



Central Market (1903). Line 1 Tramway (2013)

European Green Capital Award 2016

2. Local transport



An initiative of the
European Commission



2016



Spain

2. LOCAL TRANSPORT

2A. Present Situation

Describe the present situation in relation to local transport and mobility flows from the surrounding region, including any relevant disadvantages or constraints resulting from historical, geographical and/or socio-economic factors which may have influenced this indicator area. Where available, information/data should be provided from previous years (5 – 10) to show trends.

Briefly describe the present general features of the current transport systems (modal shares: walk, bike, car-sharing, public transport (train, tram, metro, bus), structural features and governance arrangements). Include data for the following specific indicators:

- 1. Length in meters of designated cycle lanes along roads (but physically separated from other traffic) in relation to the total number of inhabitants in the city (meters of lane per capita);*
- 2. Proportion (%) of population living within 300 metres of an hourly (or more frequent) public transport service;*
- 3. Proportion (%) of all journeys under 5 km by private car (as car driver or car passenger). Please describe the modes of transport included in calculating the car proportion;*
- 4. Proportion (%) of public transport vehicles classified as low emission vehicles, meaning the proportion of buses among the publicly or privately owned and operated bus fleets that have certified lower emissions than EURO V emission standards.*

Zaragoza is the capital of Aragon and has a 50% of its population. It is a communication node between Madrid-Barcelona and Valencia-Bilbao and a functional centre of commerce, industry, services and administration for the region. It also counts with the biggest land logistic centre of Europe.

Its road infrastructure follows a radial pattern complemented by four ring roads avoiding road traffic in the urban centre.



Graphic 1. The river Ebro divides the city in two halves connected by five bridges

Presently, the 37.8% of trips more than five minutes long are made on foot. The city has an index of road vehicles under 0,4 vehicles/person and over a 97% of its population lives less than 500 meters from public services and green areas.

The general characteristics of the transport system of Zaragoza are a consequence of the Plan of Sustainable Mobility 2006:

Pedestrian mobility

Zaragoza has 30 km of pedestrian or semi-pedestrian tracks and a 56 km long "Green Ring" (North & South) linking the city to its natural surrounding area.

The website of the Consortium of Transport of the Area of Zaragoza shows the network of pedestrian streets, pedestrian tracks and the streets with 30 km/speed limit:

Cycling mobility

Zaragoza has 112.11 km of cycling infrastructures separated from road traffic and 100 km of trails, roads and biking boulevards.

The Municipal Bylaw on Traffic includes secondary streets with 30 km/speed limit.

The public bikes system opened in 2008 counts with 130 station and 1,300 bikes.

Waiting for a new survey on mobility, a 9.8 % of the population uses the bike every day, compared to the national average of 6.6%.

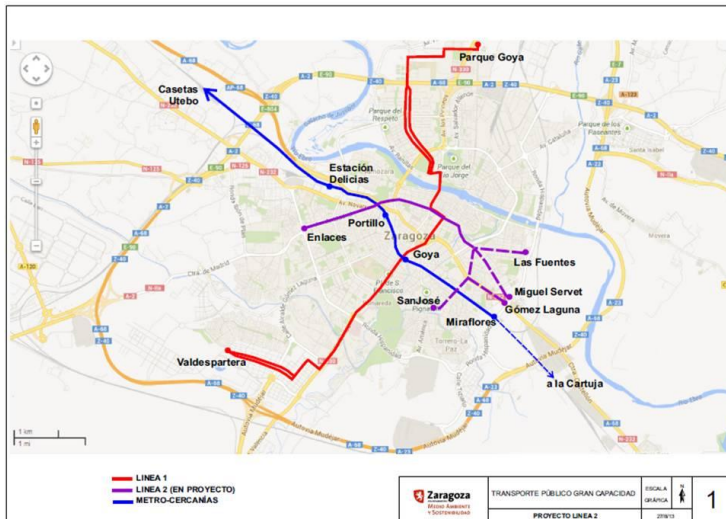
Public transport: bus

The bus fleet is composed of 356 vehicles: 11 give service to people with severe reduced mobility, three to the Tourist Bus service, and the rest (342 vehicles) to 44 bus lines for the whole metropolitan area.

