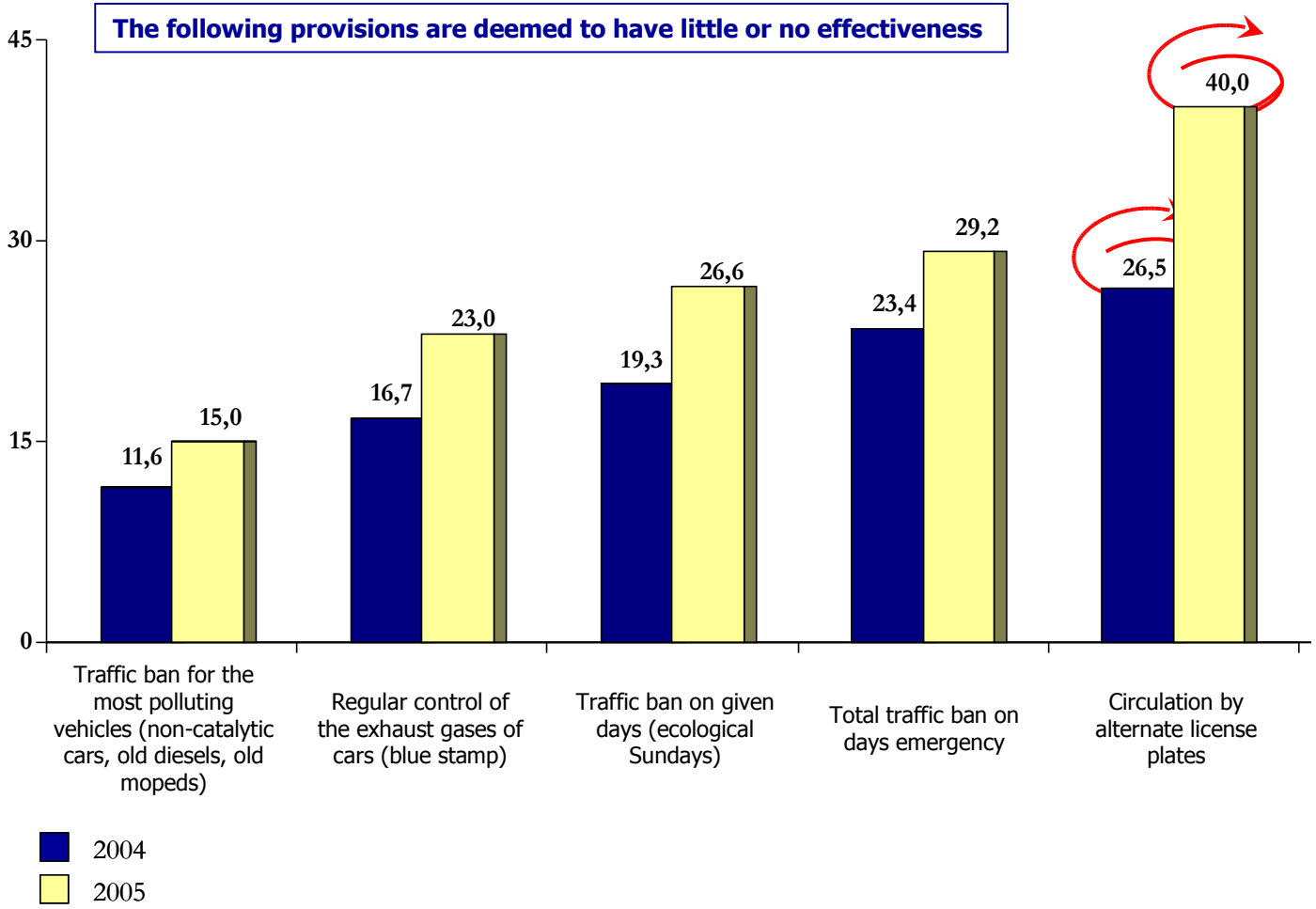
Comuni con oltre 100.000 abitanti — Grandi città — Comuni <100.000 abitanti — Totale

Judgment on the measures designed to reduce traffic and pollution

The opinion of residents in the medium and large towns
(average scores 1-10)

