



The integration of mobility and accessibility of workers in prevention management systems in enterprises

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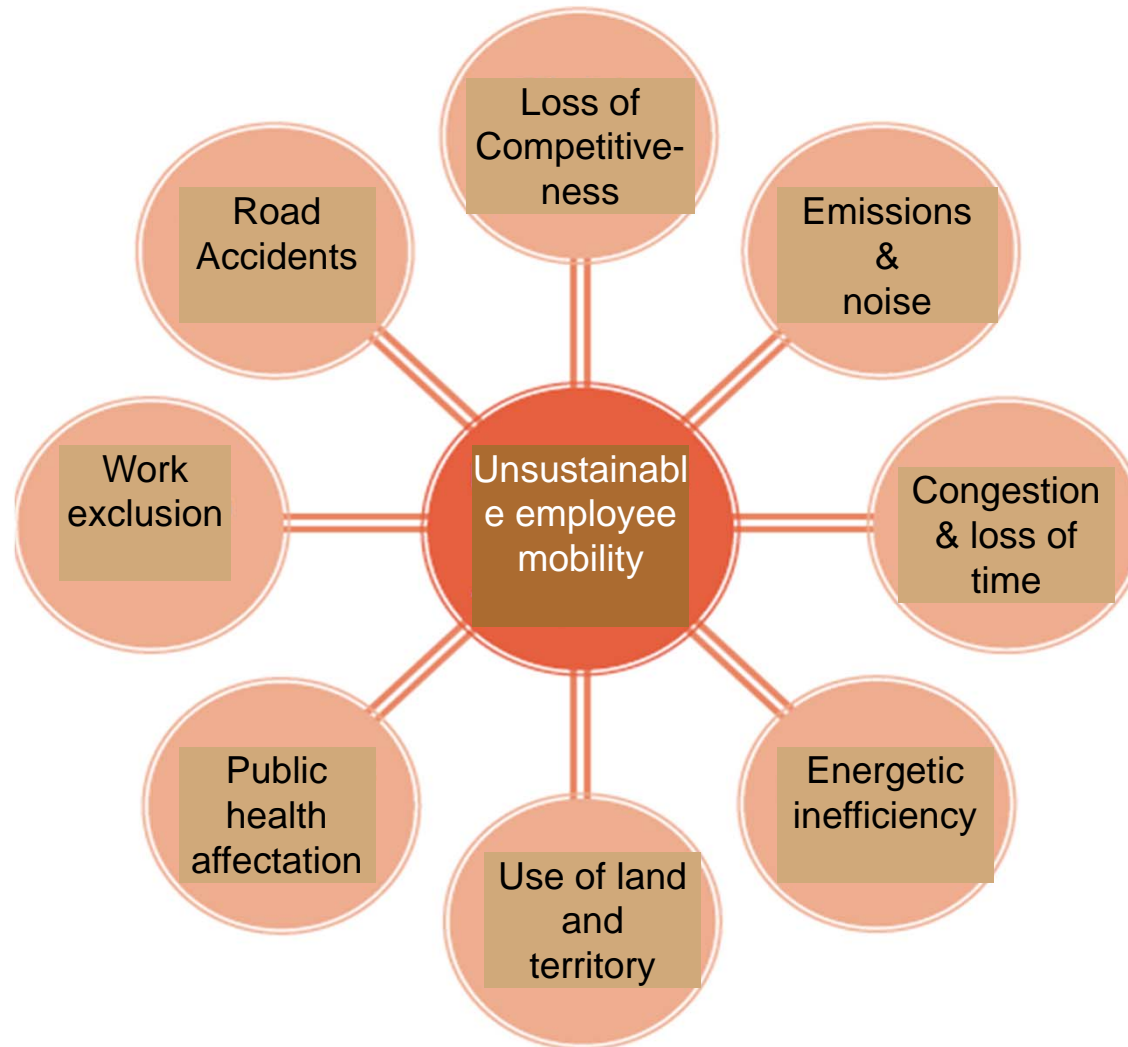
16/07/2014



- **The mobility context**

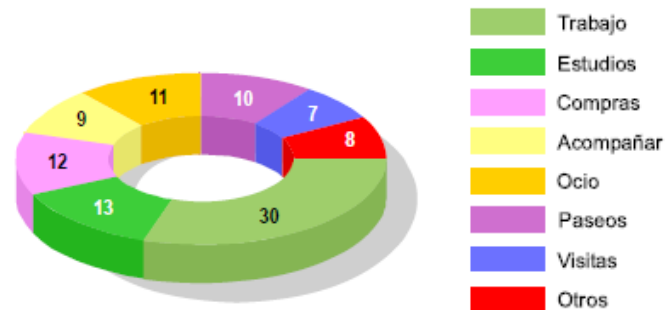
- Work-related road accidents
- The cost of accidents
- Planning and management of mobility
- The mobility manager

■ The impact associated with the current mobility model



■ Mobility guidelines in Spain

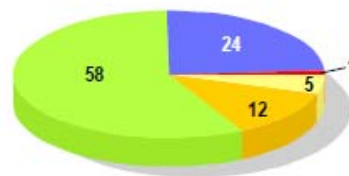
Reason for commuting on weekdays



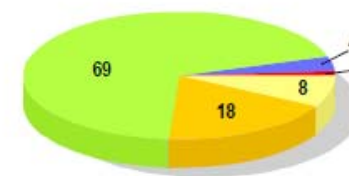
Modal distribution in commutes to the workplace