The integration bus-tramway has created a network of 602 km, with 17.9 million km covered every year.

Public transport: tramway

The first tram line (*graphic 2*) was launched in 2013 with 12.8 km and 80.000 passengers/day.



Graphic 2. Public transport with a high capacity

The tram has produced a considerable reduction of traffic in the main thoroughfare of the old town with the suppression of two lanes in every direction. Other two important street of the city centre are only used now for the tram, pedestrians and cyclists:

- (1) The length of cycling infrastructures separated from road traffic is 112.11 km, with a relation of 0.16 m/person
- (2) An 88% of the population lives less than 300 m from an urban bus stop (*graphic 3*)

| | Influence Area from 0 to 100 m | Influence Area from 100 to 200 m | Influence Area from 200 to 300 m | TOTAL |
|------------------|--------------------------------|----------------------------------|----------------------------------|-------|
| Population 2009 | 65% | 21% | 11% | 96% |
| Population 2011 | 62% | 21% | 11% | 95% |
| Network use 2009 | 60% | 20% | 10% | 90% |
| Network use 2011 | 58% | 19% | 11% | 88% |

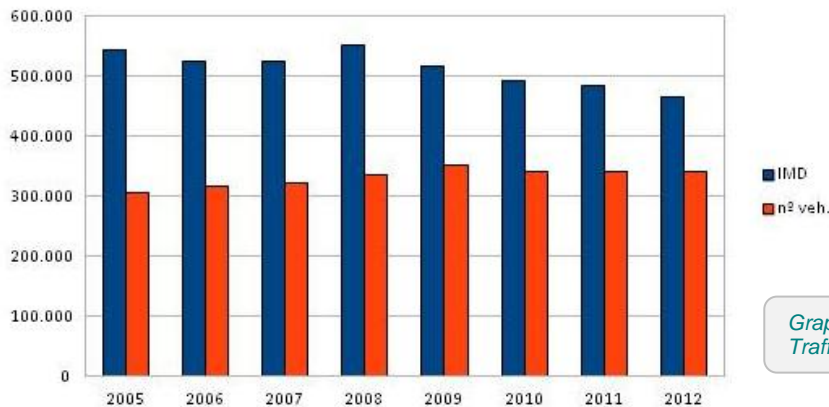
Graphic 3. Population and employment covered (%) by bus

A survey of the University of Zaragoza shows that, with the construction of tram line No 1, a 73.73 % of the population is less than 150 meters from a high-capacity transport stop

(3) according to the survey on metropolitan mobility, 1,915,000 trips/working day take place every day:

- 47.7% on foot
- 7.8 % by bike
- 24% in private vehicle (distance under five km)
- 18.8 % in public transport
- and the rest in taxi, wheelchair, ambulance, skates.

Average traffic intensity has fallen a 14.5 % (28.3 % in the city centre) from 2005-2012, whereas the number of vehicles registered has increased an 11.8 % (graphic 4)



Graphic 4. Relation between Average Traffic Intensity – Vehicle Fleet

(4) 30% of the fuel used in public transport is biofuel. The fleet complies with regulation EURO V and works totally with B30.

From August 2013 the vehicles will be renewed by a new concession firm:

registered before 31/12/2014
from 01/01/2015

with EEV vehicles
with Euro6 vehicles

2B. Past Performance

Describe the measures implemented over the last five to ten years. Particular reference should be given to achievements in reducing congestion, encouraging a shift away from transport by private car, and improving environmental performance and efficiency of transport. Include information on hours lost to congestion (to get in and out of the city during peak hours).

Make reference to integrated transport, land use planning as well as stakeholder involvement.

Comment on which measures have been most effective, enabling frameworks and lessons learned.

