



# Barcelona Road safety framework



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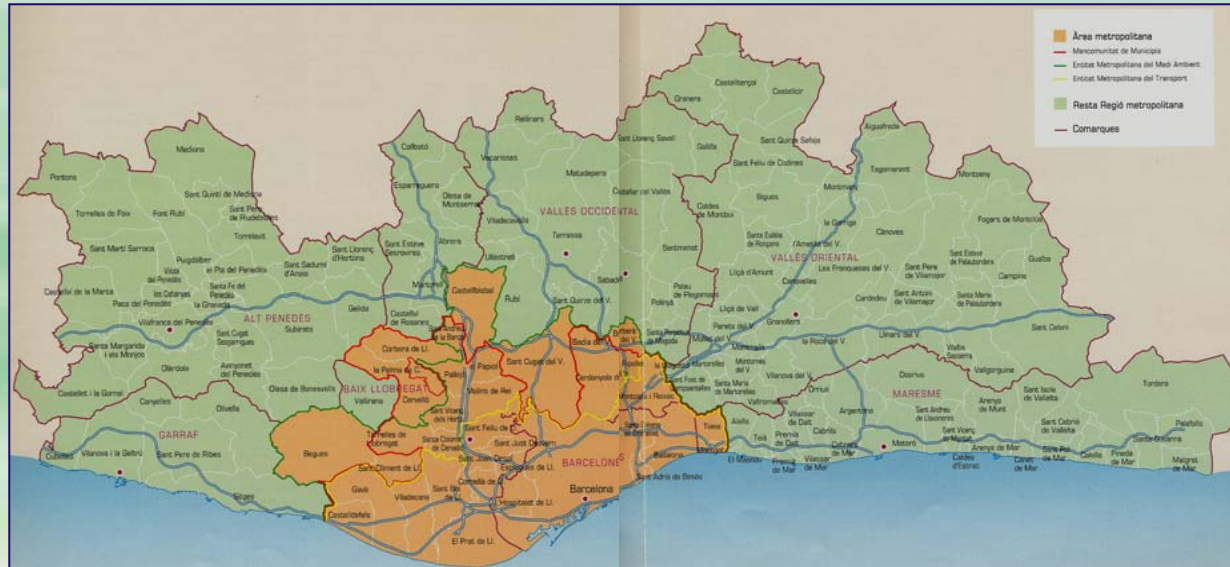
EUROPEAN CITIES AND REGIONS NETWORKING FOR INNOVATIVE TRANSPORT SOLUTIONS

## Index

- **Mobility patterns.**
- **Barcelona road safety. General data.**
- **Barcelona road safety. Motorbikes.**
- **Motorbikes: strong points and weak points.**
- **Improving road safety: actions in progress.**