Total



Área metropolitana



Área no metropolitana

■ Sólo a pie menos de 5 minutos
■ Sólo a pie más de 5 minutos

■ Sólo público
■ Sólo privado

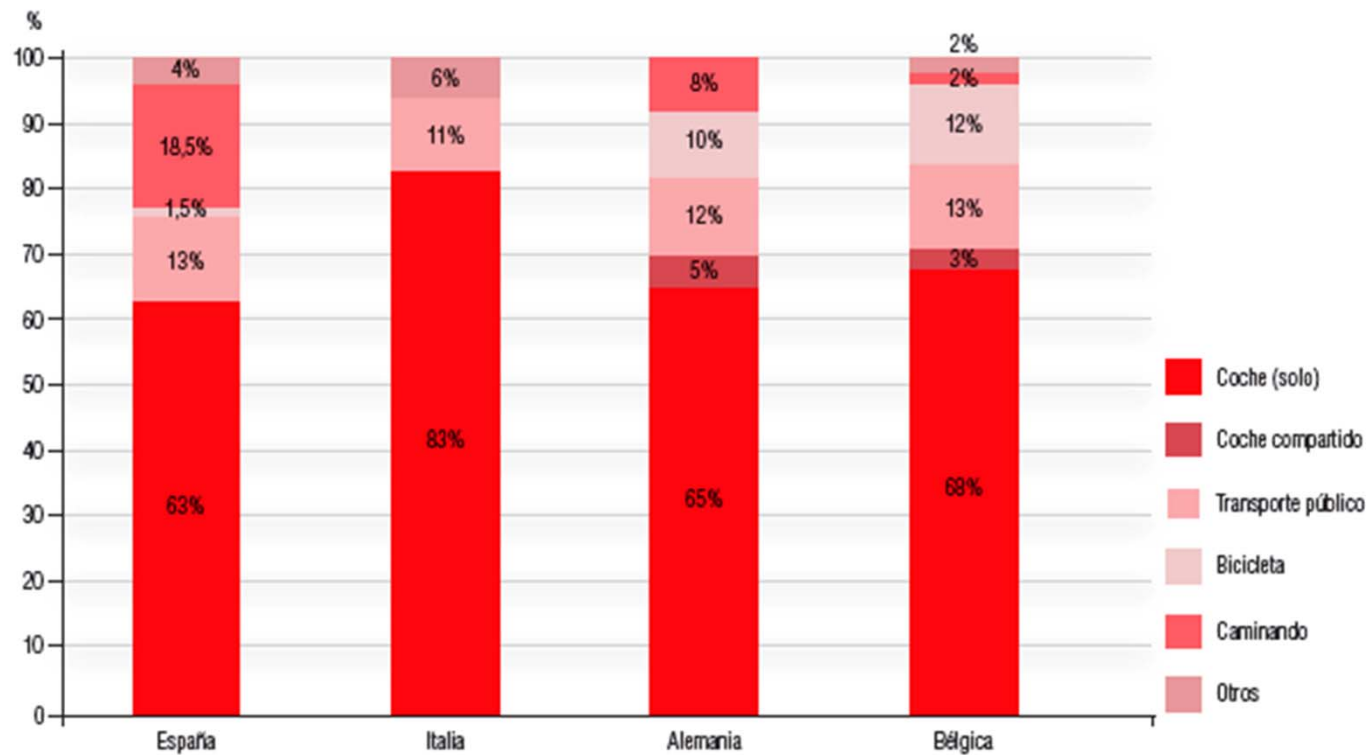
■ Público y privado

Fuente: Movilia 2006



■ Modal distribution in Europe [i.e. 4 countries]

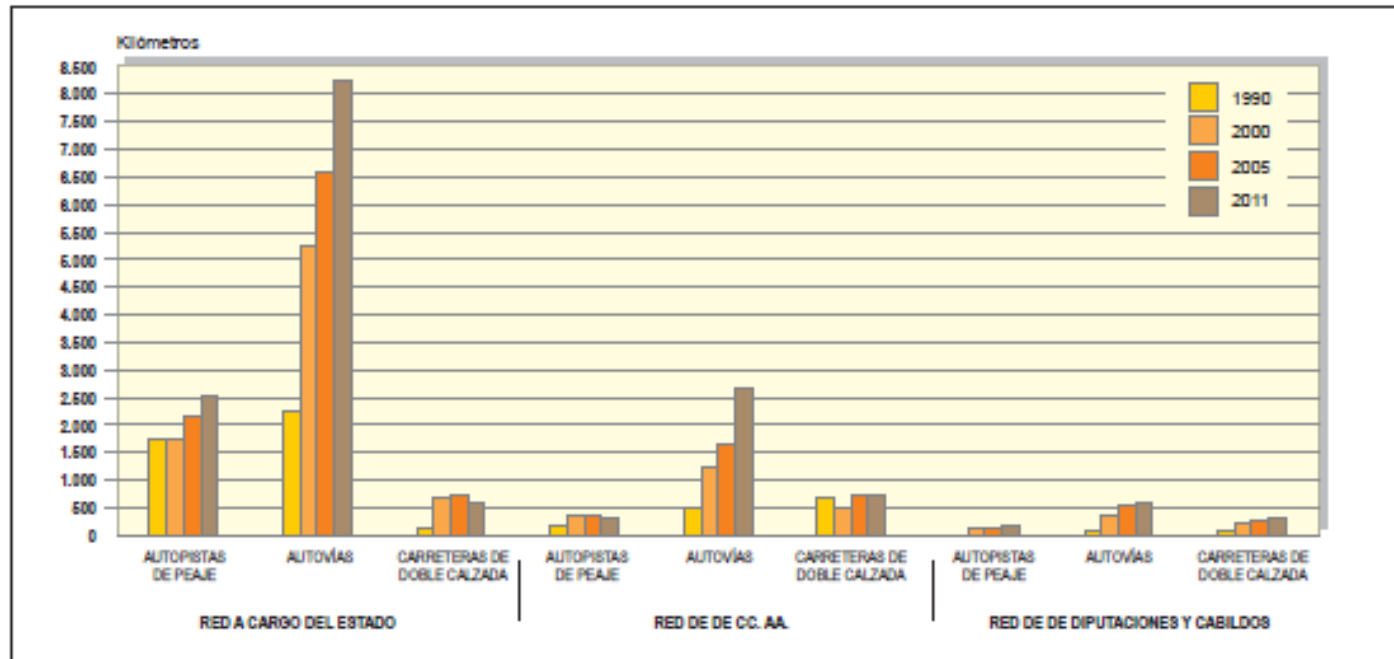
COMMUTING TO AND FROM WORK



Fuente: *Proyecto europeo E-Cosmos*

■ Investment in infrastructures in Spain

EVOLUTION OF HIGH CAPACITY ROADS 1990 - 2011



Fuente: Anuario estadístico 2011




■ The main consequences of this model

The increase of the high capacity road network favours **decentralization and dispersal of work centres** in the territory.

This distance between homes and workplaces requires increasingly **more commuting time**. Commuting in a private vehicle **increases accident risk and stressful situations** mainly associated with road congestions such as fatigue, irritability, loss of resting hours, anxiety...).



- 
- The mobility context
 - **Work-related road accidents**
 - The cost of accidents
 - Planning and management of mobility
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■ The concept

The law stipulates that the following will be considered as **work-related accidents**: any accident a worker should have, when commuting to or from work.

Anything that should occur when a worker is **commuting to or from the workplace**

When there are no **voluntary interruptions** during the commute

Anything that should occur on the **usual route** (not necessarily the shortest)



■ The characteristics

Road accidents involving employees that occur when commuting or traveling in mission, have common characteristics

They occur **outside the physical space of the company**

In most cases **on public roads**

They are both **road accidents and work-related accidents**



THEREFORE, THE RESPONSIBILITY FOR PREVENTION BELONGS TO THE COMPANIES AND PUBLIC ADMINISTRATIONS.