	2005	2004
Apply discounts on public transport season tickets	8,03	7,45
Prevent the circulation of heavy vehicles within the cities	7,86	7,68
Increase the preferential lanes and routes for public transport	7,42	6,85
Prohibit car traffic in old town centers and other crowded zones	7,30	7,07
Modify the opening hours of shops	6,67	6,44
Promote car-pooling arrangements	6,47	6,64
Cause non-residents to pay car parks *(park pricing)*	5,18	5,27
Charge for the access to old town centers and to the roads obstructed by traffic *(road pricing)*	4,83	5,11

Judgment on the provisions to fight pollution (%)



Second section

POLICIES AND MEASURES FOR A SUSTAINABLE URBAN MOBILITY: A CONCISE REVIEW

A summary of policies and measures for a sustainable mobility in the urban area

Policies	Measures
1. Fares and pricing	Road pricing
	Park pricing
2. Management of the demand for urban mobility	Traffic calming
	Limitation of vehicle traffic
	Car-pooling
	Car-sharing
	Information Technology (ITS)
3. Public transport	Bus priority
	Tariff integration
	Infomobility
4. Not pollutant modes of transport	Bicycle and pedestrian mobility
5. Land use and transport	Integrated planning between transport and land use

Concrete actions: road pricing

Consolidate practices

- Singapore (1975)
- Middle towns in Norway: Bergen, Oslo, Trondheim (end of '80)
- London
- Stockholm

Studies and Projects

- Middle towns in UK (Bristol, Edinburgh)
- Paris, Marseille
- Genoa, Rome, Milan (studies and experiments)

A successful case: London's congestion charge

- ✓ Introduced in 2003, after many years of studies and modeling simulations.
- ✓ The interested zone (only on weekdays) is delimited by the Inner Ring Road (22 sq. km.). Starting from February 2007, the area will be extended to the west of the city (a further 20 sq. km.).
- ✓ After merely a year, considerable results have already been attained: sizable **reduction in car traffic (-39%), increase in public transport (+38%), decrease in bus waiting time (-30%), decrease in the number of accidents (-9%), and decrease in traffic emissions (-12%, nitrogen oxides and fine dusts**).
- ✓ Unexpected **negative effects: nearly 50% lower returns** than expected owing to the extremely high reduction in the number of cars entering the city and the high number of cars that are exempted from the charge.

Concrete actions: car-sharing

Car sharing replaces the ownership of a car with a system of car rental by a community of users (multi-owned cars for several users). Car sharing is considered an efficient alternative to the ownership of a car for users who cover less than 10,000 km a year. The introduction of the car-sharing services aims at:

- ✓**separating the use of a car from its ownership**, and this applies in particular to that that share of motorists who does not drive the car on a regular basis for its journeys;
- ✓**minimizing vehicle traffic by stimulating the use of collective transport**;
- ✓**reducing the needs for parking spaces** in crowded urban areas, through a drop of the population motorization rates

Concrete actions: car sharing

Starting from the 1980s, a growing recourse to car-sharing arrangements has been reported in a few central European countries (**Germany, The Netherlands, and Switzerland**) and, later on, in the United States and Canada. Considered as a whole, the three European countries rely on over 100 organizations and in excess of 100,000 users. In the **United States**, 17 car-sharing organizations involve nearly 76,500 members (in 2005) with a vehicle fleet of 1,200 cars. **In recent years**, a few interesting initiatives have also been developed in **Austria, Denmark, France and Italy**.

The spread of the car-sharing service proceeded at the same rate as the development and spread of the **technologies applied to the mobility sector**: telecommunication systems to manage reservations and car-sharing services (web portals for communication among members and the operation headquarters), smart cards for access and financial management (invoicing system), satellite control of vehicles (GPS) and so on.

Concrete actions: supporting the use of bicycles

The mobility of urban areas in Europe and particularly in Italy combines well with the bicycle mode of travel (short-distances, facility of access and parking, etc.).

However, this potential is "frustrated" by the **conflict between bikes and vehicle traffic**.

The promiscuity of the routes and, above all, the speed disparity between bikes and cars reduce to a considerable extent the **safety** conditions related to the *weaker* mode of transport.

The situation is compounded by the **poor quality of urban environments**, often characterized by high levels of atmospheric and acoustic pollution. A few experiences: the **Bike Offices, "Call-a-bike", "Piedibus".**

A final remark

Time and money are scarce!

Urban policies for a sustainable mobility should be:

1. diversified and integrated
2. focused on local pattern
3. effective (strategic level)
4. efficient (operative level)

Thanks for your attention!

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