ARTICLE FROM THE BOOK:
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The First Step in Developing a Bicycle Infrastructure - The choice of Seville by bike.

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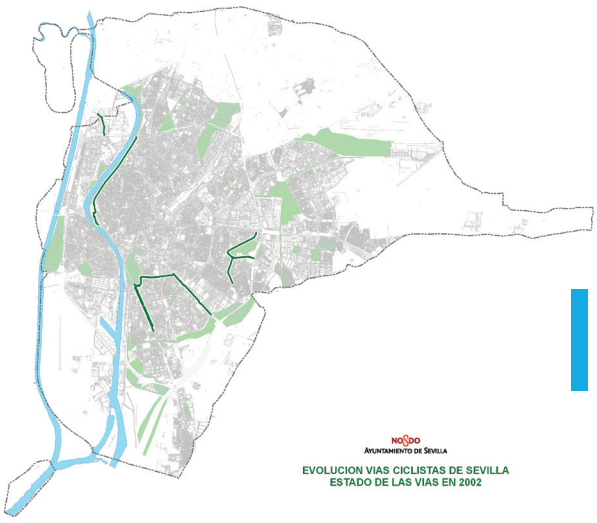
Introduction

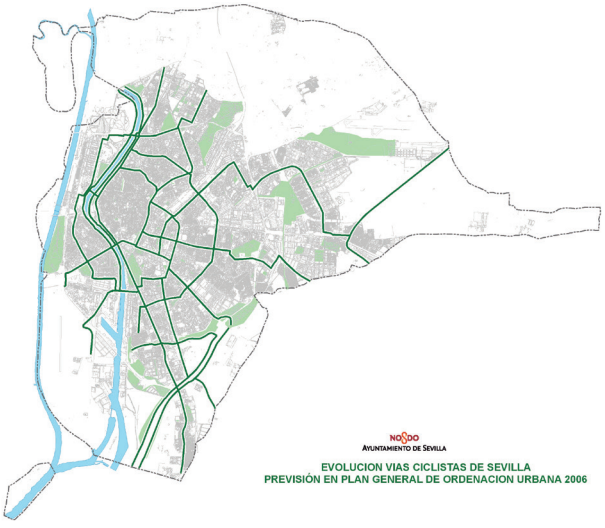
The first project for the implementation of a traffic lane specifically dedicated to cyclists in the city of Seville was developed in 1994-95. Its route runs along the riverside walk on the left bank of the Guadalquivir River Basin, from the Triana bridge to the Alamillo Bridge, a distance of 3.5km, and its function was essentially for leisure and recreation. During the next ten years, more sections were built, reaching a total of about 12 km, representing less than 1% of the length of public, municipally owned road.

A new General Plan of Urban Planning of Seville has been under way since 2001, in which a regional strategy for urban mobility will be formulated based on the development and integration of all systems and modes of public transport in the city, already existing or planned: railroad, subway, urban and metropolitan reserved platforms, the bikeway network and the pedestrian network, including strengthening non-motorised forms of transport (pedestrian and bicycle).

The concept that the bike should have its own space, segregated from other modes is a fundamental key to make it a real and effective form of transport in the city, and to gain the support and trust of citizens.



Graphic 1.
Cycle routes in Seville - 2002



Graphic 2.
Network of Cycle Routes proposed in the PGOU of Seville - 2006

The design of the main network of cycle routes in Seville

The next step in specifically developing the actions relating to the bicycle was the elaboration of the Bicycle Master Plan, which set out the main measures to be adopted by the city of Seville during the period 2006-2010. This document defined the policy programme to promote the bicycle as transportation to service the new system of access

Photo 1. Rondas del Centro Histórico

Photo 2. Paseo de las Delicias

and mobility designed for the city of Seville. In regard to the construction of specific infrastructure, it envisages a network of urban bikeways with a total length of 77 km for the exclusive passage of bikes through eight urban routes, which cover the entire city connecting suburbs with the centre. As a general design criteria, it has been proposed to adopt two-way lanes of 2.5 m average width, physically separated, except for those stretches that are specifically designated otherwise. Their route for the most part follows the platform sidewalk, at the expense of reduced parking spaces or driveways occupied by illegal parking on double lines. The necessary elements to ensure functionality and safety will be installed as well as specific signalling and traffic lights.

Photo 3 Portugal Avenue - Maria Luisa's park

Photo 4 Intercity bus station: Plaza de Armas

The existence of cycling infrastructure in the cities is always an important incentive for the use of bicycles in certain urban travel. However, the selection of a particular mode of transport for a city trip depends largely on a general policy for ensuring accessibility and largely on the chances of finding parking at a moderate distance from the destination. It also depends on cultural factors and lifestyle prevailing in the city, and may be conditioned by the need to access various activities throughout the day. The chain of reasons for daily travel may also be an ally of pedestrian movement and the bicycle, if the city centre, neighbourhood centres and axes have an urban quality that makes sure these movements are carried out effectively, comfortably and enjoyably. A large number of trips is concentrated precisely in these areas for various reasons: work, trade, service, study, culture and entertainment in general.