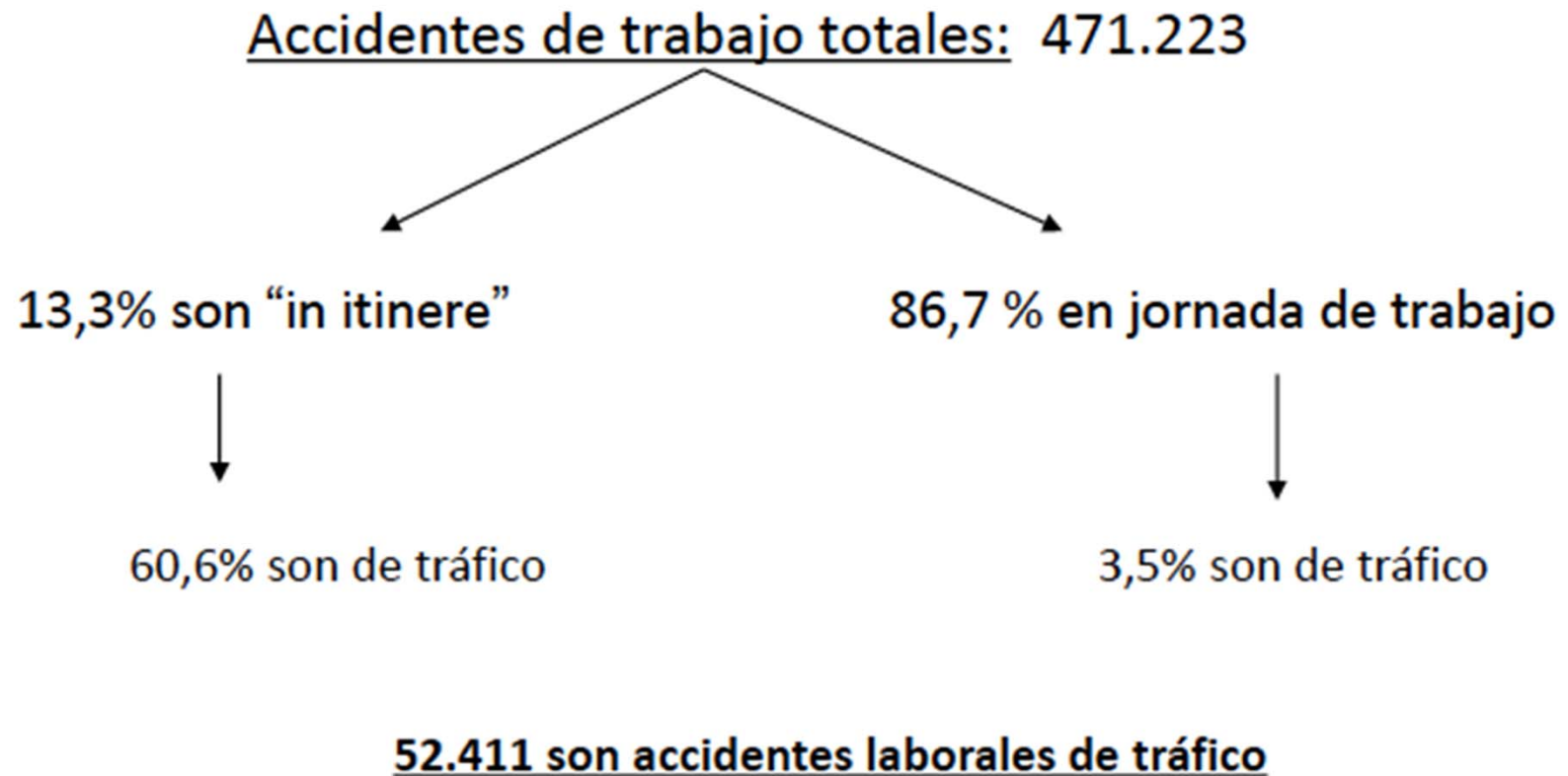
■ Mobility of workers in figures

The number of commutes of Spanish workers in an average working day (to and from work) in 2006 was approximately **37.0 millions** out of a total of 123.3 millions (30%)

Source: Data of the Survey on the Mobility of People Residing in Spain 2006-07 (Movilia) periodically drawn up by the Ministry of Development



■ Work-related accidents in figures



Source: <http://www.seguridadviallaboral.es/>



■ Work-related accidents in figures

Of the 471,223 work-related road accidents causing sick-leave that occurred in 2012, 52,411 were road accidents (more than 10%).

Every day there are 143 work-related road accidents causing sick-leave (including Saturdays and Sundays).

Of the work-related fatal accidents occurred in 2012, 55.5% were while commuting, whereas 44.4% were during the day.

Work-related road accidents account for 39% of work-related fatal accidents.



3 OUT OF 10 WORK-RELATED FATALITIES ARE DUE TO TRAFFIC CAUSES.



■ Work-related accidents in the rest of Europe

WORK-RELATED ACCIDENTS WHILE COMMUTING:

- Belgium: 45% of deaths and 10% of work-related accidents.
- Finland: 45% of deaths and 13% of work-related accidents.
- France: 47% of deaths and 10% of work-related accidents.
- Germany: 43% of deaths and 15% of work-related accidents.
- Italy: 21% of deaths and 6% of work-related accidents.
- Portugal: 16% of deaths and 6% of work-related accidents.




■ An X-ray of commuting accidents in Spain

11.8% work-related road accidents causing sick-leave are commuting accidents, and there is an **increasing global trend**.

The age group that registers the largest number of commuting accidents among **men, is the 25-44 year-old group**, whereas in **women it is 24 years old or less**.

In 2008 and 2009 of the total number of victims of road accidents, **60% and 54%** respectively, **were work-related accidents** (in mission and commuting).

Of the total of work-related accidents, **70% were commuting accidents and 30% in mission accidents**.

- 
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■ The cost of National Health

Economic losses in the National Health system from the impact of road accidents in 2000-2010 reached **1.21% of GDP**.

It considers **medical expenses** of victims and socially, all people who **stop working and contributing**. It also considers **hypothetical benefits lost** in the National Health system if there are no accidents.

The main costs are:

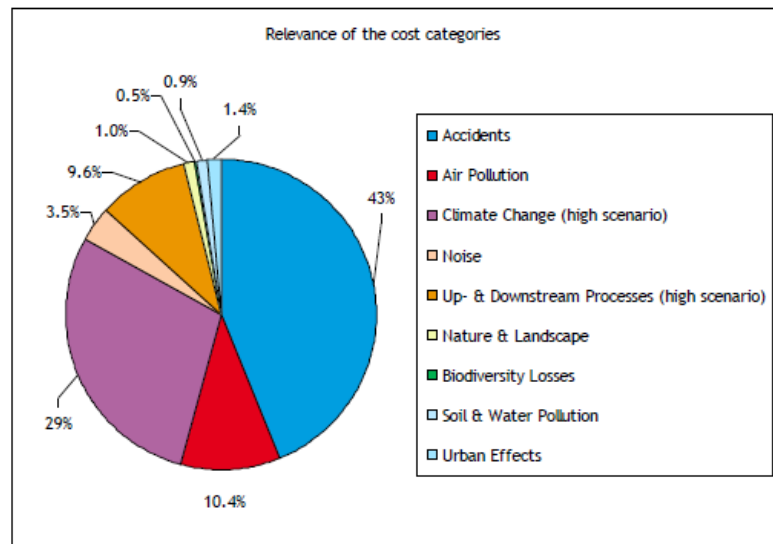
- pensions for permanent disability, retirement and death and survivors pensions (widows', widowers' and orphans)
- temporary disability
- family benefits for dependent children,
- other benefits such as death grants

Source: roadaccidents and their impact on Social Security (2000-2010). Ministry of Employment and Social Security.