# Mobility patterns



**Barcelona: centre of a Metropolitan Region (164 municipalities and 4,4 million inhabitants).**

**Density: 1.359 inhabitants/km2**



**Barcelona: very densed city (1.600.000 inhabitants and 101 km2)**

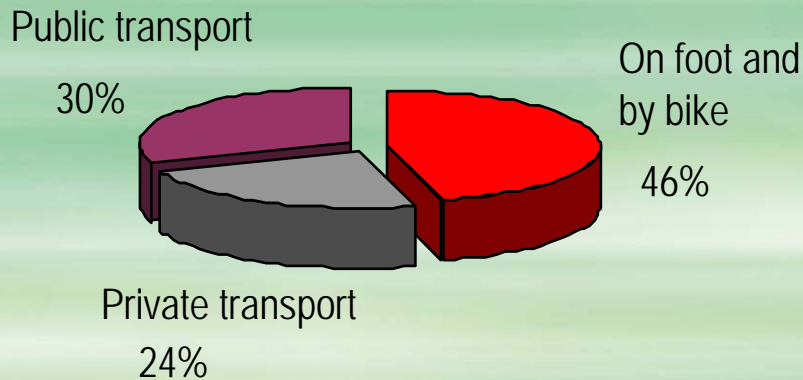
**Density:15.963inhabitants/km2).**



# Mobility patterns

## Inner trips:

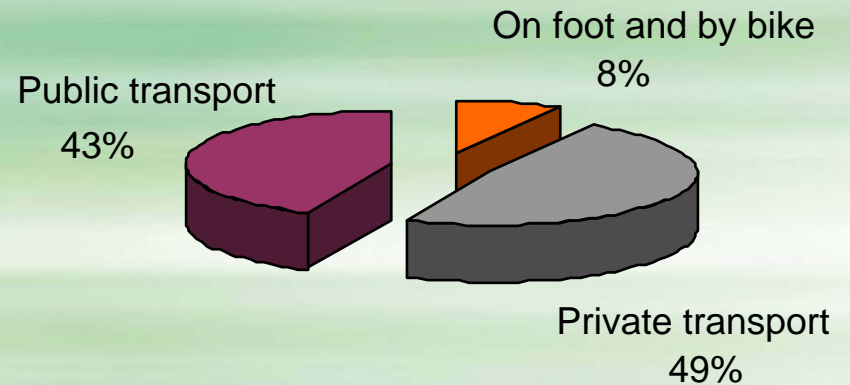
**4.694.000 (61,57%)**



**28% of the private motorized transport is carried out by motorbikes (247.550 trips/day).**

## Commuting trips:

**2.929.000 (38,43%)**

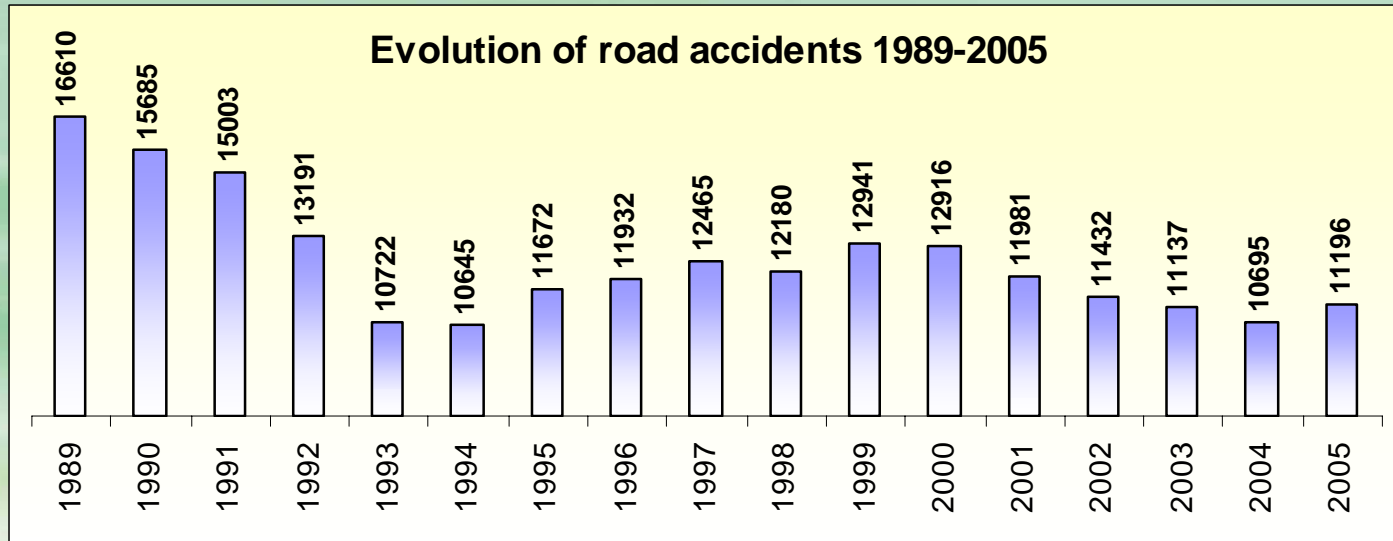


**4% of the private motorized transport is carried out by motorbikes (57.670 trips/day).**



## Barcelona road safety. General data

### Evolution of road accidents in Barcelona:



**In 2006, the number of road accidents decreased 2.9% (10.875 accidents)**



## Barcelona road safety. General data

### Evolution of road accidents in Barcelona:

	2000	2001	2002	2003	2004	2005	2006	(% variation 06/05)
<b>Accidents</b>	12.916	11.981	11.432	11.137	10.695	11.196	10.875	<b>(-2,9%)</b>
<b>Accidents amb victims</b>	11.348	10.755	10.356	10.096	9.744	10.167	9.821	<b>(-3,5%)</b>
<b>Wounded</b>	14.816	14.383	13.765	13.470	12.906	13.489	12.887	<b>(-4,6%)</b>
<b>Casualties</b>	54	59	35	46	42	49	48	<b>(-2,1%)</b>



**The number of accidents with victims decreased 3.5%.**

## Barcelona road safety. General data

### Evolution of road accidents ... According to the type of vehicle:

	Any 2004	Any 2005	Any 2006	% Variation 06/05
Private car	10.042	10.210	9.320	-8,72
Motorbike	3.078	3.724	4.234	+13,7
Moped	3.517	3.350	3.157	-5,76
Van	1.403	1.391	1.447	+4,02
Lorry	593	457	422	-7,65
Taxi	812	850	838	-1,41
Bicycle	338	394	387	-1,78
Others	609	722	949	+31,44
TOTAL	20.393	21.098	20.754	-1,63

**Although the general decrease of road accidents, motorbikes involved in road accidents has increased 13.7%**



## Barcelona road safety. General data

Evolution of road accidents ... According to the type of accident:

	2005	2006	% Variation 06/05
Abast	1.914	1.812	-5,32%
Multiple abast	322	295	-8,38%
Run over	1.662	1.494	-10,11%
Overturn (more than two wheels)	58	53	-8,62%
Fall (two wheels)	840	893	+6,31%
Front crash	158	118	-25,32%
Front-side crash	3.275	3.150	-3,82%
Side crash	1.805	1.960	+8,59%
Crash against a fix obstacle	1.023	1.021	-0,20%
Altres	522	508	-2,68%



## Barcelona road safety. General data

### Evolution of road accidents ... According to the cause of the accident:

	2005	2006	Δ% 05-06
<b>Drivers</b>			
Lack of attention	2.196	2.024	-7,83%
Don't respect traffic lights	1.241	1.142	-7,98%
Con't respect safety distances	936	864	-7,70%
Improper lane turn	976	988	+1,23%
Don't respect signals (except traffic lights)	794	758	-4,53%
Change of lane without caution	656	713	+8,69%
Improper overtake	477	491	-2,93%
Don't respect pedestrian crossings	450	436	-3,11%
Don't give way on the right	370	333	-10%
Lack of attention to put into reverse	350	373	+6,57%
Lack of attention to go into circulation	308	306	-0,65%
Circulate on opposite direction	71	65	-8,45%
Others	2.336	2.372	+1,54%
<b>Pedestrians</b>			
Don't use pedestrian crossings	401	377	-5,99%
Don't respect traffic lights	226	217	-3,98%
Others	171	159	-7,02%



## Barcelona road safety. Motorbikes

- **Motorbikes: important role in the Barcelona mobility framework**
- **26% of the total of the fleet and 40% of the private car fleet.**
- **The number of motorbike trips keep increasing (5.6% in 2005).**
- **Change of legislation in Spain (October 2004).**
- **Nawadays: more motorbikes and more drivers without experience**



**The number of accidents have increased.**



## Barcelona road safety. Motorbikes

Evolution of road accidents ... According to the driver experience:

Experience	Motorbikes involved in road accidents				% variation 06/05
	2003	2004 (*)	2005	2006	
Less than 1 year	393	478	927	1.154	24,5%
1 year	323	313	413	656	58,8%
2 years	241	278	293	356	21,5%

The number of motorbike drivers involved in road accidents with less than one year of experience keep growing fast (24.5%)



## Barcelona road safety. Motorbikes

Evolution of road accidents ... According to the driving licence:

	2005	2006	Variation 05-06%
<b>Motorbike drivers involved in road accidents</b>	3.624	4.078	+12,52
<b>Motorbike drivers involved in road accidents with licence B</b>	720	1.170	+62,50
<b>% road accidents licence B</b>	19,87 %	28,70%	

**Motorbike accidents:  
main reasons  
(in order of importance)**

**Improper lane turn  
Disobey the traffic lights  
Lack of attention  
Change of lane without caution  
Don't respect distances**



## Motorbikes: strong points

- Tradition and popularity.
- Alternative to private car in urban mobility.
- Contribution to flowing traffic (1 car = 3 motorbikes) → HOV.
- Comfort driving, agile, city models designed.
- “Door to door” (to disappear).
- Good weather conditions.
- Bad weather conditions → motorbike as a necessity.
- Economic.
- Image (young and sportive).
- Barcelona has 167 motorbikes for 1000 inhabitants



# Motorbikes: weak points

**Road safety  
(driving risk. More  
vulnerable and fragile)**

**Environment  
(pollution and  
noise)**

**Parking places and  
improper use of public  
space**



## Barcelona motorbikes 1986



## Barcelona motorbikes 2007



## Barcelona motorbikes 1986-2007



**1986**



**2007**



## Barcelona motorbikes 1986-2007



**1986**



**2007**



## Road Safety Masterplan 2004-2007: actions in progress

**Education and  
formation**

**Participation of  
all stakeholders**

**I+R on  
accidents**

**Urban Police  
controls**

**Forums and  
awareness campaigns**

**New technologies to  
improve road safety**



## Road Safety Masterplan 2004-2007: actions in progress

### Education and formation

- Training courses to motorbikes drivers.
- Road Safety education to children

### Participation of all the stakeholders

- Road Safety Working Group within the Mobility Pact.



## Road Safety Masterplan 2004-2007: actions in progress

### I+R on accidents

- I+R on motorbike accidents
- Improvement of data taken from accidents
- International motorbike working group
- Development of different actions to improve 'Risk Spots'.

### New technology to improve road safety

- 'Video fines' in 30 crossings (higher risk points).



## Road Safety Masterplan 2004-2007: actions in progress

### Urban Police controls

- Main goal: avoid those risky behaviours.
- Alcohol controls.

### Forums and awareness campaigns

- Annual Barcelona Safety Forum (1994-2006).
- Awareness campaigns: 'Use the helmet', 'Drive with caution: avoid accidents'.
- Different road safety publications (magazines, leaflets, etc).





**Thank you very much for your attention!!!**



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