The City of Zaragoza is decided on changing its present day urban model. The goal is to reach a more sustainable and safe city by fostering public transports as the tram as well as biking and trips on foot.

This strategy is based on several elements:

Recovery of the tram as a means of transport

The last Spanish tram line closed in Zaragoza in 1976. Line 1 North-Centre-Southwest, with 12.8 km, opened in 2013.

An immediate result has been that traffic over Santiago Bridge (one of the main thoroughfares for going in and out of the city) has seen traffic reduced in a 68.1 % (*graphic 5*).



Graphic 5. Comparison of Coso Str. with the passing of the tram

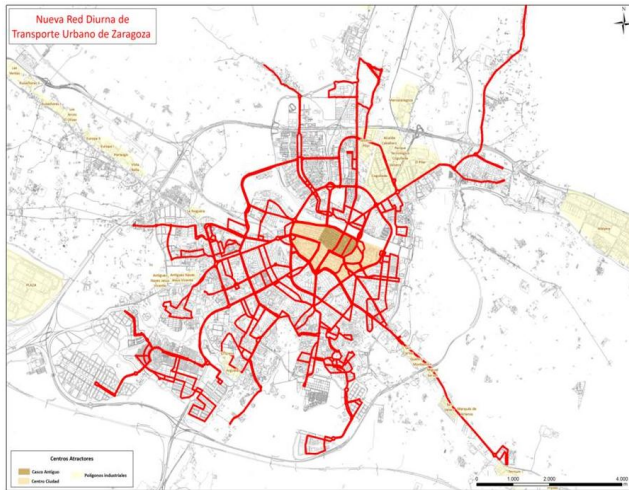
According to a survey made in 2011, over a 25% of users -nearly eight million- approve this new way of transport.

The tram does not use catenary in the stretch crossing the old town but fast charge accumulators, a new system that has awakened the interest of other cities for its future tram plans.

The system of tram priority traffic lights, which has counted with the collaboration of the Municipality, is another technological element that, besides the application of CIT to urban mobility, has put Zaragoza on the forefront of European Smart Cities.

Renovation of the layout and the fleet of urban buses

The launching of the tram has produced redistribution in the network of urban buses in order to integrate both means of transport with a more efficient service in the city centre (*graphic 6*).



Graphic 6. New Daytime Network of Urban Transport of Zaragoza

From the 44 lines covering the whole metropolitan area, two are circular, two are shuttle services to highly demanded places (cemetery and Venecia shopping mall), six are shuttle buses linking several neighbourhoods with the tram, and 34 give service to the rest of the network.

With the implementation of the stage two of the tram, the Service for the Management of the Collective Urban Transport by Bus has been tendered. As a consequence, the number of kilometres and the present number of buses will be reduced from 1 August.

Launching of the commuting train East-West

This line connects from 2008 population centres placed at both edges of the city. Goya Station was opened in 2012 in the city centre, producing an important increase in the number of users during last year (44%). From 2008, there has been an increase of a 77 %.

Fostering the use of private electric vehicles

Zaragoza counts since 2010 with 45 points for recharging electric vehicles. The dealer company renting these vehicles for hours have reached a figure of 3,000 users, over a 50% of the total of users in Spain.

Promotion of the use of hybrid vehicles

Municipal By-Law 6 for motor vehicles establishes discounts for hybrid vehicles and vehicles classified by the energy used.

A significant case is that of the taxi. A 17.5 % of them are hybrid and the first electric was launched this year.

Promotion and incentives for the creation of innovative mobility companies

The firm *Hello By Car* has launched a service of car sharing in collaboration with the City of Zaragoza.

Fostering the use of bikes

In the last years, Zaragoza has focused on the construction of infrastructures for bikers separated from road traffic to foster its use as a daily means of transport. The existing network has been multiplied by 10 in only 10 years, and a public renting system with 130 stations and 1,300 bikes has been opened

Zaragoza has a 41.5 % of bike users, a percentage three points over the national average. Nearly 55,000 people use the bike every day or nearly every day:

- 9.8% use the bike nearly every day,
- 9.5% at least once a week
- 7.4% uses the bike on weekends
- 8.8% uses it sometimes every month
- 6.0% uses it with less frequency.