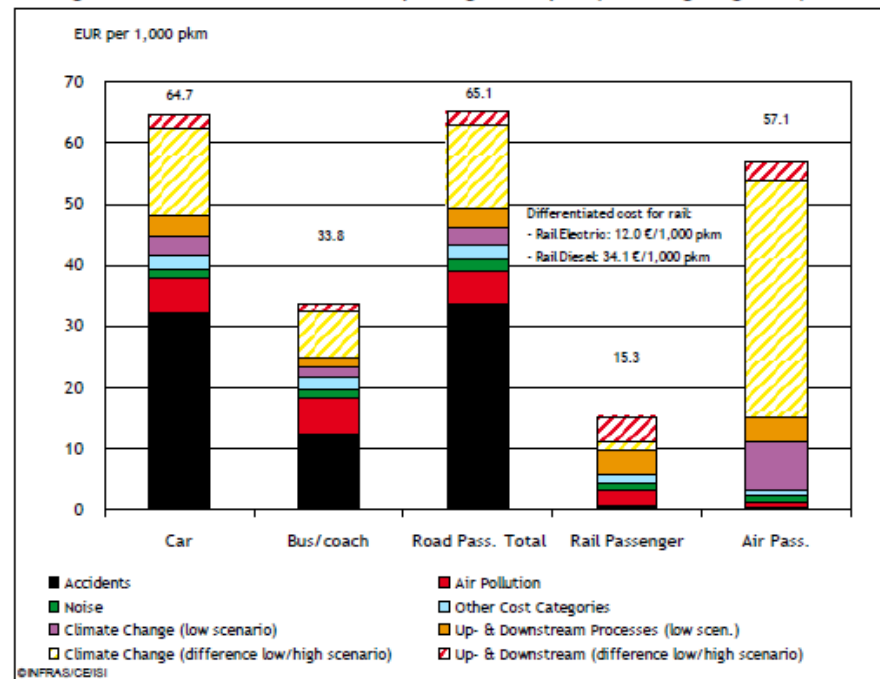


■ The external costs of transport in Europe

In mobility, there are negative externalities that are **excluded from the economic balance** despite the social and environmental impact this poses to the whole of society.



Average external costs 2008 for EU-27*: passenger transport (excluding congestion)



Source: External costs of transport in Europe, 2011



■ The alternative to private vehicles

ACCIDENT RISK IN CONNECTION WITH DIFFERENT MOBILITY MODES

Tipo de vehículo	Nivel de riesgo
Automóvil	100
Autobús	12
Autocar	9
Tren	3
Bicicleta	2

Automobile = base 100

Source: European Commission

Collective public transport **are 10-30 times safer** than the car per passenger/km



■ The preventive action

The principles of preventive action say that:

- Risks are to be **avoided**
- Those that cannot be avoided must be **assessed**
- They must be **addressed at their source**
- Measures must be adopted that put **collective protection** first, ahead of individual protection



■ Basic conclusions

The result of an occupational mobility model overly dependent on the use of private motor vehicles is a high traffic fatality rate...


... that endangers victims first, and also the welfare of society in general as well as business competitiveness, particularly.

This high accident rate can be avoided. Therefore, action must be taken immediately from the public administrations and from the companies, but also from the trade-unions.

