

Seville was built on the bed of a lake called Litur (3000 years ago) in the Tartessian period. Over time, the sediments of the Guadalquivir River filled it, creating a firm ground on which various civilizations emerged: the ancient Spal of the Tartessian period, the Hispalis of the Roman period and later, the Muslim Isbiliya, whose radial layout of its streets continues in modern Seville, within and beyond its walls.

Consequently, today's Seville extends over a vast plain that facilitates the development of active transportation modes, such as walking and cycling. Currently, the city has a 205-kilometer network of bike lanes, making it one of the most extensive in the country, and 29% of daily trips are made on foot. Additionally, 15% of the historic centre has been pedestrianised.

However, this topography so special presents challenges for the construction of underground infrastructure, not only due to the complexity of the terrain but also because of the abundant archaeological wealth that lies beneath its streets.

The presence of a river, along with its tributaries, streams, and a vast floodplain, has strongly influenced and continues to condition the mobility in the current metropolitan area. For 700 years, the only connection between the two sides of the river was a boat bridge (1171-1852), which had to be rebuilt after each rise of the river. The construction of the Triana Bridge in the late 19th century marked a significant improvement in the mobility of merchants and workers. From then until 2009, when Seville's first metro line was inaugurated (serving 23 million passengers annually), the construction of bridges remained the only means of connecting both riverbanks.

All these factors shape the mobility of 1.6 million residents in the Seville metropolitan area, who make over 2 million daily trips, with 56.2% traveling from the surroundings to the city centre. Mobility still heavily relies on private vehicles, although significant efforts have been made in recent years to balance the modal share.

More than 50 kilometres of streets and avenues are equipped with dedicated bus lanes, helping to increase the commercial speed of the municipal bus fleet, TUSSAM, and facilitating the travel of 87 million passengers per year.

Other projects focused on enhancing public transportation are underway, financed through Next Generation and FEDER European funds. These include the connection between Plaza Nueva and Santa Justa Station via the Light Metro, as well as the link between Sevilla Este, Santa Justa Station, and Plaza del Duque, within the historic centre, through a Bus Rapid Transit (BRT) system with electric buses.

Finally, it is worth highlighting the progress of the new underground metro line, co-financed equally by the Government of Spain and the Junta de Andalucía. This line will run from north to south, linking the city's three main public hospitals.

In such a complex scenario, ITS tools serve as essential allies in optimizing mobility management across Seville and its metropolitan area.

The Mobility Management Centre (CGM), part of the Seville City Council's Mobility Department, is responsible for ensuring road safety for both vehicles and pedestrians while maintaining efficient traffic flow at safe speeds, minimizing environmental impact. With years of experience, we have set a target of keeping an average speed above 21 km/h on the city's main roadways, because of lower speeds exponentially increase greenhouse gas emissions, and keeping the average wait time for vehicles at traffic light intersections below 21 seconds.

Achieving these objectives requires the coordinated effort of over 50 professionals, including those responsible for the preventive and corrective maintenance of on-street infrastructure and those managing the operations of the CGM.

The main ITS equipment managed by the CGM includes traffic control regulators, artificial vision detectors, traffic surveillance CCTV cameras, traffic counting cameras, variable message signs installed on the streets, and educational speed radars designed to raise driver awareness by displaying real-time speed.

The main ITS applications include the Traffic Management System, the Traffic Light Coordination Assistance System, a Traffic Simulator, Road Usage Information System, Counting Management System, Parking Availability Information System, Geographic Information System (GIS), GIS-based Web Information Services, and the Mobility App, designed to provide citizens with real-time updates on traffic conditions and parking availability.

As a complement to the goal of reducing greenhouse gas emissions, the **Low Emission Zone Management Unit (ZBE)** was created. Its main objective is to reduce pollution from motorized mobility and improve air quality in cities with more than 50,000 inhabitants.

In Seville's Low Emission Zones (ZBE), as part of the **eCitySevilla** project, a pioneering public-private collaboration initiative in Spain, dozens of entities, including companies, institutions, universities, and research centres, have already joined. The project aims to create a **smart, open-ecosystem, digital, decarbonized, and sustainable city model** on Isla de la Cartuja by 2025. In line with this vision, two low-emission zones were established in this area.

Additionally, Seville is one of the 100 cities selected by the European Commission for the **NetZeroCities** project, aiming to achieve climate neutrality by 2030. Seville is also part of the **DGT 3.0** platform, which aims to connect road users in real time by providing up-to-date traffic information through the exchange of anonymous data between vehicles, infrastructure, and control centres.

The Seville City Council, in order to improve the connection between new public transport systems and the micromobility and shared transportation modes (bicycles, e-bikes, scooters, and electric motorcycles) currently operating in the city, actively participates in research on sustainable urban mobility and infrastructure planning.