More than 500,000 people of a total of 698,917 know how to ride a bike.

300,000 have a bike for personal use and 69.2 % of homes have at least one bike.

Graphic 7 shows the evolution of cycling infrastructures during the last years. It can be clearly observed the change in the criteria adopted by the City and the importance given to the construction of infrastructures in the urban centre.



Graphic 7. Evolution of Cycling Infrastructures

The average number of bike uses by day continues to be very high compared to other cities with similar systems. During the month of March the average number has been eight uses/bike.

New network of slow streets and pedestrian trails (graphic 8)

Even though in the 90s the biggest part of the streets of the old town were pedestrianized, it has been in 2010 when the Municipal By-Law on Circulation of Pedestrians and Bikers has started to be applied, limiting speed to 30 km/h in 783 urban road that, with an average length of 300 m, represent 235 km of 30 km/speed limit streets.

It can be stressed the positive answer that the tram has had on the citizens of Zaragoza, with 80,000 daily users of Line 1 and the huge boost given to the use of the bike, taking into account that Zaragoza is a university city and bike is becoming a usual way of moving by an important part of the population.

Graphic 8. .30 km/speed limit



Citizens' participation, both in the strategy for the establishment of the tram and above all in fostering the use of the bike, has been key factors for this success. Direct linking trails formed by a specific structure made for bike as well as the 30 km/speed limit streets have also been constructed by the Municipality.

These actions have allowed the traffic in the city has been reduced by 14.5% and 28.3% in the centre. Zaragoza is the European city of over 500,000 inhabitants with fewer traffic jams (Tom Tom Navigator Report)

2C. Future Plans

Describe the short and long term objectives for local transport and how you plan to achieve them. Emphasize to what extent plans are supported by commitments, budget allocations, and monitoring and performance evaluation schemes. Make reference to integrated transport, land use planning as well as stakeholder involvement.

Refer particularly to:

1. *Reduction of overall demand for transport;*
2. *Reduction of individual motorised traffic (passenger and freight);*
3. *Promotion of active forms of transport (walking cycling), efficient public transport, and CO₂-free city logistics;*
4. *Promotion of less polluting technologies, fuels (including renewable energy), behaviours and practices for passenger and freight transport;*
5. *Adoption and implementation of Sustainable Urban Mobility Plans and other integrative approaches.*

Reduction of congestion and improvement of regional mobility flows.

As far as **cycling mobility** is concerned, the Master Plan for Biking (2010–2025) states that the municipal policy for boosting the use of the bike as a means of transport in our city must be comprehensive, foster the use of sustainable means of transport as a real alternative to the motor vehicles as well as its acceptance among the citizens and the promotion of cycling culture.

The plan considers adding a total of **40 km of separated roads** in the urban layout and urges to correct and improve determined points of the network, maintain them, reinforce the number of existing bike parks, and foster intermodality with other systems of transport. A figure of 130 km of cycle tracks will be reached at the end of the year.

Moreover, the Barometer of the Bicycle, apart from giving us data and information on the effects of the policy for the integration of the bike carried out in the last years, has proved the potential of the bicycle in a city such as Zaragoza in which rainfall is scarce and sloping streets make it easier the use of non-motorized means of transport. (*graphic 9*)



Graphic 9 Downtown pacified

According to the revision made by the PIT (Intermodal Transport Plan/2006), it exists more than 13 km of bus lanes in the urban road layout of Zaragoza, the majority of them one-way roads. Scarcely two kilometers of the road layout are double-lane streets (in other words, around a total of 4 km of bus lanes). These lanes are not exclusively for buses but taxis are allowed when they are occupied. New **lanes exclusively for buses** as well as a pilot experience of **traffic lights priority for buses** will be built by the new company in charge of the public bus service.