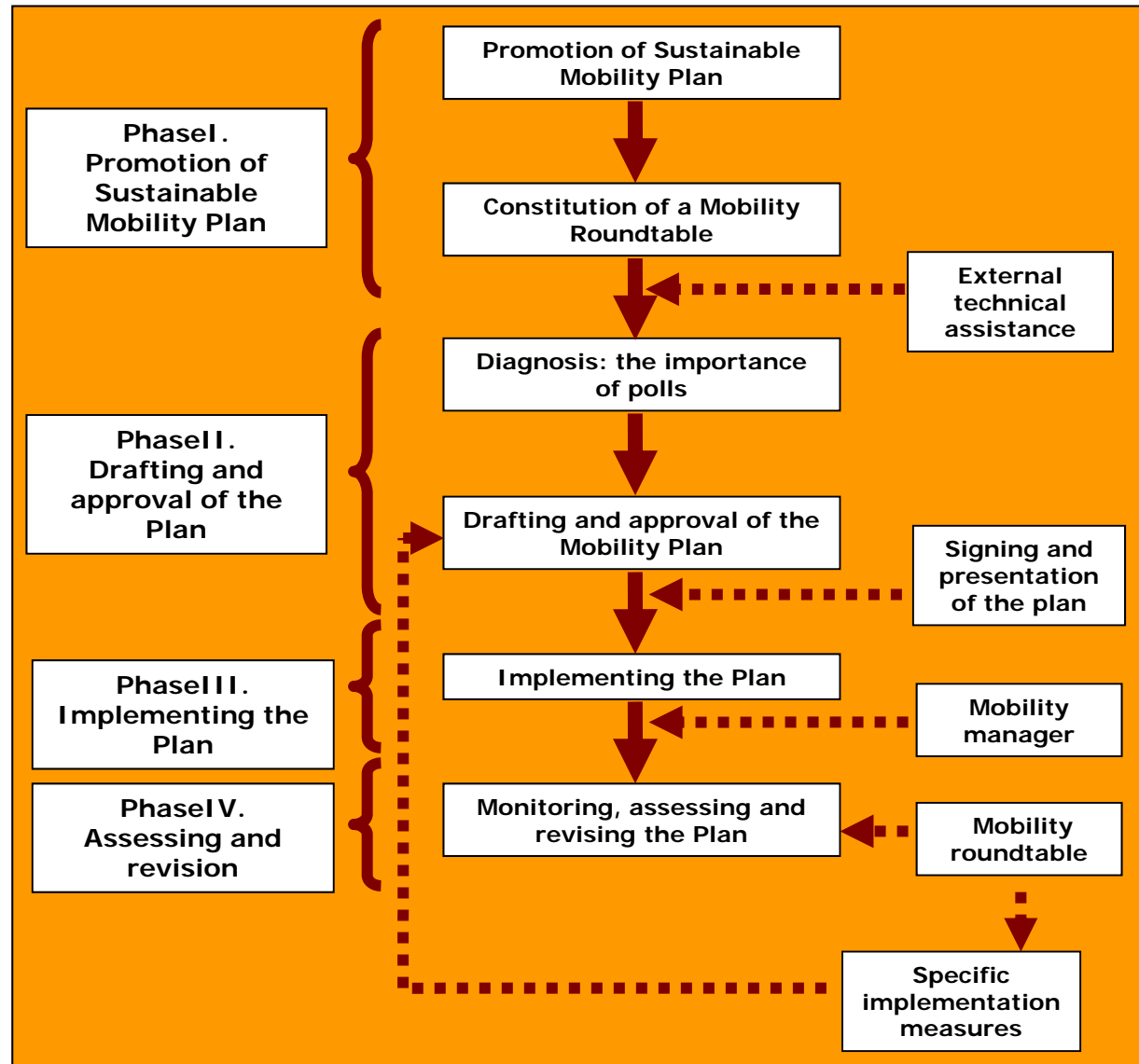


THE BEST PREVENTION PLAN TO PREVENT ACCIDENT RISKS AT ORIGIN IS THE SUSTAINABLE AND SAFE OCCUPATION MOBILITY PLAN.



- 
- The mobility context
 - Work-related road accidents
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■ Procedure for action



■ The constitution of mobility roundtables

Steady spaces for participation and dialogue in which take part employee representatives, managements of enterprises and/or administrations, local and sectorial administrations and transport operators.

External workers must be represented.

Their aim is to promote and assist in implementing the plan and to promote and disseminate the implementation of proposals, while being be a point of reference in the management of mobility in their scope.



■ Sustainable mobility plans (I)

Develop **sustainable mobility plans**.

From the supply and demand of mobility, strategies and intervention measures must be established to promote sustainable mobility. Specifying temporary goals, making operational proposals, determining those responsible, cost and funding and setting monitoring indicators.



■ Sustainable mobility plans (II)

The priority must be to ensure the right to sustainable, safe, healthy, equitable and economic mobility for employees, i.e. reducing dependence on private motor vehicles.

A sustainable mobility plan is a shared commitment between enterprises, public administrations and employees.

A sustainable mobility plan is a dynamic process that never ends, but needs to be reviewed on an ongoing basis.



■ Sustainable mobility plans (the diagnosis)

The Plan must have three parts:

- 1 – **The diagnosis or analysis.**
- 2 – **An action plan**
- 3 – **Control indicators and monitoring of the plan**

1 - Diagnosis. Understand the reality to be able to transform it. Collect information and data that adequately identify problems and dysfunctions.

- . **Characteristics of the work centre.** Sector of activity, number of employees, location, etc.
- . **Demand.** Knowing the habits, needs and problems of employees: the survey
- . **Offer.** Infrastructures and mobility and accessibility services



■ Sustainable mobility plans (the action plan)

2 – Action plan. Raising and promoting corrective and action-oriented measures and making operational proposals specifying temporary goals, including the budget and responsibility for implementing the measures.

- ***Promoting walking and cycling:***

- Ensuring safe and convenient routes with wide paved and well-lit sidewalks, controlling parking indiscipline, etc.
- Installing safe and sheltered bicycle parking, primarily inside buildings. Installing showers and locker rooms.



■ Sustainable mobility plans (the action plan)

- Implementing the workplace bicycle fleet
- Creating public bicycle services
- Publishing a guide with basic recommendations for carrying out short bicycle trips including the safest and most accessible routes
- Calming the surrounding traffic

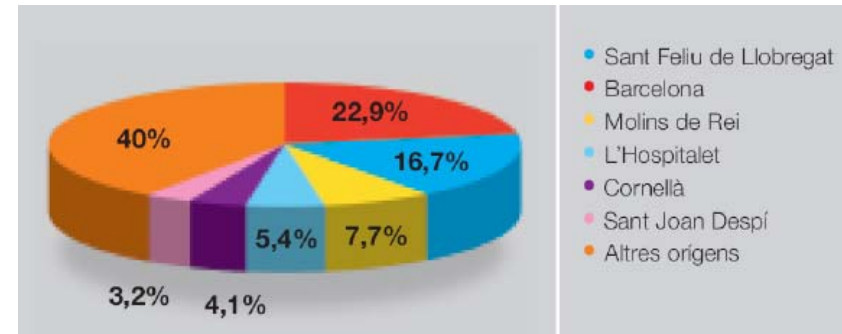


→ An example: El Pla industrial area

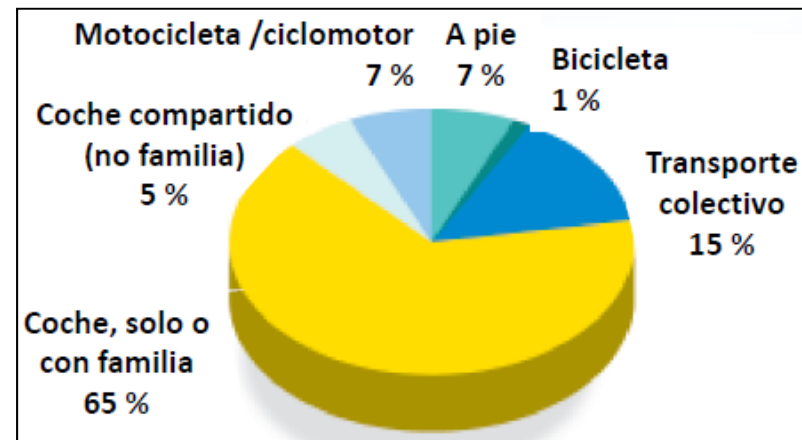
Characteristics of the industrial area



Where the workforce comes from



Modes of transport



In 2010 a **bike path** was made to link the industrial area with neighbouring municipalities on the old N-340.

Parking spaces have been installed in the urban area and around the railway station from which there is a safe and convenient journey to the industrial area.

To meet the increasing demand, some companies have started to provide their **own bicycle parking space**.

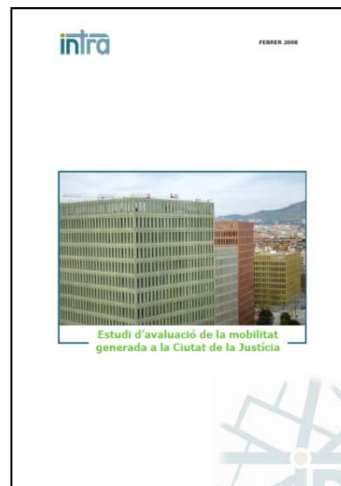


■ Sustainable mobility plans (the action plan)

- ***Increasing commuting by public transport:***
 - Informing employees of the PT.
 - Adapting public transport schedules to the entrances and exits of employees, reinforcing its frequency and capacity.
 - Implementing new services and adapting existing bus lines, changing routes to improve territorial coverage and bringing stops closer to workplaces.
 - Offering discounts on bus passes. RD6/2010 and RD1788/2010, establish exemptions from income tax for employees and from contributions to the National Health for entrepreneurs when they offer passes for public transport.