The definition of the network of bikeways from Seville took shape on a few main routes from the analysis of urban components and functionality of a wide road, and information gathered in field work. The intention was that this network would not only serve to channel the demands of initial trips into some form of common patterns, but also to generate other patterns that previously were very difficult, either due in some cases to the risk resulting from the movement in some places, or in other cases by the excessive length or shortness of the trips. We began the analysis with the design of a theoretical network based on the main relationships between neighbourhoods and the historic centre, major facilities and public spaces, elements of transportation and city-level services and especially intermodal centres. These routes were then adjusted, depending on the location of other equipment of lower rank (schools, markets etc), shopping streets, neighbourhood centres and other nodes of attraction / generation of trips. We also considered the information on the use of the bicycle and the possibilities for future developments. This allowed a programme to be defined to develop the cycle network based on a territorial balancing that takes the form of providing all the neighbourhoods of Seville with bicycle infrastructure within the district, and with easy connectivity with the local road network.

Based on these considerations and analysis, a network of eight main routes was organised that comprises the network of urban structure of bikeways. For this strategy to succeed, it was considered important that this principal network was operational in most of the sections in the shortest time. This was made possible by its classification in the General Plan of Urban Planning as a basic infrastructure of the city, which has allowed accurate economic backgrounds for its complete implementation in less than 12 months.

Also, we established a series of measures to support the development of bikeways and a set of complementary programmes for this strategy. Citizens must perceive the bicycle as an alternative form of transport - effective, safe, useful and beneficial to the entire city. The new infrastructure did however, cause inevitable conflicts in the beginning.

Cycle parking

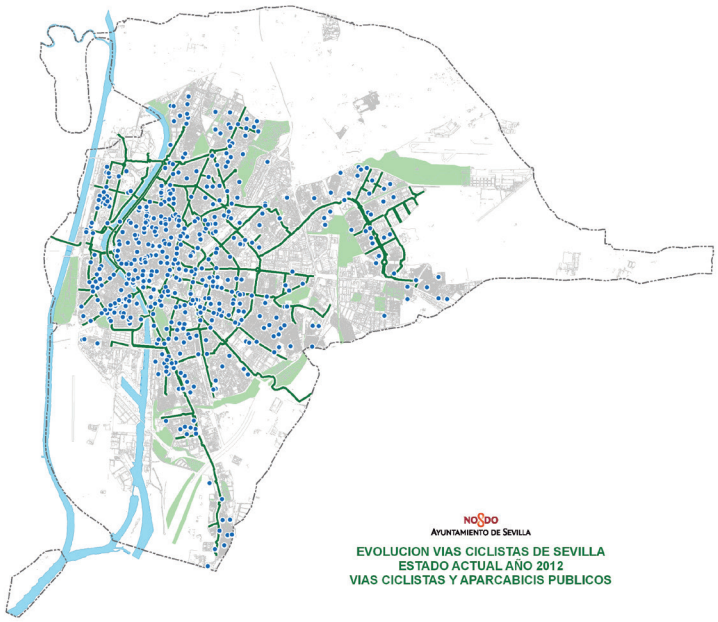
One of the essential measures was the installation of bike racks in strategic and accessible points of the city. The bicycle, as a means of transport, needs to be parked in a safe place and near the point of destination.

The location of these parking spaces is a specific task to be developed over the short and medium term. It is linked to the network management, to be developed in parallel with the extension of the neighbourhood network, so that the construction of a lane on a street or the signalling of a route priority should be associated with a location study of bicycle parking, and thus satisfy the demands generated by the possible existence of infrastructure.

Photo 5. New Plaza Town Hall
Photo 6. Central railway station of Santa Justa
Photo 7. Central railway station of Santa Justa

In both the location of bikes parks and the planning and management of the network of neighbourhood routes, it is important to have the involvement of local sectors supporting non-motorised modes of transport. It's a less expensive measure than the construction of lanes and allows the citizens to recognize the cycling infrastructure and the value of using a bike to have access to the centre of attractions that has this service.

In this first phase, 120 modules of cycle parking were installed, with 1,200 places distributed in public spaces in areas of high concentration of users (schools, libraries, institutions and public services in general). A list of financial allocations, equipment and public spaces located within 300 meters from the main network of bikeways was developed, in order that the installation of parking around town should be evenly distributed. According to the new regulations in the General Plan of Urban Planning of Seville, there is an obligation to provide places for bikes in the new parking garages to be built in the city at a ratio of one for every ten places for motor vehicles. Urbanisation projects in new areas such as redevelopment of roads must also include exclusive spaces for parking bicycles, including proper supports.