Several lanes of Zaragoza are exclusively reserved for buses which favours shorter bus trips whereas private vehicles must employ longer alternative routes such as Conde de Aranda and Coso streets.

Related to environmental education and public awareness, it has been launched this year within the framework of the actions on Climate Change and Mobility, the project *Camino Escolar* (*School Road*) (*graphic 9*). In June 2013 was carried out a test in two schools of the city, and in this academic year this project will be extended to ten more education centres. **The goal is to reach a 70% of the schools of the city participating in Camino Escolar by the year 2020.**



Graphic 10. Camino escolar. (School Trail) June 2013

Other actions foreseen:

- previous study of Tram Line 2 East-West, with a possible stretch to Torrero neighbourhood. The project is right now on its final project stage and its estimated cost is 200 million Euro
- extension of the bike system to the whole city
- construction of more park cars
- reduction in the number of public buses after the opening of tram line 2
- renovation of public buses from 2015 aiming at reaching an 80 % of hybrid and electric vehicles in 2020
- in the long run, implementation of a commuting train service to connect population centres in the South of the city with Zaragoza Logistic Platform and the city centre. It is currently in its study stage.

2D. References

Legislation

- Municipal Bylaw on Circulation of Pedestrians and Cyclists http://www.zaragoza.es/ciudad/organizacion/detalle_Normativa?id=622

Surveys and Indicators

- Bicycle Master Plan
<http://www.zaragoza.es/ciudad/viapublica/movilidad/bici/plan.htm>
- Survey on Zaragoza Agenda 21 /record of actions 2000/2011
http://www.zaragoza.es/ciudad/medioambiente/agenda21/memoria_agenda21.htm
- Intermodal Transport Plan
<http://www.zaragoza.es/contenidos/movilidad/pdf/procerancias.pdf>
- Ebrópolis/Strategic Plan for Zaragoza and its Surrounding Area
<http://www.ebropolis.es>
- Ebrópolis/ Controller frame. Indicators
<http://observatoriourbano.ebropolis.es/web/observatoriourbano/arb/interior.asp?idArbol=196&idNodo=196>
- Survey on users´ satisfaction 2012
http://www.zaragoza.es/ciudad/noticias/detalleM_Noticia?id=142033
- Survey on Zaragoza sustainability 2012
<http://www.zaragoza.es/ciudad/medioambiente/agenda21/observatorio/indicadores.htm>
- Zaragoza strategy for mitigation of climate change and improvement of air quality
<http://www.zaragoza.es/contenidos/medioambiente/EstrategiaCCCAZ.pdf>
- Zaragoza strategy for adaptation to climate change
<http://www.zaragoza.es/ciudad/medioambiente/atmosfera/estrategiasadaptacion.htm>
- Zaragoza strategy for a sustainable management of energy. Horizon 2010-2020
<http://www.zaragoza.es/contenidos/medioambiente/estrategia-gestion-sostenible-2012.pdf>

Links to useful web pages

- Bike
<http://www.zaragoza.es/ciudad/viapublica/movilidad/bici/>
- Bike-rent Public Service
<https://www.bizizaragoza.com/>
- 30 km/speed limit streets
<http://www.zaragoza.es/ciudad/viapublica/movilidad/bici/carril/pacificadas.htm>
- Bus
<http://www.urbanosdezaragoza.es/>
- Tramway of Zaragoza
<http://www.tranviasdezaragoza.es/>
- Pedestrian streets and 30 km/speed limit streets
http://itinerarios.consortiozaragoza.es/index.php?option=com_content&view=category&layout=blog&id=6&Itemid=14
- Mobility
http://www.zaragoza.es/ciudad/risp/buscar_Aplicacion?&temas_smultiple=Movilidad

- How to move
<http://www.zaragoza.es/ciudad/viapublica/movilidad/>
- *Camino Escolar* Project
<http://www.zaragoza.es/ciudad/caminoescolar/>
- Commuting lines
<http://www.zaragoza.es/ciudad/viapublica/movilidad/movi/cercanias.htm>