→ An example: The city of Justice of Barcelona

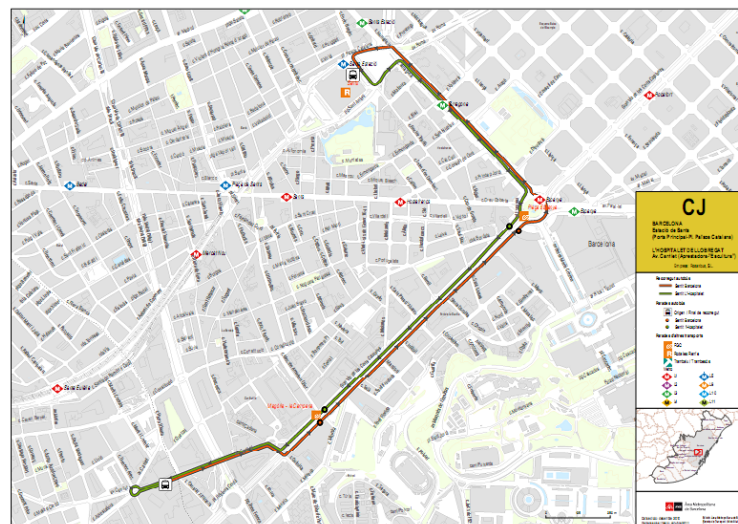
- The new judicial facilities meant moving nearly **2,500 employees** and more than **10,000 visitors daily**.
- In 2008 **The Study** was concluded **on the evaluation of mobility generated**, analyzing the potencial for displacements caused by the new judicial facilities.
- It analyzed the **mobility needs** of the people who would transfer to the new location and set out **proposals favouring access using sustainable mobility**.



- When in 2009 the City of Justice became fully operational, a **bus shuttle (CJ)** was introduced.
- As the promoter of the judicial complex, this bus line **is co-funded by the Department of Justice** of the Generalitat of Catalonia and by Barcelona's Metropolitan Transport Agency.



- The bus connects the Sants station, **the most powerful public transport rail hub of Barcelona**, to the City of Justice.
- It runs every 15 minutes and the journey takes 15 minutes.



- To improve the time it takes, a **bus lane was enabled in the opposite direction on calle Tarragona** to save 5 minutes on the journey.
- In 2009 it registered an average of **700 passengers per day**, in 2010 and in 2012 it reached **1,000 passengers per day**. Amounting to a total of 253,000 passengers per year.

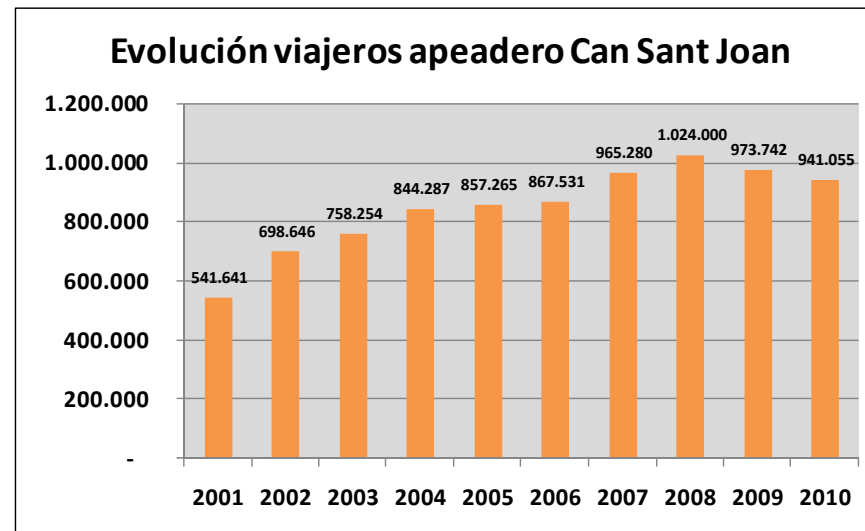
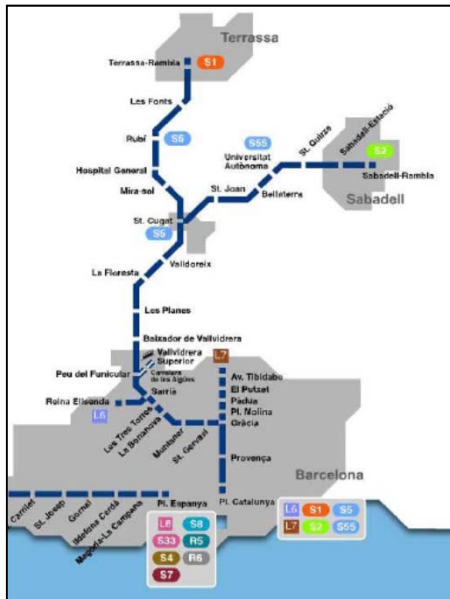


→ **An example: Can Sant Joan industrial area**

- **12,000** employees
- About **40 enterprises** mostly medium and large
- **Mixed industrial area** for services and industry (HP, Banc Sabadell, Sharp, TVE, Correos, Catalana d' Occident, Novotel, etc.)
- **5 schools** (1 univeristy) with 4,000 students



- Of the total of employees that travel to the industrial area, **26% use the railway**: amounting to approximately 1,000,000 passengers per year.
- 60% of rail travelers walk to their workplaces while **40% use the shuttle bus**.



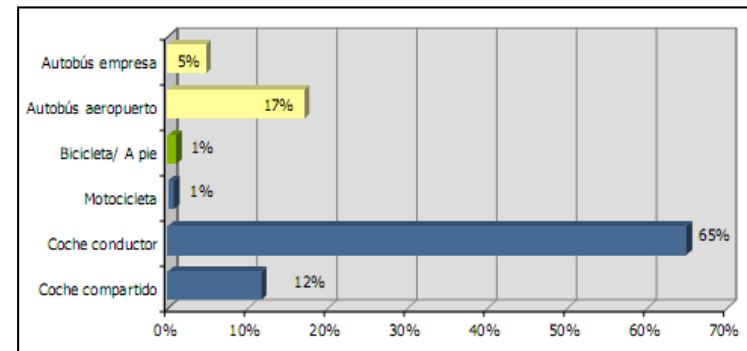
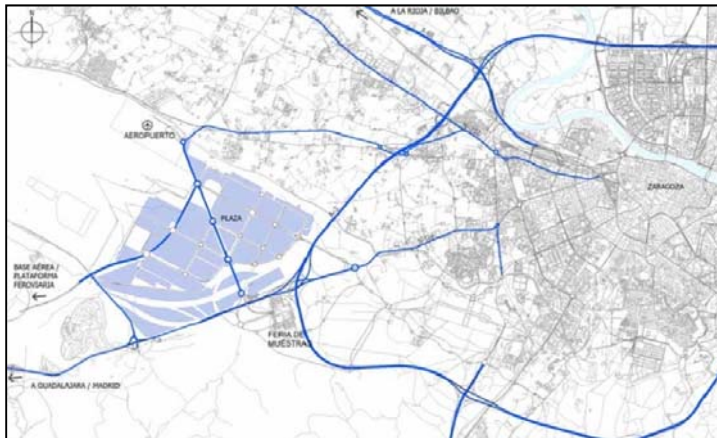
- Intermodal rail-bus: **effective, fast and convenient**
- **Attractive** commute time
- **Exclusively work-related** shuttle bus; no urban route
- **Offer adapted to demand**, schedules and route
- On average there are about **1,500 users per day** and in **2012** there were **370,000 users**.