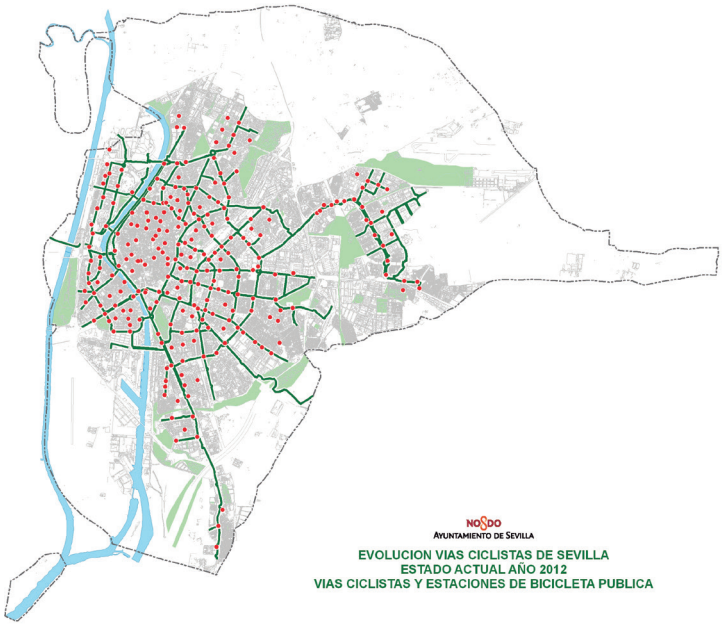
Graphic 3. Network of Cycle Routes in Seville and location of cycle parking in public spaces - 2012.

In this section, special mention should also be made of the contribution of the University of Seville, which has been increasing the supply of safe parking for bicycles inside their facilities, exceeding the 2,500 places, which are used heavily by the university community.

The construction of new sections of the bikeway network has continued in subsequent years, reaching a total length of 142 km, which is its implementation in 9.4% of the roads of the city. It has also continued with the installation programme modules for private cycle parking across the city, and there are now 434 modules and a total of 2,160 places.

The system of public bike rental

The spectacular rise in the use of bicycles in Seville would probably not have occurred if the development of this ambitious first phase of construction of connected bikeways which serve most of the equipment and the central city areas had not been accompanied at the same time by a new, large-scale system of public bikes.



Graphic 4. Network of Cycle Routes in Seville and location of SEVICI's stations - 2012.

The chances of success of a system with these characteristics were analysed according to both the levels of use in other cities where it had already been implemented, and the responses of the citizens of Seville when asked if they would use a system of this type. Indeed, in research studies, 39% of the population responded positively to the possibility of using this system, which could mean up to 275,000 potential users. In addition, 29% of respondents who were not yet bicycle users answered in the affirmative, indicating that this service could also serve to encourage people to become regular bike users to get around in the city.

The procedure selected for implementation was the holding of a public competition for a special contract for the installation, management and maintenance of an individualised, public cycle transport system. Financing was to be through a mixed system: through revenue from commercial use of a limited number of advertising media located in the public spaces of the city and direct revenue from fees paid by users. With regards to the service, there are 2,600 bikes distributed in 260 stations dotted across the city that have a total of 4,857 parking points (bornetas), which are accessible to any citizen for travel around town a short distance and usually over short periods of time (20-25 minutes). From each station, the user can get a bike and return it to the same or another station.

Photo 8. New Plaza Town Hall

The public response at the operational start of this new system, called SEVICI, in July 2007, was very positive, rapidly increasing the number of annual subscribers to reach a peak of 60,000 in 2009. It has now stabilised at around 52,000. The main reasons for using this system are its comfort, price and effectiveness.

The main features are the following:

• The service operates continuously 24 hours a day, 365 days a year.

• The location and number of stations are located in such a way that the user has the impression that there is a station both near both his start and the destination. The plan and design of the station furniture is such that it does not create urban barriers for pedestrians nor does it have a negative impact on the landscape.

Photo 9. San Bernardo intermodal station (suburban rail network, metro, streetcar, intercity buses, city buses, taxis, bicycles)

Photo 10. San Bernardo intermodal station

• The system facilitates intermodality. In fact, this is one of its essential characteristics as it allows users who use other means of transport to also use a bike, which would be difficult to transport inside the bus, subway or commuter train.

• The system offers two types of subscription (long-term and weekly). Payment is by credit card. The first half hour is free.

• Bikes have unique components of brakes, locks on the wheels, handlebars, etc., to make stealing them useless because they cannot be used on conventional bicycles.

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Photo credit
Municipality of Seville