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TVE / Novotel	6:43	7:07	7:31	7:41	7:46	7:52	7:57	8:02	8:09	8:14	8:19	8:26	8:31	8:38	8:39	8:46	8:53	8:59	9:03	9:10	9:14	9:19	9:27	9:30	9:34	9:47	9:58	10:12	TVE / Novotel	
Gimbernal / THAU	6:45	7:09	7:33	7:43	7:48	7:54	7:59	8:04	8:11	8:16	8:21	8:28	8:33	8:40	8:41	8:48	8:55	9:01	9:05	9:12	9:16	9:21	9:28	9:30	9:36	9:49	10:00	10:14	Gimbernal / THAU	
Hewlett Packard	6:46	7:10	7:34	7:44	7:49	7:55	8:00	8:05	8:12	8:17	8:22	8:29	8:34	8:41	8:42	8:49	8:56	9:02	9:06	9:13	9:17	9:22	9:30	9:33	9:37	9:50	10:01	10:15	Hewlett Packard	
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→ An example: The Logistic Platform of Zaragoza

- In 2005, the logistics Estate PLAZA was inaugurated at a crossroads in the road network on the outskirts of Zaragoza, which currently has a total of 12,000 employees.
- Taking advantage of the the airport bus that passed through the area, it was reconverted to the bus of the Industrial Area with 500,000 users per year.



- The PLAZA Park bus has integrated its fare, increased its timetable, more stops have been added in the Logistics park, which are now sheltered.
- The Sustainable mobility roundtable was created.
- A campaign has started to promote car-sharing.



■ Sustainable mobility plans (the action plan)

- ***Recuperation and expansion of collective company transport***
 - Ensuring access to all employees in the same workplace without exception.
 - Pooling the bus service between the companies for it to become the bus of the Park, industrial area, etc.
 - Ensuring intermodality with other services and public transport modes.
 - Periodically review the routes and timetables, adapting them to new needs.



■ Sustainable mobility plans (the action plan)

- *Private motor vehicle*

- **Sustainable management of parking spaces**

- . Prioritize free parking for people with disabilities, pregnant women, car-sharing, employees with no or little possibility of using alternatives, etc.

- . Put parking rates to finance sustainable mobility actions.

- . Reduce parking spaces in public spaces and within companies and end impunity.



■ Sustainable mobility plans (the action plan)

- **Support for car sharing**
 - . Creating a car sharing agency that promotes the service and ensures the trips
 - . Creating a website to manage and promote car-sharing
 - . Ensuring the best parking spaces within the grounds of companies
 - . Offering economic incentives, gas vouchers, etc.
 - . Ensuring the commute back home, i.e. by the company paying for a taxi
 - . Creating a space in the mobility web portal to contact potential car-sharing users.

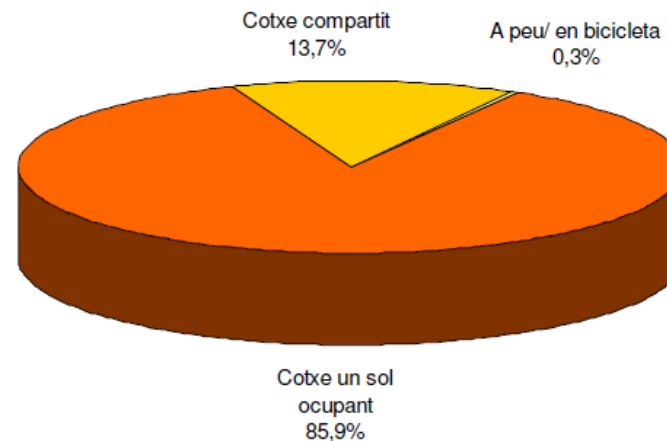


→ An example: the firm Denso

- DENSO is located in the industrial region of Bages, and manufactures automobile components with a staff of **800 employees**
- The management of the company, along with the committee, promoted the **introduction of car sharing**
- The parking spaces were reserved closest to the factory gate for, **green parking**



- Twice a year, **the company grants 3 prizes of 50 € in gas vouchers** to the employees having accumulated most green tickets.
- The initiative started with 15 spaces, which increased to 31 due to **the acceptance from the employees.**



■ Sustainable mobility plans (the action plan)

- *Other measures:*

- Building a mobility web portal to inform about alternatives to using a private vehicle and to connect with the mobility manager for complaints, suggestions, queries, etc.
- Perform a mobility survey in the workplace aimed at obtaining a certificate of environmental management (EMAS or ISO).
- Disseminating campaign on the mobility plan and of acceptance and awareness of habit changes.
- Develop a mobility handbook presenting all the sustainable modes for accessing workplaces.

→ An example: The City of Justice in Barcelona

- The handbook aims to **educate and raise awareness** on the benefits of sustainable mobility and **report** on the whole range of sustainable modes to access the new court facilities.



Els avantatges de la mobilitat sostenible

Desplaçar-se de forma habitualment en transport públic, en bicicleta o a peu surt més a compte que fer-ho en vehicle privat. Perquè es...

- més eficient,
- més saludable,
- més segur,
- més equitatiu,
- més competitiu,
- i també més econòmic.

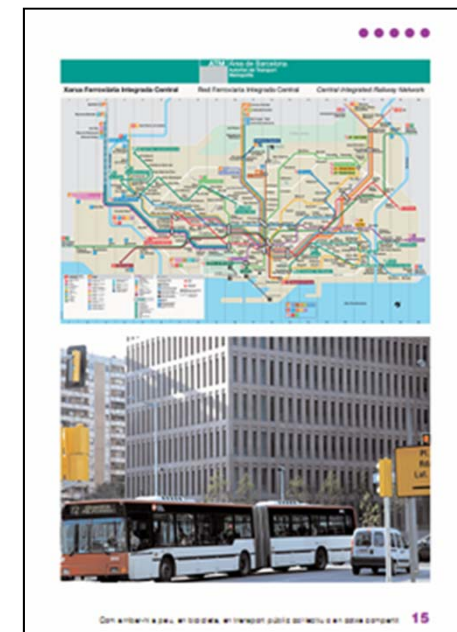
Una mobilitat més sostenible, per tant, beneficia el conjunt de la societat i especialment els treballadors i les treballadores que cada dia es desplacen per accedir al seu lloc de treball.

Comparació entre el cotxe i diferents mitjans de transport per a diversos indicadors ambientals

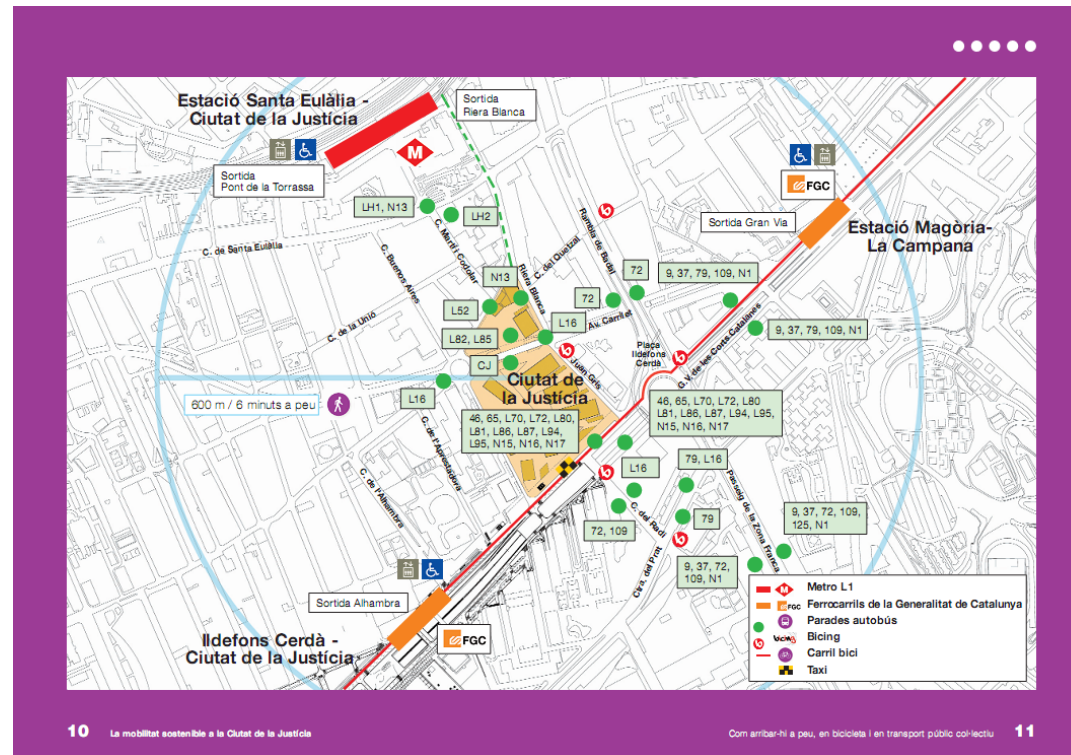
Indicador	Cotxe	Autobús	Bicicleta	Tren
Consum d'energia primària	100%	30%	0%	34%
Emissions de CO ₂	100%	29%	0%	30%
NO _x	100%	9%	0%	4%
HC	100%	8%	0%	2%
CO	100%	2%	0%	1%
Contaminació atmosfèrica total	100%	9%	0%	3%

El valor del cotxe es pren com a referència respecte a la resta.
Font: Guia metodològica para la implantación de sistemas de bicicletas públicas en España. IDAE

4 La mobilitat sostenible a la Ciutat de la Justícia de Barcelona i l'Hospitalet de Llobregat



- The handbook includes a map of the environment with information of the **whole range of sustainable mobility** to access the new City of Justice



■ Sustainable mobility plans (monitoring)

□ Indicadores de control y seguimiento del plan

- Assess the level of implementation of the measures proposed in the plan and also of the results of the implementation of the measures included in the mobility plan. This will allow to assess and review the validity of the proposals and monitor progress.

□ Appoint **mobility Managers**

- A person responsible for promoting the actions of the mobility Plan management, control, organization and monitoring of mobility in the workplace or industrial area. This person will also be responsible for disseminating the sustainable mobility measures.



- 
- The mobility context
 - Work-related road accidents
 - The cost of accidents
 - Planning and management of mobility
 - **The mobility manager**

■ The concept and the functions

They are responsible for implementing the actions of the mobility Plan to manage, control, organize and monitor mobility of the workplace or industrial area. They will also be responsible for disseminating measures of sustainable mobility.

The manager's functions are:

- To implement the decisions of the Mobility Commission
- To ensure implementation of the proposals of mobility of the industrial area
- To monitor the actions carried out and evaluate the degree of implementation and compliance.



■ Functions(II)

- Perform negotiation actions with the different public and private agents associated with the field of mobility with the aim of promoting the implementation of the proposed Mobility Plan.
- Generate and adequately convey information of mobility in the industrial area (public transport services, bicycle, etc.), and distribute it appropriately.
- Hold information, training and advice actions in relation to the promotion of sustainable mobility for employers and employees.
- Act as a link between the various administrations and public transport operators.



■ Functions(III)

- Propose measures of action regarding collective public transport, walking and bicycle mobility, car-sharing and other forms of transport that result in improving overall sustainable mobility of the system.
- Promote and maintain active channels of communication with the commission agents and the information services with employees.
- Promote the publication of information materials on transport services of the industrial area, and generally sustainable mobility.
- Enable a **MOBILITY OFFICE** at the work centre or industrial area with a virtual extension via the Internet.



■ CONCLUSIONS (I)

Having a **Mobility Plan**, una **a Mobility roundtable** and a **Mobility manager** at the work centres is key to preventing commuting accidents.

Cooperation between the various agents with different interests, but with a shared responsibility in fostering sustainable and safe mobility, is essential to reduce accidents.

The involvement of enterprises is key; for this, they must see the social, economic and environmental benefits involved in committing to a new mobility model.

Public administrations must act as intermediaries in the social dialogue and strongly support with their policies of management and infrastructures the promotion of sustainable mobility.

A demanding and propositive trade-union action is a relevant factor for promoting actions to guarantee the right to a sustainable and safe mobility.



■ CONCLUSIONS (II)

A favourable legal framework is a necessary requirement to promote sustainable mobility

A fiscal policy in favour of sustainable modes of transport is a tool that reinforces this option for going to work

An **Observatory of work-related mobility** is necessary to assess and monitor the implementation of mobility plans and their impact on accident reduction



WE MUST ACT NOW TO REDUCE ACCIDENT RATES, IMPROVE AIR QUALITY, MITIGATE CLIMATE CHANGE, AVOID SOCIAL EXCLUSION AND LOWER THE BILL OF TRANSPORT.





Protest requesting public to get to work in Barcelona's El Prat Airport in 2003.



Thank you very much for your attention

Manel Ferri Tomàs

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